



# **All Discrete Surround Mixing and Recording Console**

**Operator's Manual**  
*REVISED 6-1-16*



**Automated Processes, Inc.**

**Written for Automated Processes Incorporated  
by Daniel Pfeifer  
2010, latest revision 2016**

# Table of Contents

## 1.0 Overview

- 1.1 Introduction and Features
- 1.2 Vision Mainframe
  - 1.2.1 Channels Bucket
    - 1.2.1.1 Upper 200 Slots
    - 1.2.1.2 Lower 200 Slots
    - 1.2.1.3 500L Slot
  - 1.2.2 Options Bucket

## 2.0 Channel Signal Flow

- 2.1 Dual Signal Path Architecture
- 2.2 Channel Input Selections
- 2.3 Channel Signal Processing
- 2.4 Channel Output Assignments
- 2.5 Channel Components
- 2.6 Block Diagrams
  - 2.6.1 Basic Fader 1 Block Diagram
  - 2.6.2 Basic Fader 2 Block Diagram
  - 2.6.3 Basic Fader 2 with Direct Out Engaged Block Diagram
  - 2.6.4 Basic Multitrack Recording using Fader 1 and Fader 2 Audio Paths Block Diagram
  - 2.6.5 Complete Fader 1 and Fader 2 Signal Flow Block Diagram

## 3.0 Channel Controls and Patch Points

- 3.1 Master Input Selectors (INPUT SELECT)
  - 3.1.1 Fader 1 and Fader 2 Input Selectors
  - 3.1.2 Ancillary Controls
- 3.2 Channel Input
  - 3.2.1 212L Microphone Preamplifier
  - 3.2.2 205L Direct Input
- 3.3 Signal Processing: Optional Dynamics Processing/Filter Set
  - 3.3.1 225L Compressor/Limiter
  - 3.3.2 235L Noise Gate/Expander
  - 3.3.3 215L High-pass/Low-pass Sweep Filter
- 3.4 Equalizer: 500L Slot: 550L EQ or 560L Graphic EQ
  - 3.4.1 550A 3-band Parametric EQ
  - 3.4.2 550L 4-band Parametric EQ
  - 3.4.3 560L 10-band Graphic EQ
- 3.5 1068L Input Module:
  - 3.5.1 Equalizer Assignment
  - 3.5.2 Auxiliary Sends
    - 3.5.2.1 Auxiliary Routing Pre-selector Switches
    - 3.5.2.2 Auxiliary Send Controls
    - 3.5.2.3 AUX PRE MUTE
  - 3.5.3 Tape Pad
  - 3.5.4 Fader 2 Path Controls
  - 3.5.5 Fader 1 Path Controls
- 3.6 Channel Faders
  - 3.6.1 Fader 1
  - 3.6.2 Fader 2
  - 3.6.3 Position Faders
    - 3.6.3.1 Setting Fader Positions
- 3.7 Channel Meters and Peak Indicators
  - 3.7.1 Channel VU Meters
  - 3.7.2 Fader 1 and Fader 2 Peak Indicators
- 3.8 Channel Patch Points
  - 3.8.1 Complete Channel Patch Points
  - 3.8.2 Channel Patch Points for Multitrack Recording
    - 3.8.2.1 Fader 2 Patch Points (Multitrack Send)
    - 3.8.2.2 Fader 1 Patch Points (Multitrack Return)
- 3.9 200 Slot Programming and Patch Points
- 3.10 Recallable Input Channel Switches and Auxiliary Send Routing
  - 3.10.1 Recallable Input Channel Switches
  - 3.10.2 Recallable Auxiliary Send Routing
- 3.11 Automated Input Channel Switches

## **4.0 Channel Output Routing and Bus Assignment**

- 4.1 Channel Direct Output
- 4.2 Channel Output Assignment Module
  - 4.2.1 Channel Output Display
  - 4.2.2 Channel Set Button
  - 4.2.3 Multitrack Summing Bus Assignments
  - 4.2.4 Program Bus Assignments
  - 4.2.5 Ancillary Controls
  - 4.2.6 Multitrack Summing Bus Assignment Procedure
  - 4.2.7 Program Bus Assignment Procedure
  - 4.2.8 Auxiliary Send 9/10 Assignment Procedure
- 4.3 Channel Output Assignment Using Vision Software
  - 4.3.1 Recall Settings Window
  - 4.3.2 Channel Grid
  - 4.3.3 Channel Status Indication
  - 4.3.4 Channel Output Assignments
  - 4.3.5 Clear Channel Output Assignments
  - 4.3.6 Procedures for Making Channel Output Assignments Using Software
    - 4.3.6.1 Using the Recall Window to Make Channel Output Assignments
    - 4.3.6.2 Saving Channel Output Assignments in a Snapshot
    - 4.3.6.3 Applying Channel Output Assignments from a Snapshot

## **5.0 Multitrack Summing Busses, Trims, Signal Flow, and Patch Points**

- 5.1 Multitrack Summing Bus
- 5.2 Multitrack Output Trim Module
- 5.3 Multitrack Signal Flow
- 5.4 Multitrack Patch Points

## **6.0 Stereo Program Busses, Master Faders, Signal Flow, and Patch Points**

- 6.1 Stereo Program Busses A, B, and C
- 6.2 Stereo Program Master Faders
- 6.3 Stereo Grand Master
  - 6.3.1 Grand Master Select
- 6.4 Stereo Program Signal Flow
- 6.5 Stereo Program Patch Points

## **7.0 Surround Program Bus, Master Faders, Signal Flow, and Patch Points**

- 7.1 Surround Program Outputs
- 7.2 5-Channel Surround Program Bus and Masters
- 7.3 LFE Feed and Master
  - 7.3.1 Creating a LFE Feed for 5.1 and 7.1 Surround Program Outputs
    - 7.3.1.1 LFE Feed from a Mono Auxiliary Send
    - 7.3.1.2 LFE Feed from Fader 1 and a Multitrack Summing Bus
    - 7.3.1.3 LFE Feed from Fader 2 and a Multitrack Summing Bus
    - 7.3.1.4 LFE Feed from an Unfiltered External Source
    - 7.3.1.5 LFE Feed from a Filtered External Source
- 7.4 A/B Feed and Master
  - 7.4.1 Creating a LFE Feed for 5.1 and 7.1 Surround Program Outputs
    - 7.4.1.1 A/B Feed from a Stereo Auxiliary Send
    - 7.4.1.2 A/B Feed from Fader 1 and a Pair of Multitrack Summing Busses
    - 7.4.1.3 A/B Feed from Fader 2 and a Pair of Multitrack Summing Busses
    - 7.4.1.4 A/B Feed from an External Source
- 7.5 5.1 and 7.1 Master Faders
- 7.6 Surround to Stereo Fold Down (Lt Rt Fold Down Matrix)
- 7.7 Surround Signal Flow
  - 7.7.1 5.0 Surround Signal Flow without LFE
  - 7.7.2 5.1 Surround Signal Flow with LFE
  - 7.7.3 7.1 Surround Signal Flow with LFE and A/B
- 7.8 Surround Program Patch Points

## **8.0 Auxiliary Busses, Masters, Signal Flow, and Patch Points**

- 8.1 Auxiliary Busses
- 8.2 Auxiliary Send Masters
  - 8.2.1 227L Cue Send Module
  - 8.2.2 227M Cue Master Module
    - 8.2.2.1 Talk Back
    - 8.2.2.2 Stereo Masters to Cue Sends
- 8.3 Auxiliary Send Signal Flow
- 8.4 Auxiliary Send Patch Points

## **9.0 Options Bucket**

- 9.1 E1068L Stereo Surround Echo Return Module
  - 9.1.1 E1068L Signal Flow for Stereo Mixing
  - 9.1.2 E1068L Signal Flow for Surround Mixing
  - 9.1.3 E1068L Patch Points
- 9.2 Other Modules
- 9.3 Options Bucket Patch Points

## **10.0 Control Group Master Faders**

### **11.0 Solo Modes, Controls, and Patch Points**

- 11.1 Solo Modes
- 11.2 Solo Controls
- 11.3 Solo: Normal and Solo: Groups
- 11.4 Solo Bus Access Patch Points

### **12.0 Talk Back**

- 12.1 Control Room Talk Back
- 12.2 Reverse Talk Back
- 12.3 Talk Back Microphone Controls
- 12.4 Talk Back Level Controls
- 12.5 Assigning Talk Back to Cue Send (Auxiliary Send)
- 12.6 Reverse Talk Back Patch Points

### **13.0 Monitor Control Sections**

- 13.1 Stereo Monitoring
- 13.2 Surround Monitoring and Bass Management
  - 13.2.1 Bass Management
  - 13.2.2 LFE and Control Room Insert Controls
  - 13.2.3 LFE Filter and Control Room Insert Patch Points
- 13.3 Control Room Monitor Source Selection (MONITOR SELECT)
  - 13.3.1 Control Room Monitor Source Selectors and Level Control
  - 13.3.2 Control Room Monitor Insert
  - 13.3.3 Program and Playback Monitor Selector Patch Points
- 13.4 Control Room Monitor Speaker Solo and Cut Controls
- 13.5 Control Room Monitor System Selection (CONTROL ROOM)
  - 13.5.1 Control Room Monitor System Controls
  - 13.5.2 Control Room Monitor Output and Amplifier Input Patch Points
- 13.6 5.1 Test Points
- 13.7 Studio Monitor Source Selection (STUDIO) and Level Control
  - 13.7.1 Studio Monitor Controls
  - 13.7.2 Studio Monitor Output and Amplifier Input Patch Points

## **14.0 User Controls**

### **15.0 Oscillator/Pink Noise Generator**

- 15.1 Oscillator/Pink Noise Generator Controls
- 15.2 Oscillator/Pink Noise Generator Patch Points

### **16.0 Meters and Peak Indicators**

- 16.1 VU Meter Bridge
  - 16.1.1 Channel Meters
  - 16.1.2 Program Meters
  - 16.1.3 Meter Controls (METER SELECT)
- 16.2 Channel Peak Indicators and Reference Level Control
- 16.3 Power Supply Voltage Indicators
- 16.4 Penguin Surround Meter Software



## **17.0 Patchbay**

- 17.1 Patch Bay Normals
- 17.2 Channel Patch Bay
  - 17.2.1 Complete Channel Patch Points
  - 17.2.2 Fader 1 and Fader 2 Patch Points for Multitrack Recording
- 17.3 Multitrack Summing Bus/Multitrack Send Patch Bay
- 17.4 Upper System Patch Bay
  - 17.4.1 227L Cue Send Patch Points
  - 17.4.2 Stereo Program Patch Points
  - 17.4.3 Surround Program Patch Points
  - 17.4.4 Lt Rt Fold Down Matrix Output Patch Points
- 17.5 Lower System Patch Bay
  - 17.5.1 2-Track and 8-Track Record/Playback Device Returns and Stereo and Surround Monitor Source Inputs
  - 17.5.2 Control Room Monitor and Studio Monitor Outputs and Control Room Monitor and Studio Amplifier Inputs
  - 17.5.3 E1068L and Options Bucket Patch Points
  - 17.5.4 LFE Filter Patch Points
  - 17.5.5 Control Room Monitor Insert Patch Points
  - 17.5.6 Stereo, Surround, and Solo Summing Bus Access
  - 17.5.7 Lt Rt Fold Down Matrix External Inputs
  - 17.5.8 Oscillator/Pink Noise Generator Patch Points
  - 17.5.9 Talk Back Patch Points
  - 17.5.10 Phase Reverse (polarity inverter) and Multiple (MULT) Patch Points
- 17.6 Custom User Patch Bay

## **18.0 Vision Computer Control**

- 18.1 System Overview
- 18.2 Hardware and Software Interface
- 18.3 System Architecture
  - 18.3.1 PC Computer and Vision Software
  - 18.3.2 ACM Control Panel (Vision Control)
  - 18.3.3 Automation Control Module (ACM)
  - 18.3.4 Fader Control Modules (FCM)
  - 18.3.5 Fader Modules
  - 18.3.6 1068L Input Modules
  - 18.3.7 Output Assignment Modules (Routing Panels)

## **19.0 Vision Software**

- 19.1 Starting Vision Software
- 19.2 Main Window
  - 19.2.1 Title Bar
  - 19.2.2 Menu Bar
    - 19.2.2.1 File Menu
      - 19.2.2.1.1 New Project
      - 19.2.2.1.2 Open Project
      - 19.2.2.1.3 Save Project Copy
      - 19.2.2.1.4 Import Snapshot
      - 19.2.2.1.5 Recent Projects
    - 19.2.2.2 View Menu
    - 19.2.2.3 Setup Menu
      - 19.2.2.3.1 Unlock Settings Tab
      - 19.2.2.3.2 Program Settings
      - 19.2.2.3.3 Control Surface Setup
      - 19.2.2.3.4 Channel Mapping
      - 19.2.2.3.5 Update ACM Firmware
      - 19.2.2.3.6 Manage FCMs
      - 19.2.2.3.7 Update Display Firmware
    - 19.2.2.4 Tools Menu
      - 19.2.2.4.1 Position Faders
      - 19.2.2.4.2 Test Recall System

- 19.3 Primary Windows
  - 19.3.1 Channel Control
  - 19.3.2 ACM Connection
  - 19.3.3 Global Functions
  - 19.3.4 Timecode
  - 19.3.5 Project
  - 19.3.6 Recall Settings
  - 19.3.7 Groups

## **20.0 File Management**

- 20.1 File Structure
- 20.2 File Storage
- 20.3 File Menu
  - 20.3.1 Create a New Project
  - 20.3.2 Using Existing and Recent Projects
- 20.4 Deleting Project Files and Folders

## **21.0 Project Window**

- 21.1 Mix Tree Tab
- 21.2 Songs Tab
- 21.3 Snapshots Tab

## **22.0 Songs**

- 22.1 Song List
- 22.2 Creating a New Song
- 22.3 Opening an Existing Song
- 22.4 Deleting a Song
- 22.5 Editing a Song Title

## **23.0 Snapshots**

- 23.1 Snapshot Display
- 23.2 Snapshot Selection
- 23.3 Snapshot Menu
  - 23.3.1 Apply Snapshot
  - 23.3.2 Take Snapshot
  - 23.3.3 Take Snapshot to File
  - 23.3.4 Delete Snapshot
  - 23.3.5 Export Snapshot
  - 23.3.6 Import Snapshot
  - 23.3.7 Edit Snapshot Name
  - 23.3.8 Change Song
- 23.4 Take Snapshot Window
  - 23.4.1 Snapshot Name
  - 23.4.2 Sections to Save
  - 23.4.3 Channels to Save
  - 23.4.4 Take Snapshot and Cancel Buttons
- 23.5 Apply Snapshot Window
  - 23.5.1 Sections to Apply
  - 23.5.2 Channels to Apply
  - 23.5.3 Action
  - 23.5.4 Apply and Cancel Buttons
- 23.6 Default Snapshot
- 23.7 Snapshot Window Control from the ACM Control Panel (Vision Control)
- 23.8 Snapshot Procedures
  - 23.8.1 Applying an Existing Snapshot
  - 23.8.2 Taking a New Snapshot
  - 23.8.3 Making a New Snapshot File without Adding it to the Project
  - 23.8.4 Deleting Snapshots
  - 23.8.5 Exporting a Snapshot
  - 23.8.6 Importing a Snapshot
  - 23.8.7 Editing a Snapshot Name
  - 23.8.8 Assigning a Snapshot to a Song

## **24.0 Recall System**

- 24.1 Recall Settings Window
  - 24.1.1 Channel Grid
  - 24.1.2 Channel Status Indication
  - 24.1.3 Fader 1 Assignments and Recallable Switches
  - 24.1.4 Fader 2 Assignments and Recallable Switches
  - 24.1.5 Multitrack Summing Bus Routing
  - 24.1.6 Auxiliary Send Routing
  - 24.1.7 Global Settings and Routing
  - 24.1.8 Clear Settings
  - 24.1.9 Read Console
- 24.2 Recall System Procedures
  - 24.2.1 Making Software Channel Output Assignments and Recallable Switch Settings
  - 24.2.2 Saving Recall Settings in a Snapshot
  - 24.2.3 Applying Saved Recall Settings from a Snapshot
  - 24.2.4 Clearing Recall Settings on All Channels

## **25.0 Groups**

- 25.1 Overview
- 25.2 Group Enables
- 25.3 Group Masters
  - 25.3.1 Group Master Faders
  - 25.3.2 Group Master Channels
- 25.4 Groups Window
  - 25.4.1 Group Window Display
  - 25.4.2 Keep Similar Groups Together
- 25.5 Group Selection
- 25.6 Groups Menu
  - 25.6.1 Edit Group
  - 25.6.2 Rename Group
  - 25.6.3 Delete Group
  - 25.6.4 New Group
  - 25.6.5 Disable
  - 25.6.6 Coalesce & Delete Group
  - 25.6.7 Coalesce & Keep Group
  - 25.6.8 Coalesce w/Audio Master
- 25.7 New/Edit Group Window
  - 25.7.1 Group Name
  - 25.7.2 Sections
  - 25.7.3 Group Type
  - 25.7.4 Channel or Fader 1 and Fader 2 Selection Grids
    - 25.7.4.1 Selection Grid Status Indication
    - 25.7.4.2 Group Master and Member Selection
- 25.8 Groups Window Control from the ACM Control Panel (Vision Control)
- 25.9 Default Groups
- 25.10 Group Setup Procedures
  - 25.10.1 Enabling Groups Globally
  - 25.10.2 Making a New Group
  - 25.10.3 Editing an Existing Group
  - 25.10.4 Editing a Group Name
  - 25.10.5 Deleting Groups
  - 25.10.6 Disabling and Enabling One or More Individual Groups
  - 25.10.7 Coalescing Groups

## **26.0 Automation System**

- 26.1 Overview
  - 26.1.1 Automation Controls
- 26.2 Automation Concepts
  - 26.2.1 Automation Hardware Concepts
  - 26.2.2 Automation Software Concepts
  - 26.2.3 Manual Mixing
  - 26.2.4 New Mix
  - 26.2.5 Mix Passes
  - 26.2.6 Initial Positions
  - 26.2.7 End-Of-Pass Processes
  - 26.2.8 Timecode and Synchronization
  - 26.2.9 Function Enables

- 26.3 Automation System Components
  - 26.3.1 Automation Hardware Components
    - 26.3.1.1 Automation Control Module (ACM)
    - 26.3.1.2 ACM Control Panel (Vision Control)
    - 26.3.1.3 Fader Control Modules (FCM)
    - 26.3.1.4 Fader Modules
    - 26.3.1.5 1068L Input Modules
  - 26.3.2 Automation Software Components
    - 26.3.2.1 Project Window Mix Tree
    - 26.3.2.2 Channel Control Window
    - 26.3.2.3 Global Functions Window
- 26.4 Channels and Sections
  - 26.4.1 Selecting Channel Sections Using Software
  - 26.4.2 Global Channel Section Selectors
  - 26.4.3 Channel Status Display
  - 26.4.4 Selecting Channel Sections Using Hardware
- 26.5 Automation Modes and Submodes
  - 26.5.1 Automation Modes
    - 26.5.1.1 Manual
    - 26.5.1.2 Read
    - 26.5.1.3 Update
    - 26.5.1.4 Write
  - 26.5.2 Mute Write
  - 26.5.3 Automation Submodes
    - 26.5.3.1 None
    - 26.5.3.2 Static
    - 26.5.3.3 Latch
    - 26.5.3.4 Touch Into Write
    - 26.5.3.5 Update from Start
    - 26.5.3.6 Update from Touch
    - 26.5.3.7 Update to Next Move
    - 26.5.3.8 Online Fader Trim
  - 26.5.4 Assigning Automation Modes and Submodes
    - 26.5.4.1 Channel Control Window Mode and Submode Assignment
    - 26.5.4.2 ACM Control Panel (Vision Control) Mode and Submode Assignment
    - 26.5.4.3 Fader Module Mode Assignment
- 26.6 Global Functions
  - 26.6.1 Global Functions Window
  - 26.6.2 Global Automation Functions
    - 26.6.2.1 Bridge Gaps
    - 26.6.2.2 Auto Takeover
    - 26.6.2.3 Auto Safe
    - 26.6.2.4 Kill Mix
    - 26.6.2.5 Solo: Normal and Solo: Groups
  - 26.6.3 Function Enables
    - 26.6.3.1 Enable Faders
    - 26.6.3.2 Enable Groups
    - 26.6.3.3 Enable Switches
    - 26.6.3.4 Enable Timecode
    - 26.6.3.5 Control Surface
    - 26.6.3.6 Enable Leave Write
  - 26.6.4 Automation Section Safe Modes
    - 26.6.4.1 Safe Switches
    - 26.6.4.2 Safe Insert 2
    - 26.6.4.3 Safe Insert 1
    - 26.6.4.4 Safe Mute 2
    - 26.6.4.5 Safe Mute 1
    - 26.6.4.6 Safe Fader 2
    - 26.6.4.7 Safe Fader 1
- 26.7 ACM Control Panel (Vision Control)
  - 26.7.1 ACM Control Panel Buttons
    - 26.7.1.1 Global Functions Buttons
    - 26.7.1.2 Automation Mode Buttons
    - 26.7.1.3 Automation Submode Buttons
    - 26.7.1.4 Function Enable Buttons
    - 26.7.1.5 Save Mix and Section Select Buttons
    - 26.7.1.6 Navigation Control Buttons

- 26.7.2 ACM Control Panel Display
- 26.7.3 ACM Main Menu
  - 26.7.3.1 PC Window Control
  - 26.7.3.2 New Mix
  - 26.7.3.3 Solo: Normal and Solo: Groups
  - 26.7.3.4 Function Enables (Global Funcs)
  - 26.7.3.5 Clear Recall
  - 26.7.3.6 Defaults
  - 26.7.3.7 Demo Functions
  - 26.7.3.8 Console Settings
  - 26.7.3.9 Code Versions
- 26.8 Mix Tree
  - 26.8.1 Mix Tree Display
  - 26.8.2 Mix Selection
  - 26.8.3 Mix Tree Edit Functions
    - 26.8.3.1 Duplicate Mix
    - 26.8.3.2 Delete Mix
    - 26.8.3.3 Copy/Swap Mix Data
    - 26.8.3.4 Offline Fader Trim
    - 26.8.3.5 New Song From Mix
    - 26.8.3.6 Export Mix
    - 26.8.3.7 Import Mix
    - 26.8.3.8 Edit Mix Name
    - 26.8.3.9 Mix Properties
    - 26.8.3.10 Glide Return
- 26.9 Mix Tree Control from the ACM Control Panel (Vision Control)
- 26.10 Automation Procedures
  - 26.10.1 Creating a New Mix in Automation
  - 26.10.2 Making a Mix Active
  - 26.10.3 Exporting an Individual Mix
  - 26.10.4 Importing an Individual Mix
  - 26.10.5 Loading Existing Mix Trees

## **27.0 DAW Control**

- 27.1 Control Surface Controls
- 27.2 Control Surface Setup
- 27.3 Control Surface Enable
- 27.4 DAW Control Surface Applications
- 27.5 DAW Control Surface Procedures
  - 27.6.1 Using the console control surface to control a DAW

## **28.0 System Setup, Maintenance, and Updates**

- 28.1 Software Configuration
  - 28.1.1 Default Project and Firmware Folders
    - 28.1.1.1 Set A Default Location For New Project Folders and Files
    - 28.1.1.2 Set A Default Location For ACM, FCM, and ACM Control Panel Display Firmware
  - 28.1.2 Recall Settings Mic/Tape Label Setup
- 28.2 Password Protection
  - 28.2.1 Set Password Protection
  - 28.2.2 Unlock Protected Settings
- 28.3 Software and Firmware Updates
  - 28.3.1 Updating PC Software
    - 28.3.1.1 Install or Update the Vision PC Software
  - 28.3.2 Updating ACM Firmware
    - 28.3.2.1 Program ACM Firmware
  - 28.3.3 Updating FCM Firmware
    - 28.3.3.1 Program FCM Firmware
  - 28.3.4 Updating ACM Control Panel Display Firmware
    - 28.3.4.1 Program ACM Control Panel Display Firmware
- 28.4 Channel Mapping
  - 28.4.1 Making Changes to the Channel Map
- 28.5 Timecode Setup
  - 28.5.1 SMPTE Timecode
  - 28.5.2 Timecode Source
    - 28.5.2.1 Selecting the Timecode Source
  - 28.5.3 Freewheel Frames
    - 28.5.3.1 Setting Freewheel Frames

- 28.5.4 MIDI Timecode
  - 28.5.4.1 Selecting a MIDI Port for MTC
- 28.5.5 Enable Timecode
- 28.6 Fader Calibration
  - 28.6.1 Calibrate Faders
- 28.7 Test Recall System
  - 28.7.1 Recall Section Selection
  - 28.7.2 Channel Selection
  - 28.7.3 Run Test
  - 28.7.4 Test Results
  - 28.7.5 Recall System Test Procedure
- 28.8 Default Snapshot
  - 28.8.1 Burning the Default Snapshot
  - 28.8.2 Loading the Default Snapshot
- 28.9 Default Groups
  - 28.9.1 Burning the Default Groups
  - 28.9.2 Loading the Default Groups
- 28.10 Control Surface Setup
  - 28.10.1 DAW Control Setup Procedure
- 28.11 ACM Display Setup
  - 28.11.1 ACM Display Contrast
    - 28.11.1.1 Adjust ACM Display Contrast
  - 28.11.2 ACM Touch Level Display
    - 28.11.2.1 Set Touch Level Display
- 28.12 Program Meter Calibration

## Appendix

- i. Vision Block Diagram
- ii. 200 Slot Choices
- iii. Dimensions
- iv. Module Information Sheets
  - a. 205L Discrete Direct Input
  - b. 212L Discrete Microphone Preamp
  - c. 215L Discrete High-pass/Low-pass Sweep Filter
  - d. 225L Discrete Channel Compressor
  - e. 235L Discrete Channel Noise Gate
  - f. 525 Re-Issue Discrete Compressor
  - g. 527 Compressor/Limiter
  - h. 550A Discrete 3-Band Equalizer
  - i. 550L Discrete 4-Band Equalizer
  - j. 560L Discrete 10-Band Graphic Equalizer
- v. Console/Module Setup Sheets
  - a. 205L Direct Input
  - b. 212L Microphone Preamp
  - c. 215L High-pass/Low-pass Sweep Filter
  - d. 225L Channel Compressor
  - e. 235L Channel Noise Gate
  - f. 525 Re-Issue Compressor
  - g. 527 Compressor/Limiter
  - h. 550L 4-Band Equalizer
  - i. 560L 10-Band Graphic Equalizer
  - j. 1068L Input Module
  - k. Channel Fader
  - l. Group/Master Fader
  - m. Bus Trim
  - n. 227 Aux Sends
  - o. E1068L Echo Return
  - p. Master Section
- vi. Automation Quick Reference

Daniel Pfeifer is a Professor of Recording Industry  
at Middle Tennessee State University

## 1.0 Overview

### 1.1 Introduction and Features

#### Vision Features

The API Vision is a new surround mixing and recording console, featuring surround assign and panning on each fader, plus comprehensive central facilities. The only analog console ever designed from the ground up for surround work.

#### Overview

- Resettable Switch Automation, assignable per Channel or Globally
- Resettable Bus Assign, assignable per Channel or Globally
- Twenty-Four Multitrack Summing Busses
- Dedicated Surround Mix Bus
- Three Independent Stereo Busses
- Simultaneous Surround and Stereo Mixing
- API's all Discrete Signal Path
- Transformer Outputs

#### Each Channel Features

- Dual signal path architecture (two independent audio paths, Fader 1 and Fader 2)
- Dual input (MIC and TAPE)
- Two 100mm Automated Moving Faders on each path
- Simultaneous Stereo and Surround Panning on each path
- Ten Auxiliary Sends (two stereo, six mono, all switchable between paths and pre/post fader)
- 40-600 Hz High-Pass Sweep Filter in Fader 1 path
- 70 Hz High-Pass Filter in Fader 2 path
- Assignable Equalizer (as fitted):
  - 550A 3-band Parametric
  - 550L 4-band Parametric
  - 560L 10-band Graphic
- Optional Processing (as fitted):
  - 205L Direct Input
  - 212L Microphone Preamplifier
  - 215L Sweep Filter
  - 225L Compressor
  - 235L Noise Gate
  - 525 Re-Issue Compressor (special order)
  - 527 Compressor Limiter (special order)
- Balanced Insert in each path
- Phase Reverse (Polarity Inverter)

#### Central Facilities

- Comprehensive Surround Monitoring
- 8 Multi-channel playback selectors
- Bass management
- Individual Solo/Mute control of surround monitors
- Surround Fold-down Matrix
- Central Computer/monitor for automation and recall
- Comprehensive automation system (Fader 1, Fader 2, and switches)
- DAW control
- Machine Control (optional)
- Provision for optional signal processing:
  - 205L Direct Input
  - 212L Mic Pre
  - 215L Sweep Filter
  - 225L Compressor
  - 235L Noise Gate
  - 525 Re-Issue Compressor (special order)
  - 527 Compressor Limiter (special order)
- Monitor Calibration Controls
- 3 sets of speaker assigns

**Also Featuring**

- The same exacting craftsmanship featured on all API Legacy Series Consoles
- API's unique 5 year warranty
- Full Patch Bay facilities
- Highest Quality Leather and Wood Trim
- Custom Built to Client's Specification

API's VISION responds to the major advances in digital audio recording. Digital media demands a new level of performance, reliability and flexibility from the professional tools used to create audio masters. From the mic amps and equalizers, to the signal processing devices and right through the bus and routing structures of an audio console, we applaud the rising levels of sonic expectation today's audio performances demand. API proudly presents the Vision Recording and Mixing Console, built to the same exacting standards of reliability, sonic performance, and investment grade audio that has made the Legacy Series the standard of modern recording consoles.

**VISION** Dedicated to all those who hear, appreciate, and demand the best.





## 1.2 Vision Mainframe and Slots

The Vision console mainframe comes in a variety of frame sizes built with a Center Section and three or more 16-channel channel buckets. The smallest frame size is 48 channels. The Patch Bay is remotely mounted.

The mainframe is designed with a Center Section, a series of channel module buckets, each with four module slots, and an Options Bucket in which the customer specified modules are installed. Due to this flexible design, the console may be configured in many ways and each Vision console is built to meet the specifications determined by the owner. While work flow, capacity, and patching may vary by configuration, the basic operational premise of all Vision consoles is the same.

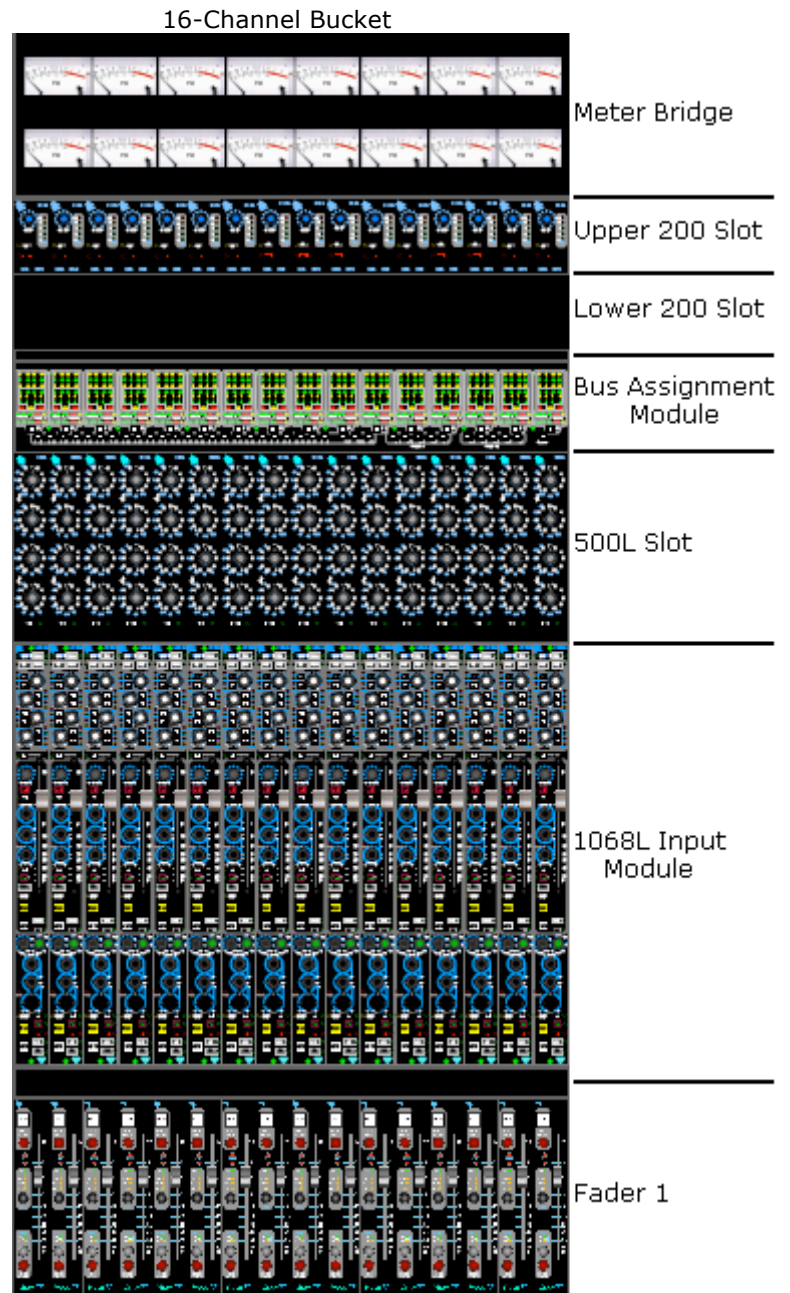
### 1.2.1 Channel Bucket

There are five module slots associated with each channel bucket in the Vision mainframe. From the meter-bridge to the armrest, the slots are installed in the following order:

- Upper 200 Slot
- Lower 200 Slot
- 500L Slot
- 1068L Input Module Slot
- Fader 1 Slot

The Input Module Slot can be equipped only with a 1068L Input Module.

The Fader 1 Slot can be equipped only with a Fader 1 Fader.



### **1.2.1.1 Upper 200 Slots**

The Upper 200 Slot is used for either input preamplification or channel signal processing. The Upper 200 Slot may be fitted with the following API 200 Series modules:

- 205L Direct Input
- 212L Microphone Preamplifier
- 215L Sweep Filter
- 225L Compressor/Limiter
- 235L Noise Gate/Expander

When the Upper Slot is fitted with a 205L or 212L to serve as a channel preamp, it is programmed internally to feed the 1068L Input module MIC input.

The channel preamp will typically be installed in the Options Bucket when the Upper 200 Slot is fitted with a signal processor (215L, 225L, or 235L).

For signal processing, the Upper and Lower Slots are grouped together. Internal links may be programmed to route both slots to one of the following fixed locations:

- Fader 1, Pre EQ
- Fader 1, Post EQ
- Fader 2, Pre EQ
- Fader 2, Post EQ

As an alternative, a USER button in the Center Section can be programmed to switch the Upper 200 Slot to an alternate location. This is a custom option and may not be programmed on all consoles. Refer to the studio engineering documents and staff for details on specific installations

If the Upper 200 Slot used with for signal processing, the upper slot is located before the lower slot in the signal flow.

*NOTE: See section 3.8 200 Slot Programming and Patching for details on 200 Slot routing.*

### **1.2.1.2 Lower 200 Slots**

The Lower 200 Slot is typically used only for channel signal processing. The Lower 200 Slot may be fitted with the following API 200 Series modules:

- 215L Sweep Filter
- 225L Compressor/Limiter
- 235L Noise Gate/Expander

For signal processing, the Upper and Lower Slots are grouped together. Internal links may be programmed to route both slots to one of the following fixed locations:

- Fader 1, Pre EQ
- Fader 1, Post EQ
- Fader 2, Pre EQ
- Fader 2, Post EQ

The Lower 200 Slot will remain in this fixed location determined by the internal link and cannot be moved.

If the Upper 200 Slot used with for signal processing, the upper slot is located before the lower slot in the signal flow.

*NOTE: See section 3.8 200 Slot Programming and Patching for details on 200 Slot routing.*

### 1.2.1.3 500L Slot

There is one (1) 500L Slot for each channel. The 500L Slot can be equipped only with the API 500L Series modules. This slot is typically fitted with one of two equalizer modules:

- 550A 3-Band Parametric EQ
- 550L 4-Band Parametric EQ
- 560L 10-Band Graphic EQ

The 500L Slot can be routed to either the Fader 1 or Fader 2 Path or bypassed completely via controls on the 1068L Input module. The routing may be stored using the recall system and the bypass may be controlled using the automation system.

*NOTE: Standard 500 series modules will not fit in the 500L slot.*

### 1.2.2 Options Bucket

The Options Bucket is located on the right-hand side of the Center Section. It has 42 slots for API 200, 200L, and 500 Series modules. 500 series modules can only be installed as a special order. It can also accommodate the E1068L Stereo/Surround Return module for additional echo returns.

The Options Bucket can be fitted with the following modules:

- 205L Direct Input
- 212L Microphone Preamplifier
- 215L Sweep Filter
- 225L Compressor/Limiter
- 235L Noise Gate/Expander
- 550A 3-Band Parametric EQ (special order)
- 550B 4-Band Parametric EQ (special order)
- 560 10-Band Graphic EQ (special order)
- 525 Re-Issue Compressor (special order)
- 527 Compressor Limiter (special order)
- E1068L Stereo/Surround Return

Any combination of these modules may be installed.

When the Options Bucket is equipped with preamp modules (205L and/or 212L), the Upper 200 Slots in the channels are available for additional signal processing modules and may be fitted with such. If the channel Upper 200 Slots are equipped with preamps, the entire Options Bucket is available for signal processors and echo returns.

*NOTE: The E1068L Stereo/Surround Return is two (2) units wide. Each one occupies two (2) 200 Slots in the Options Bucket and cannot be fitted in a channel 200 Slot.*

*NOTE: Standard 500 series module can be fitted in the Options Bucket as a special order.*

Refer to the chapter 9.0 Options Bucket for further information.

## 2.0 Channel Signal Flow

The 1068L Input module is the heart of the channel-strip. The Vision channel design provides two fully-featured audio paths for multitrack recording (one for routing microphones to a multitrack and one for mixing the multitrack return) or two complete audio paths with stereo/surround panning for mixing. A choice of inputs, a comprehensive set of channel patch points, and extensive output options combine with the other channel features to provide great flexibility.

The 1068L Input module is fully integrated with the Vision software. The recall system can be used for the setup of one or more channels with switch settings, input/output assignments, auxiliary send routing, and global features. The automation system records and playback moves made to faders, mutes, inserts, EQ bypass, and Auxiliary Send on/off switches.

### 2.1 Dual Signal Path Channel Architecture

The 1068L Input module was designed with a dual-signal-path architecture. Each complete channel provides two independent audio paths in a single channel strip. These paths are known as Fader 1 and Fader 2.

Multitrack Recording: In a typical multitrack recording session, the channel signal paths function as follows:

- Fader 2 carries the signals from a microphone, DI, or other input source to the multitrack recorder (DAW, hard-disk recorder, or tape machine) via Direct Outputs and/or the 24 Multitrack Summing Busses.
- Fader 1 accepts the returns from the multitrack recorder and routes them to the Program Busses (mix Busses).

Stereo and Surround Mixing: In a typical multitrack mixing session, the channel signal paths function as follows:

- Fader 1 accepts the returns from the multitrack recorder and other sources and routes them to any of the three Stereo Program Busses and/or the Surround Program Bus.
- Fader 2 can also carry multitrack returns and other sources to the Program Busses. Fader 2 is fully automatable and has surround panning.
- Fader 2 may alternately be used as an extra Auxiliary send or LFE send, using the Multitrack Summing Busses as outputs.

For those familiar with other inline recording consoles, Fader 2 functions as an "input" or "channel" path (while tracking) and Fader 1 functions as a "monitor" or "mix" path.

### 2.2 Channel Input Selection

There are two primary choices of input sources for each path. The two input selections are:

- MIC (Mic Preamp Out): This is the output of the installed preamp in the Upper 200 Slot or Options Bucket. There are two modules available to serve as a preamp:
  - 212L Microphone Preamplifier
  - 205L Direct Input
- TAPE (Multitape Output): This is the output from the multitrack recorder interfaced with the console.
  - A -6 dB TAPE PAD can be engaged

*NOTE: Fader 2 can alternately receive the output of Fader 1 as its input if the FDR1 switch is engaged. This topic will be covered in more detail later in this manual.*

The Input Select (FDR1 MIC, FDR2 TAPE) switches in the Center Section, the Fader 1 MIC switch, and the Fader 2 TAPE switch determine which input source is routed to which audio path. The default Input Selection (no input selection switches engaged) for each path is as follows:

- Fader 1: TAPE
- Fader 2: MIC

Pressing the input selection switches selects the alternate source available, either MIC for Fader 1 or TAPE for Fader 2.

Both faders may be fed from the same source.

*NOTE: The 200 Slots may be normalled to a location pre or post the EQ in either path, via an internal programming link. If the link is set where the 200 Slots are pre the EQ, the selected input source feeds the slots before proceeding to the Channel Input patch point for that path (Fader 1 or Fader 2). (Refer to the sections 3.2 and 3.3 for additional 200 Slot information.)*

## **2.3 Channel Signal Processing**

The Equalizer (500L Slot) is assignable to either Fader 1 or Fader 2.

- The Equalizer is normally assigned to Fader 1
- The Equalizer may be assigned to Fader 2 using the EQ FDR2 switch
- The Equalizer may be bypassed using the EQ BYP switch
- The 500L Slot may be fitted with the one of the following Equalizers
  - 550A 3-Band Parametric EQ
  - 550L 4-Band Parametric EQ
  - 560L Graphic EQ

Upper and Lower 200 Slots

- The 200 Slots may be routed Pre or Post the EQ in either audio path via an internal programming link
- The Upper 200 slot can be programmed to change locations using a USER switch
- If preamps are located in the Options Bucket, both 200 Slots may be fitted with signal processor modules
- The 200 Slots may be fitted with the following signal processing modules:
  - 215L Sweep Filter
  - 225L Compressor
  - 235L Gate

Fader 1 and Fader 2 have the following features:

- Insert Send and Return
- Phase Reverse (Polarity Inverter)
- Trim
- Peak Indicator
- High-pass Filter
  - Fader 1 has a 40-600 Hz sweep filter
  - Fader 2 has a 70 Hz fixed filter
- Automatable Fader
- Mute
- Solo Activation

## **2.4 Channel Output Assignments**

Fader 1 and Fader 2 paths have complete access to all output assignment possibilities.

These output assignments are as follows:

- Direct Output
- Stereo/Surround Panning
- Multitrack Summing Busses 1-24
- Surround Program Bus
- Stereo Program Bus A, B, and C
- Auxiliary Sends 1-10
- Insert Send

Direct Output:

- Only one path can be assigned to feed the Direct Output at a time
- The Direct Output is always active and does not replace the Multitrack Bus outputs
- Fader 1 normally feeds the Direct Output
- Fader 2 will feed the Direct Output only when the Fader 2 DIR switch is engaged

Multitrack Summing Busses:

- There are twenty-four (24) Multitrack Summing Busses which feed Active Combining Amplifiers (ACA)
- There is a Trim for each ACA output
- Only one audio path (Fader 1 or Fader 2) can be assigned to the Multitrack Summing Busses at a time
- The Multitrack Summing Busses are normally fed from Fader 1

#### Stereo/Surround Panning:

- Stereo and Surround panning may be engaged in either path simultaneously
- The Surround Pan-pot in both paths always feed the Surround Program Bus
- Stereo panning may also be engaged in either or both paths

#### Surround Program Bus:

- Assignments can be made to the Surround Program Bus (L, R, C, Ls, Rs)
- An Low Frequency Effect (LFE) channel can be created using a Auxiliary Send or the Fader 2 audio path via a Multitrack Summing Bus
- Both paths can be assigned to the Surround Program Bus simultaneously

#### Stereo Program Busses:

- Assignments can be made any of the 3 Stereo Program Busses, A, B, and C
- Both paths (Fader 1 and Fader 2) can be assigned to the all 3 Stereo Program Busses simultaneously
- Simultaneous assignment to both paths to all Program Busses allows the simultaneous output of a surround and 3 stereo mixes.

#### Auxiliary Sends (Aux Sends):

- Either patch can feed the 2 Stereo and 6 Mono Auxiliary Sends.
- An Auxiliary Send can be routed pre or post the fader of the assigned path
- Aux Sends 1-6 are mono
- Aux Sends 7-8 and 9-10 are stereo
- Aux Sends 9-10 can be routed to feed the Multitrack Summing Busses 1-8

## 2.5 Channel Components

Several sections of the console make up a complete Input/Output (I/O) Channel:

- Channel Meter
- Upper 200 Slot (Channel Input or Signal Processing)
  - Microphone Preamp (212L) -OR-
  - Direct Input (205L) -OR-
  - 215L High-Pass Sweep Filter -OR-
  - 225L Compressor -OR-
  - 235L Gate
- Lower 200 Slot (Signal Processing)
  - 215L High-Pass Sweep Filter -OR-
  - 225L Compressor -OR-
  - 235L Gate
- 500L Equalizer Slot
  - 550A 3-Band Parametric EQ -OR-
  - 550L 4-Band Discrete EQ -OR-
  - 560L Graphic EQ
- 1068L Input Module
  - Input Selection for both paths
  - -6 dB Tape Pad
  - Channel Trims for both paths
  - Phase Reverse (Polarity Inverter) for both paths
  - Insert Send and Return for both paths
  - Peak Indicator for both paths
  - Fader 2
  - Filters for both paths
  - Mutes for both paths
  - Solo Controls for both path
  - Fader 1 Output to Fader 2 Input Routing
  - Stereo/Surround Panning for both paths
  - Ten Auxiliary sends (2 stereo, 6 mono)
  - Auxiliary and EQ Routing
  - Access to Output Assignments for both paths
- Fader 1

## 2.6 Block Diagrams

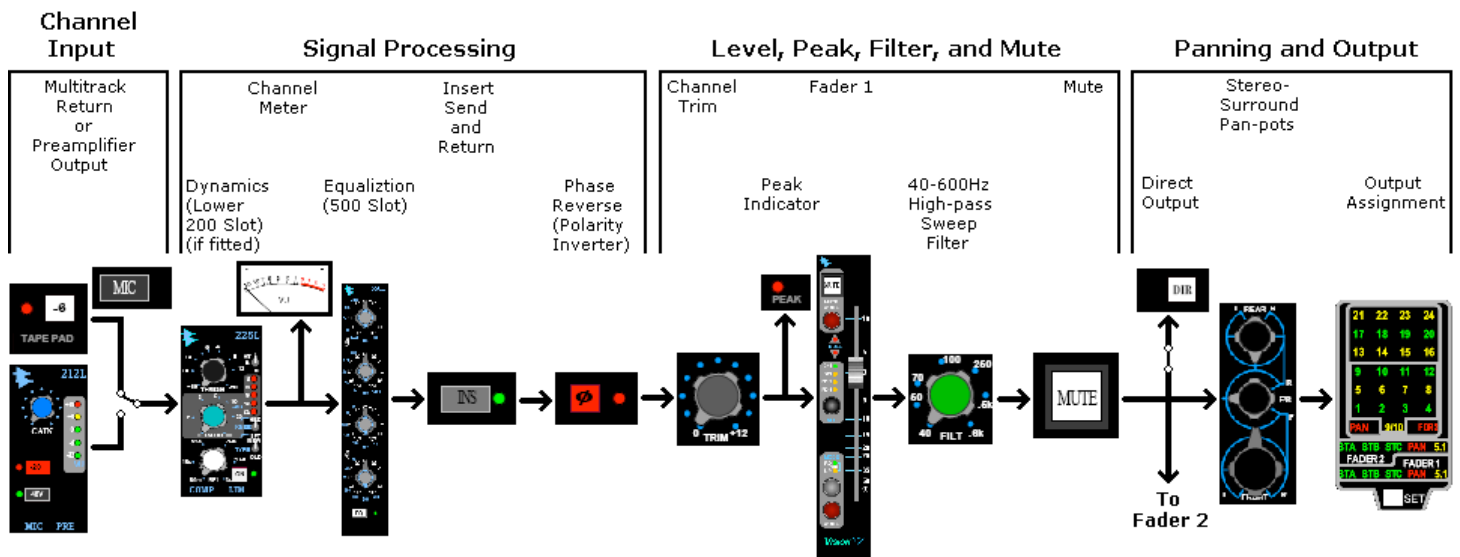
The series of basic block diagrams below indicate the signal flow through the Fader 1 and Fader 2 signal paths. A more technical and detailed signal flow diagram is available in a separate document.

Each feature of both paths is shown in the order in which they occur within the channel. The various processes are shown as if they are engaged.

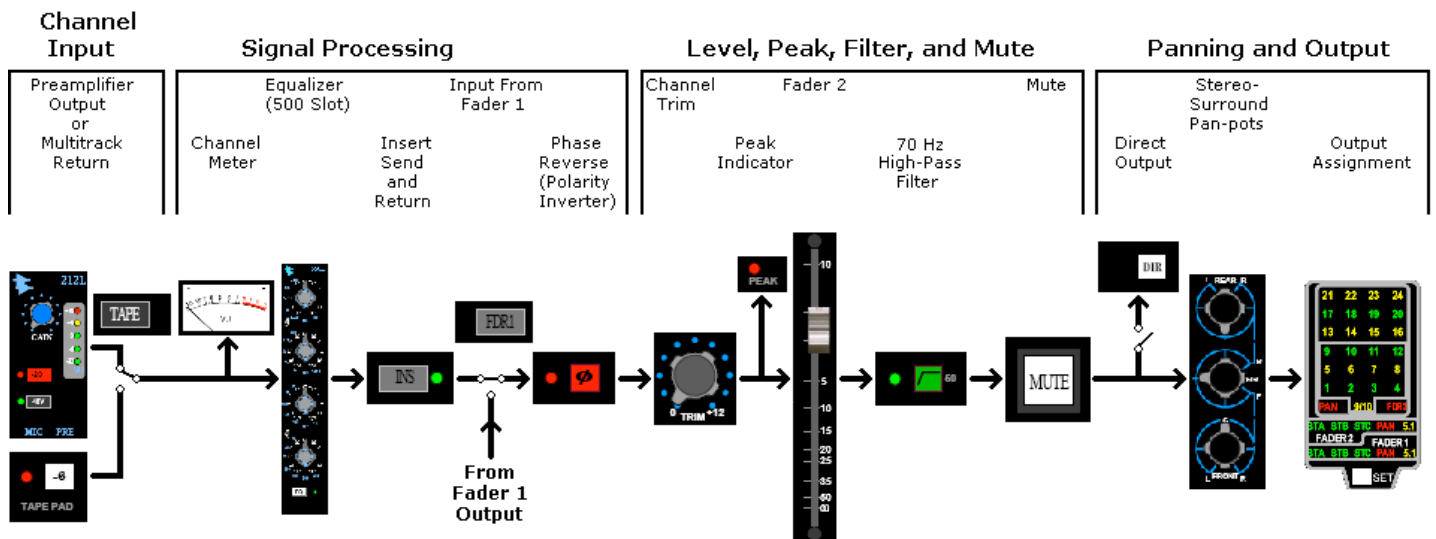
All block diagrams assume the following:

- A 212L Preamp installed in the Upper 200 Slot
- Input Selector switches not engaged (MIC, TAPE, FDR1 MIC, or FDR2 TAPE)
- FDR 1 switch not engaged on Fader 2
- The Lower 200 Slot is Pre-EQ in Fader 1 with a 225L Compressor installed
- The 500L Slot has a 550L EQ installed
- Pan-pots engaged
- These block diagrams do not show patch points

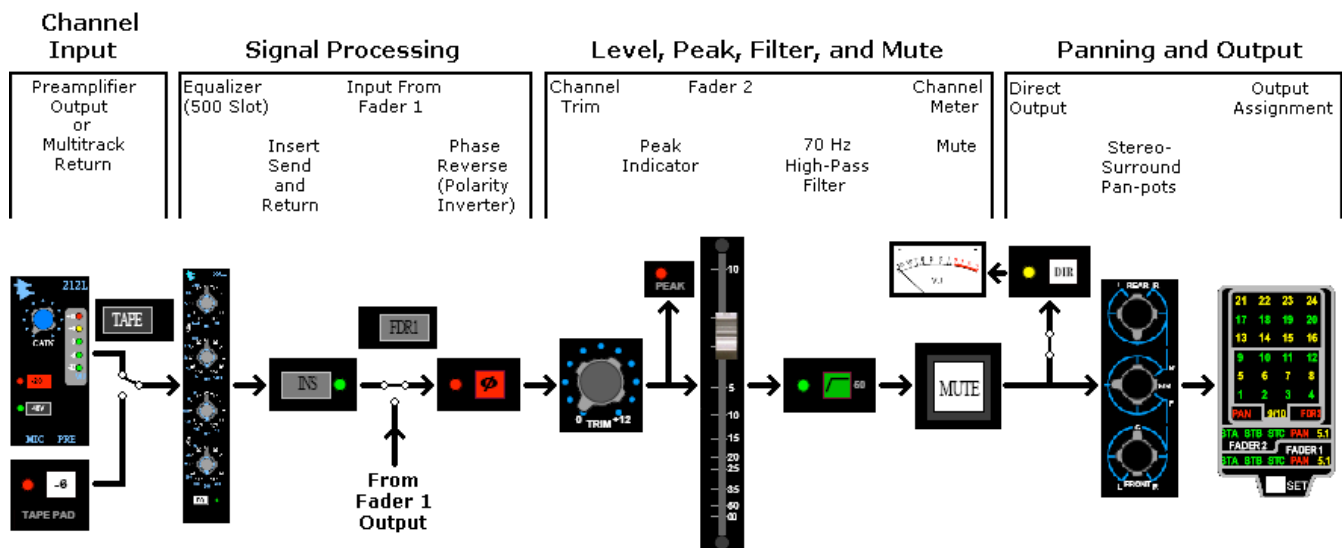
### 2.6.1 Basic Fader 1 Block Diagram



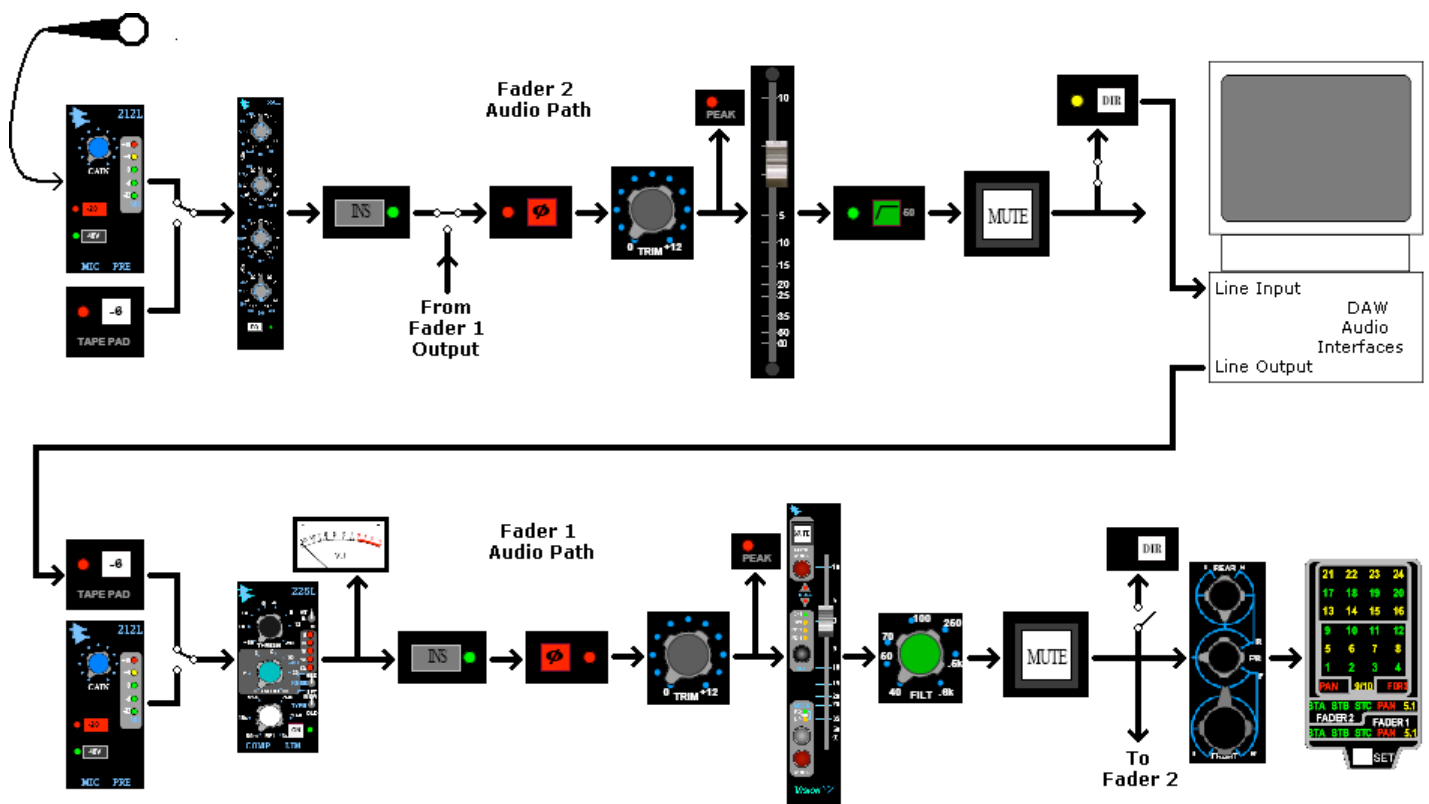
### 2.6.2 Basic Fader 2 Block Diagram



### 2.6.3 Basic Fader 2 with Direct Out Engaged Block Diagram



### 2.6.4 Basic Multitrack Recording Block Diagram using Direct Out for the Multitrack Feed

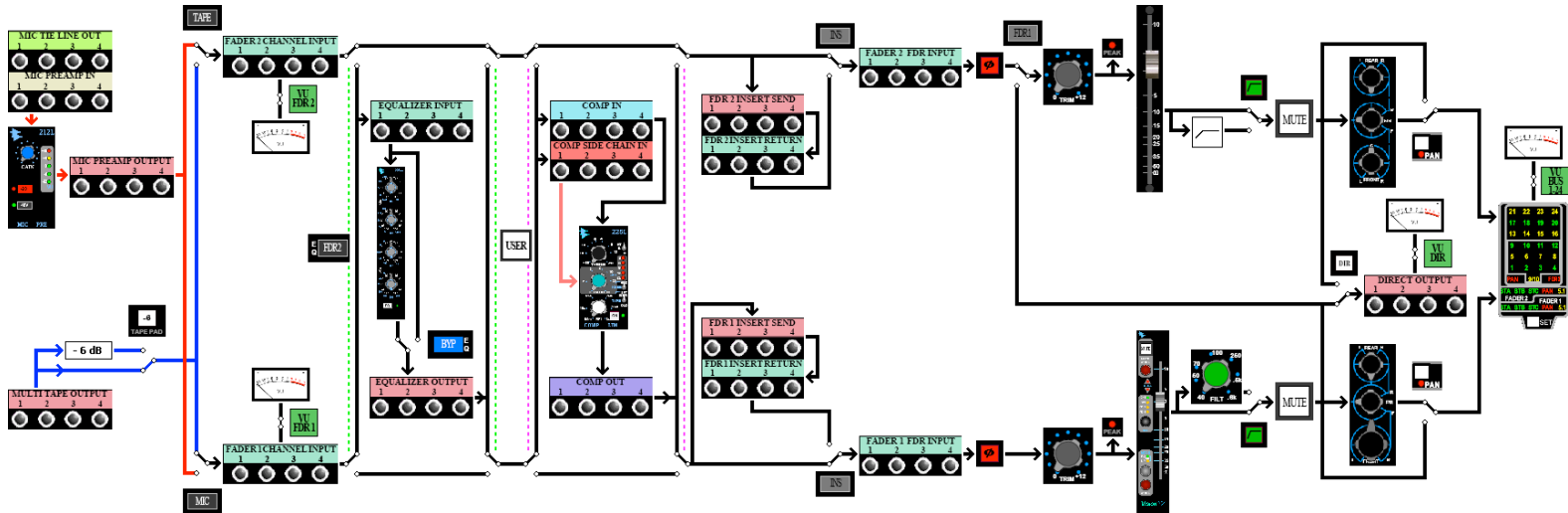


**NOTE:** For mixing signal flow, refer to the basic Fader 1 and Fader Block Diagrams. If Fader 2 is used to feed the Program Busses, the TAPE switch on the channel will need to be engaged.



## 2.6.5 Complete Fader 1 and Fader 2 Signal Flow Block Diagram

The block diagram below shows both audio paths, their relationship with each other, the installed signal processing, and their associated patch points. This configuration is shown with a 550L EQ installed in the channel 500 slot and a 225L compressor installed in the upper 200 slot. A USER button has been programmed to switch the upper 200 slot from post EQ in the Fader 1 audio path to post EQ in the Fader 2 audio path. The meter positions indicated the feed to the channel VU meter when the adjacent button is engaged. The output of each audio path is shown with the pan-pot engaged.



## 3.0 Channel Controls

### 3.1 Master Input Selectors (INPUT SELECT)



The INPUT SELECT section of the Center Section provides global input switching capabilities for the Fader 1 and Fader 2 audio paths. Without the FDR2 TAPE or FDR1 MIC, or the MIC or TAPE switches on the 1068 Input module engaged, Fader 1 will be fed the TAPE input selection (Multitrack Return MULTITAPE OUTPUT patch points). Fader 2 will be fed the MIC input selection (output from the module in the Upper 200 Slot or Options Bucket modules.)

#### 3.1.1 Fader 1 and Fader 2 Input Selectors



FDR 2 TAPE: Selects TAPE as the input source for FADER 2 on all channels

- Illuminates in green when engaged

FDR 1 MIC: Selects MIC as the input source for FADER 1 on all channels

- Illuminates in green when engaged

*NOTE: The Fader 1 and Fader 2 Input Selections may be stored and recalled using the recall system.*

#### 3.1.2 Ancillary Controls



ALL SAFE: Prevents all of the current Input Selection for both paths from being changed.

- Illuminates in yellow when engaged

ALL CLEAR: Resets the Input Selection to the default (normal) state: Fader 1 = TAPE, Fader 2 = MIC

- Illuminates in green when pressed

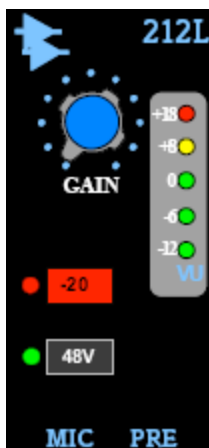
### 3.2 Channel Input: Channel 200 Slot or Options Bucket

Two (2) preamplifier modules are available for the channel input:

- 212L Microphone Preamplifier
- 205L Direct Input

#### 3.2.1 212L Microphone Preamplifier

The 212L Microphone Preamplifier may be fitted in a channel 200 Slot or Options Bucket.



#### Features

- Wide range GAIN control
- -20 dB Pad
- 48v Phantom Power Switch
- RE 115 K Mic input Transformer
- LED VU Meter
- Uses API 2520 Op-Amp
- Transformer Coupled Inputs & Outputs to +28 dBu
- All Discrete Circuit

The controls for the 212L Mic Preamp function as follows:



- 20: Inserts a -20dB Pad at the microphone input
- A red LED indicator illuminates when engaged



- 48V: Provides 48 Volt Phantom Power to the Mic Preamp In patch point
- The Mic Tie Line Out patch points are fully-normalled to the Mic Preamp In patch points
  - A green LED indicator illuminates when engaged



- GAIN: Sets the preamplifier gain
- 55 dB gain range



- VU (Meter): LED meter indicates output level

*NOTE: The switches on this module are not part of the automation or recall systems.*

### 3.2.2 205L Direct Input

The 205L Direct Input may be fitted in a channel 200 Slot or Options Bucket.



#### Features

- Wide range GAIN control
- Hi-Z input, like a Tube Amp
- Thin < > Fat TONE Control reduces low end mud
- BRIGHT Switch boosts the presence
- 20 dB PAD lowers the input level
- 100 K LOAD switch changes the tone of instruments
- 5 Segment LED Meter shows Output Level
- Transformer Coupled Output to +28 dBm
- All Discrete Design

The controls for the 205L Direct Input function as follows:



- ON (On/Off switch): Activates the module
- A green LED indicator illuminates when engaged



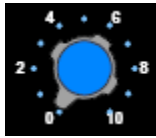
- Hi-Z IN (High Impedance 1/4" Input Jack): Instrument input jack
- Illuminated in blue



- 100K LOAD: Engages a 100K Ohm input load
- Changes the tone of the pickup and tends to darken the high frequency content



- 20 PAD: Inserts a -20 dB Pad at the instrument input



GAIN: Sets the preamplifier gain

- -40 to +20 dB



TONE: Adjusts the tonal characteristics of inputs signal

- The "Thin" and "Fat" Tone control can reduce "muddiness"
- THIN: - 12 at 150 Hz
- FAT: Flat (+/- 0 dB)



BRT (Bright): Activates a presence boost

- +6 dB at 8 kHz



VU (Meter): LED meter indicates output level

*NOTE: The switches on this module are not part of the automation or recall systems.*

### 3.3 Channel Signal Processing: Upper 200 Slot, Lower 200 Slot, Options Bucket

As of this writing, there are three 200 Series signal processing modules available:

- 225L Compressor/Limiter
- 235L Noise Gate
- 215 Sweep Filter

Signal processing modules may be installed in the Upper and Lower 200 Slots and the Options Bucket.

As mentioned above, the channel preamps (212L or 205L) may be installed in one of the channel 200 Slots. However, if they are installed in the Options Bucket, both 200 Slots may be fitted with signal processing modules.

The routing of the Upper and Lower 200 Slots is dependent on which modules are installed and internal programming. In a standard installation, the Upper and Lower 200 Slots are grouped together for routing purposes.

The possible locations for the 200 Slots are:

- Pre-EQ Fader 1
- Post -EQ Fader 1
- Pre-EQ Fader 2
- Post -EQ Fader 2

*NOTE: A USER button in the Center Section can be programmed to change the location of the Upper 200 Slot as a custom option. See section 3.7.3 200 Slot Programming and Patching for details on 200 Slot routing.*

### 3.3.1 225L Compressor/Limiter



#### Features:

- Threshold control from -20 to +10 dBu
- Variable compression ratio from 0 to infinity
- Fast, Medium and Slow Attack Times
- Adjustable release time from 50ms to 3 seconds
- "Old" or "New" sound
- HARD or SOFT compression knee
- Always at unity gain, regardless of settings
- LED Gain Reduction meter
- API 2510 and API 2520 op-amps
- Transformer output to +28 dBu

The 225L Compressor is typically installed in the Lower 200 Slot.

The API 225L Compressor/Limiter is ideal for all studio, live sound and broadcast applications. Regardless of the threshold or ratio settings, the output level always remains at unity. This unique feature allows real-time adjustments without changing the output level. Both "feed forward" (new) and "feed back" (old) gain reduction methods are selectable on the front panel. There also is a SOFT or HARD selector for either an "over easy" compression resulting in a very natural, uncompressed sound or a typical sharp knee type that has a much more severe limiting effect. The 225L is designed for individual channel use or two units can be combined for Stereo applications via a rear access pin. The 225L also has a side-chain input for the detector amplifier.

As a custom option, two 225L Compressors can be linked together for stereo applications. A DC control voltage link is available via an access pin on the rear of the unit. This modification requires a switch and custom wiring and is available at extra cost.

The controls for the 225L Compressor/Limiter function as follows:



ON (On/Off switch): Activates the module

- A green LED indicator illuminates when engaged



THRESH (Threshold): Sets the activation threshold

- +10 dBu to -20 dBu



RATIO: Sets compression ratio

- 0 to  $\infty$
- 0: 1:1...no gain reduction
- $\infty$ :  $\infty$ :1...hard limiting



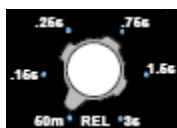
KNEE (HRD-SFT): Selects the "knee" of the onset of compression

- HRD (Hard): Fast curve (more useful for limiting applications)
- SFT (Soft): Slower curve (acts as an "over-easy" compressor)



AT (Attack Time): Selects attack time

- F: Fast
- M: Medium
- S: Slow



REL (Release Time): Sets release time

- 60ms to 3 seconds



**TYPE:** Selection between "new" and "old" types of compressors.

- **NEW:** "Feed-forward" compressor
- **OLD:** "Feed-back" compressor

*NOTE: The "COMP SIDE CHAIN IN" patch point is only active when the NEW type is selected. This is due to path to the detector circuit being fed after the gain reduction element (VCA) when OLD type is selected.*



**-dB (Gain-reduction Meter):** LED meter indicates the amount of gain reduction

*NOTE: The switches on this module are not part of the automation or recall systems.*

### 3.3.2 235L Noise Gate/ Expander



200 Slots may alternately be fitted with a 235L Gate/Expander Module.

#### Features

- Threshold control from -45 to +25dBu
- Variable Fine Adjustable Depth to -80 dB
- Fast, Medium and Slow Attack Times
- Adjustable Release/Hold Time, 50ms to 3 seconds
- 2:1 Expander or Noise Gate Selection
- Release or Hold Switch for Release control knob
- Always at Unity Gain, Regardless of settings
- LED Gain Reduction Meter
- Uses the API 2510 and API 2520 Op-Amps
- Transformer Output to +28dBu

The API 235L Noise Gate/Expander is a new product design, as API has not offered a gate module since 1974. The 235L is a great sounding gate/expander with the ability to reduce noise in any type of program. The 235L can open unusually fast, without losing any part of the sound. Its extreme flexibility, repeatable settings, and superb sound make it ideal for all studio, live sound, and broadcast applications.

The API 235L Noise Gate/Expander is one of the fastest noise gates manufactured today. When an engineer is faced with program material with a high level of background noise, the 235L can either Gate the signal at a preset Threshold, or with the use of the Expander function, can reduce the background noise to an almost undetectable level. This can be achieved without the typical loss of the program material caused by slow triggering of the signal, or "pinging" caused by false triggering.

With a wide range of adjustment, the 235L can operate from -45 to +25 dBu, fitting into any audio situation regardless of program level. Once the Threshold level is set, the Attack time can be selected to react faster than 100 micro seconds or slightly slower than 25 milliseconds to reduce false triggering. Although the Depth control has a full range of -80 dB, the scale is expanded in the first half of rotation so 0 to 9 dB is available for fine tuning of subtle, undetectable gating. The second half of rotation is from 10 to 80 dB for more drastic noise reduction.

The Expander function selects a 1:2 ratio, allowing the signal to "sneak up" to the full signal level without any loss of "under threshold" nuances of vocals and percussion. Setting the threshold in the Gate function to the desired level, then switching to the Expander mode is the perfect setup.

For special gating functions such as the famed "gated snare reverb", the Release function can be switched to Hold, and the Release control becomes the Hold time. In both functions, the unselected one has a set time of 100ms.

When used with the other 200L series modules, a complete input strip can be built from input through dynamics, equalization, and final output.

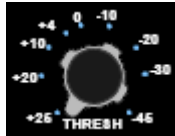
The 235L makes use of the 2510 and 2520 op-amps and therefore exhibits the reliability, long life, and uniformity which are characteristic of API products.

The controls for the 235L Noise Gate/Expander function as follows:



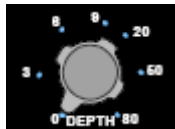
ON (On/Off switch): Activates the module

- A green LED indicator illuminates when engaged



THRESH (Threshold): Sets the activation threshold

- +25 to -45dB



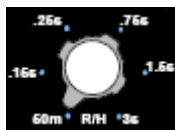
DEPTH: Sets the amount of attenuation (gain reduction)

- 0 to -80dB



AT (Attack): Selects attack time

- F: Fast (less than 100 microseconds)
- M: Medium (25ms)



R/H (Release/Hold) Time: Sets release or hold time

- 50ms to 3 seconds
- The Release or Hold function is determined by the HLD/REL switch



HLD/REL (Hold/Release): Switches the Release Time control to Hold Time

- HLD (Hold): The R/H control determines Hold time (Release is set to 100ms)
- REL (Release): The R/H control determines Release time (Hold is set to 100ms)



EXP/GTE (Expander/Gate): Selects the Expander or Gate function

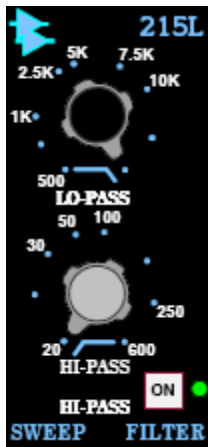
- EXP (Expander): Sets the ratio to 1:2
- GTE (Gate): Sets the gate function



-dB (Gain-reduction Meter): LED meter indicates the amount of gain reduction

*NOTE: The switches on this module are not part of the automation or recall systems.*

### 3.3.3 215L High-Pass, Low-Pass Sweep Filter



200 Slots may alternately be fitted with a 215L Sweep Filter Module.

#### Features

- Wide range 6 dB per octave LOPASS control
- Wide range 12 dB per octave HIPASS control
- Balanced input stage
- Passive filter design for smooth tone
- Unity gain throughout
- Hard Wire BYPASS switch
- Transformer Coupled Output to +28 dBu
- All Discrete Design

The API 215L is a unique passive, sweepable filter, designed specifically to contour the sound in such a way that it sounds natural and seems as if it *"always sounded that way"*. Its extreme flexibility, repeatable settings and superb sound make it ideal for all studio, live sound, and broadcast applications.

The 215L design is a passive low pass filter with a slope of only 6 dB per octave, and a passive dual high-pass filter with a slope of 12 dB per octave. The filters are isolated from each other with the same discrete transistor buffer used in the famous 550 series equalizers. This minimizes interaction between the filters, as well as providing a low impedance source for the filter.

The input section is a balanced circuit using the API 2510 all discrete op-amp, minimizing the loading effect on any device plugged into it. The output stage is a transformer balanced output, driven by the all discrete API 2520 op-amp.

The filters are both continuously adjustable, with a range from 20 Hz to 20 kHz in two bands. The low pass filter has a range from 500 Hz to 20 kHz, and the high pass filter has a range from 20 Hz to 600 Hz. This covers a broad range of frequencies throughout the audio spectrum.

Because of the subtle nature of the 215L filter, it finds a home with uses like rolling off the low end of a hi-hat, where a natural sound is desired, not the usual "phase-shifter" sound of a 18 to 24 dB per octave filter found on most consoles. It can also be used to thin out room mics, without a complete loss of low end, again, resulting from steep filter circuits.

The 215L Filter makes use of the 2520 and 2510 op-amps and therefore exhibits the reliability, long life and uniformity which are characteristic of API products.

The controls for the 215L Sweep Filter function as follows:



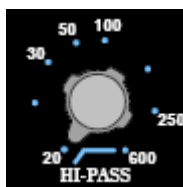
ON (On/Off switch): Activates the module

- A green LED indicator illuminates when engaged



LO-PASS: Sets the frequency of the low-pass filter

- 500Hz to 20kHz



HI-PASS: Sets the frequency of the high-pass filter

- 20Hz to 600Hz

*NOTE: The switch on this module is not part of the automation or recall systems.*



### 3.4 Channel Equalizer: 500L Slot

The channel 500L Slot may be fitted with one of three equalizer choices:

- 550A Discrete 3-Band EQ
- 550L Discrete 4-Band EQ
- 560L Graphic EQ

#### 3.4.1 550A Discrete 3-Band Equalizer



The 550A Equalizer is the console version of the famous API 550A all-discrete 3-Band EQ.

The 550A has the following features:

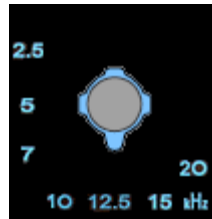
- 3-Bands
- +/- 12 dB of boost or cut
- High and Low bands can be peaking or shelving
- The mid-band is peaking
- 50 Hz to 15 kHz band-pass filter
- Bypass with indicator

The controls for the 550A EQ function as follows:



EQ (In/Out switch): Activates the channel EQ

- Bypass when not engaged
- A red LED indicator illuminates when engaged



Frequency Selection (Center Knob): Selects the center frequency for the selected band. Center frequencies vary by band:

- High: 2.5kHz, 5kHz, 7kHz, 10kHz, 12.5kHz, 15kHz, 20kHz
- Mids: 200Hz, 400Hz, 600Hz, 800Hz, 1.5kHz, 3kHz, 5kHz
- Lows: 30Hz, 40Hz, 50Hz, 100Hz, 200Hz, 300Hz, 400Hz
- Frequencies are indicated in blue numbers



Boost and Cut (Ring): Sets the amount of boost or cut for the selected band

- + 12dB of boost or -12dB of cut
- Decibels are indicated in white numbers



FLTR (Filter): Activates a 50 Hz to 15 kHz band-pass filter

- The filter is active when the switch is to the right



HF (High-Frequency) Peaking/Shelving Switch: Selects between peaking and shelving EQ curves for the high-frequency band

- Shelving is active when the switch is engaged

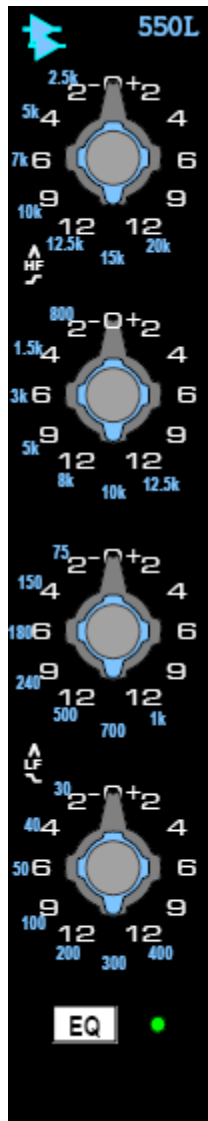


LF (Low-Frequency) Peaking/Shelving Switch: Selects between peaking and shelving EQ curves for the low-frequency band

- Shelving is active when the switch is engaged

*NOTE: The switches on this module are not part of the automation or recall systems.*

### 3.4.2 550L Discrete 4-Band Equalizer



The 550L Equalizer is the console version of the famous API 550B all-discrete 4-Band EQ.

The 550L has the following features:

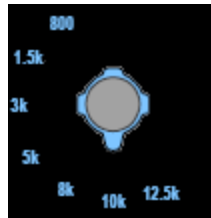
- 4-Bands
- +/- 12 dB of boost or cut
- High and Low bands can be peaking or shelving
- Mid-bands are peaking
- Bypass with indicator

The controls for the 550L EQ function as follows:



EQ (On/Off switch): Activates the channel EQ

- Bypass when not engaged
- A green LED indicator illuminates when engaged



Frequency Selection (Center Knob): Selects the center frequency for the selected band. Center frequencies vary by band:

- High: 2.5kHz, 5kHz, 7kHz, 10kHz, 12.5kHz, 15kHz, 20kHz
- High-Mids: 800Hz, 1.5kHz, 3kHz, 5kHz, 8kHz, 12.5kHz
- Low-Mids: 75Hz, 150Hz, 180Hz, 240Hz, 500Hz, 700Hz, 1kHz
- Lows: 30Hz, 40Hz, 50Hz, 100Hz, 200Hz, 300Hz, 400Hz
- Frequencies are indicated in blue numbers



Boost and Cut (Ring): Sets the amount of boost or cut for the selected band

- + 12dB of boost or -12dB of cut
- Decibels are indicated in white numbers



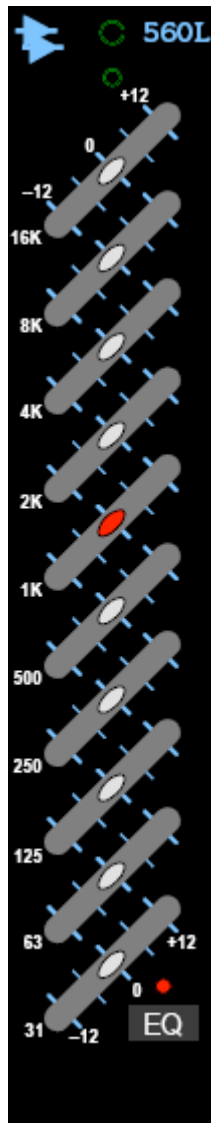
HF (High-Frequency) Peaking/Shelving Switch: Selects between peaking and shelving EQ curves for the high-frequency band



LF (Low-Frequency) Peaking/Shelving Switch: Selects between peaking and shelving EQ curves for the low-frequency band

*NOTE: The switches on this module are not part of the automation or recall systems.*

### 3.4.3 560L Discrete 10-Band Graphic Equalizer



The 560L Equalizer is the console version of the 560B all-discrete 4-Band EQ.

The 560L has the following features:

- 10-Bands with the following center frequencies
  - 31Hz
  - 63Hz
  - 125Hz
  - 250Hz
  - 500Hz
  - 1kHz
  - 2kHz
  - 4kHz
  - 8kHz
  - 16kHz
- +/- 12 dB of boost or cut
- Hard bypass with indicator

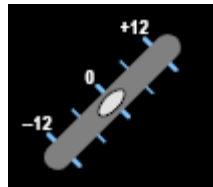
Each band has its own boost/cut control.

The controls for the 560L EQ function as follows:



EQ (On/Off switch): Activates the channel EQ

- Hard bypass when not engaged
- A red LED indicator illuminates when engaged

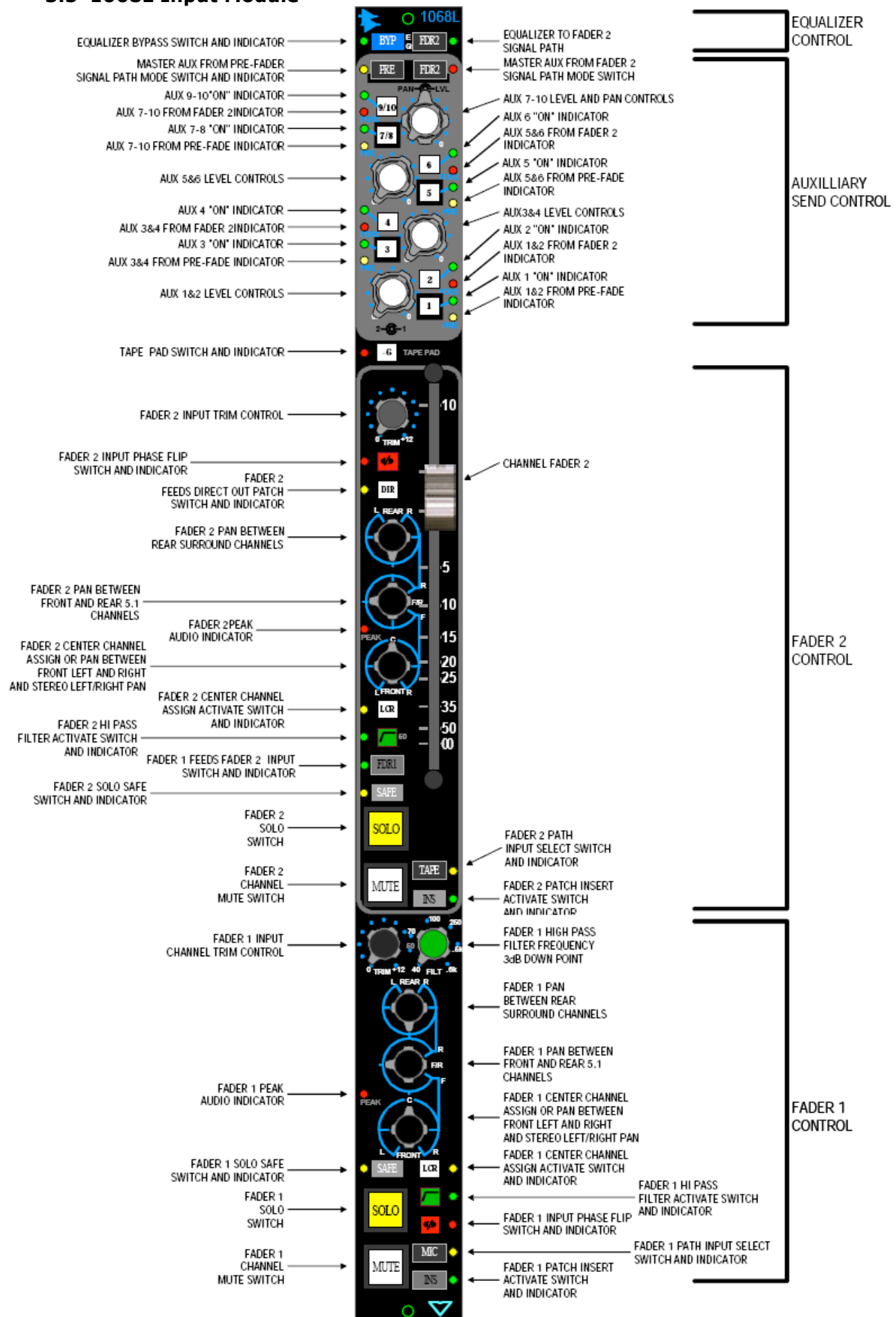


Boost and Cut (Slider): Sets the amount of boost or cut for the selected band

- + 12dB of boost or -12dB of cut

*NOTE: The switch on this module is not part of the Automation or Recall systems.*

### 3.5 1068L Input Module



The illustration on the previous page shows the 1068L with a brief description of each control. This serves as a quick reference guide. A more detailed description of each control follows.

### 3.5.1 Equalizer Assignment Controls



The Equalizer (EQ) provides the following features:

- The EQ (and its Patch Points) can be assigned to either the Fader 1 or Fader 2 audio path (not both at once)
- The EQ can also be bypassed entirely (completely removed from the audio path). This is a hard-wired bypass when engaged.
- The EQ routing and bypass is logic controlled

In order for the EQ to be heard, the following conditions must be met:

- Must be assigned to the desired path
- The EQ switch on the Equalizer itself must be engaged (ON)
- Must be not be in Bypass (BYP Off)

The EQ will be assigned to Fader 1 by default.

*NOTE: The EQ switch on the Equalizer is not part of the automation or recall systems.*

The Equalizer Assignment controls function as follows:



EQ BYP (Bypass): Engages a hardwire bypass of the EQ routing

- Bypass applies to both paths
- Automation
- A green LED indicator illuminates when engaged



EQ FDR2 (Fader 2): Assigns the EQ to Fader 2

- EQ is assigned to Fader 1 when FDR2 is not engaged
- Recall
- A green LED indicator illuminates when engaged

Assigning the EQ to Fader 2 can be set on individual channels on the 1068L module or on multiple channels using the Recall Settings window. EQ routing can also be stored and recalled using snapshots. Refer to sections 23.0 Snapshots and 24.0 Recall System for details.

### 3.5.2 Auxiliary Sends

The Vision console provides a powerful Auxiliary Send system that provides a comprehensive set of options for Cue and Effects Sends.

There are ten (10) Auxiliary Sends:

- Six (6) Mono (1-6)
- Two (2) Stereo (7/8 and 9/10)

Aux Sends 1-6 are primarily used as Effects Sends during recording and mixing, but may be also be used as Cue Sends during recording if needed.

Aux Sends 7/8 and 9/10 are intended for use as Cue Sends during recording and as stereo Effects Sends during mixing.

When used as Cue Sends following sources may be added to the 7/8 and 9/10 Auxiliary Busses at the 227M Cue Master module:

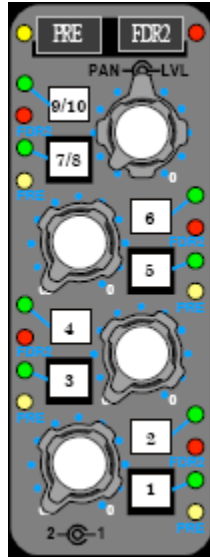
- Grand Master output
- Lt Rt Fold Down Matrix output

Each of the Auxiliary Sends feed their respective Auxiliary Summing Bus. The output of each of these Busses is fed to the corresponding 227L module in the Center Section. There, an External Input source may be selected and Talk Back may be added. On/Off, Output Level, Solo controls and a meter are also included on the 227L module. Refer to the 8.2.1 227L section of this manual for further information.

Aux Sends 9/10 may be routed to Multitrack Summing Busses 1-8 to provide additional summing outputs. This can be done on individual channels using the Output Assignment

section or on multiple channels using Global controls the Recall Settings window. Refer to sections 4.0 Output Assignment or 24.0 Recall System for details.

*NOTE: When Aux Sends 9/10 are routed to the Multitrack Summing Busses, the feed to Auxiliary Bus 9/10 from that channel is defeated.*



Aux Sends are always assigned in four groups:

- 1 and 2
- 3 and 4
- 5 and 6
- 7/8 and 9/10

Each group of Aux Sends may be sourced as follows:

- Fader 1 or Fader 2 audio path
- Pre or Post the assigned fader
- Source assignments may be made:
  - Locally on the 1068L Module
  - Via the Recall system

Each group of Aux Sends has a set of indicator led lights that display:

- The signal source for each of the Aux Send group
- The On-Off status of the Aux Sends in the group

*IMPORTANT NOTE: Only one Stereo Aux Send (7/8 or 9/10) may be used at a time. In other words, both Stereo Aux Sends cannot be used simultaneously on the same channel.*

Aux Sends 7/8 and 9/10 have the same source routing (pre/post, Fader 1/Fader 2).

Talk Back may be added to any Auxiliary Send as needed.

### 3.5.2.1 Auxiliary Routing Pre-selector Switches

There are two (2) Auxiliary Routing Pre-selector switches that are used to control the source assignments for the ten (10) Auxiliary Sends:

- PRE: Routes the Auxiliary Send source from Pre the assigned fader
- FDR2: Routes the Auxiliary Send source from Fader 2

*NOTE: The default Auxiliary Send source assignment is Post Fader 1.*

The Auxiliary Routing Pre-selector switches function as follows:



PRE (Pre-fader): Activates the Pre-fader Aux Send source assignment mode

- A yellow LED indicator illuminates when active



FDR2 (Fader 2): Activates the Fader 2 Aux Send source assignment mode

- A red LED indicator illuminates when active

Only one of the two pre-selector modes can be activated at a time.

The Auxiliary Routing Pre-selector switches serve as "second function" keys to alter the function of the Auxiliary Send "1", "3", "5", and "7/8" switches to become source assignment toggle switches.

*IMPORTANT NOTE: The source assignment (Pre/Post and Fader1/Fader2) is the same for both Stereo Auxiliary Sends (7/8 or 9/10).*

To make an Auxiliary Send source assignment, do the following:

- Press the desired Auxiliary Routing Pre-selector switch to activate one of the two Auxiliary pre-selector modes (indicated by its lit led)
- Press the "1", "3", "5", and/or "7/8" switch to make the desired source assignments

To choose Fader 2 as the Auxiliary Send source assignment:

- Activate the Fader 2 (FDR2) pre-selector switch
- Press "1", "3", "5", and/or "7/8" switches to assign the desired Auxiliary Sends to Fader 2

To choose Pre-fader as the Auxiliary Send source assignment:

- Activate the Pre (PRE) pre-selector switch
- Press "1", "3", "5", and/or "7/8" switches to assign the desired Auxiliary Sends to be fed Pre-fader from the selected audio path (Fader 1 or Fader 2)

The corresponding PRE and FDR2 indicators will illuminate showing which Auxiliary Sends are sourced from Fader 1 or Fader 2 and whether they are selected as Pre or Post fader.

Auxiliary Send source assignments may be set individually on the 1068L module or on multiple channels using the Recall Setting window. Auxiliary Send source assignments may be stored and recalled using snapshots. Refer to sections 23.0 Snapshots and 24.0 Recall System for details.

### 3.5.2.2 Auxiliary Send Controls

The 10 Auxiliary Sends are equipped with "ON" switches. Mono Auxiliary Sends 1-6 have individual ON switches.

Stereo Auxiliary Sends 7/8 and 9/10 have one ON switch each Stereo Auxiliary Send.

The "1", "3", "5", and/or "7/8" switches serve as ON switches as well as "second function" switches for Auxiliary Send source assignments (Pre or Fader2).

The "2", "4", "6", "9/10" switches serve solely as ON switches, they play no role in source assignment.

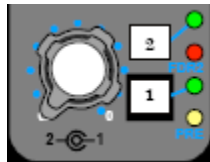
The ON Switches may be controlled:

- Locally from the 1068L module
- Via the automation system

The 10 Auxiliary Sends on the 1068L module have Level or Level and Pan controls that are used to set the level of signal being sent from the channel to each Auxiliary Summing Bus.

Because Sends 7/8 and 9/10 pass through a pan control, their levels are equal to that of the other sends at the extremes of the pan control, and are -3dB down when the pan control is centered.

The Auxiliary Send controls function as follows:



1 and 2 (On/Off switches): Individual on/off switches for Mono Aux Sends 1 and 2

- Automation
- Green LED indicators illuminate when engaged

1 and 2 Level: Sets the send levels for Aux Sends 1 and 2

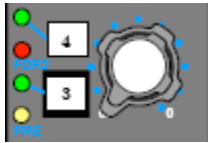
- Aux Send 1: Knob
- Aux Send 2: Ring

FDR2 LED: A red LED illuminates when Aux Sends 1 and 2 are fed from Fader 2

- Recall

PRE LED: A yellow LED illuminates when Aux Sends 1 and 2 are fed from Pre-fader from the assigned path

- Recall



3 and 4 (On/Off switches): Individual on/off switches for Mono Aux Sends 3 and 4

- Automation
- Green LED indicators illuminate when engaged

3 and 4 Level: Sets the send levels for Aux Sends 3 and 4

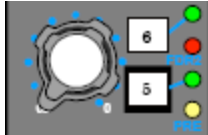
- Aux Send 3: Knob
- Aux Send 4: Ring

FDR2 LED: A red LED illuminates when Aux Sends 3 and 4 are fed from Fader 2

- Recall

PRE LED: A yellow LED illuminates when Aux Sends 3 and 4 are fed from Pre-fader from the assigned path

- Recall



5 and 6 (On/Off switches): Individual on/off switches for Mono Aux Sends 5 and 6

- Automation
- Green LED indicators illuminate when engaged

5 and 6 Level: Sets the send levels for Aux Sends 5 and 6

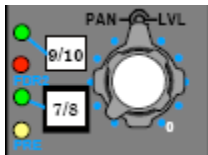
- Aux Send 5: Knob
- Aux Send 6: Ring

FDR2 LED: A red LED illuminates when Aux Sends 5 and 6 are fed from Fader 2

- Recall

PRE LED: A yellow LED illuminates when Aux Sends 5 and 6 are fed from Pre-fader from the assigned path

- Recall



7/8 and 9/10 (On/Off switches): Individual on/off switches for Stereo Aux Sends 7/8 and 9/10

- Automation
- Green LED indicators illuminate when engaged

7/8 or 9/10 Level: Sets the send level and pan position for Aux Sends 7/8 or 9/10

- Level: Knob
- Pan: Ring

FDR2 LED: A red LED illuminates when Aux Sends 7/8 and 9/10 are fed from Fader 2

- Recall

PRE LED: A yellow LED illuminates when Aux Sends 7/8 and 9/10 are fed from Pre-fader from the assigned path

- Recall

*IMPORTANT NOTE: Only one Stereo Auxiliary Send (7 and 8 or 9 and 10) may be used at a time. In other words, both Stereo Auxiliary Sends cannot be used simultaneously on the same channel.*

*IMPORTANT NOTE: The source assignment (Pre/Post and Fader1/Fader2) is the same for both Stereo Auxiliary Sends (7 and 8 or 9 and 10).*

Stereo Aux Send 9/10 can be routed to feed the Multitrack Summing Busses 1-8. This can be done on individual channels using the Output Assignment section or on multiple channels using the Global controls Recall Settings window. Refer to sections 4.0 Output Assignment or 24.0 Recall System for details.

*NOTE: When Aux Sends 9/10 are routed to the Multitrack Summing Busses, the feed to Auxiliary Bus 9/10 from that channel is defeated.*



### 3.5.2.3 AUX PRE MUTE

The Pre-fader Auxiliary Sends can be made to mute when the channel MUTE button is engaged. This is accomplished by engaging the AUX PRE MUTE button in the SOLO area of the Center Section.



**AUX PRE MUTE:** Links the channel MUTE buttons with the Pre-Fader Aux Sends

- All Pre-fader Aux Sends mute when a channel MUTE button is engaged
- Illuminates in yellow when engaged

### 3.5.3 Tape Pad



**-6 (TAPE PAD):** Inserts a -6dB pad before the feed to the MIC/TAPE selection switch in both paths.

- Recall
- A red LED indicator illuminates when engaged

Engaging the -6dB Tape Pad will reduce distortion and increase headroom in the audio path when the level from the multitrack recorder return is hot enough to overload the TAPE input. The -6dB Tape Pad can also be engaged on multiple channels in the Global controls in the Recall Settings window. The Tape Pad settings can also be stored and recalled using snapshots. Refer to sections 23.0 Snapshots and 24.0 Recall System for details.

### 3.5.4 Fader 2 Path Controls



The 1068L Fader 2 audio path is a complete audio channel designed to serve the following functions:

- Routing microphone and instrument inputs to a multitrack recorder
- Multitrack returns for additional inputs during mixdown
- Retuning effects, virtual tracks, and other sources during mixdown
- LFE Send during mixdown
- Additional Aux Send during mixdown
- Creating stems and bouncing tracks
- Any other operation that needs a fully featured audio path

Accordingly, the Fader 2 audio path is equipped with the following features (in the order they appear in the signal flow):

- MIC or TAPE input selection
- Pre or Post EQ access to the channel 200 Slots (if link is set)
- Access to Channel Meter (depending on Master Meter Selection)
- Assignable EQ
- Insert Send and Return
- Fader 1 Output as an alternate input option
- Phase Reverse (Polarity Inverter)
- Channel Trim
- Peak Indicator
- Full-sized Automatable Fader
- 70 Hz High-pass Filter
- Automatable mute
- Full Solo Functions
- Solo Safe
- Direct Output
- Stereo/Surround Panning

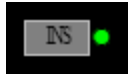
MIC is the default input for Fader 2 (TAPE and FDR2 TAPE not engaged).

The controls for the Fader 2 audio path are as follows:



- TAP:** Selects the Multitrack Return (TAPE) as the active input for Fader 2
- TAPE may be the active input for both faders
  - MIC is the default Fader 2 input
  - Recall
  - A yellow LED indicator illuminates when engaged

*NOTE: The Fader 2 input on all channels may be set to TAPE by engaging the FDR2 TAPE Master Input Selector switch (Input Select) in the Center Section.*



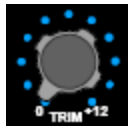
- INS (Insert):** Activates the Fader 2 Insert Return
- The Insert Send is fed pre-fader from the output of the Equalizer
  - The Insert Send is always active
  - The Insert Return is located PRE the Fader input
  - The Insert Return is active only when the INS button is engaged
  - Automation
  - A green LED indicator illuminates when engaged



- FDR1 (Fader 1 Output):** Routes the output of Fader 1 to the Fader 2 audio path
- The Fader 1 output is routed to the Fader 2 audio path POST the Insert Return and PRE the Phase Reverse.
  - It's useful for creating a LFE feed or an additional Aux Send using the Fader 2 audio path
  - It's useful for creating stems and bouncing tracks
  - Recall
  - A green LED indicator illuminates when engaged



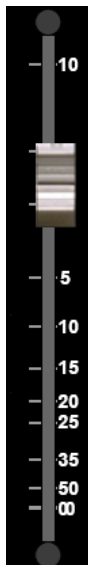
- Ø (Phase Reverse):** Inserts a Phase Reverse (Polarity Inverter) in the Fader 2 audio path
- Recall
  - A red LED indicator illuminates when engaged



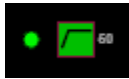
- TRIM:** Sets the amount of pre-fader level Trim (boost)
- 0 to +12dB of gain
  - Located Pre-fader, so the added gain is reflected in all post-fader stages (Aux Sends, Solos, Bus Assignments and Direct Output).



- PEAK:** A red LED illuminates when the preset Peak Reference level is reached in the Fader 2 audio path
- Peak level is selected by the PEAK REFERENCE selector in the Center Section



- FADER 2:** Controls the output level of the Fader 2 audio path
- Full-size 100mm Fader
  - Fully automated
  - Touch sensitive for automation control
  - When the Fader is set to 0dB, the level is at unity gain



Hi-Pass (70 Hz Filter): Activates the Fader 2 high-pass filter

- -3 dB at 70 Hz
- 6 dB/octave slope
- Located Post-Fader
- Recall
- A green LED indicator illuminates when engaged



MUTE: Cuts the Fader 2 audio output

- The MUTE button is the on/off switch for the Fader 2 audio path
- Automation
- Illuminates in red when engaged



SOLO: Activates the selected solo function for Fader 2

- The following solo functions may be selected via the Center Section:
  - Pre-fader Listen (PFL): Non-destructive, mono
  - After Fader Listen (AFL): Non-destructive, mono
  - Solo-In-Place (SIP): Destructive, panned, post-fader
- Illuminates in yellow when engaged

*NOTE: AFL is the default solo mode.*



SAFE: Activates the Solo Safe mode for Fader 2

- The SAFE button protects Fader 2 from being muted when the Solo-In-Place function is active and another channel is soloed
- Recall
- A yellow LED indicator illuminates when engaged



DIR (Direct Output): Routes the output of Fader 2 to the Direct Output

- The Direct Output is fed POST the MUTE switch
- The Direct Output is fed from Fader 1 by default
- Recall
- A yellow LED indicator illuminates when engaged



LCR (Left Center Right): Activates Left-Center-Right panning for Fader 2

- Activates the feed to the Center Program Bus from the pan-pot
- Audio panned Front and Center is fed to the Center Program Bus
- Audio panned Front and Center is not fed to the Left and Right Program Busses
- Stereo Left-Right panning is selected by default
- Recall
- A yellow LED indicator illuminates when engaged



REAR L-R: Rear Left-Right Pan-pot

- Sets the Rear Left-Right pan position to the surround Program Bus

F/R (Front/Rear): Front-Rear Pan-pot

- Sets the Front/Rear pan position to the surround Program Bus

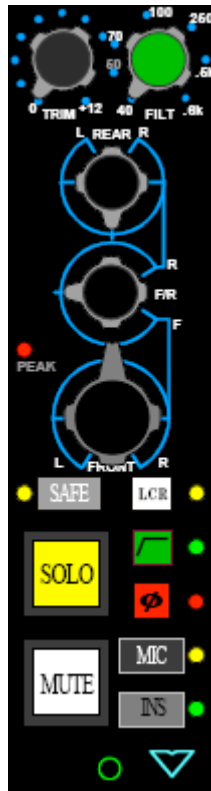
FRONT L-R: Front Left-Right Pan-pot

- Sets the Left-Right pan position to the Stereo Program Busses
- Sets the Front Left-Right pan position to the L/R Surround Program Bus
- Left-Right panning is selected by default for surround panning
- May function as a Left-Center-Right pan-pot for surround panning when the LCR switch is engaged

*IMPORTANT NOTE: The FRONT pan-pot is two pan-pots ganged together to a single knob. When assigned, one pan-pot feeds Stereo Program Busses A, B, and C, and the other feeds the L/R Surround Program Bus. Because of this*

*innovative design, the F/R pan-pot has no affect on the feed to the Stereo Program Busses, allowing simultaneous stereo and surround mixing without using the Lt Rt Fold Down Matrix.*

### 3.5.5 Fader 1 Path Controls



The 1068L Fader 1 audio path is a complete audio channel designed to serve the following functions:

- Multitrack returns during tracking and mixdown
- Retuning effects, virtual tracks, and other sources during mixdown
- Routing microphone and instrument inputs to a multitrack recorder
- Creating stems and bouncing tracks
- Any other operation that needs a fully featured audio path

Accordingly, the Fader 1 audio path is equipped with the following features (in the order they appear in the signal flow):

- TAPE or MIC input selection
- Pre or Post EQ access to the Lower 200 Slot (if link is set)
- Access to Channel Meter (depending on Master Meter Selection)
- Assignable EQ
- Insert Send and Return
- Phase Reverse (Polarity Inverter)
- Channel Trim
- Peak Indicator
- Full-sized Automatable Fader
- High-pass Sweep Filter
- Automatable mute
- Full Solo Functions
- Solo Safe
- Direct Output
- Stereo/Surround Panning

TAPE is the default input for Fader 1 (MIC and FDR1 MIC not engaged).

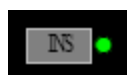
The controls for the Fader 1 audio path are as follows:



**MIC:** Selects the output of the preamp (MIC) as the active input for Fader 1

- MIC may be the active input for both faders
- TAPE is the default Fader 1 input
- Recall
- A yellow LED indicator illuminates when engaged

**NOTE:** The Fader 1 input on all channels may be set to MIC by engaging the FDR1 MIC Master Input Selector switch (Input Select) in the Center Section.



**INS (Insert):** Activates the Fader 1 Insert Return

- The Insert Send is fed pre-fader from the output of the Equalizer
- The Insert Send is always active
- The Insert Return is located PRE the Fader input
- The Insert Return is active only when the INS button is engaged
- Automation
- A green LED indicator illuminates when engaged



**Ø (Phase Reverse):** Inserts a Phase Reverse (Polarity Inverter) in the Fader 1 audio path

- Recall
- A red LED indicator illuminates when engaged



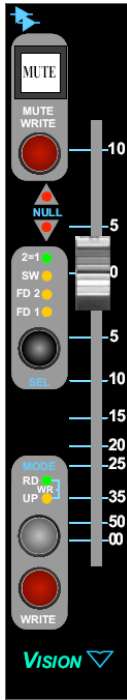
**TRIM:** Sets the amount of pre-fader level Trim (boost)

- 0 to +12dB of gain
- Located Pre-fader, so the added gain is reflected in all post-fader stages (Aux Sends, Solos, Bus Assignments and Direct Output).



**PEAK:** A red LED illuminates when the preset Peak Reference level is reached in the Fader 1 audio path

- Peak level is selected by the PEAK REFERENCE selector in the Center Section



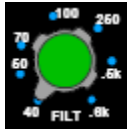
**FADER 1:** Controls the output level of the Fader 1 audio path

- When the Fader is set to 0dB, the audio path level is at unity gain
- Full-size 100mm Fader
- Fully automated
- Touch sensitive for automation control
- Contains the automation controls for both faders and switches



**(Hi-Pass Filter) switch:** Activates the Fader 1 high-pass filter

- Recall
- A green LED indicator illuminates when engaged



**FILT (Filter) selector:** Sets the Fader 1 high-pass filter frequency

- Sweepable from 40 Hz to .6 kHz
- 6 dB/octave slope
- Located Post-Fader



**MUTE:** Cuts the Fader 1 audio output

- The MUTE button is the on/off switch for the Fader 1 audio path
- Automation
- Illuminates in red when engaged



**SOLO:** Activates the selected solo function for Fader 1

- The following solo functions may be selected via the Center Section:
  - Pre-fader Listen (PFL): Non-destructive, mono
  - After Fader Listen (AFL): Non-destructive, mono
  - Solo-In-Place (SIP): Destructive, panned, post-fader
- Illuminates in yellow when engaged

*NOTE: AFL is the default solo mode.*



**SAFE:** Activates the Solo Safe mode for Fader 1

- The SAFE button protects Fader 1 from being muted when the Solo-In-Place function is active and another channel is soloed.
- Recall
- A yellow LED indicator illuminates when engaged



**DIR (Direct Output):** The Direct Output is fed from Fader 1 by default

- The Direct Output is fed POST the MUTE switch
- The Direct Output is fed from Fader 2 only when the DIR switch in the Fader 2 controls is engaged
- Recall

*NOTE: There is not a DIR switch for Fader 1. The DIR is included with the Fader 2 controls and toggles the Direct Output to be fed from one fader or the other. When the DIR switch is not engaged, the Direct Output is fed from Fader 1.*



LCR (Left Center Right): Activates Left-Center-Right panning for Fader 2

- Activates the feed to the Center Program Bus from the pan-pot
- Audio panned Front and Center is fed to the Center Program Bus
- Audio panned Front and Center is not fed to the Left and Right Program Busses
- Stereo Left-Right panning is selected by default
- Recall
- A yellow LED indicator illuminates when engaged



REAR L-R: Rear Left-Right Pan-pot

- Sets the Rear Left-Right pan position to the surround Program Bus

F/R (Front/Rear): Front-Rear Pan-pot

- Sets the Front/Rear pan position to the surround Program Bus

FRONT L-R: Front Left-Right Pan-pot

- Sets the Left-Right pan position to the Stereo Program Busses
- Sets the Front Left-Right pan position to the L/R Surround Program Bus
- Left-Right panning is selected by default for surround panning
- May function as a Left-Center-Right pan-pot for surround panning when the LCR switch is engaged

*IMPORTANT NOTE: The FRONT pan-pot is two pan-pots ganged together to a single knob. When assigned, one pan-pot feeds Stereo Program Busses A, B, and C, and the other feeds the L/R Surround Program Bus. Because of this innovative design, the F/R pan-pot has no affect on the feed to the Stereo Program Busses, allowing simultaneous stereo and surround mixing without using the Lt Rt Fold Down Matrix.*

### 3.6 Channel Faders

Each audio path has its own output fader:

- Fader 1
- Fader 2

Each fader is touch sensitive, full-sized (100mm), and automatable.

Fader 1 and/or Fader 2 faders can be set to a common position on a global basis via software.

Each fader is located before the High-pass Filter and Mute switch at the end of each audio path.

Details pertaining to each individual fader are included in the following sections.

### 3.6.1 Fader 1

The Fader 1 fader is located in the Fader Module at the bottom of a complete channel strip. It is the primary level control for the Fader 1 audio path.

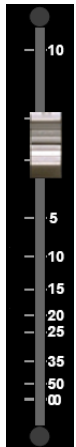


FADER 1: Controls the output level of the Fader 1 audio path

- When the Fader is set to 0dB, the audio path level is at unity gain
- Full-size 100mm Fader
- Fully automated
- Touch sensitive for automation control
- Contains the automation controls for both faders and switches

### 3.6.2 Fader 2

The Fader 2 fader is an integral part of the 1068 Input Module. It is the primary level control for the Fader 2 audio path.



FADER 2: Controls the output level of the Fader 2 audio path

- When the Fader is set to 0dB, the audio path level is at unity gain
- Full-size 100mm Fader
- Fully automated
- Touch sensitive for automation control
- The Fader 2 automation controls are found in the Fader 1 Fader Module

### 3.6.3 Position Faders

Using software the Fader 1 and/or Fader 2 faders can be set to a common position on a global basis. The Fader 1 and/or Fader 2 faders will all be set to same position, but the Fader 1 faders can be set independently of the Fader 2 faders and vice versa.

Faders can be set to the following positions:

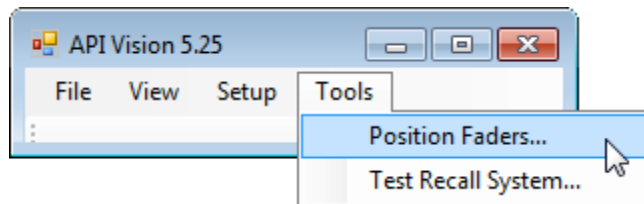
- +10 dB
- +5 dB
- 0 dB
- -5 dB
- -10 dB
- -15 dB
- -20 dB
- -25 dB
- -30 dB
- -40 dB
- -50 dB
- -60 dB
- -70 dB
- -80 dB
- -92 dB

For example, Position Faders can be used to quickly set all of the Fader 2 faders to 0 dB (unity gain) at the start of a tracking date.

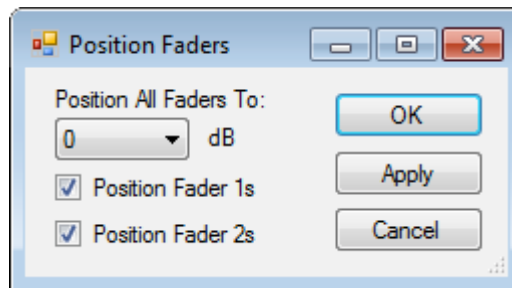
### 3.6.3.1 Setting Fader Positions

The Position Faders function allows faders to be set to a specific level.

To position faders, select "Position Faders..." from the Tools menu in the Main software window.

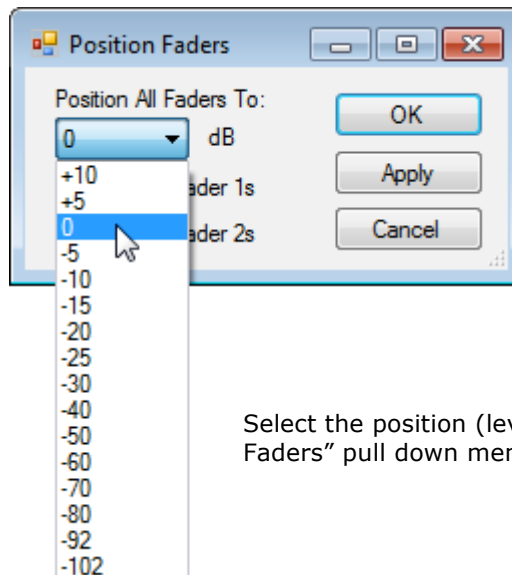


The Position Faders window will open.

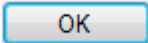


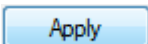
☒ Position Fader 1s  
☒ Position Fader 2s

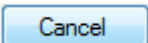
Select the set of faders to position by clicking in the appropriate checkbox.



Select the position (level) for all faders using the "Position All Faders" pull down menu.

Click  to apply the selected fader position to the selected faders and close the window.

Click  to apply the selected fader position to the selected faders and leave the window open.

Click  to cancel the operation without positioning the faders and close the window.

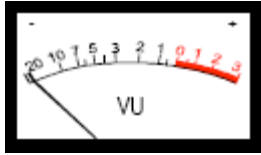
**IMPORTANT NOTE:** Positioning faders will move the selected faders from their current positions. Any current mix positions will be lost if not already stored in a snapshot or in automation. There is no "undo" after fader positions have been set.



### 3.7 Channel Meters and Peak Indicators

A VU Meter is provided for each channel, along with a LED Peak Indicator for each audio path (Fader 1 and Fader 2).

#### 3.7.1 Channel VU Meters



The Channel Meter can be fed from the following points:

- Fader 1 Channel Input
- Fader 2 Channel Input
- Direct Output
- Multitrack Summing Bus 1-24

The Channel Meter is fed from the Fader 1 Channel Input by default (no METER SELECT buttons engaged).



METER SELECT: The feed to the Channel Meter is determined by the selection made using the METER SELECT controls in the Center Section

The METER SELECT controls function as follows:



VU FDR 1 (Fader 1): Assigns the meters to the Fader 1 Channel Input

- Illuminates in green when engaged



VU FDR 2 (Fader 2): Assigns the meters to the Fader 2 Channel Input

- Illuminates in green when engaged



VU DIR (Direct Output): Assigns the meters to the Channel Direct Output

- Illuminates in green when engaged



VU BUS 1-24 (Direct Output): Assigns the meters to the outputs of Multitrack Summing Busses 1-24

- Illuminates in green when engaged



MAIN VU 0 = +10: Sets the Program Meter (MAIN) VU scale to 0VU equals +10dBu

- A -10dB pad is inserted before the meter
- 0VU equals +14dBu when engaged
- 0VU equals +4dBu when not engaged
- Illuminates in green when engaged



MAIN VU PEAK: Changes the Program Meter (MAIN) ballistics from VU to Peak

- A fixed peak hold circuit feeds the meter
- Illuminates in green when engaged

### 3.7.2 Fader 1 and Fader 2 Peak Indicators

Each channel is equipped with a LED Peak Indicator in each path. The Peak Reference Level is selected by the PEAK REFERENCE selector in the Center Section.



**PEAK:** A red LED illuminates when the preset Peak Reference level is reached in the audio path



**PEAK REFERENCE:** Sets the Peak Reference level for the channel Peak Indicators

- +4 dBu to +24 dBu Range
- 2 dB increments

## 3.8 Channel Patch Points

### 3.8.1 Complete Channel Patch Points

There is a comprehensive set of Patch Points associated with the complete Vision channel including:

- Microphone Tie Lines
- Upper 200 Slots
- Lower 200 Slots
- 500 Slot
- 1068L Input module (Fader 1 and Fader 2 audio path)
- Multitrack Recorder Returns

The following section outlines these Patch Points in the order they appear in the Patch Bay. The Patch Points for the Fader 1 and Fader 2 audio paths are outlined later in this section.

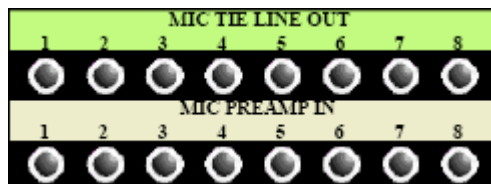
***IMPORTANT NOTE:** To accommodate the space restrictions of this manual, only the first eight (8) Patch Points are shown for each row. The total number of these points in an actual patch bay will be determined by frame size. For example, a 48 channel frame will have 48 Patch Points for each of sections outlined below.*

### Normals

**Outputs:** All output Patch Points “split” when a patch cord is inserted. In other words, the signal continues to its Normalled destination, as well as through the inserted patch cord, in essence creating a “Y-cord.”

***NOTE:** The MIC TIE LINE OUT Patch Points are the only Patch Points that “break” when a patch cord is inserted.*

**Inputs:** All input Patch Points “break” when a patch cord is inserted. In other words, the signal is diverted through the inserted patch cord and does not continue on to its normalled destination.

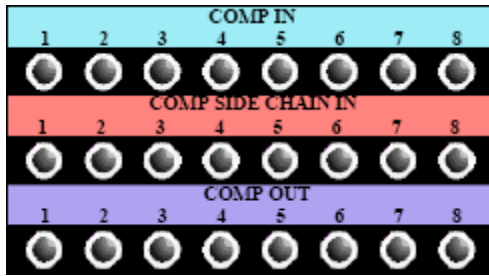


**MIC TIE LINE OUT:** Studio Microphone Tie-line Outputs

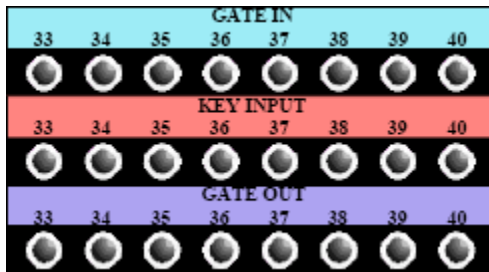
- Fully-normalled to MIC PREAMP IN

**MIC PREAMP IN:** Connection point to the Preamp Input (Upper 200 Slot or Options Bucket In)

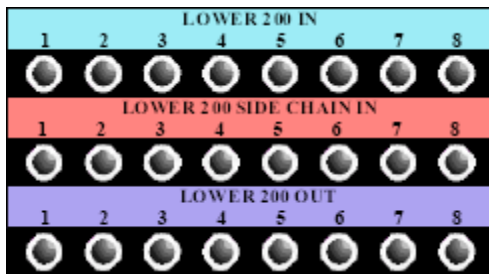
- Feeds the preamp input
- Fully-normalled from MIC TIE LINE OUT
- Patching to these points will replace the mic tie-line feed to the preamp with the patch cord signal
- Not used with 205L Direct Input Module



or



or



COMP IN: Compressor Input (200 Slot Input)

- Half-normalled to COMP SIDE CHAIN IN

COMP SIDE CHAIN IN: Compressor Side-Chain Input (200 Slot Side-chain Input)

- Half-normalled from COMP IN

COMP OUT: Compressor Output (200 Slot Output)

- Returns Pre or Post EQ in the programmed audio path (Fader 1 or Fader 2) (See 200 Slot Patching below)

*NOTE: Patching into the COMP SIDE CHAIN IN will replace the Compressor Input as the input to the module's detection path (side-chain)*

*NOTE: The "COMP SIDE CHAIN IN" patch point for the 225 Compressor is only active when the NEW type is selected. This is due to path to the detector circuit being fed after the gain reduction element (VCA) when OLD type is selected.*

GATE IN: Gate Input (200 Slot Input)

- Half-normalled to KEY INPUT

KEY IN: Gate Key Input (200 Slot Key Input)

- Half-normalled from GATE IN

GATE OUT: Gate Output (200 Slot Output)

- Returns Pre or Post EQ in the programmed audio path (Fader 1 or Fader 2) (See 200 Slot Patching below)

*NOTE: Patching into the KEY INPUT will replace the Gate Input as the input to the module's detection path (key input)*

LOWER 200 IN: Lower 200 Slot Input

- Half-normalled to LOWER 200 SIDE CHAIN IN

LOWER 200 SIDE CHAIN IN: Lower 200 Slot Side-chain Input

- Half-normalled from LOWER 200 IN

LOWER 200 OUT: Lower 200 Slot Output

- Returns Pre or Post EQ in the programmed audio path (Fader 1 or Fader 2) (See 200 Slot Patching below)

*NOTE: Patching into the SIDE CHAIN IN will replace the Lower 200 Input as the input to the module's detection path (side-chain input)*

MIC PREAMP OUTPUT: Preamplifier Output (Upper 200 Slot or Options Bucket Out)

- Feeds the input to the channel Input Selector switch (MIC and TAPE) in both paths (Fader 1 and Fader 2)
- The MIC PREAMP OUTPUT is the default source for Fader 2
- Fader 1 will receive the MIC PREAMP OUTPUT when the Fader 1 MIC switch is engaged
- Both paths may receive the signal from MIC PREAMP OUTPUT simultaneously



**MULTITAPE OUTPUT:** Multitrack Recorder Output (Multitrack Return)

- Feeds the input to the channel Input Selector switch (MIC and TAPE) in both paths (Fader 1 and Fader 2)
- The MULTITAPE OUTPUT is the default source for Fader 1
- Fader 2 will receive the MULTITAPE OUTPUT when the Fader 2 TAPE switch is engaged
- Both paths may receive the signal from MULTITAPE OUTPUT simultaneously

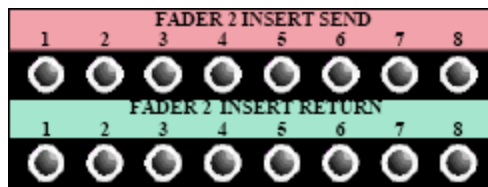


**FADER 2 CHANNEL INPUT:** Fader 2 audio path input

- Replaces the feed to the Fader 2 Channel Input

The FADER 2 CHANNEL INPUT is located:

- Post the Input Selector switch or the 200 Slot Output if so programmed
- Pre EQ



**FADER 2 INSERT SEND:** Fader 2 Insert Send

- Always active

**FADER 2 INSERT RETURN:** Fader 2 Insert Return

- Replaces the feed to the channel Fader Input when the Fader 2 INS switch is engaged

The Fader 2 Insert is Located:

- Post EQ or the 200 Slot Output if so programmed
- Pre FADER 2 FDR INPUT

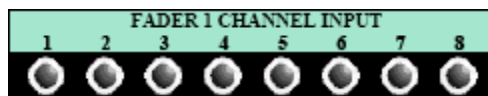


**FADER 2 FDR INPUT:** Fader 2 Fader Input

- Replaces the feed to the Fader 2 Fader Input

The Fader 2 Fader Input is located:

- Post Insert Return
- Pre Phase Reverse (Polarity Inverter)

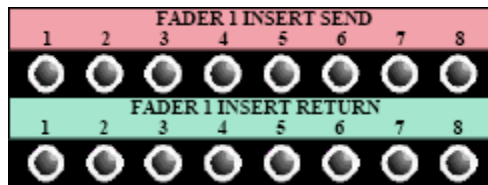


**FADER 1 CHANNEL INPUT:** Fader 1 audio path input

- Replaces the feed to the Fader 1 Channel Input

The FADER 1 CHANNEL INPUT is located:

- Post the Input Selector switch or the Lower 200 Slot Output if so programmed
- Pre EQ



**FADER 1 INSERT SEND:** Fader 1 Insert Send

- Always active

**FADER 1 INSERT RETURN:** Fader 1 Insert Return

- Replaces the feed to the channel Fader Input when the Fader 1 INS switch is engaged

The Fader 1 Insert is Located:

- Post EQ or the 200 Slot Output if so programmed
- Pre FADER 1 FDR INPUT

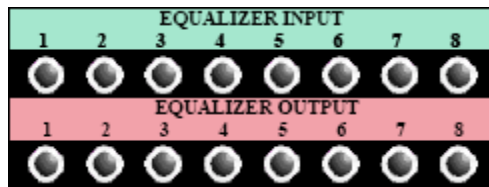


**FADER 1 FDR INPUT:** Fader 1 Fader Input

- Replaces the feed to the Fader 1 Fader Input

The Fader 1 Fader Input is located:

- Post INSERT RETURN
- Pre Phase Reverse (Polarity Inverter)



EQUALIZER INPUT: Equalizer Input (500 Slot In)

- Replaces the feed to the Equalizer Input
- Post the CHANNEL INPUT

EQUALIZER OUTPUT: Equalizer Output (500 Slot Out)

- Always active

The Equalizer is located:

- Post the CHANNEL INPUT
- Pre INSERT SEND or the 200 Slot Input if so programmed
- Assignable to Fader 1 or Fader 2 audio path

**IMPORTANT NOTE:** *It is possible to patch round the Equalizer by patching the output of the Input Source (preamp or multitrack return) directly to the FADER Input for the desired audio path. This will also bypass the 200 Slot routing and insert for that path.*



DIRECT OUTPUT: Channel Direct Output

- Fed from FADER 1 by default
- Will be fed from Fader 2 if the DIR switch is engaged

The Direct Output is located:

- Post the Direct Output switch (Post-fader/mute)

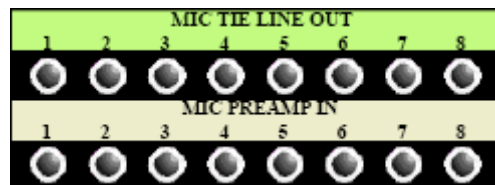
### 3.8.2 Channel Patch Points For Multitrack Recording

The next two sections will show the channel patch points normally associated with each path during a typical multitrack recording session. The following conditions apply:

- 212L Mic Preamp, 225L Compressor, and 550L EQ are fitted in their respective slots
- Input Selectors are in their default positions (Fader 2 MIC, Fader 1 TAPE)
- The EQ is assigned to Fader 2 and is engaged
- The multitrack recorder is patched to be fed from the Direct Output (not shown)
- The Direct Output is assigned to Fader 2 (DIR switch engaged) and patched to a multitrack recorder
- The Lower 200 Slot is programmed to be Pre EQ in Fader 1

#### 3.8.2.1 Fader 2 Patch Points (Multitrack Send Audio Path)

The patch points below are the patch points normally associated with the Fader 2 audio path during a typical multitrack recording session. In this scenario, Fader 2 is used to route microphone inputs to a multitrack recorder via the Direct Output.



MIC TIE LINE OUT: Studio Microphone Tie-line Outputs

- Fully-normalled to MIC PREAMP IN

MIC PREAMP IN: Connection point to the Preamp Input (Upper 200 Slot In or Options Bucket In)

- Feeds the preamp input
- Fully-normalled from MIC TIE LINE OUT
- Patching to these points will replace the mic tie-line feed to the preamp with the patch cord signal
- Not used with 205L Direct Input module



**MIC PREAMP OUTPUT:** Preamplifier Output (Upper 200 Slot or Options Bucket Out)

- Feeds the input to the channel Input Selector switch (MIC and TAPE) in both paths (Fader 1 and Fader 2)
- The MIC PREAMP OUTPUT is the default source for Fader 2
- Fader 1 will receive the MIC PREAMP OUTPUT when the Fader 1 MIC switch is engaged
- Both paths may receive the signal from MIC PREAMP OUTPUT simultaneously

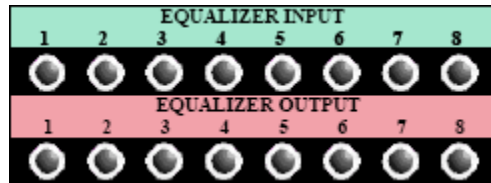


**FADER 2 CHANNEL INPUT:** Fader 2 audio path input

- Replaces the feed to the Fader 2 Channel Input

The FADER 2 CHANNEL INPUT is located:

- Post the Input Selector switch or the 200 Slot Output if so programmed
- Pre EO



**EQUALIZER INPUT:** Equalizer Input (500 Slot In)

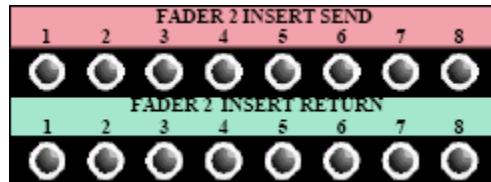
- Replaces the feed to the Equalizer Input
- Post the CHANNEL INPUT

**EQUALIZER OUTPUT:** Equalizer Output (500 Slot Out)

- Always active

The Equalizer is located:

- Post the CHANNEL INPUT
- Pre INSERT SEND or the 200 Slot Input if so programmed
- Assignable to Fader 1 or Fader 2 audio path



**FADER 1 INSERT SEND:** Fader 1 Insert Send

- Always active

**FADER 1 INSERT RETURN:** Fader 1 Insert Return

- Replaces the feed to the channel Fader Input when the Fader 1 INS switch is engaged

The Fader 1 Insert is Located:

- Post EQ or the 200 Slot Output if so programmed
- Pre FADER 1 FDR INPUT



**FADER 2 FDR INPUT:** Fader 2 Fader Input

- Replaces the feed to the Fader 2 Fader Input

The Fader 2 Fader Input is located:

- Post Insert Return
- Pre Phase Reverse (Polarity Inverter)



DIRECT OUTPUT: Channel Direct Output

- Fed from FADER 1 by default
- Will be fed from Fader 2 if the DIR switch is engaged

The Direct Output is located:

- Post the Direct Output switch (Post-fader/mute)

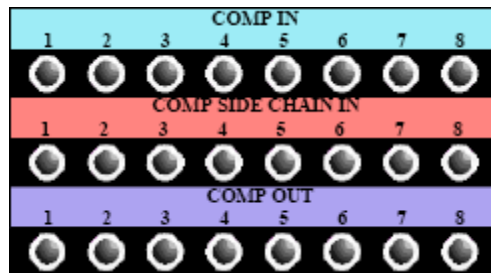
### 3.8.2.2 Fader 1 Patch Points (Multitrack Return Audio Path)

The patch points below are the Patch Points normally associated with the Fader 1 audio path during a typical multitrack recording session. In this scenario, Fader 1 is used to route multitrack returns to a mix bus (not shown).



MULTITAPE OUTPUT: Multitrack Recorder Output (Multitrack Return)

- Feeds the input to the channel Input Selector switch (MIC and TAPE) in both paths (Fader 1 and Fader 2)
- The MULTITAPE OUTPUT is the default source for Fader 1
- Fader 2 will receive the MULTITAPE OUTPUT when the Fader 2 TAPE switch is engaged
- Both paths may receive the signal from MULTITAPE OUTPUT simultaneously



COMP IN: Compressor Input (200 Slot Input)

- Half-normalled to COMP SIDE CHAIN IN

COMP SIDE CHAIN IN: Compressor Side-chain Input (200 Slot Side-chain Input)

- Half-normalled from COMP IN

COMP OUT: Compressor Output (200 Slot Output)

- Returns Pre or Post EQ in the programmed audio path (Fader 1 or Fader 2) (See Lower 200 Slot Patching below)

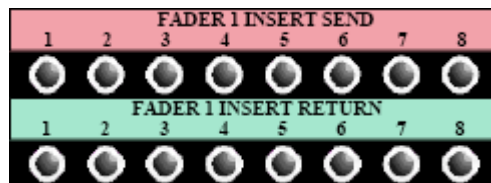


FADER 1 CHANNEL INPUT: Fader 1 audio path input

- Replaces the feed to the Fader 1 Channel Input

The FADER 1 CHANNEL INPUT is located:

- Post the Input Selector switch or the 200 Slot Output if so programmed
- Pre EQ



FADER 1 INSERT SEND: Fader 1 Insert Send

- Always active

FADER 1 INSERT RETURN: Fader 1 Insert Return

- Replaces the feed to the channel Fader Input when the Fader 1 INS switch is engaged

The Fader 1 Insert is Located:

- Post EQ or the 200 Slot Output if so programmed
- Pre FADER 1 FDR INPUT





- FADER 1 FDR INPUT:** Fader 1 Fader Input
- Replaces the feed to the Fader 1 Fader Input
- The Fader 2 Fader Input is located:
- Post Insert Return
  - Pre Phase Reverse (Polarity Inverter)

### 3.9 200 Slot Programming and Patching

The routing of the Upper and Lower 200 Slots is dependent on which modules are installed and internal programming.

#### Preamps in 200 Slots

If the Upper 200 Slots are equipped with a preamp, its output is internally programmed to directly feed the Input Selector switches MIC input on the 1068L Input module. The Lower 200 Slot is available for signal processing.

#### Signal Processing in Both Slots

If the channel preamps are installed in the Options Bucket, the Upper and Lower 200 Slots are both available for signal processing modules. In a standard installation, both slots are grouped together for routing purposes.

In this configuration, the location of both 200 Slots is determined by an internal programming link. The possible locations are:

- Pre-EQ Fader 1
- Post -EQ Fader 1
- Pre-EQ Fader 2
- Post -EQ Fader 2

*NOTE: Since the routing of the 200 Slots is determined by an internal link, the location cannot be changed from the channel control panel. See the studio documentation or engineering staff for the 200 Slot programming of each installation.*

Using the 225L Compressor as an example, the routing to and from a 200 Slot is stated below for each of the possible slot locations:

#### Fader 1, Pre EQ:

- Mic/Tape switch output to COMP IN
- COMP OUT to pre FADER 1 CHANNEL INPUT

#### Fader 1, Post EQ:

- EQ Bypass switch output to COMP IN
- COMP OUT to Fader 1 path pre INSERT SEND

#### Fader 2, Pre EQ:

- Mic/Tape switch output to COMP IN
- COMP OUT to pre FADER 2 CHANNEL INPUT

#### Fader 2, Post EQ:

- EQ Bypass switch output to COMP IN
- COMP OUT to Fader 2 path pre INSERT SEND

#### Movable Upper 200 Slots

In some installations, the Upper 200 Slots can be programmed to change locations in the signal path by programming a USER switch in the Center Section. This capability can be set up to apply independently to all the channels in each bucket of 16-channels. The Upper Slot can be programmed to move to one of the following locations:

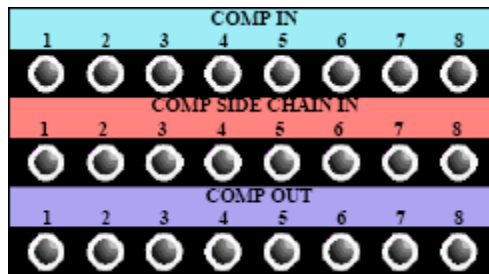
- Pre-EQ Fader 1
- Post -EQ Fader 1
- Pre-EQ Fader 2
- Post -EQ Fader 2

The Lower 200 Slot will remain in the fixed location determined by the internal link.



*NOTE: Programming the Upper 200 Slot to move is a custom option and is not installed on all consoles. See the studio documentation or engineering staff for the 200 Slot programming of each installation.*

The 200 Slot input Patch Points break when a patch cord is inserted. The 200 Slot output Patch Points split when a patch cord is inserted. The patch points for the 225L Compressor and 235L Gate (if fitted) are shown below.



COMP IN: Compressor Input (200 Slot Input)

- Half-normalled to COMP SIDE CHAIN IN

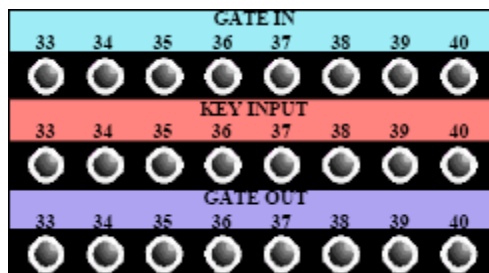
COMP SIDE CHAIN IN: Compressor Side-Chain Input (200 Slot Side-chain Input)

- Half-normalled from COMP IN

COMP OUT: Compressor Output (200 Slot Output)

- Returns Pre or Post EQ in the programmed audio path (Fader 1 or Fader 2)

*NOTE: Patching into the COMP SIDE CHAIN IN will replace the Compressor Input as the input to the module's detection path (side-chain)*



GATE IN: Gate Input (200 Slot Input)

- Half-normalled to KEY INPUT

KEY IN: Gate Key Input (200 Slot Key Input)

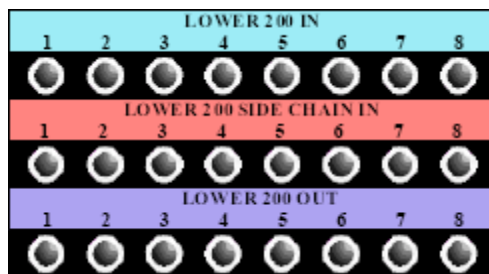
- Half-normalled from GATE IN

GATE OUT: Gate Output (200 Slot Output)

- Returns Pre or Post EQ in the programmed audio path (Fader 1 or Fader 2)

*NOTE: Patching into the KEY INPUT will replace the Gate Input as the input to the module's detection path (key input)*

**OR**



LOWER 200 IN: Lower 200 Slot Input

- Half-normalled to LOWER 200 SIDE CHAIN IN

LOWER 200 SIDE CHAIN IN: Lower 200 Slot Side-chain Input

- Half-normalled from LOWER 200 IN

LOWER 200 OUT: Lower 200 Slot Output

- Returns Pre or Post EQ in the programmed audio path (Fader 1 or Fader 2) (See 200 Slot Patching below)

*NOTE: Patching into the SIDE CHAIN IN will replace the Lower 200 Input as the input to the module's detection path (side-chain input)*

*NOTE: The 215L patch points (Input and Output) are not shown here.*

### 3.10 Recallable Input Channel Switches and Auxiliary Send Routing

In addition to being controlled from the console control surface, the positions of several switches on the 1068L Input module may be set, stored, and recalled using the recall system in the Vision software. Input channel auxiliary routing may be set, stored, and recalled.

For full details regarding how to store and recall channel switches and routing, please refer to section 24.0 Recall System.

#### 3.10.1 Recallable Input Channel Switches

The positions of the following switches may be set, stored, and recalled using the recall system:

Fader 1:

- Solo Safe
- Phase (polarity inverter)
- HP Filter (High-pass filter)
- LCR (Left, Center, Right surround panning)
- Mic (Microphone Input)

Fader 2:

- Solo Safe
- Phase (polarity inverter)
- HP Filter (High-pass filter)
- LCR (Left, Center, Right surround panning)
- Tape (Tape Input)
- Follow Fader 1 (Input from Fader 1)
- Direct (Direct Output)

Global:

- Tape Pad
- EQ to Fader 2

### **3.10.2 Recallable Auxiliary Send Routing**

The following Auxiliary Send and Global routing options may be set, stored, and recalled using the recall system:

Stereo Sends (Auxiliary Send Routing):

- Send 1/2 -> PRE
- Send 1/2 -> FDR 2
- Send 3/4 -> PRE
- Send 3/4 -> FDR 2
- Send 5/6 -> PRE
- Send 5/6 -> FDR 2
- Send 7/8 -> PRE
- Send 7/8 -> FDR 2

*NOTE: Auxiliary Sends 9/10 follow the same routing set for Auxiliary Sends 7/8.*

Global:

- 9/10 to Bus 1-8

### **3.11 Automated Channel Switches**

In addition to being controlled from the console control surface, the positions of several 1068L Input module switches may be automated using the automation system in the Vision software.

For full details regarding how to automate channel switches, please refer to section 26.0 Automation System.

The positions of the following Input module switches may be automated using the automation system:

- EQ BYP (EQ Bypass)
- Fader 1 Insert
- Fader 2 Insert
- Fader 1 Mute
- Fader 2 Mute
- Auxiliary Send 1 On/Off
- Auxiliary Send 2 On/Off
- Auxiliary Send 3 On/Off
- Auxiliary Send 4 On/Off
- Auxiliary Send 5 On/Off
- Auxiliary Send 6 On/Off
- Auxiliary Send 7/8 On/Off
- Auxiliary Send 9/10 On/Off

*NOTE: The Fader 1 and Fader 2 channel faders are also automatable.*

## 4.0 Channel Output Routing and Bus Assignment

The output of each audio path (Fader 1 and Fader 2) may be routed to the following destinations:

- Channel Direct Output
- Multitrack Summing Busses 1-24
- Stereo Program Bus A
- Stereo Program Bus B
- Stereo Program Bus C
- Surround Program Bus

*IMPORTANT NOTE: If no output assignments have been made, the output of the Fader 1 will feed the Channel Direct Output and the Fader 2 will not be routed anywhere.*

In a tracking session, it is typical for Fader 2 to be assigned to the Direct Output or a Multitrack Summing Bus and Fader 1 to feed the Stereo A (STA) Program Bus. In a mixing session, it is typical for both paths on most channels to be assigned to one or more Program Bus (Stereo A, B, C, and/or Surround). The Fader 2 audio path may be used to create additional sends during a mix.

The channel Direct Output may be fed from the output of the Fader 1 by default. It may be fed from Fader 2 when the DIR switch on the 1068L Input module is engaged. The Direct Output cannot be fed from both audio paths simultaneously.

Assignments to the Multitrack Summing Busses can be made from only one audio path at a time (Fader 1 or Fader 2). In other words, the Multitrack Summing Busses cannot be accessed from both paths simultaneously.

Assignments to all Program Busses may be made from both paths simultaneously. This allows both the Fader 1 and Fader 2 audio paths to contribute to the Program Busses during mix down. This means a Vision console with 48 channels provides 96 automated channels with surround panning while mixing.

Assignments to the Multitrack Summing and Program Busses may be made in two ways:

- Hardware: Using the 16-channel Output Assignment module
- Software: Using the recall system

Output assignments may be stored and recalled using the recall system

Section 4.1 will explain how to assign the Direct Output.

Section 4.2 will explain how to make output assignments using the 16-channel Output Assignment module.

Section 4.3 will explain how to make output assignments using the recall system in the Vision software.

### 4.1 Channel Direct Output

The Direct Output may be fed from the output of the Fader 1 or Fader 2 audio paths, but not both simultaneously.

The Direct Output is fed from the Fader 1 path by default. It may be fed from the Fader 2 path if the DIR switch is engaged on the 1068L Input module.



DIR (Direct Output): Routes the output of Fader 2 to the Direct Output

- The Direct Output is fed POST the MUTE switch
- Recall
- A yellow LED indicator illuminates when engaged

*NOTE: There is not a DIR switch for Fader 1. The DIR is included with the Fader 2 controls and toggles the Direct Output to be fed from one fader or the other. When the DIR switch is not engaged, the Direct Output is fed from Fader 1.*

The Direct Output feeds the DIRECT OUTPUT patch points.



**DIRECT OUTPUT:** Channel Direct Output

- Fed from FADER 1 by default
- Will be fed from Fader 2 if the DIR switch is engaged

The Direct Output is located:

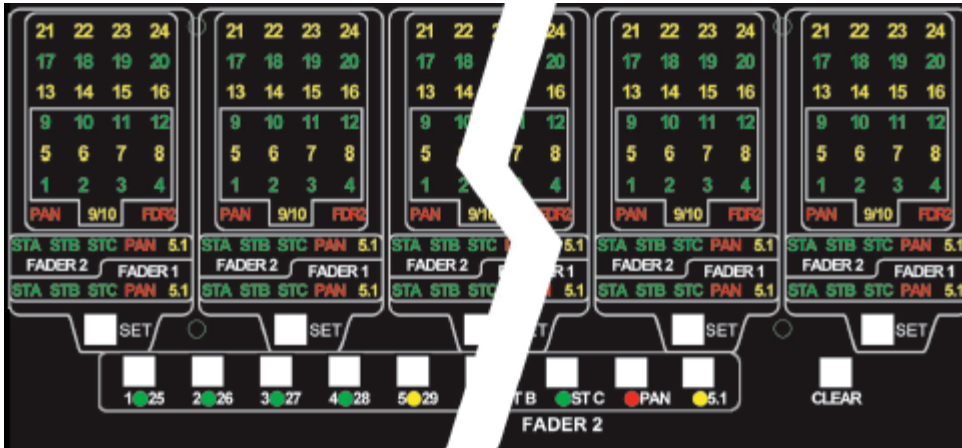
- Post the Direct Output switch (Post-fader/mute)

The DIRECT OUTPUT patch points are not normalled and must be patched to their destinations.

## 4.2 Channel Output Assignment Module



There is one (1) channel Output Assignment module for every 16-channel bucket. This Output Assignment module supports the sixteen channels installed in its bucket.



The Output Assignment module allows the assignment of the Fader 1 and Fader 2 outputs to the following Multitrack Summing and Program Busses:

- Multitrack Summing Buses 1-24
- Stereo Program Bus A
- Stereo Program Bus B
- Stereo Program Bus C
- Surround Program Bus

### 4.2.1 Channel Output Display



There is a Channel Output Display for every channel. It displays the current output routing assignments for the Fader 1 and Fader 2 audio paths:

- Multitrack Summing Bus assignments (1-24)
- Stereo Program Bus assignments (ST A, ST B, ST C)
- Surround Program Bus assignments (5.1)
- Pan-pot assignment
- Aux Send 9/10 assignments

When assignments are made, the associated indicator illuminates.

#### 4.2.2 Channel Set Button



SET: Assigns the associated channel to the selections made using the Bus Assignment buttons (see below)

#### 4.2.3 Multitrack Summing Bus Assignments

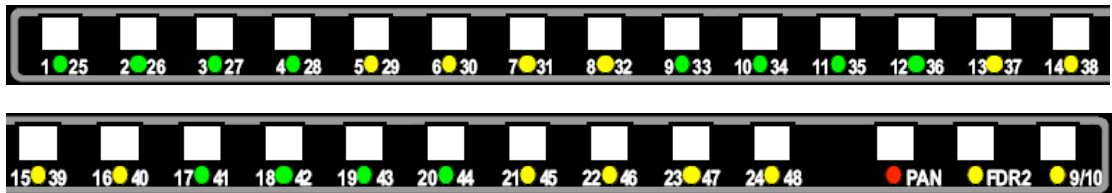
Channel output assignments may be made to any of the twenty-four (24) Multitrack Summing Busses (1-24). The output of these Busses is split to feed up to sixty-four (64) Multitrack Sends.

Multitrack Summing Bus assignments are made in the multitrack routing section of the Output Assignment module. Assignment and routing buttons provide full access to the Multitrack Summing Busses from Fader 1 or Fader 2.

*NOTE: The Multitrack Summing Busses cannot be accessed from both channel audio paths (Fader 1 and Fader 2) simultaneously.*



There is an assignment button for each of the twenty-four (24) Multitrack Summing Busses. While there are only twenty-four multitrack busses, each assignment button is labeled with its Multitrack Send numbers, 1-48. Multitrack Summing Bus 1 feeds multitrack sends 1, 25 and 49, Multitrack Summing Bus 2 feeds multitrack sends 2, 26, and 50, and so on through bus assignment 24-48.



The assignment buttons in the multitrack routing section of the Output Assignment module function as follows:



1-25 thru 24-48 (Multitrack Summing Bus): Readies the selected Multitrack Summing Busses for assignment

- Assignments are not made until a channel SET button is pressed
- A green or yellow LED indicator illuminates when selected



PAN: Readies the Pan-pot for assignment

- Facilitates odd/even panning to the Multitrack Summing Busses
- Assignments are not made until a channel SET button is pressed
- A red LED indicator illuminates when selected



FDR2 (Fader 2): Selects the output of Fader 2 as the source for Multitrack Summing Bus assignments

- The Multitrack Summing Busses are fed by the Fader 1 audio path by default
- Assignments are not made until a channel SET button is pressed
- A yellow LED indicator illuminates when selected



9/10 (Aux Send 9/10): Selects Stereo Aux Send 9/10 as the source when assignments are made

- Allows Aux Send 9/10 to feed Multitrack Summing Busses 1-8
- Assignments are not made until the channel SET button is pressed
- A yellow LED indicator illuminates when selected

## 4.2.4 Program Bus Assignments

Channel output assignments may be made to three (3) Stereo Program Busses and one (1) Surround Program Bus.

Both audio paths, Fader 1 or Fader 2, may feed all Program Busses simultaneously.



The Fader 1 and Fader 2 audio paths each have a Program Bus Assignment section. Assignments may be made to the following Program Busses:

- ST A: Stereo A
- ST B: Stereo B
- ST C: Stereo C
- 5.1: Surround

The Pan-pot in each path may also be engaged.

*IMPORTANT NOTE: The Fader 1 and Fader 2 Pan-pots are not automatically engaged and must be activated when output assignments are made.*

The assignment buttons in the Fader 1 and Fader 2 Program Bus routing sections of the Output Assignment module function as follows:

*NOTE: The Program Bus assignment buttons for Fader 1 and Fader 2 operate identically, so only one set of assignment buttons is shown here.*



ST A (Stereo A): Readies Stereo Program Bus A for assignment

- Assignments are not made until a channel SET button is pressed
- A green LED indicator illuminates when selected



ST B (Stereo B): Readies Stereo Program Bus B for assignment

- Assignments are not made until a channel SET button is pressed
- A green LED indicator illuminates when selected



ST C (Stereo C): Readies Stereo Program Bus C for assignment

- Assignments are not made until a channel SET button is pressed
- A green LED indicator illuminates when selected



PAN: Readies the Left/Right Pan-pot for assignment to the Stereo Program Busses

- Facilitates Left/Right panning to the Program Busses
- Assignments are not made until a channel SET button is pressed
- A red LED indicator illuminates when selected

*NOTE: The Fader 1 and Fader 2 Pan-pots are not engaged by default and must be activated when output assignments are made.*

*NOTE: The Fader 1 and Fader 2 Pan-pots always feed the Surround Program Bus.*



**5.1 (Surround):** Readies the Surround Program Bus for assignment

- Feeds L, R, C, Ls, and Rs Program Busses
- Does not feed the LFE or A/B Program Busses
- Surround Pan-pots are always active
- Assignments are not made until a channel SET button is pressed
- A yellow LED indicator illuminates when selected

#### **4.2.5 Ancillary Controls**



**CLEAR:** Clears all assignment selectors

#### **4.2.6 Multitrack Summing Bus Assignment Procedure**

To make Multitrack Summing Bus assignments, perform the following procedure:

1. Press the CLEAR button to clear any previous assignment selections.
2. Press FDR2 (Fader 2) if the assignments are to be fed from Fader 2.
3. Press the PAN assignment buttons if necessary (for Odd/Even panning).
4. Press the assignment buttons for the desired Multitrack Summing Busses to select them for assignment.
5. Press the SET button on the channels to be assigned.

*NOTE: The Multitrack Summing Busses cannot be accessed from both channel audio paths (Fader 1 and Fader 2) simultaneously.*

#### **4.2.7 Program Bus Assignment Procedure**

To make Program Bus assignments, perform the following procedure:

1. Press the CLEAR button to clear any previous assignment selections.
2. Press the PAN assignment buttons for Fader 1 and/or Fader 2.
3. Press the assignment buttons for the desired Program Busses to select them for assignment.
4. Press the SET button on the channels to be assigned.

#### **4.2.8 Auxiliary Send 9/10 Assignment Procedure**

To make Program Bus assignments, perform the following procedure:

1. Press the CLEAR button to clear any previous assignment selections.
2. Press the 9/10 assignment button to select stereo Aux Send 9/10 to feed the Multitrack Summing Busses 1-8.
3. Press the assignment buttons for the desired Multitrack Summing Busses to select them for assignment. Only Busses 1-8 may be selected.
4. Press the SET button on the channels to be assigned.

*NOTE: When Aux Sends 9/10 are routed to the Multitrack Summing Busses, the feed to Auxiliary Bus 9/10 from that channel is defeated.*

## 4.3 Channel Output Assignment Using Vision Software

Channel output routing and bus assignments may be made via the Vision software using the recall system.

The recall system also provides the means to determine Auxiliary Send routing and set the positions of a large number of switches on one of more channels. Collectively, the hardware states of these controls can be read from the console and stored as part of a “snapshot.” The “recall settings” in the snapshot can be re-applied to the console at a later time.

*NOTE: Only channel output assignments will be covered in this section of this manual. Complete details for using the recall system for channel setup and snapshots, refer to section 24.0 Recall System.*

### 4.3.1 Recall Settings Window

The Recall Settings window is the primary interface with the recall system.



*NOTE: Depending on how the console was configured when it was ordered, the “Mic” and “Tape” buttons might appear on opposite faders. Refer to section 19.2.2.3.2 for details.*

The Recall Settings window provides control over the following channel output assignments:

#### Fader 1 and Fader 2 Output Assignments:

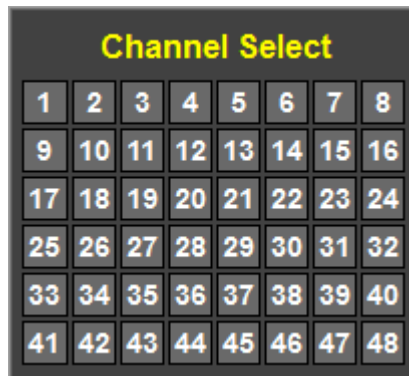
- Channel Direct Output
- Multitrack Summing Busses 1-24 (Bus Assign)
- Stereo Program Bus A
- Stereo Program Bus B
- Stereo Program Bus C
- Surround Program Bus
- Pan-pot Activation

#### Fader 2 Switches:

- Direct (Direct Output)



### 4.3.2 Channel Grid



To make channel output assignment, select one or more channels to assign. The "Channel Select" grid facilitates selection as noted below. All the selected channels will receive the same settings.

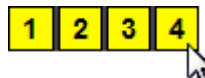
**1** Unselected channels are grey in color.

**1** Selected channels are yellow in color.

Channel selections may be made using the following methods:



Click A Single Channel: To select an individual channel



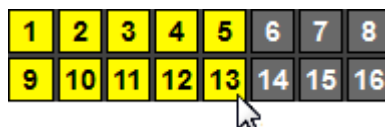
Shift + Click: To select a range of consecutive channels

- Click on the first channel to select it
- Hold down the Shift key and click on the last channel in the series
- All the channels between the first and last channels will be selected



Ctrl + Click: To select a group of non-consecutive channels

- Hold down the Ctrl key
- Click on the desired channels in any order



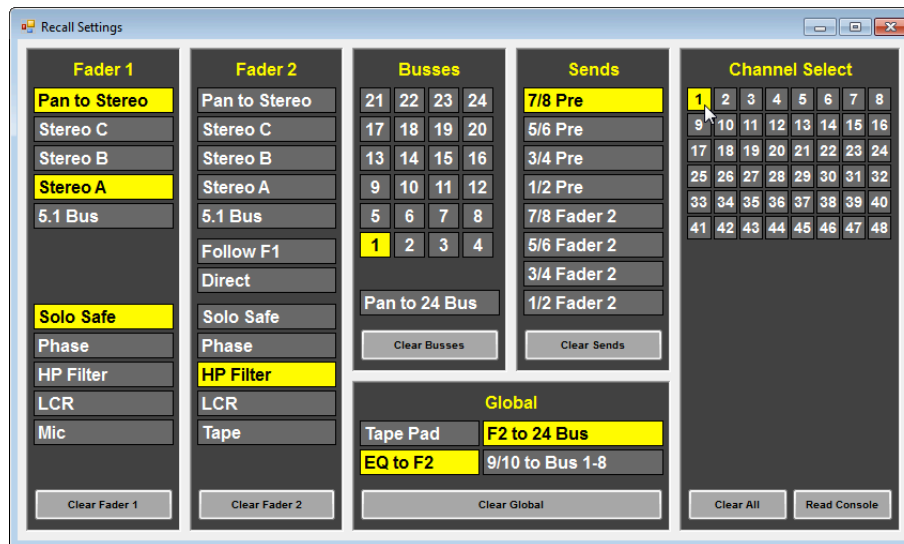
Drag + Click (Rubber-banding): To select a region of channels

- Click within the channel box of the first channel to be included
- While holding down the left mouse button, drag the mouse over the region of channels you wish to include in the selection

Clicking within the Channel Grid will clear any previous selections, unless Shift + Click or CTRL + Click methods are used. Channels or Channel can be added or deleted to previously selections using Shift + Click or CTRL + Click methods. Rubber-banding can be used in combination with Shift + Click and Ctrl + Click methods.

### 4.3.3 Channel Status Indication

Settings made on the console control surface are not automatically reflected in the Recall Settings window. To see the current recall settings on the computer screen for a single channel, click the channel in the Channel Grid.



The current position of the recall switches and bus assignments will be displayed in the Recall Settings window.

To display recall settings for two or more channels, select the channels of interest in the Channel Grid and click the "Read Console" button.

Read Console

**Read Console:** Reads the current channel output assignments and recallable switch settings and updates the Recall Settings window. The read console settings can then be saved and recalled as part of a snapshot.

**NOTE:** Clicking the Read Console button will replace the settings in the Recall Settings window with the settings from the console.



When more than one channel is selected, the Recall Settings window will display the assignments and switch settings on the selected channels as follows:



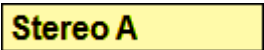
A greyed-out text label on a grey background indicates there are no channels selected in the Channel Grid.



A white text label on a grey background indicates the assignment or recall switch is not engaged on any of the channels selected in the Channel Grid. Clicking in any white label will engage that assignment or switch on the selected channel(s). The label will turn yellow, indicating the assignment has been made.




A black text label on a yellow background indicates the assignment or recall switch is engaged on all of the channels selected in the Channel Grid. Clicking the label will disengage that item on the selected channel(s).



A black text label on a faded yellow background indicates the assignment or recall switch is engaged on some, but not all of the channels selected in the Channel Grid. Clicking the label will engage that item on all selected channels.

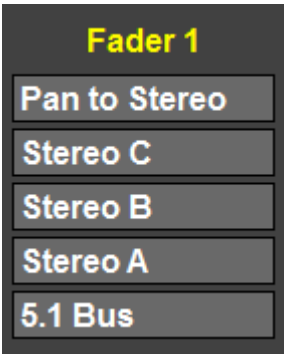


In addition to the Recall Settings window, the current output assignments for each channel are shown on the Channel Output Displays. LED indicators will illuminate on active assignments.

If the Direct Output is to be routed from Fader 2 its LED  will indicate that status.


4.3.4 Channel Output Assignments

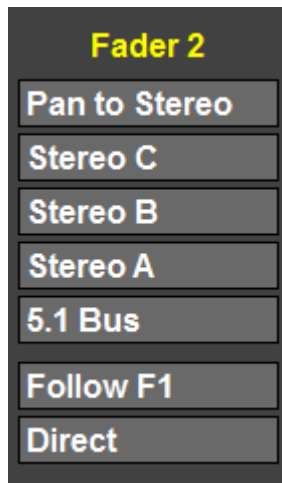
The channel output assignment selections are as follows:



- Pan to Stereo: Engages the Fader 1 Pan-pot
- Stereo C: Assigns Fader 1 to the Stereo C Program Bus
- Stereo B: Assigns Fader 1 to the Stereo B Program Bus
- Stereo A: Assigns Fader 1 to the Stereo A Program Bus
- 5.1: Assigns Fader 1 to the Surround Program Bus

The Direct Output is fed post-fader from Fader 1 by default and is always active.

Select the  button in the Global section of the Recall Settings window to route from the Fader 2, post-fader output the Multitrack Summing Busses on the channels selected in the Channel Grid.



Pan to Stereo: Engages the Fader 2 Pan-pot

Stereo C: Assigns Fader 2 to the Stereo C Program Bus

Stereo B: Assigns Fader 2 to the Stereo B Program Bus

Stereo A: Assigns Fader 2 to the Stereo A Program Bus

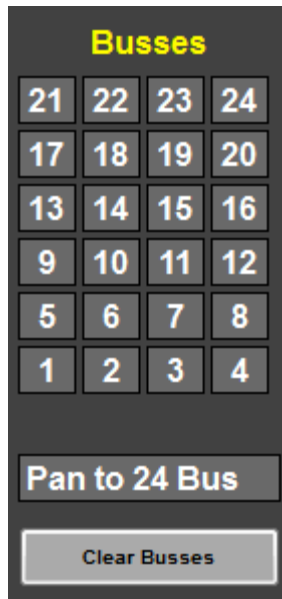
5.1: Assigns Fader 2 to the Surround Program Bus

Follow F1 (Fader 1): The Fader 2 input is fed from the Fader 1 post-fader output

Direct: Routes the post-fader output of Fader 2 to the Direct Output (Fader 1 output is disconnected)

The Direct Output is fed post-fader from Fader 1 by default and is always active.

Select the **Direct** button in the Global section of the Recall Settings window to route from the Fader 2, post-fader output the Multitrack Summing Busses on the channels selected in the Channel Grid.



Bus Assign 1-24: Assigns the output of the selected audio path (Fader 1 or Fader 2) to Multitrack Summing Busses 1-24

- Multitrack Summing Busses are fed by Fader 1 by default
- "Fader 2 to Bus 1-24" must be checked in the Global controls in order to route Fader 2 to the Multitrack Summing Busses
- Only one audio path (Fader 1 or Fader 2) can feed the Multitrack Summing Busses at one time

Pan to 24 Bus: Enables Odd/Even panning to the Multitrack Summing Busses

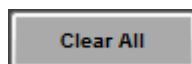
Clear Busses: Clears all Multitrack Summing assignments for the selected channels

Multitrack Routing Busses are fed from the Fader 1, post-fader output from all channels by default.

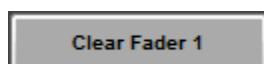
Select **F2 to 24 Bus** in the Global section of the Recall Settings window to route from the Fader 2, post-fader output the Multitrack Summing Busses on the channels selected in the Channel Grid.

#### 4.3.5 Clear Output Assignments

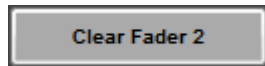
Output assignments and recallable switches may be cleared using the buttons at the bottom of each section of the Recall Settings window.



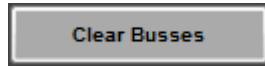
Clear All: Clears (unchecks) all output assignments and recallable switch settings for the selected channels



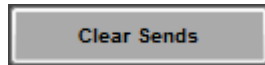
Clear Fader 1: Clears all Fader 1 output assignments and recall switch settings for the selected channels



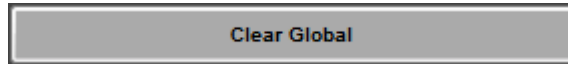
Clear Fader 2: Clears all Fader 2 output assignments and recallable switch settings for the selected channels



Clear Busses: Clears all Multitrack Summing assignments for the selected channels



Clear Sends: Clears all Auxiliary Send routing settings for the selected channels



Clear Global: Clears all Global recallable switch settings

The recall settings for the entire console including output assignments can also be cleared from the ACM Control Panel.



To clear all recall settings using the ACM Control Panel, perform the following procedure:

1. Press the Up or Down Arrow button on the ACM Control Panel to open the ACM Main menu
2. Press the Down Arrow button to move the cursor to "Clear Recall"
3. Press the "Yes OK" button
4. Press the "Yes Ok" button at the prompt to confirm that you want to clear all recall settings
5. The recall settings for the entire console will be cleared

*NOTE: There is no "undo" for clearing recall settings, so it is suggested that a snapshot is taken before the settings are cleared.*

#### 4.3.6 Procedures for Channel Output Assignments Using Software

##### 4.3.6.1 Using the Recall System to Make Channel Output Assignments

To make channel output assignments using the recall system, perform the following procedure:

1. With a project open, make sure any needed console settings have been stored in a snapshot before changing the settings in the Recall Settings window. (See 23.6.2 Taking a New Snapshot)
2. Open the Recall Settings window using the View menu in the Main window.
3. Select the desired channel(s) in the Channel Grid.
4. Select the desired output assignments.
5. The output assignments will be shown on the Channel Assignment Displays.

##### 4.3.6.2 Saving Channel Output Assignments in a Snapshot

To save channel output assignments, the recall settings must be saved to a new snapshot. To create a new snapshot that includes the console recall settings, perform the following procedure:

1. Make sure the console hardware is set as desired for the new snapshot.
2. Open the Recall Settings window using the View menu in the Main window.
3. Click the "Read Console" button in the Recalls Setting window to make sure the console settings match the settings in the recall system memory buffer.

4. With a Project open, click the Snapshots tab.
5. Right-click in the Snapshot list and select "Take Snapshot" from the menu. The Take Snapshot window will open.
6. Select one or more channels using the Channels To Save selection grid or click the "All Channels" button to select all channels.
7. Select the channel sections to include in the snapshot using the checkboxes in the "Sections to Save" section. Make sure the "Recall Switches" checkbox is checked.
8. Enter a Name for the new snapshot.
9. Click the "Take Snapshot" button to create the new snapshot.
10. The Take Snapshot window will close and the new snapshot with the recall settings, including the channel output assignments, will appear in the Snapshot list.

#### **4.3.6.3 Applying Channel Output Assignments from a Snapshot**

To apply the channel output assignment from an existing snapshot to the console, perform the following procedure:

1. Make sure any needed console settings have been stored in a snapshot before applying the stored settings.
2. With a project open, click the Snapshots tab in the Project window.
3. Click on the name of the snapshot with the needed recall settings to highlight it.
4. Right-click in the Snapshot list and select "Apply Snapshot" from the menu. The Apply Snapshot window will open.
5. Select one or more channels using the Channels To Apply selection grid or click the "All Available" button to select all the available channels.
6. Select the channel sections to include in the snapshot using the checkboxes in the "Sections to Save" section. Make sure the "Recall Switches" checkbox is checked.
7. Select an Action to determine how the snapshot data will be applied.
8. Click the "Apply" button to apply the snapshot data to the console.
9. The Apply Snapshot window will close and the selected snapshot, including the channel output assignment will be applied to the console.

## 5.0 Multitrack Summing Busses, Trims, Signal Flow, and Patch Points

### 5.1 Multitrack Summing Busses

There are twenty-four (24) Multitrack Summing Busses:

- 1-24

Multitrack Summing Busses 1-24 may be fed from:

- Fader 1 output
- Fader 2 output

*NOTE: The Multitrack Summing Busses cannot be accessed from both channel audio paths (Fader 1 and Fader 2) simultaneously.*

Multitrack Summing Busses 1-8 may also be fed from Stereo Aux Sends 9/10.

*NOTE: When Aux Sends 9/10 are routed to the Multitrack Summing Busses, the feed to Auxiliary Bus 9/10 from that channel is defeated.*

Multitrack Summing Bus assignments may be made:

- Locally on the 16-channel Output Assignment module (1-48 buttons)
- Via the recall system

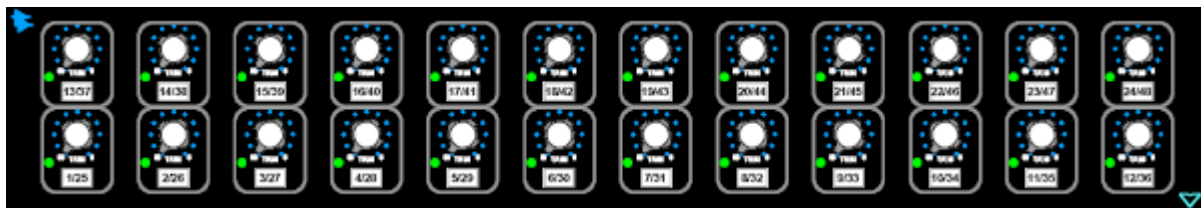
Each of the Multitrack Summing Bus assignments feeds its respective Multitrack Summing Bus. The output of these Busses is fed to the corresponding Bus Trim module in the Center Section.

*NOTE: A multitrack recorder may alternately be fed from the channel Direct Outputs by patching the DIRECT OUT patch points to the desired multitrack recorder input interface.*

### 5.2 Multitrack Output Trim Module

Each Multitrack Summing Bus has an Output Trim just before the BUS OUTPUT patch points.

The Multitrack Output Trims are located in the Center Section.



Controls for the Multitrack Output Trims are as follows:



1/25 – 24/48 (On/Off switch): Activates Multitrack Outputs 1-24 (1/25-24/48)

- A green LED indicator illuminates when engaged

TRIM: Sets the amount of trim (attenuation) for the Multitrack Output

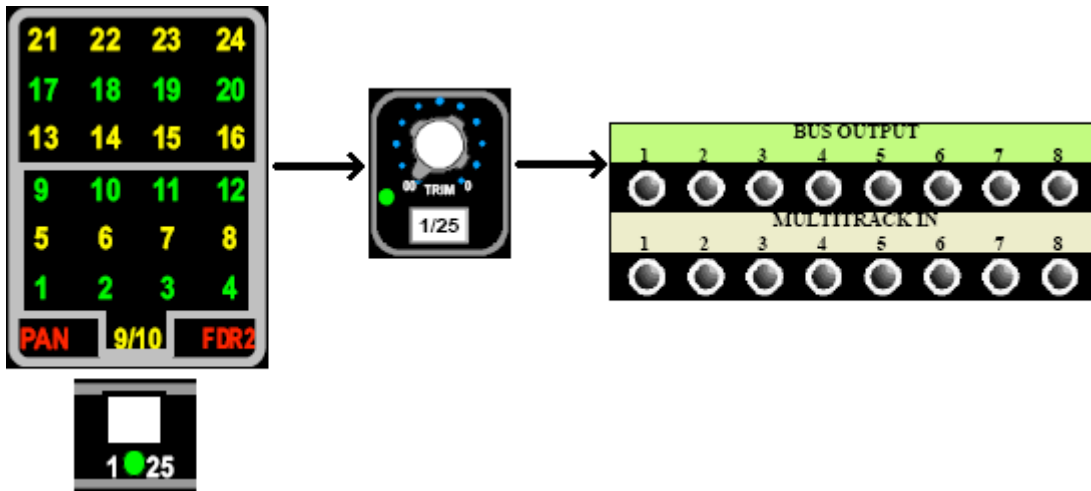
- $-\infty$  to 0 dB range
- 0 dB is unity gain
- $-\infty$  is full attenuation

The output of the Bus Trim modules feed the BUS OUT patch points. These patch points are half-normalled to the MULTITRACK IN patch points.

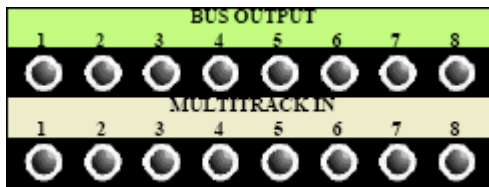
The output of the BUS OUTPUT patch points are split via normals in the patch bay to feed the MULTITRACK IN patch points. BUS OUTPUT 1 feeds MULTITRACK IN 1, 25, 49, and so on. This is reflected in the labeling of the bus assignment buttons and the Bus Trim On/Off switch. The MULTITRACK IN patch points provide a feed to the multitrack recorder.

### 5.3 Multitrack Signal Flow

The diagram below shows the basic Multitrack signal flow. Only the first eight patch points are shown for each row.



### 5.4 Multitrack Patch Points



BUS OUTPUT: Multitrack Summing Bus outputs

- Half-normalled to MULTITRACK IN

MULTITRACK IN: Input to the multitrack recorder

- Feeds the multitrack recorder inputs
- Half-normalled from BUS OUTPUT
- Patching to these points will replace the feed to the multitrack recorder with the patch cord signal



DIRECT OUTPUT: Channel Direct Output

- Fed from FADER 1 by default
- Will be fed from Fader 2 if the DIR switch is engaged

The Direct Output is located:

- Post the Direct Output switch (Post-fader)

*NOTE: The DIRECT OUTPUT patch points are associated with the channels and are not part of the Multitrack Summing Bus system. Since Direct Outputs are commonly patched to feed the multitrack recorder, their patch points are shown here.*



MULTITAPE OUTPUT: Multitrack Recorder Output (Multitrack Return)

- Feeds the input to the channel Input Selector switch (MIC and TAPE) in both paths (Fader 1 and Fader 2)
- The MULTITAPE OUTPUT is the default source for Fader 1
- Fader 2 will receive the MULTITAPE OUTPUT when the Fader 2 TAPE switch is engaged
- Both paths may receive the signal from MULTITAPE OUTPUT simultaneously



## 6.0 Stereo Program Busses, Master Faders, Signal Flow, and Patch Points

Mixing simultaneously to all three Stereo Program Busses and the Surround Program Bus is possible. A real-time fold down of the surround mix to a stereo mix is also possible.

This architecture, combined with a comprehensive set of patch points and controls, provides many routing capabilities including:

- Three independent and simultaneous outputs
- Summed Grand Master output
- Parallel processing
- Sub-mixing and processing
- Stereo stem mixing
- Mix minus stems
- Clean channel feed
- Simultaneous surround and stereo mixing
- Surround to stereo fold down
- Many others

### 6.1 Stereo Program Busses A, B, and C

Three (3) stereo mixes may be created simultaneously (as well as a surround mix).

There are three (3) independent Stereo Program Busses:

- ST A: Stereo Bus A
- ST B: Stereo Bus B
- ST C: Stereo Bus C

The output of the Master Faders for these three stereo Busses may be mixed to a Grand Master Bus, Grand Master Fader, and output.

Each of the Stereo Program Bus assignments feeds its respective Stereo Program Bus, A, B, and/or C. These Busses are fed to the associated Active Combining Amplifiers (ACA).

The patch points from the three Stereo Bus ACA outputs (STEREO ACA OUTPUTS) are half-normalled to the Stereo Master Fader inputs (STEREO FADER INPUTS).

Signals from the STEREO SUM BUS ACCESS IN patch points will be added to the bus feed from the channels before the ACA.

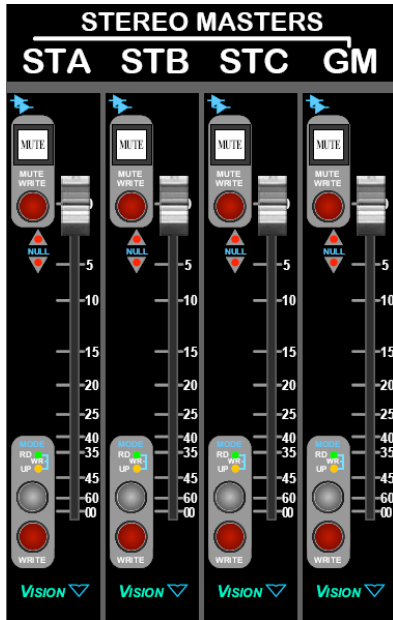
Boosters calibrate the outputs of each stereo Master Fader. The booster output patch points (STEREO BSTR OUTPUTS) feed the Stereo Grand Master Selector inputs via half-normalled patch points (STEREO GM SELECT IN).

*NOTE: If only a single stereo mix is needed, the STEREO BSTR OUTPUTS patch point can be patched directly to the 2T FEED distribution patch points in order to bypass the Grand Master summing and master.*

## 6.2 Stereo Program Master Faders

There are three (3) Stereo Master Faders and one (1) Grand Master Fader:

The output of each Stereo Program Bus ACA feeds its own Stereo Master Fader. The Grand Master ACA feeds the Grand Master Fader.



Stereo Program Master Faders:

- Stereo A (ST A)
- Stereo B (ST B)
- Stereo C (ST C)
- Grand Master (GM)

The STA, ST B, ST C Master Faders are the master output level control for their respective Stereo Program Busses.

The GM fader is the Grand Master Fader. The Grand Master is the master output level control for the Grand Master Output. (See below)

All Master Faders and mutes are fully automatable. Automation is covered in section 25.0 Automation.

The three Stereo Program Busses may be fed simultaneously from:

- Fader 1 output
- Fader 2 output
- E1068L Echo Return module

*NOTE: It is possible to make simultaneous assignments to all three Stereo Program Busses and the Surround Program Bus.*

Stereo Program Bus assignments may be made:

- Locally on the 16-channel Output Assignment module (ST A, ST B, ST C buttons)
- Via the recall system

To activate Left-Right panning the following conditions must be met:

- The channel must be assigned to one or more of the Stereo Program Busses (ST A, ST B, and/or ST C)
- The pan-pot (PAN) must be engaged in the assignment section

## 6.3 Stereo Grand Master

A stereo Grand Master Bus and Grand Master Fader are provided to facilitate a wide range of operations. The three Stereo Program mixes, an External Input, and the output of the Lt Rt Fold Down Matrix may be selected for mixing to the stereo Grand Master Bus.

Left and Right calibration trim-pots (CAL L-R) are provided for the primary Grand Master sources to assure precision summing.

The Stereo Grand Master Bus may be fed from the following sources:

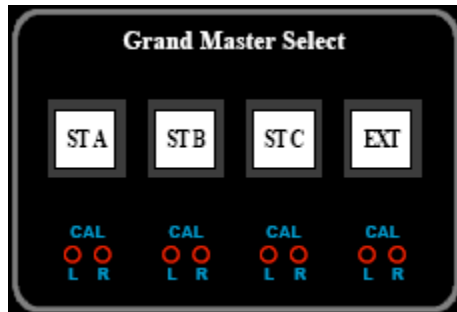
- Stereo Program Master A (ST A)
- Stereo Program Master B (ST B)
- Stereo Program Master C (ST C)
- External Stereo Source (EXT)
- Output from the Lt Rt Fold Down Matrix

### 6.3.1 Grand Master Select

The primary source selections for the Grand Master Bus are assigned with the Grand Master Select controls in the Center Section.

The Lt Rt Fold Down Matrix source selection is made by engaging the TO GM switch on the matrix control panel.

Each source selection for the Grand Master bus has a Left and Right channel calibration trim pots that enable precision stereo mix summing.



There are five (5) sources that may be selected as sources to feed the Grand Master Bus:

- ST A (Stereo A): Output of the Stereo A boosters
- ST B (Stereo B): Output of the Stereo B boosters
- ST C (Stereo C): Output of the Stereo C boosters
- EXT (External): Output of the GM EXT IN patch points
- Lt Rt Fold Down Matrix: Output of the Lt Rt Fold Down Matrix
  - TO GM button must be engaged on the Matrix
  - Level is set by the matrix MASTER LEVEL

The controls for the Grand Master Select function as follows:



ST A (Stereo A): Routes the output of the Stereo A boosters to the Grand Master Bus

- Illuminates in white when engaged



ST B (Stereo B): Routes the output of the Stereo B boosters to the Grand Master Bus

- Illuminates in white when engaged



ST C (Stereo C): Routes the output of the Stereo C boosters to the Grand Master Bus

- Illuminates in white when engaged



EXT (External): Routes the output of the GM EXT IN patch points to the Grand Master Bus

- Illuminates in white when engaged



CAL L-R (Calibration Left-Right): Calibrates the stereo balance and level to the Grand Master Bus for the associated source

- A set of calibration trim-pots is provided for each Grand Master source

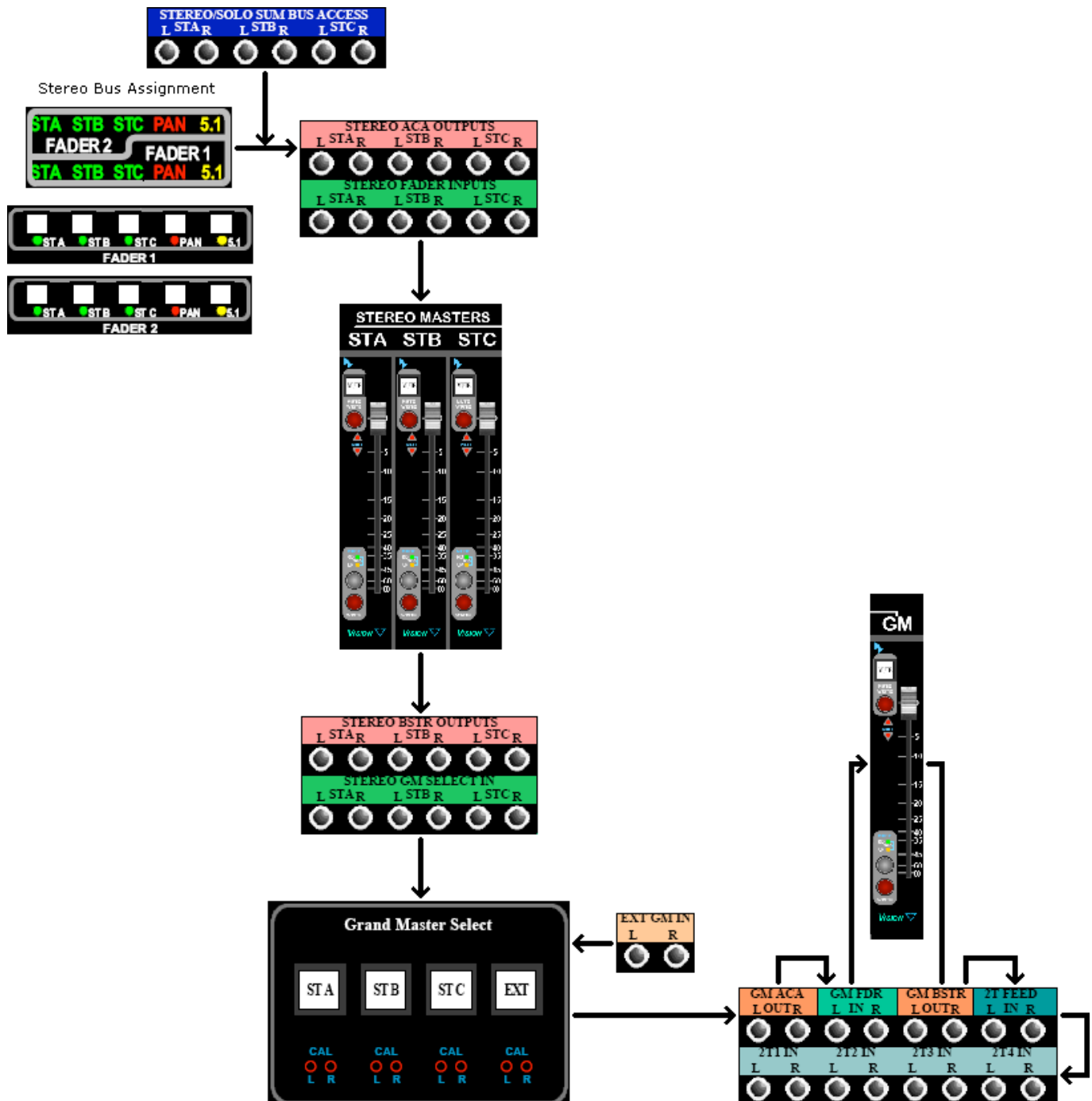
The selected Stereo Masters (A, B, C) are routed to the Grand Master Bus and mixed together at the GM ACA to create a GRAND MASTER stereo program. An external stereo source may also be added via the External Input (EXT GM IN) patch points and engaging the EXT switch.

The patch points from the Grand Master ACA outputs (GM ACA OUT) feed the Grand Master Fader (GM FDR IN) patch points. A booster calibrates the output of the Grand Master Fader (GM BSTR OUT) and is half-normalled to the 2Track Feed (2T FEED) distribution patch points.

The 2T FEED distribution patch points are half-normalled to feed to up to four (4) 2-track recorders (2T1 IN, 2T2 IN, 2T3 IN, and 2T4 IN patch points).

## 6.4 Stereo Program Signal Flow

The diagram below shows the basic Stereo Program Bus signal flow from the channel Stereo Bus Assignment, through the Stereo Masters and Grand Master, to the 2Track Feed.

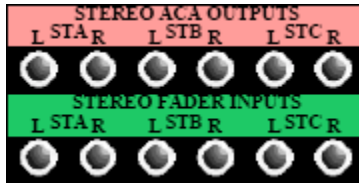


## 6.5 Stereo Program Patch Points



**STEREO/SOLO SUM BUS ACCESS IN:** Stereo and Solo Summing Bus Access Inputs

- Normalled to the Stereo A, B, C, and SOLO busses
- Signals patched into the STEREO SUM BUS ACCESS IN patch points will be added the bus feed before the ACA

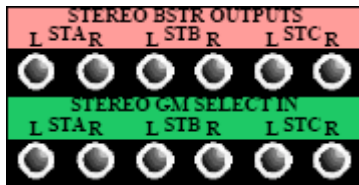


**STEREO ACA OUTPUTS:** Stereo Active Combining Amplifier outputs

- Half-normalled to STEREO FADER INPUTS

**STEREO FADER INPUTS:** Stereo Master Fader inputs

- Feeds the stereo Master Fader inputs
- Half-normalled from STEREO ACA OUTPUTS
- Patching to these points will replace the feed to the Stereo Master Faders with the patch cord signal



**STEREO BSTR OUTPUTS:** Stereo Booster outputs

- Half-normalled to STEREO GM SELECT IN

**STEREO GM SELECT IN:** Stereo Grand Master selector inputs

- Feeds the Stereo Grand Master Select inputs
- Half-normalled from STEREO BSTR OUTPUTS
- Patching to these points will replace the feed to the Stereo Grand Master Selector with the patch cord signal



**EXT GM IN:** Stereo external Grand Master inputs

- Allows an external stereo source to be added to the Grand Master mix
- Feeds the Grand Master ACA
- Active only when the EXT switch in the Grand Master Select controls is engaged



**GM ACA OUT:** Stereo Grand Master ACA output

- Half-normalled to GM FDR IN

**GM FDR IN:**

- Feeds the Grand Master Fader
- Half-normalled from GM ACA OUT
- Patching to these points will replace the feed to the Grand Master Fader with the patch cord signal



**GM BSTR OUT:** Stereo Grand Master Booster output

- Primary Stereo Program Output
- Half-normalled to 2T FEED IN

**2T FEED IN:**

- Distributed feed to four (4) 2-track recorders
- Half-normalled from GM BSTR OUT
- Half-normalled to 2T IN 1-4
- Patching to these points will replace the feed to the 2-track recorders with the patch cord signal



**2T1 IN:** Input to 2-track recorder #1

- Half-normalled from 2T FEED IN

**2T2 IN:** Input to 2-track recorder #2

- Half-normalled from 2T FEED IN

**2T3 IN:** Input to 2-track recorder #3

- Half-normalled from 2T FEED IN

**2T4 IN:** Input to 2-track recorder #4

- Half-normalled from 2T FEED IN

Patching to these points will replace the feed to the 2-track recorder with the patch cord signal

## 7.0 Surround Program Bus, Master Faders, Signal Flow, and Patch Points

Both 5.1 and 7.1 mixing is possible on the Vision console. Mixing simultaneously to the Surround Program Bus and all three Stereo Program Busses is also possible. Facilities are provided for real-time fold down of the surround mix to a stereo mix.

### 7.1 Surround Program Outputs

While the Surround Program Bus assignment is labeled "5.1," it is actually a 5-channel program bus with five (5) total busses and Active Combining Amplifiers.

The Surround Program Bus is made up of five (5) individual mix busses:

- Left
- Right
- Center
- Left Surround
- Right Surround

There are no program busses for the LFE (subwoofer) or A/B surround channels. These channels can be created using Auxiliary Sends and/or the Fader 2 audio path.

The outputs of the 5-channel surround ACAs (SURROUND ACA OUT) are normalised to the Surround Master Faders via the associated half-normalised patch points (SURROUND FADER IN).

To complete a 5.1 program output, a filtered LFE feed may be patched into the LFE Master Fader (SURROUND FADER IN LFE) at this point in the signal flow. If mixing in 7.1, the A/B feed may be patched into the A/B Master Fader (SURROUND FADER IN A/B) at this point in the signal flow.

Signals from the SURROUND SUM BUS ACCESS INPUT patch points will be added to the bus feed from the channels before the ACA.

Boosters calibrate the outputs of the Master Faders. The outputs of the boosters (SURROUND BSTR OUT) are half-normalised to the Surround Feed Inputs (SURROUND FEED IN) distribution patch points.

The SURROUND FEED IN distribution patch points are half-normalised to feed to up to four (4) surround recorders (8TRACK1 IN, 8TRACK 2 IN, 8TRACK 3 IN, and 8TRACK 4 IN).

The SURROUND FEED IN distribution patch points are also half-normalised to feed the Lt Rt Fold Down Matrix for creating automatic stereo mixes from surround mixes. An External Surround Source may also be added to the fold-down mix. The resultant mix available at the Lt Rt Out patch points.

### 7.2 5-Channel Surround Program Bus and Masters

The five (5) Surround Program Busses may be fed directly from the channel pan-pots:

- Left
- Right
- Center
- Left Surround
- Right Surround

The 5-channel panning to the Surround Program Bus can also be from the E1068L Echo Return modules by patching the FX RETURN SUR ACA OUT patch points to the SURROUND SUM BUS ACCESS IN patch points.

The Fader 1 and Fader 2 channel pan-pots and E1068L pan-pots are 5-channel pan-pots:

- Front: Left/Right or Left/Center/Right (with the LCR switch engaged)
- Rear: Left Surround/Right Surround
- F/R: Front/Rear panning is provided

There is no access to the LFE or A/B program outputs from the channel or E1068L pan-pots.

To activate full 5-channel surround panning, the following conditions must be met:

- The channel must be assigned to the Surround Program Bus (5.1)
- The LCR pan-pot switch must be engaged

With the LCR switch engaged and the pan-pot is panned Front and Center, the signal will be routed to the Center Program Bus and the feed to the Front Left and Right Program Busses will be defeated.

If the LCR switch is not engaged, the Center Program Bus will not be fed. Signals panned Front and Center will feed the Left and Right Surround Program Busses (-3 dB per side) and will create "phantom center image" between the speakers.

Assignment to the Left/Right, Center, and Left Surround/Right Surround Busses the may be made:

- Locally on the 16-channel Output Assignment module (5.1 button)
- Via the recall system

The outputs of the 5-channel surround ACAs (SURROUND ACA OUT) are normalled to the L/R, C, and SURR Surround Master Faders via the associated half-normalled patch points (SURROUND FADER IN).

### **7.3 LFE Feed and Master**

The LFE Master Fader and output are provided to support the Low Frequency Effects (subwoofer) channel of a 5.1 or 7.1 mix. However, audio is NOT routed to the LFE Master Fader unless it is patched. In other words, the Surround Program output will not have a LFE channel unless one is created through routing and patching!

There is no LFE Program Bus or ACA. There is no access to the LFE program outputs from the channel or E1068L pan-pots.

*NOTE: While one of the SURROUND ACA OUT patch points is labeled "LFE," there is no LFE ACA.*

#### **7.3.1 Creating a LFE Feed for 5.1 and 7.1 Surround Program Outputs**

The LFE Filter is part of the Monitor Control system and is not part of the Surround Program Bus. It is primarily intended for Control Room monitor Bass Management. Engaging the 5 TO LFE button in the Center Section will create a LFE feed to the subwoofer from the Left, Right, Center, and L/R Surround monitor feeds. While the subwoofer is being fed, audio is not fed to the LFE Surround Program outputs.

*NOTE: A set of Bass Management functions and LFE routing options for Control Room monitoring is provided. Refer to the 13.2.1 Bass Management section of this manual for detailed information.*

However, the LFE Filter can be bypassed in the Monitor Control system and used to create a properly filtered LFE feed. This is accomplished with patching and parameter settings.

An LFE channel for 5.1 and 7.1 Surround Program outputs may be created in several ways:

- Via a mono Auxiliary Send
- Via a Multitrack Summing Bus fed by Fader 1 or Fader 2
- Using an external LFE source

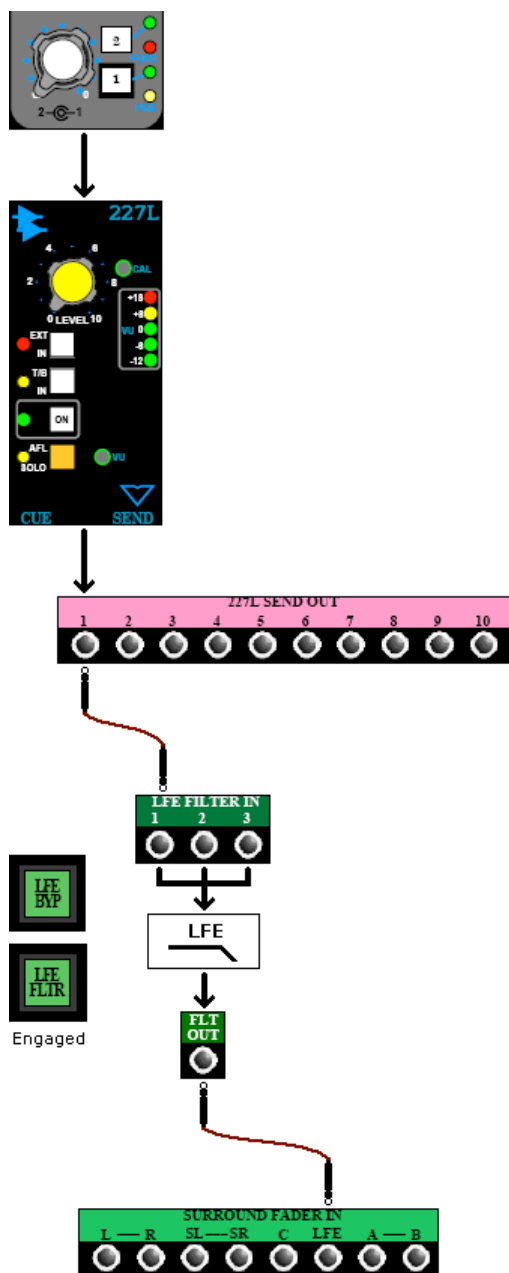
#### 7.3.1.1 LFE Feed from a Mono Auxiliary Send

Feeding the LFE from a mono Auxiliary Send provides a LFE feed that can follow fader moves (Post) or operate independently (Pre). In either case, an individual level control is provided from each channel.

To create a LFE feed from a mono Auxiliary Send, use the following procedure:

1. Patch the output of a mono Auxiliary Send (227L SEND OUT) to one of the LFE Filter Input (FLT IN) patch points
2. Make sure the corresponding 227L Cue Send master is turned on and turned up
3. Engage the LFE BYP (LFE Bypass) button in the Center Section to remove the LFE from the Control Room monitor system
4. Engage the LFE FLTR (LFE Filter) button in the Center Section to activate the LFE Filter
5. Select the LFE frequency, 80 Hz (default) or 120 Hz
6. Patch the output of the FLT OUT (Filter Out) patch point to the LFE Master Fader input (LFE SURROUND FADER IN) patch point

The diagram below shows the routing for a LFE feed from mono Auxiliary Send 1.



In this scenario, mono Auxiliary Send 1 feeds the LFE Filter. The output of the LFE Filter feeds the LFE Surround Master Fader, associated booster, and output to the SURROUND FEED to the 8Track surround mix recorders and Control Room Monitors (if 5.1 PGM is selected as the monitor source).

The LFE Filter is bypassed in the Control Room monitor system.

*NOTE: With the LFE bypassed in the Control Room monitors as described above, Bass Management will not be active when monitoring Surround Playback sources.*



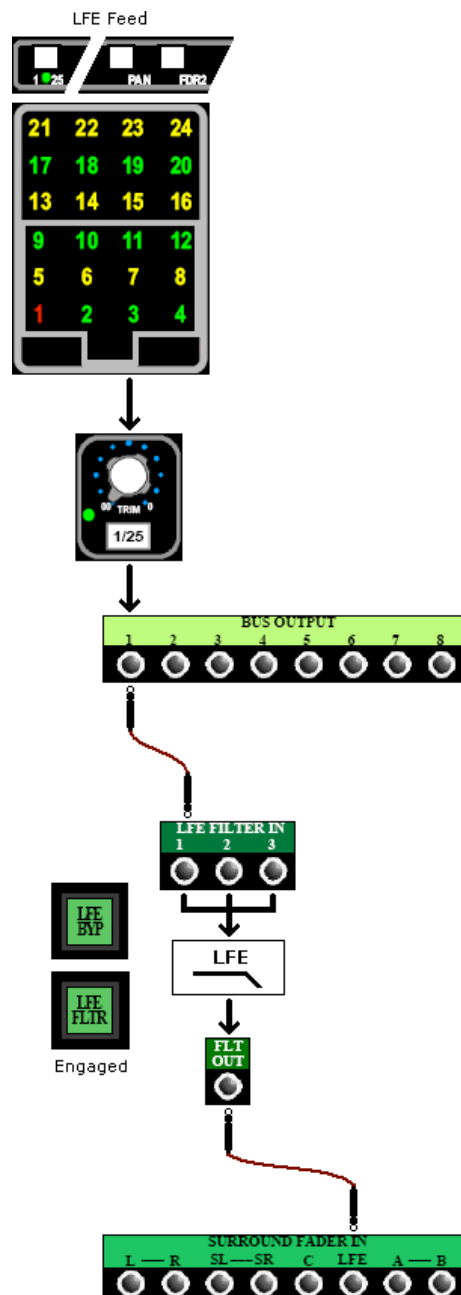
### 7.3.1.2 LFE Feed from Fader 1 and a Multitrack Summing Bus

Feeding the LFE from Fader 1 provides a LFE feed that follows the Fader 1 moves, without an independent level control.

To create a LFE feed from Fader 1 and a Multitrack Summing Bus, use the following procedure:

1. Patch the output of a Multitrack Summing Bus (BUS OUT) to one of the LFE Filter Input (FLT IN) patch points
2. Make sure the Multitrack Summing Bus Trim is turned on and turned up
3. Assign Fader 1 to the Multitrack Summing Bus on the desired channels
4. Engage the LFE BYP (LFE Bypass) button in the Center Section to remove the LFE from the Control Room monitor system
5. Engage the LFE FLTR (LFE Filter) button in the Center Section to activate the LFE Filter
6. Select the LFE frequency, 80 Hz (default) or 120 Hz
7. Patch the output of the FLT OUT (Filter Out) patch point to the LFE Master Fader input (LFE SURROUND FADER IN) patch point

The diagram below shows the routing for a LFE feed from Fader 1 and Multitrack Summing Bus 1.



In this scenario, Fader 1 is assigned to feed Multitrack Summing Bus 1, which feeds the LFE Filter. The output of the LFE Filter feeds the LFE Surround Master Fader, associated booster, and output to the SURROUND FEED to the 8Track surround mix recorders and Control Room Monitors (if 5.1 PGM is selected as the monitor source).

If Fader 1 is also feeding the 5-channel Surround Program Bus, the LFE feed will be proportionate to the 5-channel program feed.

The LFE Filter is bypassed in the Control Room monitor system.

*NOTE: With the LFE bypassed in the Control Room monitors as described above, Bass Management will not be active when monitoring Surround Playback sources.*

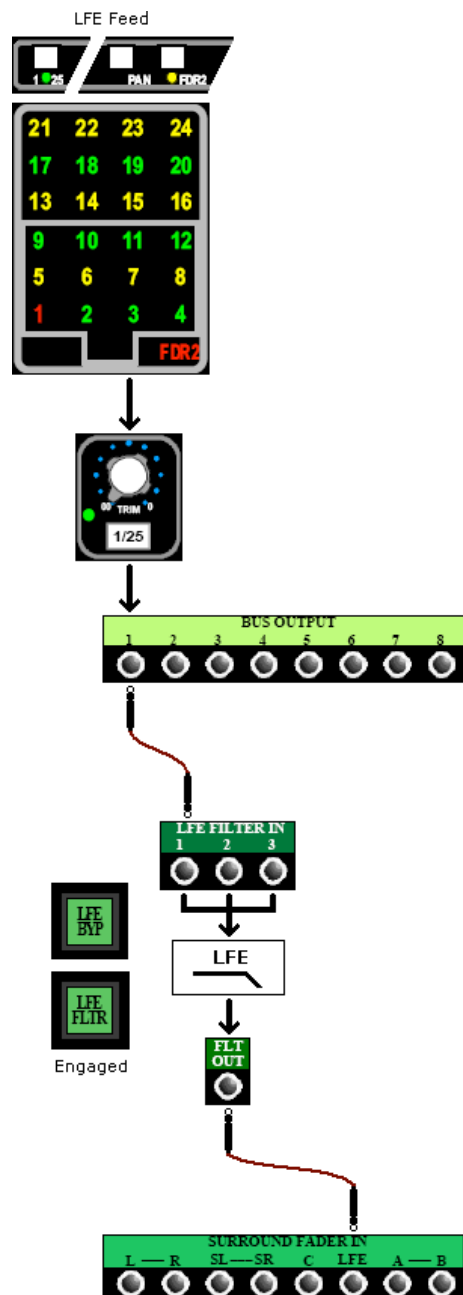
### 7.3.1.3 LFE Feed from Fader 2 and a Multitrack Summing Bus

Feeding the LFE from Fader 2 provides a LFE feed that follows the Fader 2 moves, without an independent level control.

To create a LFE feed from Fader 2 and a Multitrack Summing Bus, use the following procedure:

1. Patch the output of a Multitrack Summing Bus (BUS OUT) to one of the LFE Filter Input (FLT IN) patch points
2. Make sure the Multitrack Summing Bus Trim is turned on and turned up
3. Assign Fader 2 to the Multitrack Summing Bus on the desired channels
4. Engage the LFE BYP (LFE Bypass) button in the Center Section to remove the LFE from the Control Room monitor system
5. Engage the LFE FLTR (LFE Filter) button in the Center Section to activate the LFE Filter
6. Select the LFE frequency, 80 Hz (default) or 120 Hz
7. Patch the output of the FLT OUT (Filter Out) patch point to the LFE Master Fader input (LFE SURROUND FADER IN) patch point

The diagram below shows the routing for a LFE feed from Fader 2 and Multitrack Summing Bus 1.



In this scenario, Fader 2 is assigned to feed Multitrack Summing Bus 1, which feeds the LFE Filter. The output of the LFE Filter feeds the LFE Surround Master Fader, associated booster, and output to the SURROUND FEED to the 8Track surround mix recorders and Control Room Monitors (if 5.1 PGM is selected as the monitor source).

Fader 2 can be fed from the Fader 1 output by engaging the FDR1 switch on the desired channels. This allows Fader 2 to be used as an automated LFE send.

If Fader 2 is also feeding the 5-channel Surround Program Bus, the LFE feed will be proportionate to the 5-channel program feed.

The LFE Filter is bypassed in the Control Room monitor system.

*NOTE: With the LFE bypassed in the Control Room monitors as described above, Bass Management will not be active when monitoring Surround Playback sources.*

#### **7.3.1.4 LFE Feed from an Unfiltered External Source**

The LFE program output can be created from an unfiltered external source (such as a DAW).

To use an unfiltered external LFE source, use the following procedure:

1. Patch the output of the source to one of the LFE Filter Input (FLT IN) patch points
2. Engage the LFE BYP (LFE Bypass) button in the Center Section to remove the LFE from the Control Room monitor system
3. Engage the LFE FLTR (LFE Filter) button in the Center Section to activate the LFE Filter
4. Select the LFE frequency, 80 Hz (default) or 120 Hz
5. Patch the output of the FLT OUT (Filter Out) patch point to the LFE Master Fader input (LFE SURROUND FADER IN) patch point

In this scenario, the LFE Filter is fed from the unfiltered external source. The output of the LFE Filter feeds the LFE Surround Master Fader, associated booster, and output to the SURROUND FEED to the 8Track surround mix recorders and Control Room Monitors (if 5.1 PGM is selected as the monitor source). The LFE Filter is bypassed in the Control Room monitor system.

#### **7.3.1.5 LFE Feed from a Filtered External Source**

The LFE program output can be created from a properly filtered external source (such as a DAW).

To use a filtered external LFE source, use the following procedure:

1. Patch the output of the source to the LFE Master Fader input (LFE SURROUND FADER IN) patch point
2. Engage the LFE BYP (LFE Bypass) button in the Center Section to remove the LFE from the Control Room monitor system

In this scenario, the LFE Surround Master Fader is fed from the filtered external source. The output of the LFE Master Fader is fed to its associated booster and output to the SURROUND FEED to the 8Track surround mix recorders and Control Room Monitors (if 5.1 PGM is selected as the monitor source). The LFE Filter is bypassed in the Control Room monitor system.

### **7.4 A/B Feed and Master**

The A/B Surround Program Busses are used for 7.1 mixing.

An A/B Master Fader is fitted on some consoles to support the two extra channels needed for a 7.1 mix. However, audio is NOT routed to the A/B Master Fader unless it is patched. In other words, the Surround Program output will not have A/B channels unless they are created through routing and patching!

There are no A/B Program Busses or ACAs. There is no access to the A/B program outputs from the channel or E1068L pan-pots.

*NOTE: While two of the SURROUND ACA OUT patch points are labeled "A/B," there are no A/B ACAs.*

#### **7.4.1 Creating A/B Feeds for 7.1 Surround Program Outputs**

A/B channels for 7.1 Surround Program outputs may be created in several ways:

- Via a stereo Auxiliary Send
- Via a pair of Multitrack Summing Busses fed by Fader 1 or Fader 2
- Using an external A/B or stereo source

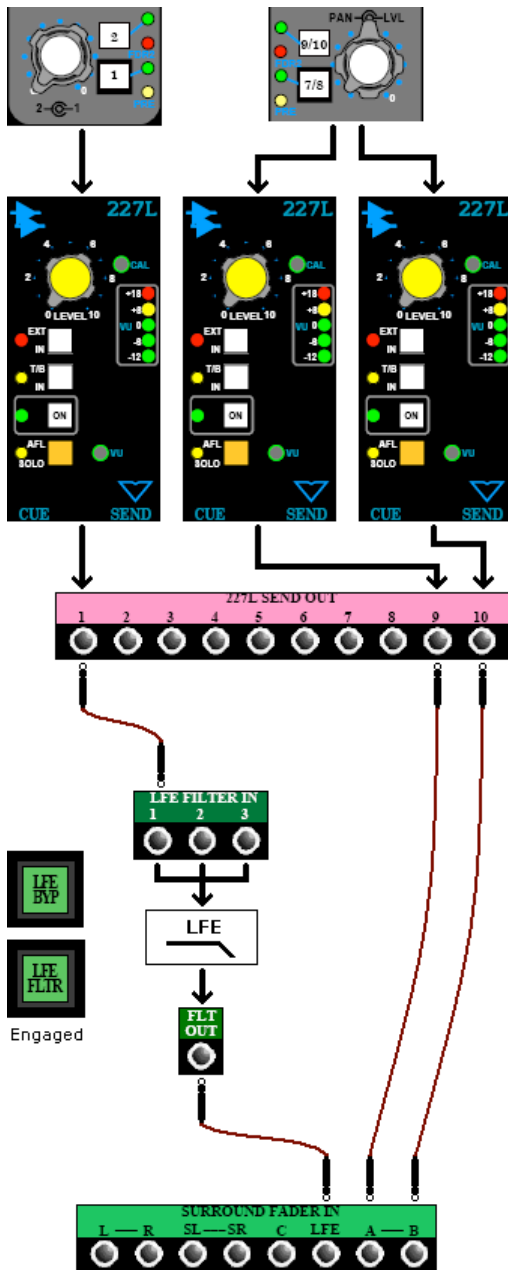
#### 7.4.1.1 A/B Feed from a Stereo Auxiliary Send

Feeding the A/B program outputs from a stereo Auxiliary Send provides an A/B feed that can follow fader moves (Post) or operate independently (Pre). In either case, individual panning and level controls are provided from each channel.

To create an A/B feed from a Stereo Auxiliary Send, use the following procedure:

1. Patch the outputs of the selected Auxiliary Sends (227L SEND OUT) to the A/B Master Fader input (A/B SURROUND FADER IN) patch points
2. Make sure the corresponding 227L Cue Send masters are turned on and turned up

The diagram below shows the routing for A-B feed from stereo Auxiliary Send 9/10 and a LFE feed from mono Auxiliary Send 1.



In this scenario, mono Auxiliary Send 1 feeds the LFE Filter. The output of the LFE Filter feeds the LFE Surround Master Fader.

Stereo Auxiliary Send 9/10 feeds the A/B Surround Master Fader.

The Master Faders feed the associated boosters and outputs to the SURROUND FEED to the 8Track surround mix recorders and Control Room Monitors (if 5.1 PGM is selected as the monitor source).

The LFE Filter is bypassed in the Control Room monitor system.

**NOTE:** With the LFE bypassed in the Control Room monitors as described above, Bass Management will not be active when monitoring Surround Playback sources.

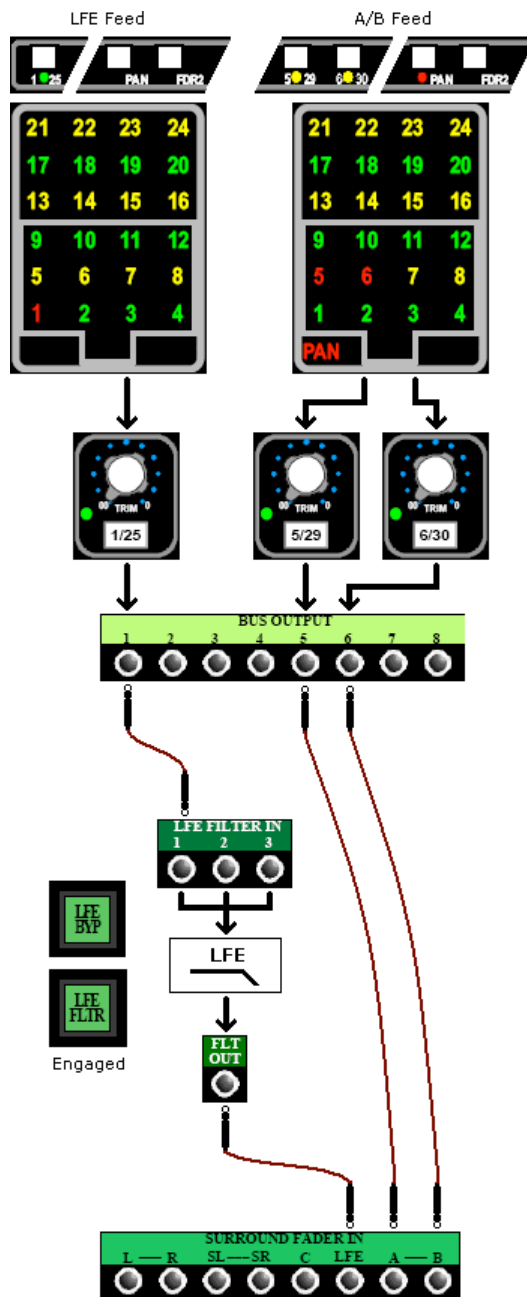
#### 7.4.1.2 A/B Feed from Fader 1 and a Pair of Multitrack Summing Busses

Feeding the A/B program outputs from Fader 1 provides an A/B feed that follows the Fader 1 moves, without an independent level control.

To create an A/B feed from Fader 1 and a Multitrack Summing Bus, use the following procedure:

1. Patch the output of a pair of Multitrack Summing Busses (BUS OUT) to the A/B Master Fader input (A/B SURROUND FADER IN) patch points
2. Make sure the Multitrack Summing Bus Trims are turned on and turned up
3. Assign Fader 1 to the selected Multitrack Summing Busses on the desired channels

The diagram below shows the routing for Fader 1 feeding an A-B feed from Multitrack Summing Busses 5-6 and a LFE feed from Multitrack Summing Bus 1.



In this scenario, Fader 1 is assigned to feed Multitrack Summing Bus 1, which feeds the LFE Filter. The output of the LFE Filter feeds the LFE Surround Master Fader.

Fader 1 is also assigned to feed Multitrack Summing Busses 5 and 6, which feeds the A/B Surround Master Fader. The Pan-pot is also engaged on these channels to facilitate panning between the 5 and 6 busses (A and B channels).

The Master Faders feed the associated boosters and outputs to the SURROUND FEED to the 8Track surround mix recorders and Control Room Monitors (if 5.1 PGM is selected as the monitor source).

If Fader 1 is also feeding the 5-channel Surround Program Bus, the A/B and LFE feed will be proportionate to the 5-channel program feed.

The LFE Filter is bypassed in the Control Room monitor system.

*NOTE: With the LFE bypassed in the Control Room monitors as described above, Bass Management will not be active when monitoring Surround Playback sources.*

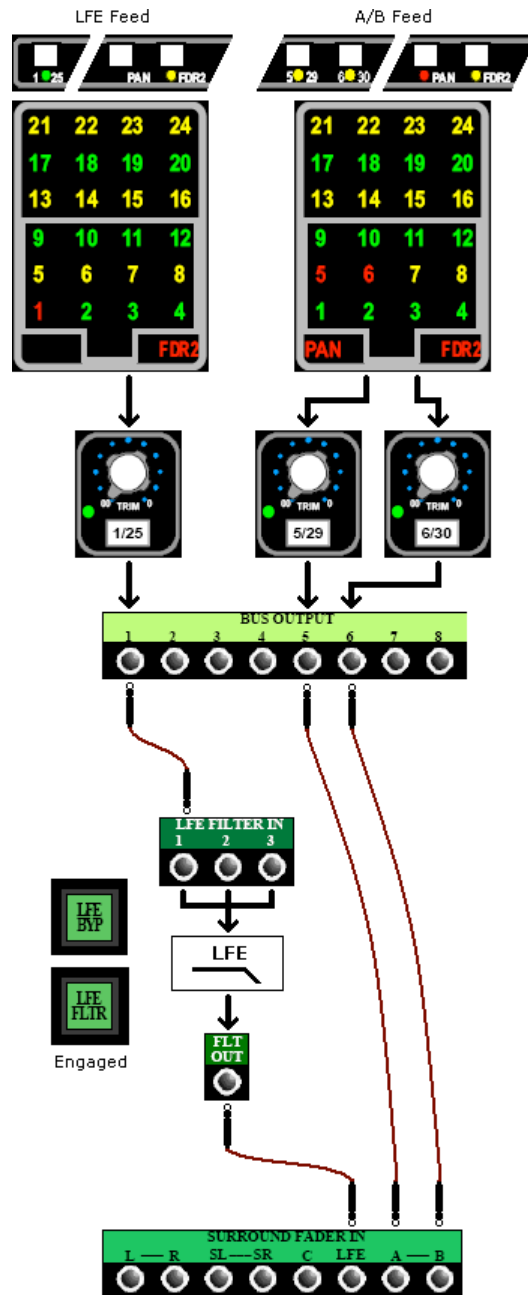
### 7.4.1.3 A/B Feed from Fader 2 and a Pair of Multitrack Summing Busses

Feeding the A/B program outputs from Fader 2 provides an A/B feed that follows the Fader 2 moves, without an independent level control.

To create an A/B feed from Fader 1 and a Multitrack Summing Bus, use the following procedure:

1. Patch the output of a pair of Multitrack Summing Busses (BUS OUT) to the A/B Master Fader input (A/B SURROUND FADER IN) patch points
2. Make sure the Multitrack Summing Bus Trims are turned on and turned up
3. Assign Fader 2 to the selected Multitrack Summing Bus on the desired channels

The diagram below shows the routing for Fader 2 feeding an A-B feed from Multitrack Summing Busses 5-6 and a LFE feed from Multitrack Summing Bus 1.



In this scenario, Fader 2 is assigned to feed Multitrack Summing Bus 1, which feeds the LFE Filter. The output of the LFE Filter feeds the LFE Surround Master Fader.

Fader 2 is also assigned to feed Multitrack Summing Busses 5 and 6, which feeds the A/B Surround Master Fader. The Pan-pot is also engaged on these channels to facilitate panning between the 5 and 6 busses (A and B channels).

The Master Faders feed the associated boosters and outputs to the SURROUND FEED to the 8Track surround mix recorders and Control Room Monitors (if 5.1 PGM is selected as the monitor source).

Fader 1 can be fed from the Fader 1 output by engaging the FDR1 switch on the desired channels. This allows Fader 2 to be used as an automated LFE send.

If Fader 2 is also feeding the 5-channel Surround Program Bus, the A/B and LFE feed will be proportionate to the 5-channel program feed.

The LFE Filter is bypassed in the Control Room monitor system.

**NOTE:** With the LFE bypassed in the Control Room monitors as described above, Bass Management will not be active when monitoring Surround Playback sources.

#### 7.4.1.4 A/B Feed from an External Source

The A/B program output can be created from an external source (such as a DAW).

To use an external A/B source, use the following procedure:

1. Patch the outputs of the external source to the A/B Master Fader input (A/B SURROUND FADER IN) patch points

In this scenario, the A/B Surround Master Fader is fed from the external source. The output of the A/B Master Fader is fed to its associated booster and output to the SURROUND FEED to the 8Track surround mix recorders and Control Room Monitors (if 5.1 PGM is selected as the monitor source).

### 7.5 5.1 and 7.1 Master Faders

Although all Vision consoles have only five (5) surround program mix busses and ACAs, each console is fully equipped with either 5.1 or 7.1 Surround Master Faders and surround program outputs.

The Surround Master Faders may be fitted in one of two configurations:

- 5.1 with 5.1 Control Master Fader
- 7.1 with A/B Master Fader

The 5.1 Master Fader package has audio Master Faders for the Left/Right, Center, LFE, Left Surround/Right Surround Busses. The last fader is a 5.1 Control Group Master (5.1). An A/B Master Fader is not included in this configuration.

The 7.1 configuration is the same as 5.1 except a console configured for 7.1 mixing will have an audio master fader for the A/B Surround Program. A 5.1 Control Group Master Fader is not included in this configuration.

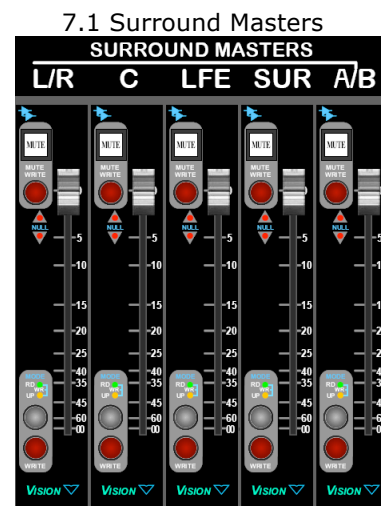
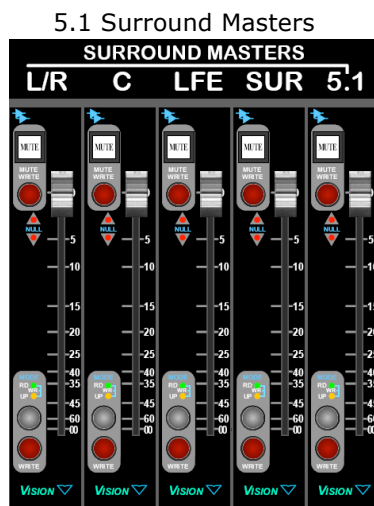
*NOTE: One of the six (6) Control Group Master Faders may be assigned to the 7.1 Program Master Faders if a Surround Program Control Group Master is needed.*

On a console configured for 5.1 mixing, there are four (4) Master Faders that support the six (6) 5.1 Surround Program outputs and a 5.1 Control Group Master Fader.

The 5.1 Surround Program outputs are assigned to a Master Fader in the following groupings:

- L/R: Left and Right
- C: Center
- LFE: LFE
- SUR: Left Surround and Right Surround (SUR)
- 5.1: 5.1 (Surround Control Group Master Fader)

A 5.1 Group Master Fader is installed where the A/B Master Fader is located in a 7.1 configuration. This 5.1 Group Master Fader is a control device only and does not pass audio. It controls the L/R, C, LFE, and SUR Master Faders for surround program fades.



On a console configured for 7.1 mixing, there are five (5) Master Faders that support the eight (8) Surround Program outputs. There is no Control Group Master Fader for the 7.1 Surround Program outputs in this configuration.

The 7.1 Surround Program outputs are assigned to a Master Fader in the following groupings:

- L/R: Left and Right
- C: Center
- LFE: LFE
- SUR: Left Surround and Right Surround (SUR)
- A/B: A/B surround outputs

## 7.6 Surround to Stereo Fold Down (Lt-Rt Fold Down Matrix)

A 7.1 surround to stereo fold down matrix is provided in every Vision console. This matrix allows a stereo mix to be automatically created from the Surround Program while the surround mix is being made.



The controls for the Lt Rt Fold Down Matrix function as follows:



Balance: Left/Right balance control for the Front Left and Right matrix feeds

L/R (Left/Right): Level control for the Front Left and Right channel contributions to the Lt Rt Fold Down



Center: Level control for the Center channel contribution to the Lt Rt Fold Down



LFE: Level control for the LFE channel contribution to the Lt Rt Fold Down



Balance: Left/Right balance control for the Rear Left and Right matrix feeds

SL/SR (Surround Left/Surround Right): Level control for the Rear Left and Right channel contributions to the Lt Rt Fold Down





Balance: Left/Right balance control for the A and B matrix feeds

A-B: Level control for the A and B channel contributions to the Lt Rt Fold Down



MASTER LEVEL: Master Left-total Right-total (Lt Rt) output level control

- Feeds the Lt Rt routing switches
- Feeds the Lt Rt OUT patch points when not CUT



INPUT EXT (External Input): Activates the Lt Rt Fold Down External Input

- Fed from the EXT Lt Rt INPUT patch points
- Illuminates in white when engaged



OUTPUT TO GM (Output To Grand Master): Routes the output from the Lt Rt Fold Down Matrix to the Grand Master Bus

- Fed from the Lt Rt MASTER LEVEL output
- Illuminates in white when engaged



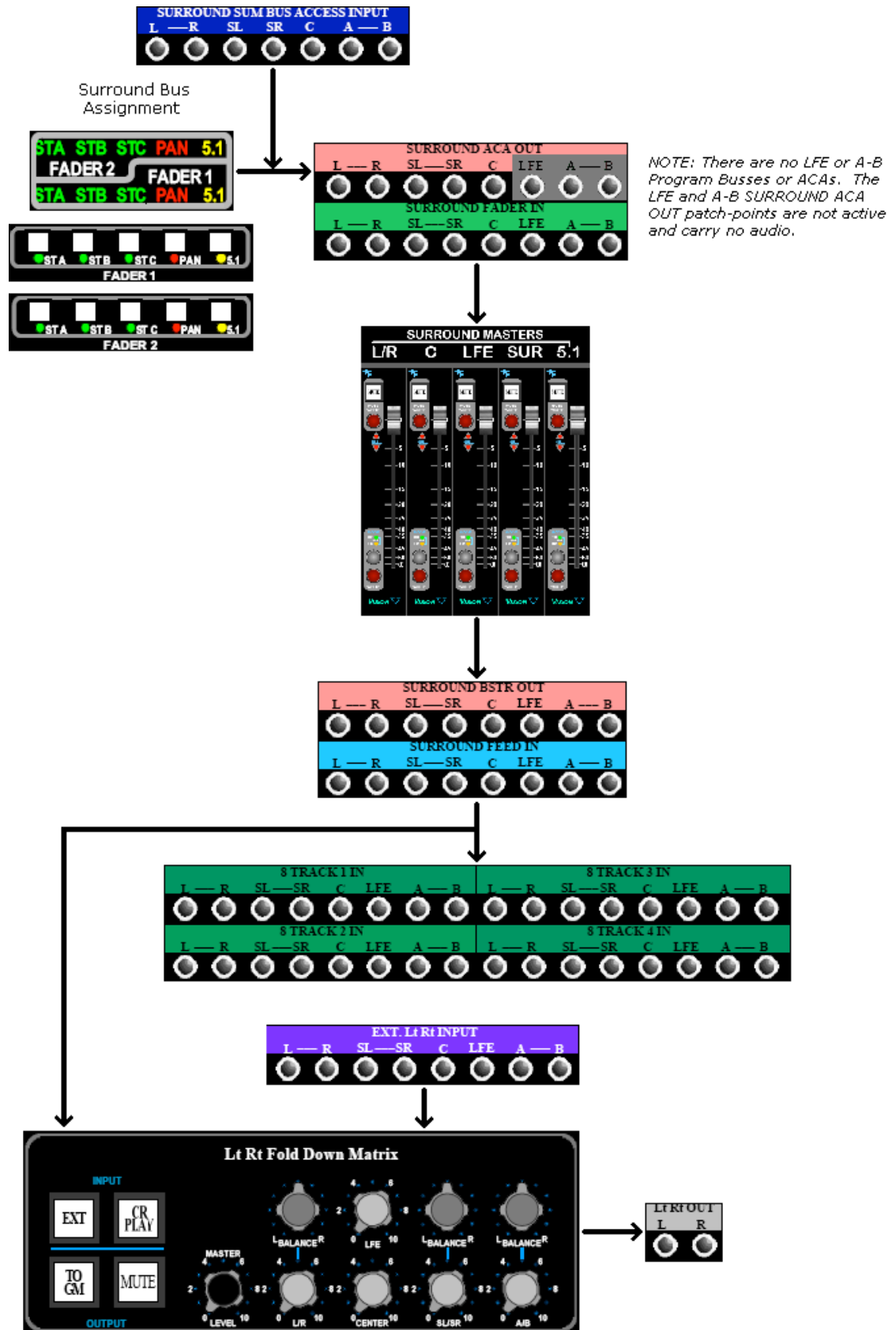
OUTPUT MUTE: mutes the output from the Lt Rt Fold Down Matrix

- Fed from the Lt Rt MASTER LEVEL output
- Illuminates in white when engaged

## 7.7 Surround Signal Flow

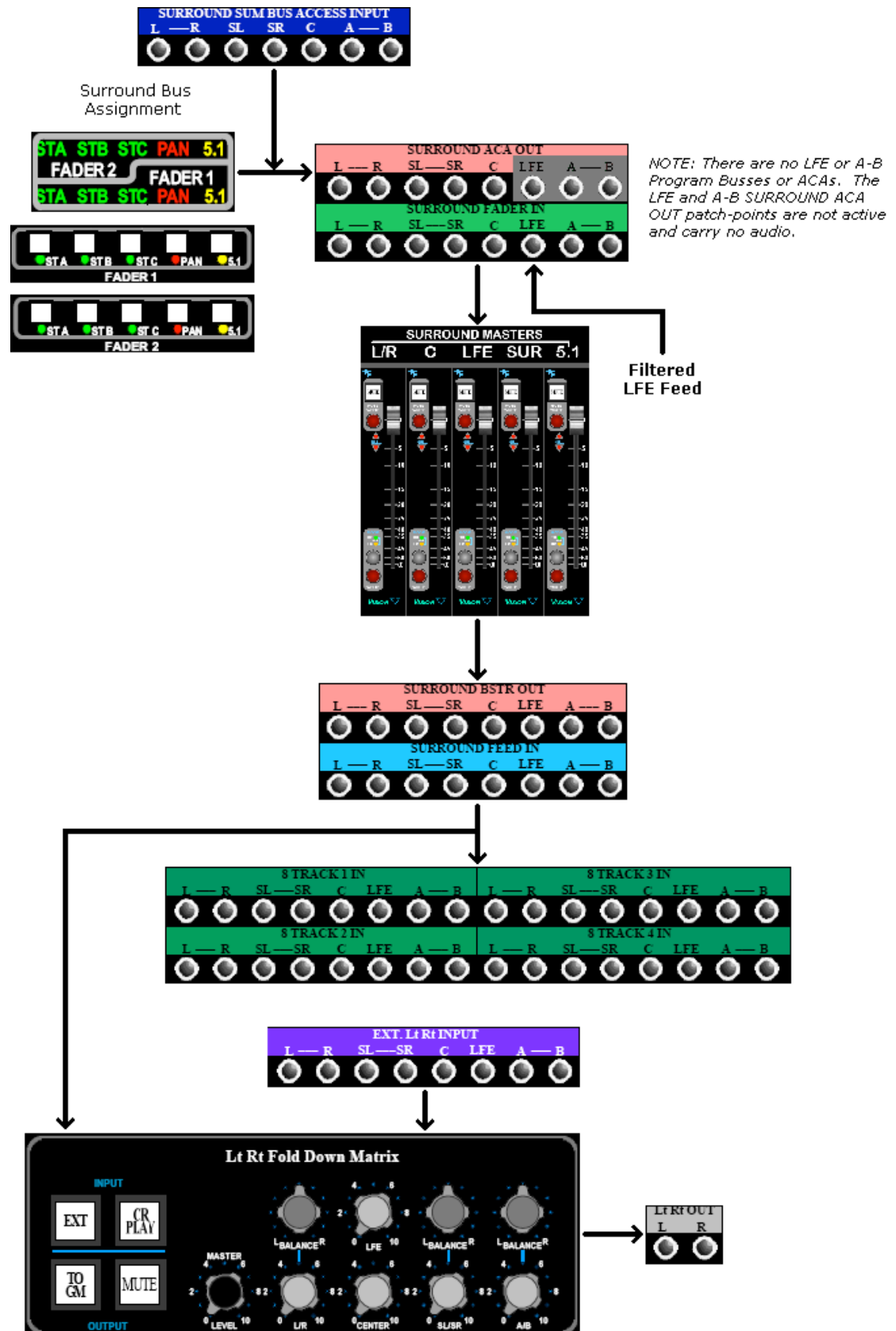
### 7.7.1 5.0 Surround Signal Flow without LFE

The diagram below shows the basic five-channel Surround Program signal flow, from the channel Surround Bus Assignment to the 8Track Feed and Lt Rt Fold Down. No LFE or A/B program outputs are included.



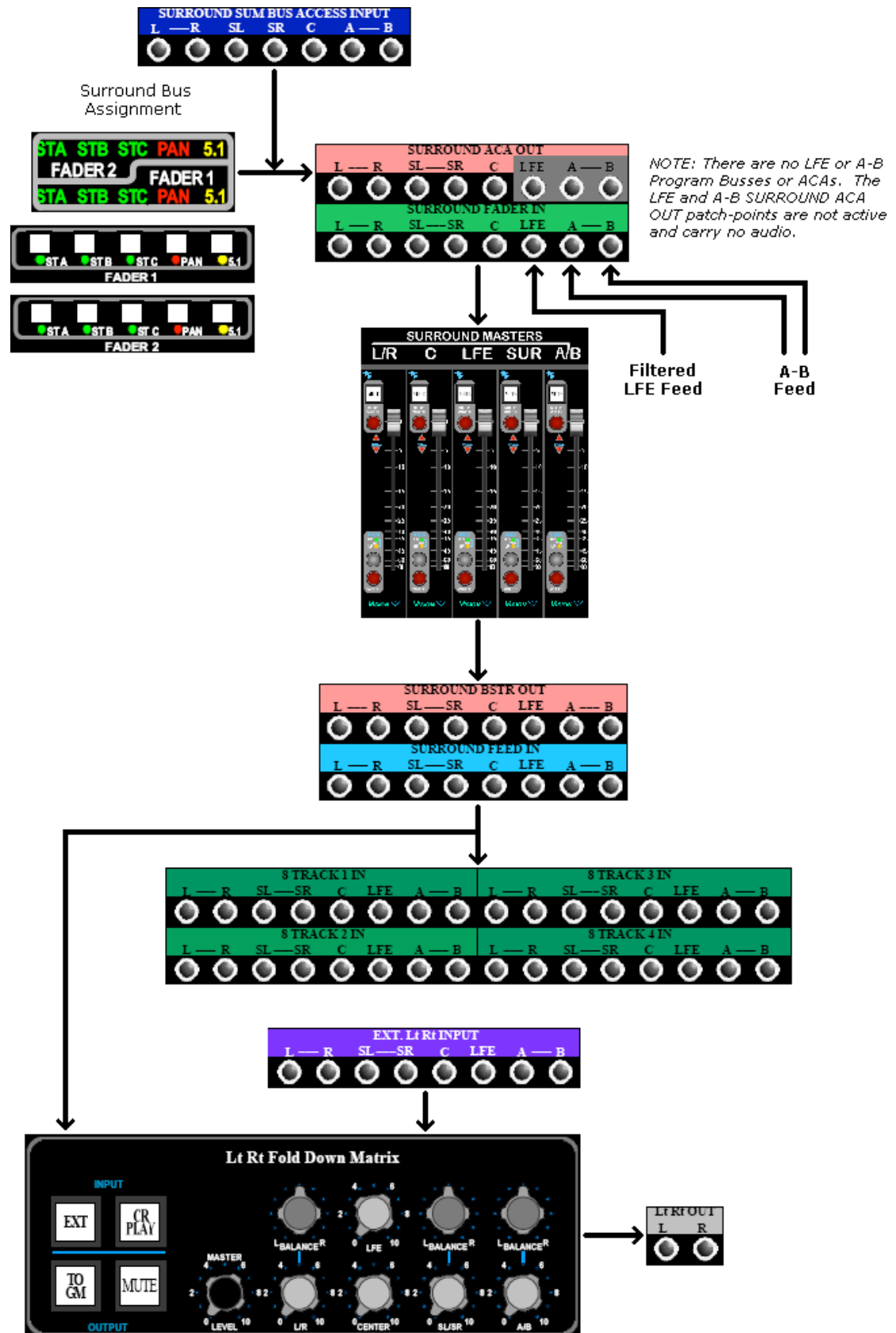
## 7.7.2 5.1 Surround Signal Flow with LFE

The diagram below shows a 5.1 Surround Program signal flow, including a LFE Program output. A LFE feed may be created by patching the output of a mono Auxiliary Send or a Multitrack Summing Bus to the LFE SURROUND FADER IN patch-point. No A/B Program outputs included.



### 7.7.3 7.1 Surround Signal Flow with LFE and A/B

The diagram below shows a 7.1 Surround Program signal flow, including LFE and A/B Program output. The LFE and A/B feeds may be created by patching the output of Auxiliary Sends or a Multitrack Summing Busses to the LFE and A/B SURROUND FADER IN patch-points.

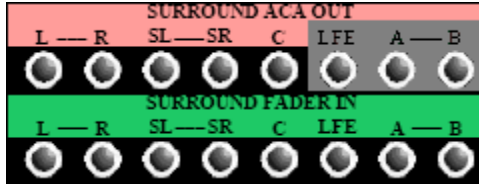


## 7.8 Surround Program Patch Points



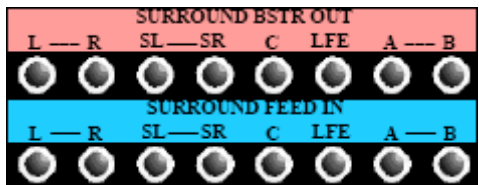
SURROUND SUM BUS ACCESS INPUT: Surround Summing Bus Access Inputs

- Normalled to the Surround Program busses
- Signals patched into the SURROUND SUM BUS ACCESS INPUT patch points will be added to the bus before the Surround Program ACAs



SURROUND ACA OUT: Surround Active Combining Amplifier outputs

- Half-normalled to SURROUND FADER IN
- There is no LFE or A-B Program Bus or ACA
- The LFE and A-B SURROUND ACA OUT patch points are not connected and carry no audio

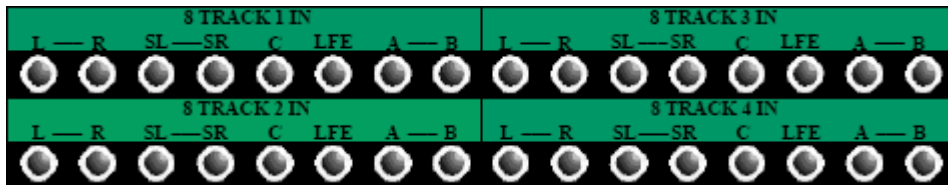


SURROUND BSTR OUT: Surround Booster outputs

- Half-normalled to SURROUND FEED IN

SURROUND FEED IN:

- Distributed feed to four (4) 8-track recorders
- Half-normalled from SURROUND BSTR OUT
- Half-normalled to 8TRACK IN 1-4
- Patching to these points will replace the feed to the 8-track surround recorders with the patch cord signal



8TRACK1 IN: Input to 8-track surround recorder #1

- Half-normalled from SURROUND FEED IN

8TRACK2 IN: Input to 8-track surround recorder #2

- Half-normalled from SURROUND FEED IN

8TRACK3 IN: Input to 8-track surround recorder #3

- Half-normalled from SURROUND FEED IN

8TRACK4 IN: Input to 8-track surround recorder #4

- Half-normalled from SURROUND FEED IN

Patching to these points will replace the feed to the 8-track surround recorder with the patch cord signal.



EXT. Lt Rt INPUT: External surround inputs to the Lt Rt Fold Down Matrix

- Feeds the Lt Rt Fold Down Matrix
- Active when the EXT switch is engaged on the Lt Rt Fold Down Matrix



Lt Rt OUT (Left Total- Right Total Output): Output of the Lt Rt Fold Down Matrix

- May be routed to the Grand Master Program Bus when the TO GM switch is engaged on the Lt Rt Fold Down Matrix

## 8.0 Auxiliary, Busses, Masters, Signal Flow, and Patch Points

The Vision console provides a powerful Auxiliary Send system that provides a comprehensive set of options for Cue and Effects Sends.

There are ten (10) Auxiliary Sends (Aux Sends):

- Six (6) Mono (1-6)
- Two (2) Stereo (7/8 and 9/10)

All ten Auxiliary Sends may be routed from:

- Pre or Post fader
- Fader 1 or Fader 2 audio paths

The Auxiliary source assignments maybe stored and recalled using the recall system. The channel Auxiliary Send On/Off switches may be automated.

Aux Sends 1-6 are primarily used as Effects Sends during recording and mixing, but may be also be used as Cue Sends during recording if needed.

Aux Sends 7/8 and 9/10 are intended for use as Cue Sends during recording and as stereo Effects Sends during mixing. The following sources may be added to the 7/8 and 9/10 Auxiliary Busses:

- Grand Master output
- Lt Rt Fold Down Matrix output

Aux Sends 7/8 and 9/10 have the same source routing.

Only one Stereo Auxiliary Send (7/8 or 9/10) may be used at one time. In other words, both Stereo Auxiliary Sends cannot be used simultaneously on the same channel.

Talk Back may be added to any Auxiliary Send as needed.

Aux Sends 9/10 may be routed to Multitrack Summing Busses 1-8 to provide addition summing outputs.

*NOTE: When Aux Sends 9/10 are routed to the Multitrack Summing Busses, the feed to Auxiliary Bus 9/10 from that channel is defeated.*

### 8.1 Auxiliary Busses

Each Auxiliary Send is supported by its own Auxiliary Bus (1-10)

For routing and operational purposes, the Auxiliary Sends are organized in four groups:

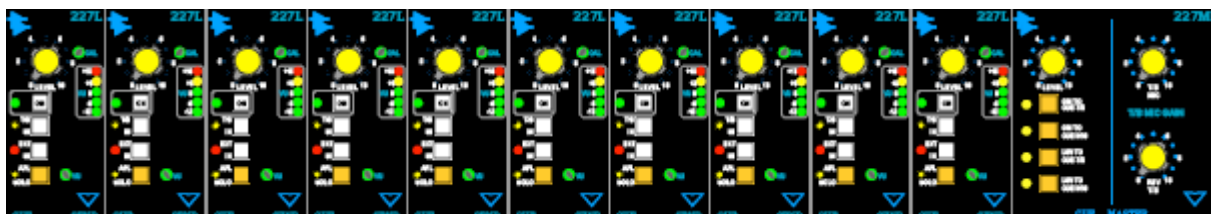
- 1 and 2
- 3 and 4
- 5 and 6
- 7/8 and 9/10

*NOTE: Aux Sends 7/8 and 9/10 follow the same routing.*

Each of the Auxiliary Send feeds its respective Auxiliary Summing Bus. The output of these Busses is fed to the corresponding 227L module in the Center Section.

### 8.2 Auxiliary Send Masters

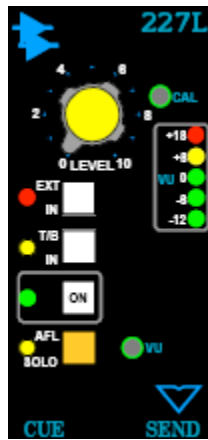
A 227L CUE SEND module provides master functions for each Auxiliary Send. A single 227M CUE MASTER module provides Talk Back and Cue routing options. Ten (10) 227L modules and a 227M module are installed in the Center Section.



### 8.2.1 227L Cue Send Module

On the 227L module, an External Input source may be selected and Talk Back may be added. On/Off, Output Level, Solo controls and a meter are also included on the 227L module.

The output of the 227L modules feed the 227L SEND OUT patch points, which may be patched to feed studio cue systems, effects devices, or other destinations.



#### Features

The 227L Cue Send module provides the following features:

- On/Off switch
- Level Control
- External Input
- Talk Back injection
- AFL Solo
- LED VU Meter
- Output calibration
- VU Meter calibration

The 227L controls function as follows:



ON (On/Off switch): Activates the 227L module

- A green LED indicator illuminates when engaged



LEVEL: Output level control

- Feeds the 227L SEND OUT patch points
- A green LED indicator illuminates when engaged



EXT IN (External Input): Activates the 227L External Input

- Adds the signal from the External Input patch points (227L Send EXT. IN) to the Aux Send audio when engaged
- A red LED indicator illuminates when engaged



T/B IN (Talk Back Input): Routes Talk Back to the Aux Send

- Adds the Talk Back output from the 227M Module to the Aux Send audio when engaged
- A yellow LED indicator illuminates when engaged

*NOTE: Talk Back level is controlled on the 227M Module.*



AFL SOLO: Activates the AFL (After Fader Listen) solo function

- Feeds the stereo Solo Bus when engaged
- Non-destructive
- A yellow LED indicator illuminates when engaged

*NOTE: AFL Solo level is controlled in the Center Section.*

*NOTE: When the AFL SOLO switch is engaged the SOLO CLR button in the Center Section will flash indicating a solo is engaged. HOWEVER, pressing the SOLO CLR button will not clear AFL SOLO on the 227L modules since the 227L solo switches are hard switches, not soft switches.*



VU (Meter): LED meter indicates Aux Send output level



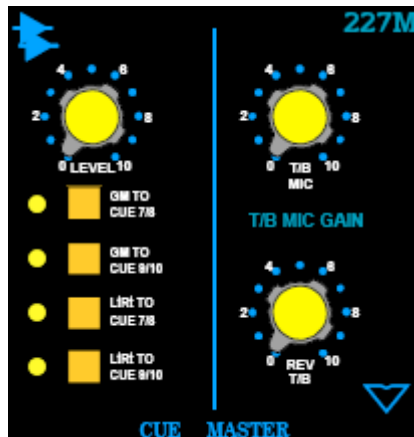
VU (Calibration): Calibration trim-pot for the Aux Send VU Meter

CAL (Calibration): Output calibration trim-pot for the Aux Send

### 8.2.2 227M Cue Master Module

The two Stereo Auxiliary Sends (7/8 and 9/10) are designed to be used as Cue Sends for headphone feeds while recording and as Effects Sends while mixing.

The 227M CUE MASTER module facilitates the routing of the outputs of the Grand Master and Lt Rt Fold Down Matrix to the Stereo Auxiliary Sends (7/8 and 9/10).



The following sources may be added to the 7/8 and 9/10 Aux Busses:

- Grand Master output
- Lt Rt Fold Down Matrix output

This is used primarily to send the selected Program mix(es) to the headphones while recording. Sends from individual channels may be added to the Program mix(es). This can be very handy for creating quick cue mixes with ability to reinforce certain tracks as needed.

The 227M also contains the preamps for the two (2) Talk Back microphones:

- Talk Back Mic (Internal): A mic is mounted in the Meter Bridge for Control Room Talk Back
- Reverse Talk Back (External): An input for an external microphone is provided for Studio Talk Back

*NOTE: Refer to the 12.0 Talk Back section later in this manual for detailed Talk Back information.*

The 227M controls function as follows:



LEVEL: Stereo Master level control

- Feeds the 227L SEND OUT patch points
- A green LED indicator illuminates when engaged



GM TO CUE 7/8: Adds the stereo Grand Master output to Aux Busses 7 and 8

- A yellow LED indicator illuminates when engaged



GM TO CUE 9/10: Adds the output of the Stereo Grand Master to Aux Busses 9 and 10

- A yellow LED indicator illuminates when engaged



Lt Rt TO CUE 7/8: Adds the output of the Lt Rt Fold Down Matrix to Aux Busses 7 and 8

- A yellow LED indicator illuminates when engaged



Lt Rt TO CUE 9/10: Adds the output of the Lt Rt Fold Down Matrix to Aux Busses 9 and 10

- A yellow LED indicator illuminates when engaged





T/B MIC (Talk Back Microphone): Level control for the internal Talk Back microphone preamplifier

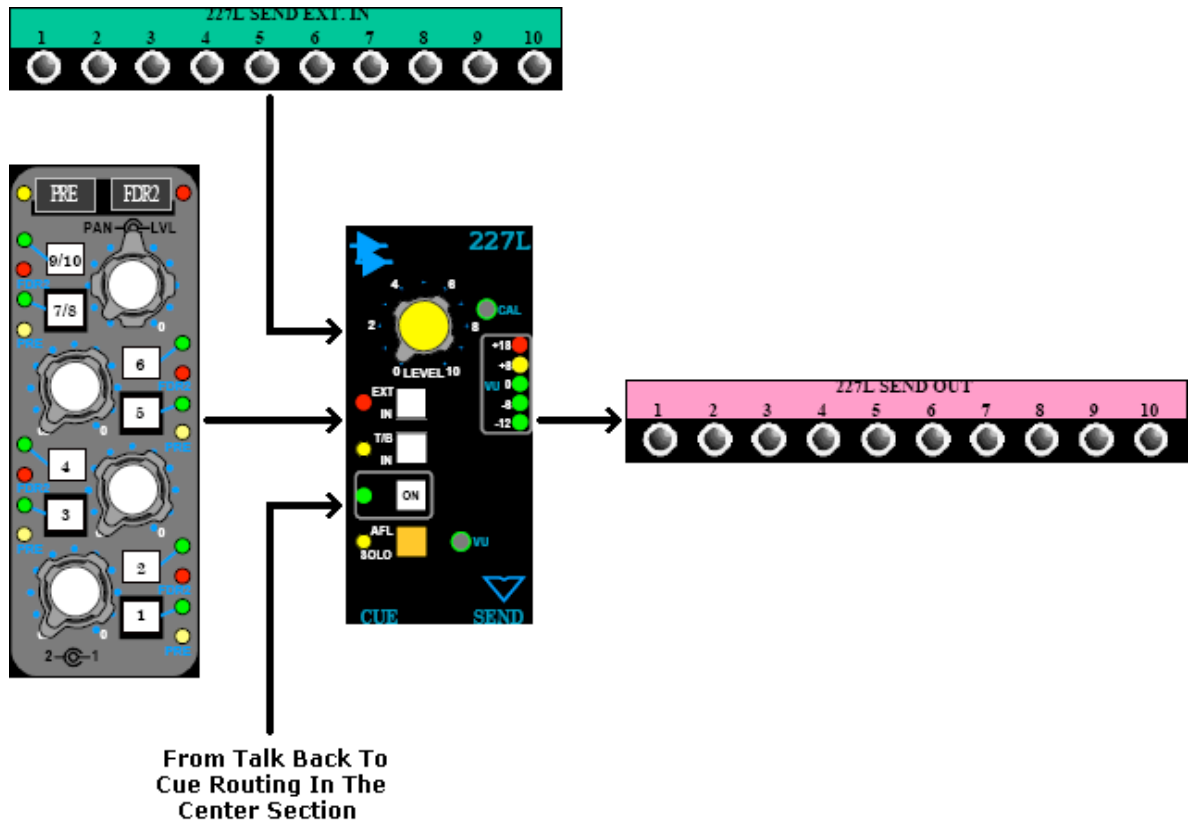
- The internal Talk Back microphone is located in the Meter Bridge
- The output of the Talk Back microphone preamp is routed to the Talk Back controls in the Center Section for further distribution

REV T/B (Reverse Talk Back): Level control for the Reverse Talk Back microphone preamplifier

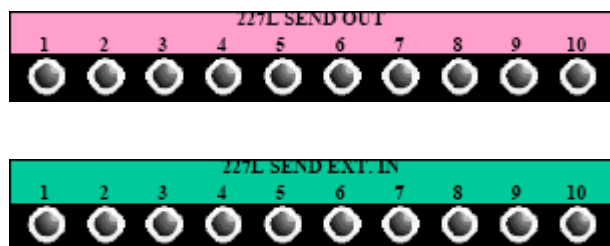
- An input for an external Talk Back microphone for Studio Talk Back is provided
- The output of the Reverse Talk Back microphone preamp is routed to the Talk Back controls in the Center Section for further distribution

### 8.3 Auxiliary Send Signal Flow

The diagram below shows the basic Auxiliary Send signal flow.



### 8.4 Auxiliary Send Patch Points



227L SEND OUT: Output of the 227L Cue Send modules

227L SEND EXT. IN (External Input): External inputs to the 227L modules

- Active when the EXT IN switch is engaged on the 227L module

## 9.0 Options Bucket

The Options Bucket is located on the right-hand side of the Center Section. It has 42 slots for API 200 Series modules. It can also accommodate the E1068L Stereo/Surround Return module for additional echo returns.

The Options Bucket can be fitted with the following modules:

- 205L Direct Input
- 212L Microphone Preamplifier
- 215L Sweep Filter
- 225L Compressor/Limiter
- 235L Noise Gate/Expander
- 550L 4-Band EQ
- 560L 10-Band Graphic EQ
- 525 Re-Issue Compressor
- 527 Compressor Limiter
- E1068L Stereo/Surround Return

Any combination of these modules may be installed.

When the Options Bucket is equipped with preamp modules (205L and/or 212L), the Upper 200 Slots in the channels are available for addition signal processing modules and may be fitted with such. If the channel Upper 200 Slots are equipped with preamps, the entire Options Bucket is available for signal processors and echo returns.

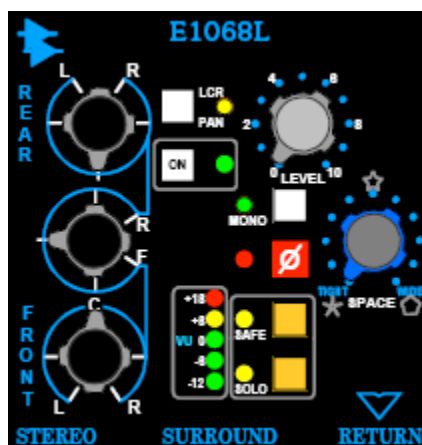
*NOTE: 500 Series modules do not fit in the Options Bucket.*

### 9.1 E1068L Stereo Surround Echo Return Module

The E1068L Stereo Surround Return module is a fully featured echo return with surround panning capabilities. It offers a powerful suite of controls that provides the flexibility to handle a wide range of applications.

As many as twenty-one (21) E1068L Echo Return modules can be installed in the Options Bucket.

*NOTE: The E1068L Stereo/Surround Return is two (2) units wide. Each one occupies two (2) 200 Slots in the Options Bucket and can not be fitted in a channel.*



#### Features

- On/Off switch
- Level control
- Stereo panning
- Surround panning
- Panning divergence control (Space)
- Mono/Stereo input
- Phase reverse (polarity inverter)
- Solo with Solo Safe
- LED VU Meter

Effects devices (or other sources) are patched to the E1068L input patch points (E1068L SURROUND RETURN).

The outputs of each E1068L feed the FX Return Surround ACAs, where the signals are summed and sent to the FX RETURN ACA OUTPUT patch points. The outputs of the FX Return Surround ACAs feed the FX RETURN SUR ACA OUT patch points only and do not directly feed the Program busses.

To feed the output of the E1068L Echo Returns to the program busses, patch the FX RETURN ACA OUTPUT patch points to the STEREO SUM BUS ACCESS IN or SURROUND SUM BUS ACCESS INPUT patch points.

The controls on the E1068L Stereo/Surround Return function as follows:



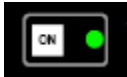
MONO: Sums the Left and Right inputs to the E1068L to mono

- A green LED indicator illuminates when engaged



Ø (Phase Reverse): Inserts a Phase Reverse (Polarity Inverter) at the E1068L inputs

- A red LED indicator illuminates when engaged



ON (On/Off switch): Activates the E1068L module

- A green LED indicator illuminates when engaged



LEVEL: Sets the E1068L output level

- Feeds the Effects Return Surround ACAs
- Feeds the Stereo and Surround Program Busses



REAR L-R: Left-Right Surround Pan-pot

- Sets the Rear Left-Right pan position

F/R (Front/Rear): Front-Rear Pan-pot

- Sets the Front/Rear pan position

FRONT L-R: Left-Right Stereo Pan-pot

- Sets the Front Left-Right pan position
- May function as a Left-Center-Right Pan-pot when the LCR switch is engaged
- Stereo Left-Right panning is selected by default



SPACE: Sets the amount of divergence in surround pan-pot

- Tight: Minimum divergence (pan-pot focus is more diffuse or softer)
- Wide: Maximum divergence (normal panning range)
- Affects the FRONT, F/R, and REAR L/R pan-pots



LCR PAN (Left Center Right): Activates Left-Center-Right panning

- Stereo Left-Right panning is selected by default
- Feeds front/center-panned audio to the Center Program Bus and removes the signal from the Left and Right Busses when engaged
- A yellow LED indicator illuminates when engaged



SOLO: Activates the AFL (After Fader Listen) solo function

- Feeds the stereo Solo Bus when engaged
- Non-destructive
- A yellow LED indicator illuminates when engaged

*NOTE: When the SOLO switch is engaged the SOLO CLR button in the Center Section will flash indicating a solo is engaged. HOWEVER, pressing the SOLO CLR button will not clear SOLO on the E1068L modules since the E1068L solo switches are hard switches, not soft switches.*



SAFE: Activates the Solo Safe mode

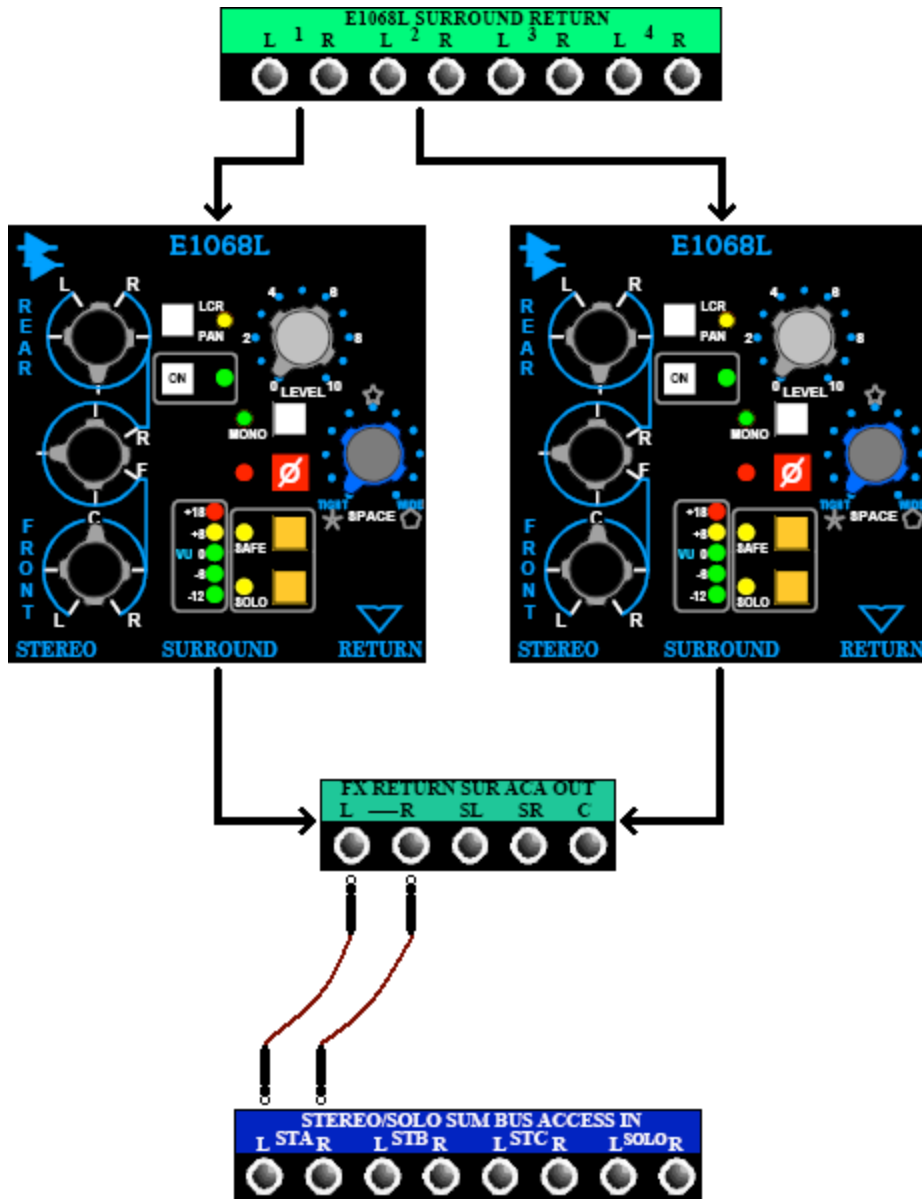
- The SAFE button protects the E1068L from being muted when the Solo-In-Place function is active and a channel is soloed
- A yellow LED indicator illuminates when engaged



VU (Meter): LED meter indicates E1068L output level

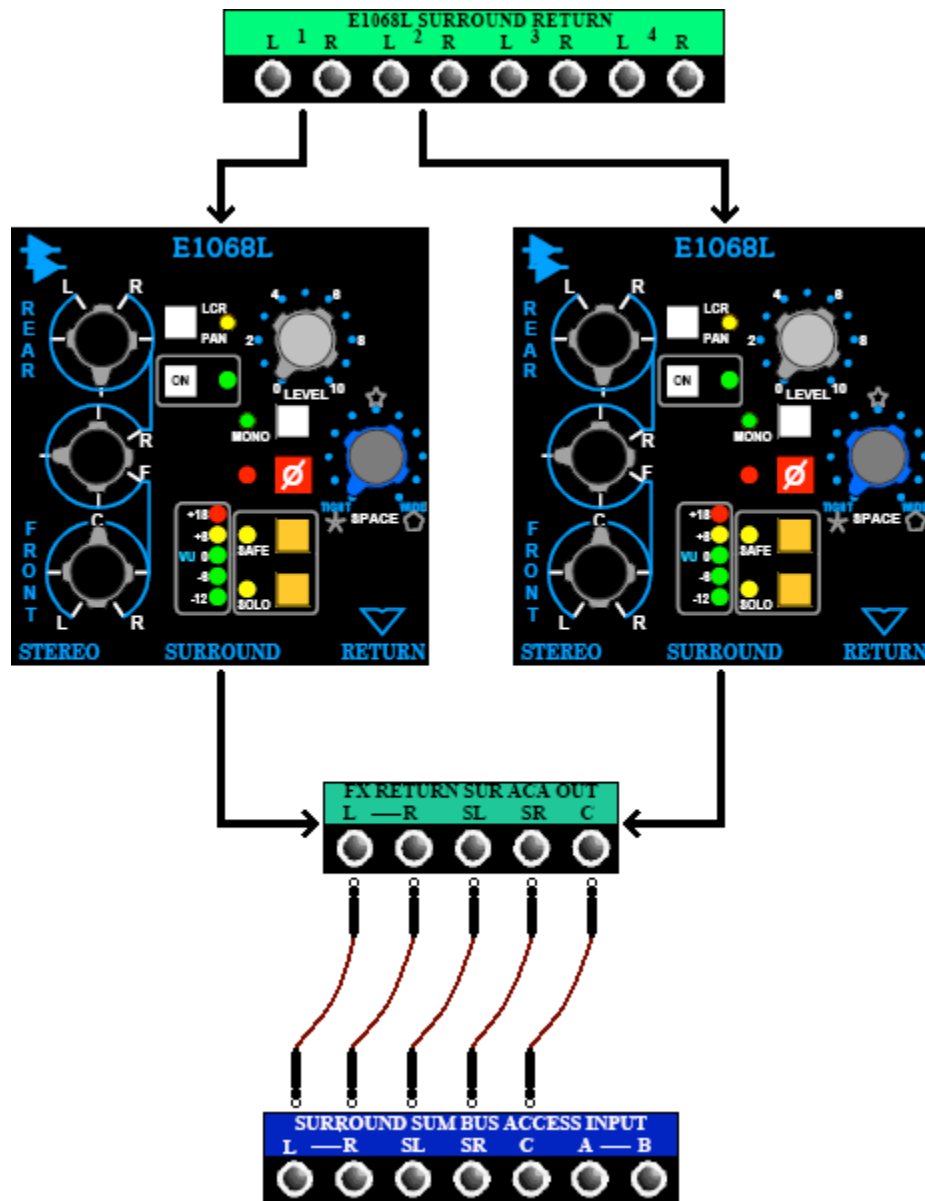
### 9.1.1.1 E1068L Signal Flow for Stereo Mixing

The diagram below shows an example of routing of E1068L Echo Returns outputs for stereo mixing applications. Two 1068L modules are shown in this example, but as many as twenty-one (21) 1068L modules can feed the FX Return Active Combining Amplifiers (ACA).

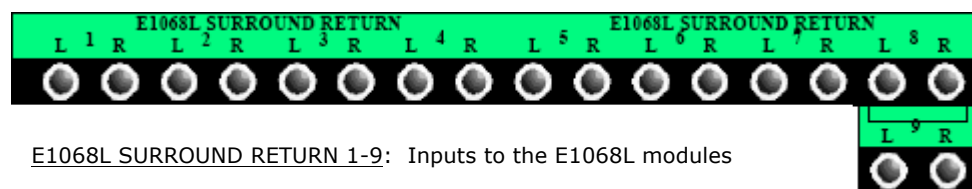


### 9.1.2 E1068L Signal Flow for Surround Mixing

The diagram below shows an example of routing of E1068L Echo Returns outputs for surround mixing applications. Two 1068L modules are shown in this example, but as many as twenty-one (21) 1068L modules can feed the FX Return Active Combining Amplifiers (ACA).



### 9.1.3 E1068L Patch Points



E1068L SURROUND RETURN 1-9: Inputs to the E1068L modules



FX RETURN SUR ACA OUT (Effects Return Surround ACA Output):  
Outputs from the Surround Effects Return ACAs

- All E1068L modules feed the Effects Return ACAs

## 9.2 Other Modules

The Options Bucket may also be fitted with the following modules:

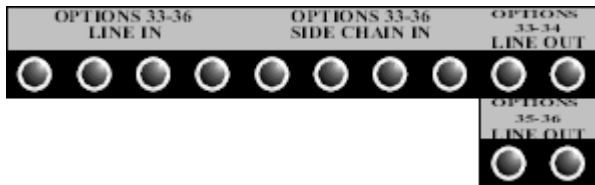
- 205L Direct Input
- 212L Microphone Preamplifier
- 215L Sweep Filter
- 225L Compressor/Limiter
- 235L Noise Gate/Expander
- 550A 3-Band EQ
- 550L 4-Band EQ
- 560L 10-Band Graphic EQ
- 525 Re-Issue Compressor
- 527 Compressor/Limiter

The Options Bucket for each Vision console is equipped and interfaced as specified by the owner. Refer to engineering staff and documentation for the specifics of each console.

The operation of these modules is covered earlier in the manual.

## 9.3 Options Bucket Patch Points

Patch points for 200 Slot modules in the Options Bucket may appear in the patch bay in various configurations.



OPTIONS LINE IN: Options Bucket 200 Slot Input

- Half-normalled to OPTIONS SIDE CHAIN IN

OPTIONS SIDE CHAIN IN: Options Bucket 200 Slot Side-chain Input

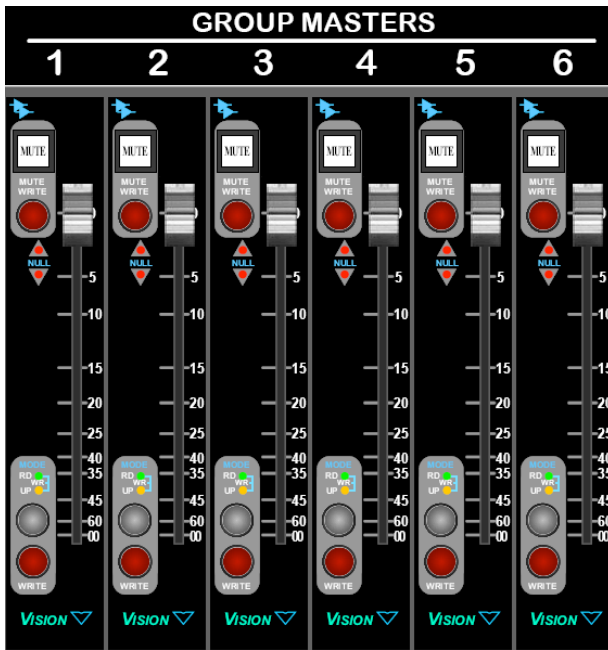
- Half-normalled from OPTIONS LINE IN

OPTIONS LINE OUT: Options Bucket 200 Slot Line Output

- 

*NOTE: Patching into the OPTIONS SIDE CHAIN IN will replace the Options Line Input as the input to the module's detection path (side-chain input)*

## 10.0 Control Group Master Faders



There are six (6) Control Group Masters (GROUP MASTERS) in the Center Section, located next to the Vision Automation control panel. These Control Group Masters do not pass audio, but are designed to control other faders and mutes on the console.

In addition to the Control Group Master faders, any other fader (input channels Fader A/B or any Program master fader) can be assigned as group masters. Group masters may be assigned to other group masters to create grand masters (not the same as the Stereo Program Bus Grand Master). Assignments are made via Vision software (see below).

Group masters can control the faders, mutes, and switches of input channels, as well as the fader of the Program and Control Group Masters. Moving the group master fader will cause the group members to follow the group master, moving proportionally according to their position and audio taper. Individual member faders may be adjusted within the group without affecting the other group members.

Each group master maybe controlled via the automation system. The system can be set to record the moves from just the group master or from the group master and group members. Refer to section 26.0 automation system for information pertaining to group automation.

Groups are stored as part of the mix files in the automation system.

Refer to section 25.0 Groups for complete details regarding the setup and operation of groups.

## 11.0 Solo Modes and Controls

### 11.1 Solo Modes

Vision consoles provide the following solo modes:

- Pre-Fader Listen (PFL)
- After-Fader Listen (AFL)
- Solo-In-Place (SIP)

Pre-fader Listen (PFL):

- The stereo Solo Bus is fed pre-fader
- Non-destructive
- Control Room monitor source is replaced with the Solo Bus
- Solo Level Control
- Mono

After Fader Listen (AFL):

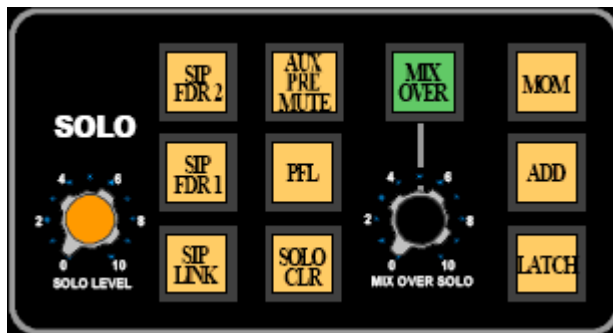
- The stereo Solo Bus is fed post pan-pot (post-fader)
- Non-destructive
- Control Room monitor source is replaced with the Solo Bus
- Solo Level Control
- Stereo (Left and Right only...no Center, LFE, Surround or A/B)

Solo-In-Place (SIP):

- Destructive (all other channels/returns will mute when a SOLO button is engaged)
- Monitored via the assigned Program Busses
- Post-fader
- Panned (Stereo or Surround)
- Solo-In-Place for Fader 1 and Fader 2 may be assigned individually
- Solo-In-Place for Fader 1 and Fader 2 may operate independently or be linked

*NOTE: After Fader Listen (AFL) is the default solo mode (no buttons engaged).*

Solo modes are selected using the SOLO controls in the Center Section.



The selected Solo mode is activated when a SOLO button on a 1068L channel module is engaged.

Engaging the SOLO button on a E1068L Stereo/Surround Return or 227L Cue Send will activate the AFL solo mode only.

The channel SOLO buttons may be engaged in one of the following solo activation modes:

- Momentary (MOM): The solo function will be active only while a SOLO button is held down
  - One or more SOLO buttons may be engaged at once
  - The solo function will be deactivated when all SOLO buttons have been released
- Additive (ADD): Multiple SOLO buttons may be engaged at once
  - Any pressed SOLO buttons will remain engaged when released
  - Individual SOLO buttons may be disengaged by pressing a them second time
  - The solo function will be deactivated when all SOLO buttons have been released
- Latch (LATCH): Only one SOLO button may be engaged at once
  - A SOLO button will remain engaged when pressed and released
  - The SOLO button will be disengaged by pressing a it second time
  - Pressing a second SOLO button while one is already engaged will disengage the active SOLO button and engage the second one

*NOTE: All engaged SOLO buttons may be disengaged by pressing the SOLO CLR button (Solo Clear).*



Mix Over Solo: A "Mix Over Solo" function allows the Solo Bus to be mixed with the selected source in the Control Room monitors.

- AFL and PFL solo modes only (does not work with Solo-In-Place)
- A SOLO must be engaged to activate Mix Over Solo
- Level control

## 11.2 Solo Controls

The solo controls function as follows:



SOLO LEVEL: Sets the level of the Solo Bus feed to the Control Room monitors

- Sets AFL Solo level
- Sets PFL Solo level



SIP FDR 1 (Solo-In-Place Fader 1): Activates the Solo-In-Place mode of for Fader 1 solos

- Illuminates in yellow when engaged



SIP FDR 2 (Solo-In-Place Fader 2): Activates the Solo-In-Place mode of for Fader 2 solos

- Illuminates in yellow when engaged



SIP LINK (Solo-In-Place Link): Links the Fader 1 and Fader 2 Solo-In-Place functions

- Illuminates in yellow when engaged



PFL (Pre Fader Listen): Activates the Pre Fader Listen solo mode of for all solos

- Illuminates in yellow when engaged



AUX PRE MUTE: Links the channel MUTE button with the Pre-Fader Aux Sends

- All Pre-fader Aux Sends mute when a channel MUTE button is engaged
- Illuminates in yellow when engaged



SOLO CLR (Solo Clear): Disengages any engaged channel SOLO buttons

- Momentary (does not stay engaged)
- Flashes in yellow when any SOLO button or switch is engaged on the console (channel, 227L, or E1068L).
- Clears any engaged SOLO buttons on channel strips

*NOTE: When the SOLO switch is engaged on a 227L or E1068L, the SOLO CLR button in the Center Section will flash indicating a solo is engaged. HOWEVER, pressing the SOLO CLR button will not clear SOLO switches on these modules since the 227L and E1068L solo switches are hard switches, not soft switches.*



MOM (Momentary): Activates the Momentary solo activation mode on channel strips

- The solo function will be active only while a SOLO button is held down
- One or more SOLO buttons may be engaged at once
- The solo function will be deactivated when all SOLO buttons have been released
- Does not apply to 227L or E1068L modules
- Illuminates in yellow when engaged



**ADD (Additive):** Activates the Additive solo activation mode on channel strips

- Multiple SOLO buttons may be engaged at once
- Any pressed SOLO buttons will remain engaged when pressed and released
- Individual SOLO buttons may be disengaged by pressing a them second time
- The solo function will be deactivated when all SOLO buttons have been released
- Does not apply to 227L or E1068L modules
- Illuminates in yellow when engaged



**LATCH (Latch):** Activates the Latch solo activation mode on channel strips

- Only one SOLO button may be engaged at once
- A SOLO button will remain engaged when pressed and released
- The engaged SOLO button will be disengaged by pressing a it second time
- Pressing a second SOLO button while one is already engaged will disengage the active SOLO button and engage the second one
- The solo function will be deactivated when all SOLO buttons have been released
- Does not apply to 227L or E1068L modules
- Illuminates in yellow when engaged



**MIX OVER (Mix Over Solo):** Activates the Mix Over Solo mode for AFL and PFL solos

- Illuminates in green when engaged

**MIX OVER SOLO:** Sets the level of the active Control Room Monitor source when an AFL or PFL solo is activated

- MIX OVER button must be engaged

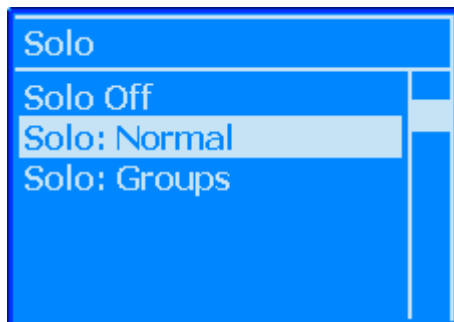
### 11.3 Solo: Normal and Solo: Groups

In addition to the normal solo functions provided by the console, two alternate solo functions are provided by the automation system:

- **Solo: Normal:** Mute switches activate a solo-in-place function console-wide
- **Solo: Groups:** Mute switches activate a solo-in-place function within established groups

Since the Program and Group Master Faders do not have SOLO switches, Solo: Normal and Solo: Groups can be used to activate a solo-in-place function from these faders.

Solo: Normal and Solo: Groups can be activated via the ACM Solo menu or the Global Functions window in the PC software.



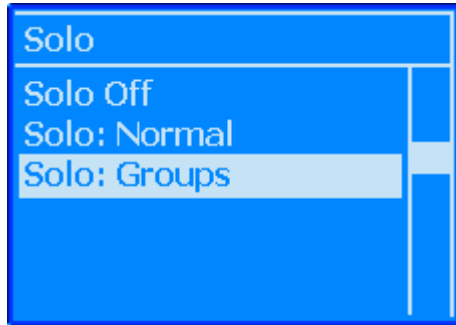
#### Solo: Normal

**Solo: Normal:** Replaces the function of the MUTE buttons with an additive solo-in-place function console wide

- To activate the Solo: Normal mode:
  - Select Solo: Normal from the Solo submenu in the ACM
  - Click the Solo: Normal button in the Global Functions window in the PC software
- When Solo: Normal is engaged:
  - "SN" will appear ACM CONTROL PANEL main display
  - The Solo: Normal button in the Global Functions window will illuminate in yellow

When Solo: Normal is active, MUTE buttons become SOLO buttons. When a MUTE button is pressed, that channel will unmute if it was muted, and all other channels will mute. When another mute button, is pressed that channel will also unmute and the first channel will remain unmuted. The solo function is additive, not exclusive.

Changes to mutes made with Solo: Normal engaged are not recorded to automation.



### Solo: Groups

**Solo: Groups:** Replaces the function of the MUTE buttons with an additive solo-in-place function within a current group

- To activate the Solo: Groups mode:
  - Select Solo: Groups from the Solo submenu in the ACM
  - Click the Solo: Groups button in the Global Functions window in the PC software
- When Solo: Normal is engaged:
  - "SG" will appear ACM CONTROL PANEL main display
  - The Solo: Groups button in the Global Functions window will illuminate in yellow

Solo: Groups functions just like Solo: Normal (see above), except that the muting is restricted to whatever group that contains the MUTE that was pressed.

Pressing a MUTE that is not in a group will solo within the ungrouped channels.

Solo: Groups only looks at mute groups, not fader, insert or switch groups.

Changes to mutes made with Solo: Groups engaged are not recorded to automation.

Refer to section 26.7.3 ACM Main menu for details regarding the use of the ACM menu items.

## 11.4 Solo Bus Access Patch Points



**STEREO/SOLO SUM BUS ACCESS IN:** Stereo and Solo Summing Bus Access Inputs

- Normalled to the Stereo A, B, C, and SOLO busses
- Signals patched into the STEREO SUM BUS ACCESS IN patch points will be added the bus before the Stereo and Solo ACAs

## 12.0 Talk Back

The Vision console provides a comprehensive Talk Back system with flexible routing and options.

The Vision console facilitates two (2) Talk Back systems:

- Talk Back Microphone (T/B MIC): A microphone is installed in the Meter Bridge for Control Room Talk Back
  - Routing to Cues, Studio Loudspeakers, and Program and Multitrack Busses
- Reverse Talk Back (REV T/B): An external microphone, typically used for studio Talk Back
  - Routing to the Control Room monitors

### 12.1 Control Room Talk Back

The control room Talk Back microphone is mounted the Meter Bridge. Its output is routed to the preamp included in the 227M Cue Master module. This microphone supports Control Room Talk Back.

Talk Back from the console Talk Back microphone may be routed to the following destinations:

- All 227L Cue Send modules with the T/B switch engaged
- Studio Loudspeakers
- Program and Multitrack Summing Busses

An individual level control is provided for each destination.

Talk Back to each of these destinations can be activated individually or as part of the COM PRESET group. Each destination may be assigned to the COM PRESET group individually.

### 12.2 Reverse Talk Back

A dedicated input is provided for a studio Talk Back microphone and preamp is provided in the 227M Cue Master module. A microphone, typically mounted in the studio, is routed to this input to support Talk Back from the studio referred to as "Reverse Talk Back."

*NOTE: The studio Talk Back microphone is not supplied by A.P.I.*

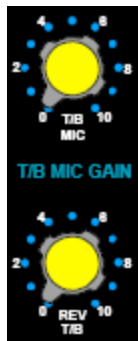
Reverse Talk Back from the microphone in the studio is routed to the Control Room monitors when Reverse Talk Back is engaged.

A level control is provided.

Reverse Talk Back can be activated individually or as part of the COM PRESET group.

### 12.3 Talk Back Microphone Controls

The Talk Back Microphone is located in the meter bridge of the Center Section. The Talk Back preamp controls are located in the 227M module.



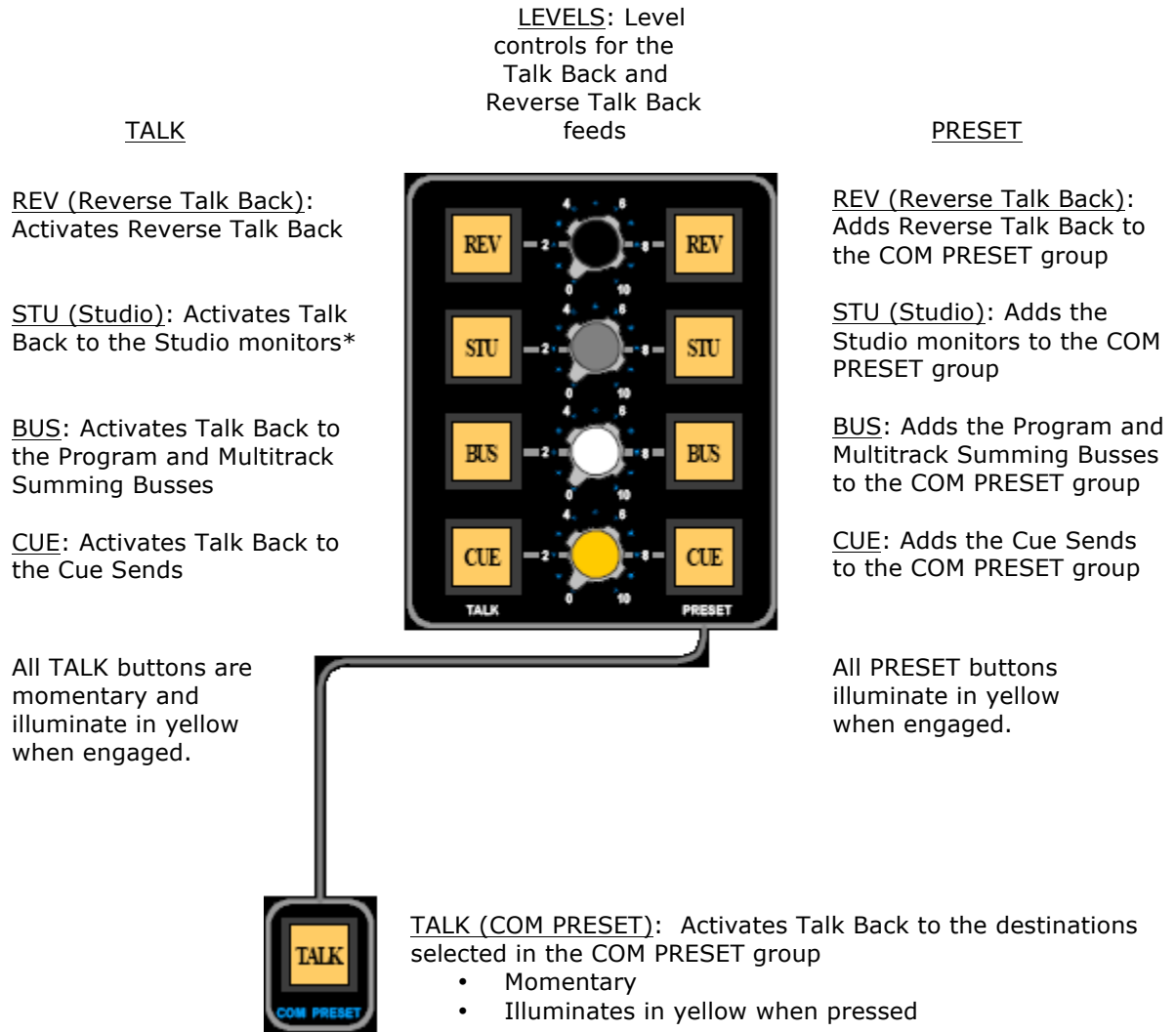
T/B MIC (Talk Back Microphone): Level control for the internal Talk Back microphone preamplifier

- The internal Talk Back microphone is located in the Meter Bridge
- The output of the Talk Back microphone preamp is routed to the Talk Back controls in the Center Section for further distribution

REV T/B (Reverse Talk Back): Level control for the Reverse Talk Back microphone preamplifier

- An input for an external Talk Back microphone for Studio Talk Back is provided
- The output of the Reverse Talk Back microphone preamp is routed to the Talk Back controls in the Center Section for further distribution

## 12.4 Talk Back Controls



A level control is provided for each Talk Back routing option. Individual Talk Back destinations can be selected by pressing the individual TALK buttons located to the left of the level control,

Individual PRESET buttons can be engaged to select a preset group of destinations. Talk Back can be activated for this COM PRESET group by pressing the TALK (COM PRESET) button.

*NOTE: The Control Room monitors will DIM when any Talk Back button is engaged.*

*NOTE: Talk Back to the Studio monitors is disabled when the STU CUT is engaged.*

## 12.5 Assigning Talk Back to Cue Send (Auxiliary Send)

Talk Back to CUE (Auxiliary Sends) is assigned to individual Auxiliary Sends on the 227L Cue Send module.



T/B IN (Talk Back Input): Routes Talk Back to the Aux Send

- Adds the Talk Back output from the 227M Module to the Aux Send audio when engaged
- A yellow LED indicator illuminates when engaged

*NOTE: Talk Back level is controlled on the 227M Module.*

## 12.6 Reverse Talk Back Patch Points



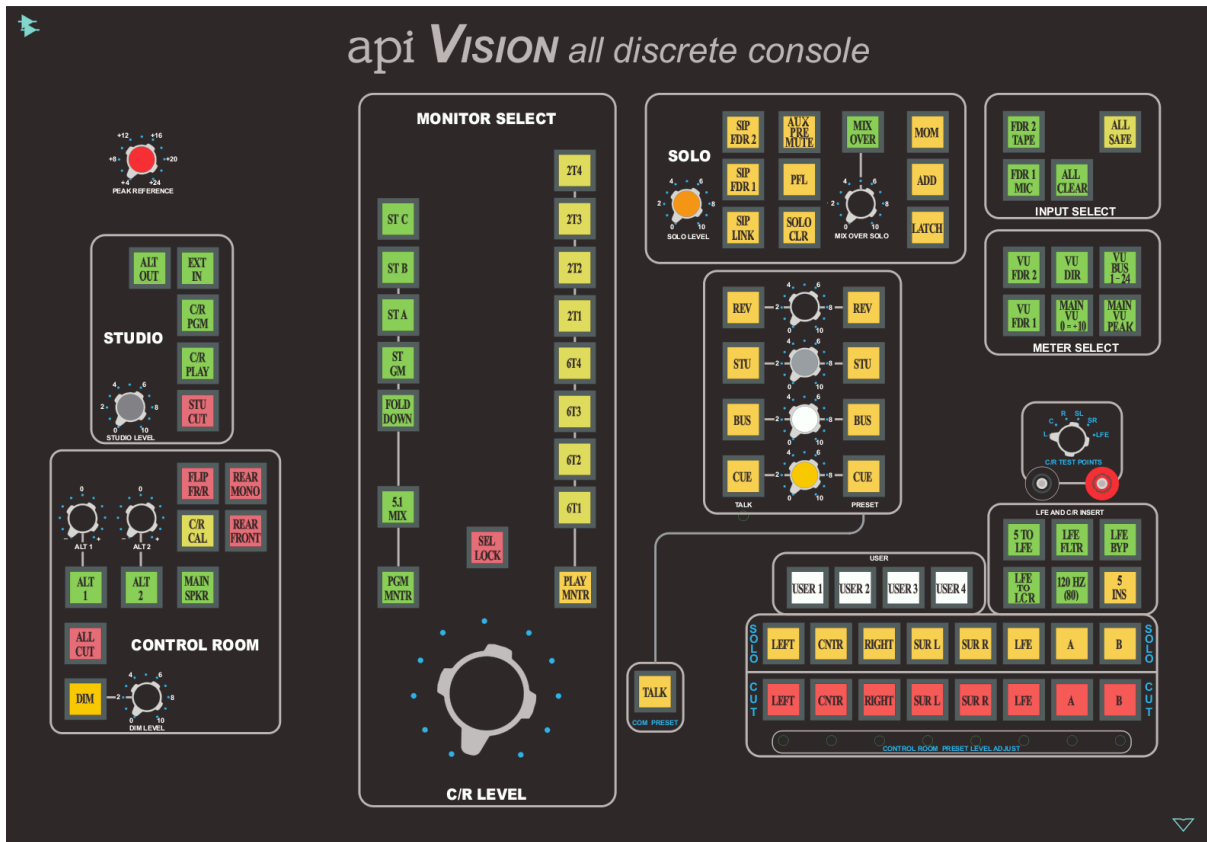
REV T/B MIC OUT: Dedicated Reverse Talk Back microphone tie-line from studio

REV T/B PRE IN: Input to the Reverse Talk Back microphone preamplifier in the 227M Cue Master Module.

## 13.0 Monitor Control Sections

The Vision console provides comprehensive Control Room and Studio monitor control facilities. Features include:

- Control Room Stereo and Surround Program monitoring
- Studio Stereo and Surround Playback monitoring
- 5.1 and 7.1 monitoring
- Fully-featured Bass Management
- Control of three (3) complete surround control room monitor systems with independent levels
- Individual 7.1 monitor solo and cut functions
- Surround Studio Program and Playback monitoring with alternate output to a 2<sup>nd</sup> set of speakers
- Monitor output calibration and test points



### 13.1 Stereo Monitoring

Support is provided for three (3) complete 7.1 surround control room monitoring systems. The Left and Right speakers for the active system are used for stereo monitoring.

The source for the stereo monitors may be selected from nine (9) total sources, five (5) internal or four (4) external. The following sources may be monitored in stereo:

- Stereo Program A (ST A)
- Stereo Program B (ST B)
- Stereo Program C (ST C)
- Stereo Program Grand Master (ST GM)
- Fold Down of the Surround Program (FOLD DOWN)
- Two-Track Recorder 1 Playback (2T 1)
- Two-Track Recorder 2 Playback (2T 2)
- Two-Track Recorder 3 Playback (2T 3)
- Two-Track Recorder 4 Playback (2T 4)

The following features may be applied:

- Speaker system selection
- Control Room level controls
- All Cut
- Dim with level
- Left and Right Solo and Mute

- Mono summing
- Source selection Lock
- Main and Alternate Studio Monitor feeds
- Control Room Monitor Insert

## 13.2 Surround Monitoring and Bass Management

Support is provided for three (3) 7.1 surround Control Room monitoring systems.

The source for the surround monitors may be selected from five (5) total sources, one (1) internal or four (4) external. The following sources may be monitored in surround:

- Surround Program (5.1 MIX)
- Six-Track Recorder 1 Playback (6T 1)
- Six-Track Recorder 2 Playback (6T 2)
- Six-Track Recorder 3 Playback (6T 3)
- Six-Track Recorder 4 Playback (6T 4)

The following features may be applied:

- Bass Management
- Speaker system selection
- Control Room level controls
- All Cut
- Dim with level
- Solo and Mute for all speakers (Left, Center, Right, Left Surround, Right Surround, LFE, A, and B)
- Front Mono summing
- Rear Mono summing
- Flip Front to Rear
- Source selection Lock
- Surround Main and Alternate Studio Monitor feeds
- Control Room Monitor Insert

### 13.2.1 Bass Management

The Vision console provides a comprehensive suite of Control Room monitor bass management functions and LFE routing options. These functions include:

- LFE Filter activation
- LFE Filter bypass
- Switchable LFE Filter frequencies (80 and 120 Hz)
- 5 Channel surround to LFE Filter fold down
- LFE routing to LCR channels

These functions apply only to the Control Room monitor feeds as there is no LFE program bus or ACA.

*IMPORTANT NOTE: There is no LFE Program Bus or ACA. A LFE program output may be created to support the Low Frequency Effects (subwoofer) channel of a 5.1 or 7.1 mix, by routing appropriately filtered audio to the LFE SURROUND FADER INPUT and bypassing the LFE in the Monitor Control section. See section 7.3 LFE Feed and Master for details.*

An LFE Filter is provided primarily for Control Room monitor bass management, but may be alternately used to create a LFE Surround Program channel. The LFE Filter has the following characteristics:

- Low-pass
- 80 Hz by default
- 120 Hz when the 120 HZ (80) switch in the Center Section is engaged
- 12dB/octave slope

There are two (2) bass management functions for the Control Room monitor feeds. Both techniques perform the same functions found on many surround playback systems. These functions are as follows:

5 TO LFE: A LFE monitor feed is created from the five surround monitor feeds

- A split of the outputs from the Left, Right, Center, Left Surround, and Right Surround monitor feeds is fed to the LFE Filter input
- The output of the LFE Filter is fed to the LFE monitor feed
- The LFE Program output is not fed
- Typically not used for stereo monitoring

The 5 TO LFE function allows the use of the subwoofer for bass reinforcement when a LFE channel has not been created for the Surround Program outputs or the Playback source does not contain a LFE channel.

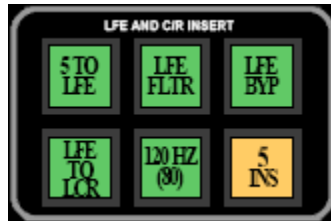
LFE TO LCR: The LFE monitor feed is redirected to the front surround monitor feeds

- The LFE monitor feed is folded into the Left, Center, and Right monitor feeds
- The LFE monitor feed is cut

The LFE TO LCR function allows the LFE channel to be added to the front surround (LCR) monitors, while defeating the subwoofer feed. This allows monitoring of the full surround content without the use of a subwoofer.

### 13.2.2 LFE And Control Room Insert Controls

The controls for the LFE Filter and bass management are located in the Center Section. The Control Room Insert activation switch is included with these controls



The LFE and Control Room Insert controls function as follows:



LFE FLTR (Filter): On/Off switch for the LFE Filter

- Activates LFE Filter
- Illuminates in green when engaged



LFE BYP (Bypass): Engages a hardwire bypass of the LFE Filter routing

- Illuminates in green when engaged



120 HZ (80): Selects between two (2) LFE Filter frequencies

- 80 Hz is the default setting (switch not engaged)
- 120 Hz is selected when this switch is engaged
- Illuminates in green when engaged



5 TO LFE: Activates the Surround to LFE fold down function

- Sums a split of the output of the L, R, C, Ls, and Rs monitor feeds to mono and routes it to the LFE Filter Input (FLT IN)
- Illuminates in green when engaged



LFE TO LCR: Activates the LFE to LCR function

- Routes the output of the LFE monitor feed to the Left, Center, and Right monitor feeds
- Defeats the LFE monitor feed
- Illuminates in green when engaged





**5 INS (Control Room Insert):** Activates the Surround Control Room Insert Return

- The Control Room Insert Send is always active
- The Control Room Insert Return is located Post the Monitor input Selector and Pre the Control Room Monitor level control
- The Insert Return is active only when the 5 INS button is engaged
- Illuminates in yellow when engaged

### 13.2.3 LFE Filter and Control Room Insert Patch Points



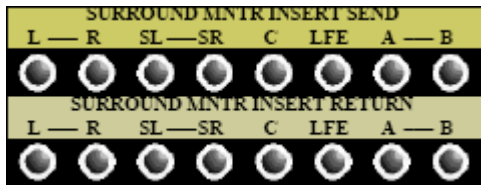
**LFE FILTER IN:** Input to the LFE low-pass filter

- Three parallel non-breaking inputs
- The signals patched to these points are summed together and fed to the LFE



**FLT OUT (Filter Out):** Output of the LFE low-pass filter

- The LFE FLTR button must be engaged to activate this output
- May be routed to the Left, Center, and Right monitor feeds when the LFE TO LCR button is engaged



**SURROUND MNTR INSERT SEND (Surround Monitor Insert Send):** 8-channel Control Room Monitor Insert Send

- L-R, SL-SR, C, LFE, and A/B channels are supported
- Always active

**SURROUND MNTR INSERT RETURN (Surround Monitor Insert RETURN):** 8-channel Control Room Monitor Insert Return

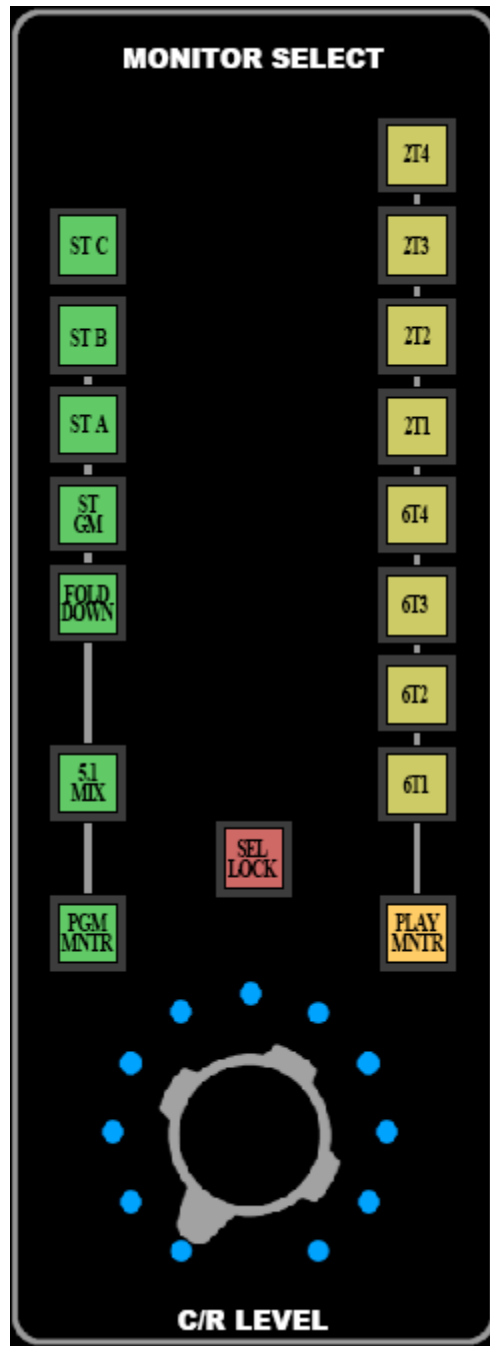
- L-R, SL-SR, C, LFE, and A/B channels are supported
- Replaces the Control Room monitor feed when the C/R INS switch is engaged

The Control Room Insert is Located:

- Post Monitor Source selectors
- Pre Control Room Level control

### 13.3 Control Room Monitor Source Selection (MONITOR SELECT)

The Control Room MONITOR SELECT section allows the choice of Program and Playback monitor sources and contains the main Control Room monitor level control.



Internal and external monitor sources may be selected:

- Internal: Program Master outputs
- External: Playback returns from external record/playback devices

The following Program outputs may be selected as the Control Room monitor source:

- 5.1 MIX: Output of the Surround Program Masters
- FOLD DOWN: Output from the Lt Rt Fold Down Matrix
- ST GM: Output of the Stereo Program Grand Master
- ST A: Output of the Stereo A Program Master
- ST B: Output of the Stereo B Program Master
- ST C: Output of the Stereo C Program Master

*NOTE: The 5.1 MIX Program Monitor selector supports 5.1 and 7.1 mixes.*

The following Playback returns may be selected as the Control Room monitor source:

- 6T1 (6-Track 1): Return from 8-Track recorder/playback device #1
- 6T2 (6-Track 2): Return from 8-Track recorder/playback device #2
- 6T3 (6-Track 3): Return from 8-Track recorder/playback device #3
- 6T4 (6-Track 4): Return from 8-Track recorder/playback device #4
- 2T1 (2-Track 1): Return from 2-Track recorder/playback device #1
- 2T2 (2-Track 2): Return from 2-Track recorder/playback device #2
- 2T3 (2-Track 3): Return from 2-Track recorder/playback device #3
- 2T4 (2-Track 4): Return from 2-Track recorder/playback device #4

*NOTE: The 6-track Playback Monitor selectors are eight channels wide and support 5.1 and 7.1 sources. The patch points for the surround monitor source inputs and record/playback devices are labeled "8-TRACK" in the patchbay.*

#### 13.3.1 Control Room Monitor Selectors and Level Control

To select one of the Program Masters as the monitor source, the PGM MNTR (Program Monitor) must be selected. The selected Program Master source will be routed to the Control Room monitor feed.



PGM MNTR (Program Monitor): Routes the output of the selected Program Master to the Control Room monitor feed

- Illuminates in green when engaged

To select the return from one of the Record/Playback devices as the monitor source, the PLAY MNTR (Playback Monitor) must be selected. The return from the selected Record/Playback device will be routed to the Control Room monitor feed.



PLAY MNTR (Playback Monitor): Routes the output of the selected Playback return to the Control Room monitor feed

- Illuminates in yellow when engaged

#### Program Monitor Selectors (PRG MNTR)



ST C (Stereo C): Selects the output of Stereo Program Master C as the Program Monitor source

ST B (Stereo B): Selects the output of Stereo Program Master B as the Program Monitor source

ST A (Stereo A): Selects the output of Stereo Program Master A as the Program Monitor source

ST GM (Stereo Grand Master): Selects the output of Stereo Grand Master as the Program Monitor source

FOLD DOWN: Selects the output of Lt Rt Fold Down Matrix as the Program Monitor source

5.1 MIX: Selects the output of 5.1 (or 7.1) Surround Mix as the Program Monitor source

PGM MNTR (Program Monitor): Routes the output of the selected Program Master to the Control Room monitor feed

All Program Monitor source selectors illuminate in green when engaged.

*NOTE: The 5.1 MIX Program Monitor selector supports 5.1 and 7.1 mixes.*

### Playback Monitor Selectors (PLAY MNTR)



2T4 (2-Track 4): Selects the return from 2-Track Record/Playback device #4 as the Playback Monitor source

2T3 (2-Track 3): Selects the return from 2-Track Record/Playback device #3 as the Playback Monitor source

2T2 (2-Track 2): Selects the return from 2-Track Record/Playback device #2 as the Playback Monitor source

2T1 (2-Track 1): Selects the return from 2-Track Record/Playback device #1 as the Playback Monitor source

6T4 (6-Track 4): Selects the return from 8-Track Record/Playback device #4 as the Playback Monitor source

6T3 (6-Track 3): Selects the return from 8-Track Record/Playback device #3 as the Playback Monitor source

6T2 (6-Track 2): Selects the return from 8-Track Record/Playback device #2 as the Playback Monitor source

6T1 (6-Track 1): Selects the return from 8-Track Record/Playback device #1 as the Playback Monitor source

PLAY MNTR (Playback Monitor): Routes the output of the selected Playback return to the Control Room monitor feed

All Playback Monitor source selectors illuminate in yellow when engaged.

*NOTE: The 6-track Playback Monitor selectors are eight channels wide and support 5.1 and 7.1 sources. The patch points for the surround monitor source inputs and record/playback devices are labeled "8-TRACK" in the patch bay.*

The selected Control Room monitor source may be locked by engaging the SEL LOCK button.



SEL LOCK(Selection Lock): Locks the selected Control Room monitor source

- Prevents the Control Room monitor source from being changed
- Illuminates in red when engaged



C/R LEVEL (Control Room Level): Level control for the selected Control Room monitor system

- $-\infty$ dB to 0dB range
- Sets the level to the selected Control Room monitor system
- Fed from the Monitor Source selectors
- Primary level control for the Main and Alternate Control Room Monitors
- Alternate monitor systems 1 and 2 have individual level trims

### 13.3.2 Control Room Monitor Insert

An eight-channel insert is provided for the Control Room monitor system. The Control Room Monitor Insert allows the insertion of stereo and surround signal processing before the Control Room monitor feed.

When activated, the Control Room Monitor Insert applies to all three Control Room monitor systems.

The Control Room Insert is activated by engaging the C/R INS button in the LFE and C/R INSERT section of the Center Section.



5 INS (Control Room Insert): Activates the Surround Control Room Insert Return

- The Control Room Insert Send is always active
- The Control Room Insert Return is located Post the Monitor input Selector and Pre the Control Room Monitor level control
- The Insert Return is active only when the C/R INS button is engaged
- Illuminates in yellow when engaged

### 13.3.3 Program and Playback Monitor Selector Patch Points

For clarity purposes, the Control Room Program and Playback monitor source selectors and their associated patch points are shown together.



=



STEREO BSTR OUTPUTS (Stereo Booster Outputs): Feeds the ST A, ST B, and ST C (Stereo A, B, and C) Program Monitor Selectors

- Outputs from the Stereo Master Fader Boosters
- Post Master Fader
- Half-normalled to STEREO GM SELECT IN (Stereo Grand Master Selector inputs)



=



GM BSTR OUT (Grand Master Booster Outputs): Feeds the ST GM (Stereo Grand Master) Program Monitor Selector

- Outputs from the Stereo Grand Master Fader Boosters
- Post Grand Master Fader
- Half-normalled to 2T FEED IN



=



Lt Rt OUT (Left Total Right Total Outputs): Feeds the FOLD DOWN (Lt Rt Fold Down Matrix) Program Monitor Selector

- Output of the Lt Rt Matrix
- Also feeds the GM Selector



=

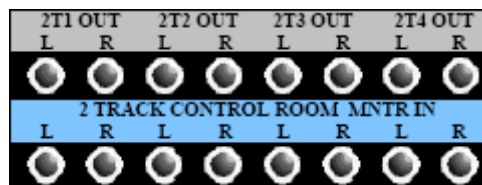


SURROUND BSTR OUT (Surround Booster Outputs): Feeds the 5.1 MIX Program Monitor Selector

- Outputs from the Surround Master Fader Boosters
- Post Surround Master Faders
- Half-normalled to SURROUND FEED IN



=



2T 1-4 OUT (2-Track Outputs 1-4):  
Returns from the external 2-Track record/playback device outputs

- Half-normalled to 2 TRACK 1-4 CONTROL ROOM MNTR IN

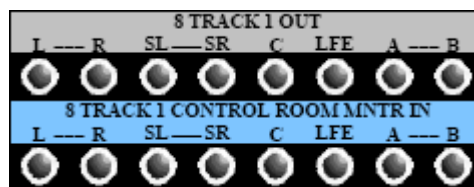
2 TRACK CONTROL ROOM MNTR IN (2-Track Control Room Monitor Inputs): Feeds the Control Room monitor stereo Playback source selectors

- Feeds the 2T1, 2T2, 2T3, and 2T4 Playback Monitor Source Selectors
- Half-normalled from 2T 1-4 OUT
- Patching to these points will replace the feed to the 2-Track Monitor Selectors with the patch cord signal



**X4**

=



8 TRACK 1-4 OUT (8-Track Outputs 1-4): Returns from the external 8-Track record/playback device outputs

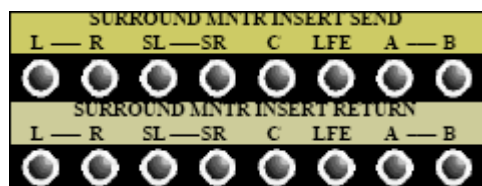
- Half-normalled to 8 TRACK 1-4 CONTROL ROOM MNTR IN

8 TRACK CONTROL ROOM MNTR IN (8-Track Control Room Monitor Inputs): Feeds the Control Room monitor surround Playback source selectors

- Feeds the 6T1, 6T2, 6T3, and 6T4 Playback Monitor Source Selectors
- Half-normalled from 8 TRACK 1-4 OUT
- Patching to these points will replace the feed to the 6-Track Monitor Selectors with the patch cord signal



=



SURROUND MNTR INSERT SEND (Surround Monitor Insert Send): 8-channel Control Room Monitor Insert Send

- L-R, SL-SR, C, LFE, and A-B channels are supported
- Always active

SURROUND MNTR INSERT RETURN (Surround Monitor Insert RETURN): 8-channel Control Room Monitor Insert Return

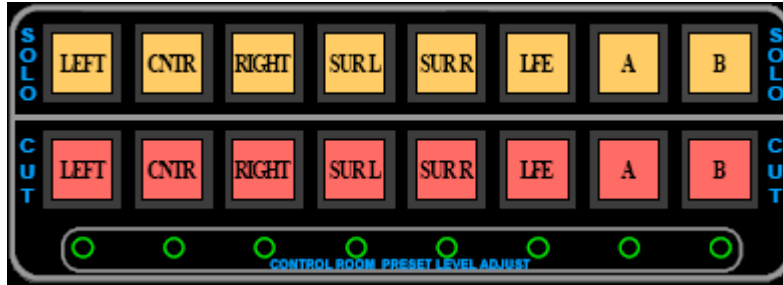
- L-R, SL-SR, C, LFE, and A-B channels are supported
- Replaces the Control Room monitor feed when the C/R INS switch is engaged

The Control Room Insert is Located:

- Post Monitor Source selectors
- Pre Control Room Level control

### 13.4 Control Room Speaker Solo and Mute Controls

An individual Solo and Mute is provided for each speaker output feed.



**SOLO:** Solos the selected speaker feed

- Defeats speaker feeds that are not soloed
- Illuminates in yellow when engaged

**CUT:** Cuts the selected speaker feed

- Illuminates in red when engaged

The SOLO and CUT switches are labeled as follows:

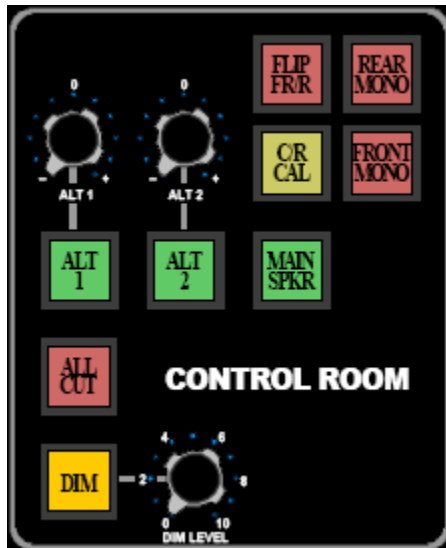
- **LEFT:** Left front Control Room monitor
- **CNTR (Center):** Center front Control Room monitor
- **RIGHT:** Right front Control Room monitor
- **SUR L (Surround Left):** Left rear Control Room monitor
- **SUR R (Surround Right):** Right rear Control Room monitor
- **LFE (Low Frequency Effects):** Subwoofer Control Room monitor
- **A:** A Control Room monitor
- **B:** B Control Room monitor

Control Room CUT switches are linked to the Control Room Monitor source selectors. The CUT switches will activate automatically depending on the selected Control Room Monitor source. If a stereo source is selected the CNTR, SUR L, SUR R, LFE, A, and B monitor feeds will be cut. If a surround source is selected, the needed speaker feed will be uncut.

**CONTROL ROOM PRESET LEVEL ADJUST trim-pots:** Sets the level of each speaker output feed for the C/R CAL (Control Room Calibrate) switch

### 13.5 Control Room Monitor System Selection (CONTROL ROOM)

The Vision console provides support for three (3) complete 7.1 surround Control Room monitoring systems. The Left and Right speakers for the active system are used for stereo monitoring.



The CONTROL ROOM section of the center section contains the primary controls for the three Control Room Monitor systems:

- **MAIN SPKR (Main Speakers):** Main Control Room monitor system
- **ALT 1 (Alternate 1):** Alternate Control Room monitor system #1 (mid-fields)
- **ALT 2 (Alternate 2):** Alternate Control Room monitor system #2 (near-fields)

ALT 1 and 2 have trim controls for matching levels between the three systems.

A calibrated Control Room monitor level (85 dB) may be set for film work and other purposes. The preset level is activated by engaging the C/R CAL (Control Room Calibrate) button.

Monitor CUT and a DIM control with variable level may be applied to the active Control Room Monitor system.

The Front and Rear speaker feeds may be summed to mono independently.

The Front and Rear speakers may be reversed (Flipped) Front to Rear, Rear to Front.

The feed for each surround speaker (L, C, R, Ls, Rs, LFE, A, B) may be soloed or muted individually. (Refer to 13.5 Surround Monitor Controls for details.)

### 13.5.1 Control Room Monitor System Controls



MAIN SPKR (Main Speakers): Routes the selected Monitor Source to the Main Control Room monitor system

- Illuminates in green when engaged



ALT 1 (Alternate 1) trim: Trims the output level of the Alternate 1 Control Room monitor system

- -∞dB to +6dB range
- 0 dB equals unity gain

ALT 1 (Alternate 1) switch: Routes the selected Monitor Source to the Alternate 1 Control Room monitor system

- Illuminates in green when engaged



ALT 2 (Alternate 2) trim: Trims the output level of the Alternate 2 Control Room monitor system

- -∞dB to +6dB range
- 0 dB equals unity gain

ALT 2 (Alternate 2) switch: Routes the selected Monitor Source to the Alternate 2 Control Room monitor system

- Illuminates in green when engaged



ALL CUT: Cuts the feed to all Control Room speaker feeds

- Illuminates in red when engaged



DIM: Activates the Control Room monitor Dim function

- Attenuates the output to the active Control Room monitor system by the amount set with the DIM LEVEL
- Illuminates in yellow when engaged

DIM LEVEL: Sets the amount of attenuation applied when the DIM button is engaged

- -∞dB to 0dB range



C/R CAL (Control Room Calibration): Activates a preset level for the active Control Room monitor system

- The calibrated level for each speaker feed is set with trim-pots located below the Speaker Solo and mute controls
- Illuminates in yellow when engaged



FRONT MONO: Sums the Left, Center, and Right speaker feeds to mono

- Left and Right speaker feeds are summed to mono when monitoring a stereo source
- Illuminates in red when engaged



REAR MONO: Sums the Left Surround and Right Surround speaker feeds to mono

- Does not affect the A-B
- Illuminates in red when engaged



FLIP FR/R (Flip Front/Rear): Reverses the Front and Rear speaker feeds

- The Front speaker feeds are routed to the Rear speakers
- The Rear speaker feeds are routed to the Front speakers
- The A-B speaker feeds are not affected
- Illuminates in red when engaged

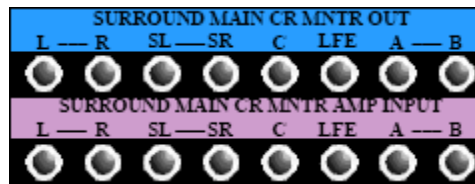


### 13.5.2 Control Room Monitor Output and Amplifier Input Patch Points

For clarity purposes, the Control Room monitor output selectors and their associated patch points are shown together.



=



SURROUND MAIN CR MNTR OUT  
(Surround Main Control Room Monitor Outputs): Control Room Main Monitor output feeds

- Active only when the MAIN SPKR (Main Speakers) button is engaged
- Half-normalled to SURROUND MAIN CR AMP INPUT

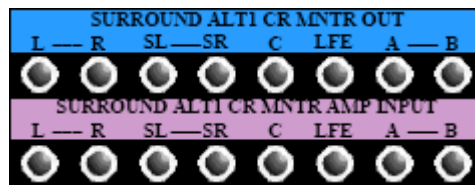
**CAUTION: Extreme caution should be used when patching into the SURROUND MAIN CR MNTR AMP INPUT patch points as these patches bypass the Control Room volume control.**

SURROUND MAIN CR AMP INPUT  
(Surround Main Control Room Amplifier Inputs): Feeds the inputs of the Control Room Main Monitor amplifiers

- Half-normalled from SURROUND MAIN CR MNTR OUT
- Patching to these points will replace the feed to the Main Monitor amps with the patch cord signal



=



SURROUND ALT 1 CR MNTR OUT  
(Surround Alternate 1 Control Room Monitor Outputs): Control Room Alternate 1 Monitor output feeds

- Active only when the ALT 1 (Alternate 1 Speakers) button is engaged
- Half-normalled to SURROUND ALT 1 CR AMP INPUT

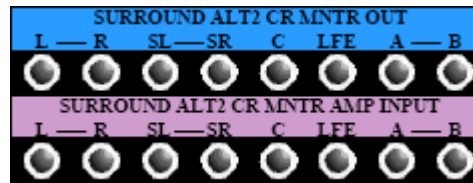
**CAUTION: Extreme caution should be used when patching into the SURROUND ALT 1 CR MNTR AMP INPUT patch points as these patches bypass the Control Room volume control.**

SURROUND ALT 1 CR AMP INPUT  
(Surround Alternate 1 Control Room Amplifier Inputs): Feeds the inputs of the Control Room Alternate 1 Monitor amplifiers

- Half-normalled from SURROUND ALT 1 CR MNTR OUT
- Patching to these points will replace the feed to the Alt 1 Monitor amps with the patch cord signal



=



SURROUND ALT 2 CR MNTR OUT  
(Surround Alternate 2 Control Room Monitor Outputs): Control Room Alternate 2 Monitor output feeds

- Active only when the ALT 2 (Alternate 2 Speakers) button is engaged
- Half-normalled to SURROUND ALT 2 CR AMP INPUT

**CAUTION: Extreme caution should be used when patching into the SURROUND ALT 2 CR MNTR AMP INPUT patch points as these patches bypass the Control Room volume control.**

SURROUND ALT 2 CR AMP INPUT  
(Surround Alternate 2 Control Room Amplifier Inputs): Feeds the inputs of the Control Room Alternate 2 Monitor amplifiers

- Half-normalled from SURROUND ALT 2 CR MNTR OUT
- Patching to these points will replace the feed to the Alt 2 Monitor amps with the patch cord signal

**CAUTION:** Exercise great care when patching into **any** of the Amplifier Input (AMP IN) patch-points. There is no level control between these patch-points and the inputs to the monitor system amplifiers. Patching unattenuated signals into these patch points can result in very loud output from the Control Room monitor system.

## 13.6 5.1 Test Points

A pair of Test Points are mounted in the Center Section for Control Room monitor output calibration.



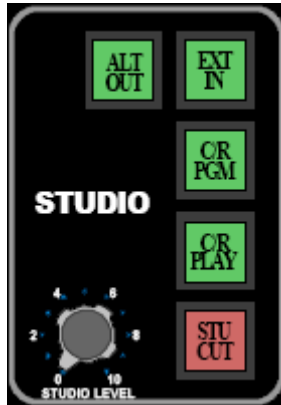
C/R TEST POINTS (Control Room Test Points) Selector: Selects the monitor output for measurement

- L = Left
- C = Center
- R = Right
- SL = Left Surround
- SR = Right Surround
- LFE

NEGATIVE AND POSITIVE (Black and Red) Test Points: Banana jacks for testing the selected monitor output feed

## 13.7 Studio Monitor Source Selection (STUDIO) and Level Control

Studio monitor feeds are provided for two (2) surround studio monitor systems. There is one surround Studio monitor output that normally feeds the main Studio monitor system. The output can be switched to feed an Alternate Studio monitor system instead of the main system.



The Studio monitor systems can be fed from the following sources:

- C/R PLAY (Control Room Playback): The selected Control Room monitor Playback source is routed to the Studio loudspeakers
- C/R PGM (Control Room Program): The selected Control Room monitor Program source is routed to the Studio loudspeakers
- EXT IN (External Input): The signal from the SURROUND STUDIO EXT MNTR INPUT patch points is routed to the Studio loudspeakers

### 13.7.1 Studio Monitor Controls



C/R PLAY (Control Room Playback): The Playback source selected for the Control Room monitors is routed to the Studio monitor feed

- Changing the Control Room monitor Playback source will change the will also change the feed to the Studio monitors if C/R PLAY is engaged
- Illuminates in green when engaged



C/R PGM (Control Room Program): The Program source selected for the Control Room monitors is routed to the Studio monitor feed

- Changing the Control Room monitor Program source will change the will also change the feed to the Studio monitors if C/R PGM is engaged
- Illuminates in green when engaged



EXT IN (External Input): The signal from the SURROUND STUDIO EXT MNTR IN patch points is routed to the Studio monitor feed

- Illuminates in green when engaged



STU CUT (Studio Cut): Cuts the feed to all Studio monitor feeds

- Talk Back to Studio monitors is disabled when STU CUT is engaged
- Illuminates in red when engaged



STUDIO LEVEL: Level control for the Studio monitor outputs

- Sets the level for the Studio monitor system and Alternate Output
- Fed from the Studio monitor Source selectors
- $-\infty$ dB to -2dBu range



ALT OUT (Alternate Output): Activates the Studio monitor Alternate outputs

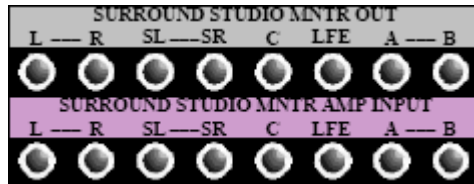
- Activates an additional set of studio monitors
- Routes the selected Studio monitor source to the SURROUND ALT STUDIO MNTR AMP IN patch points
- The feed to the main Studio monitors is not cut
- Illuminates in green when engaged

### 13.7.2 Studio Monitor Output and Amplifier Input Patch Points



SURROUND EXT STUDIO MNTR INPUT (Surround External Studio Monitor Input): External Surround Studio monitor inputs

- Allows an external surround source to be routed to the Studio monitor EXT IN source selector
- Active only when the EXT IN switch in the Studio monitor controls is engaged



SURROUND STUDIO MNTR OUT (Surround Studio Monitor Outputs): Studio monitor output feeds

- Half-normalled to SURROUND STUDIO MNTR AMP INPUT
- Feeds the SURROUND ALT STUDIO MNTR AMP IN patch points when the ALT OUT button in the Studio monitor controls is engaged

**CAUTION:** Extreme caution should be used when patching into the **SURROUND STUDIO MNTR AMP INPUT** patch points as these patches bypass the Studio volume control.

SURROUND STUDIO MNTR AMP INPUT (Surround Studio Monitor Amplifier Inputs): Feeds the inputs of the Studio Monitor amplifiers

- Half-normalled from SURROUND STUDIO MNTR OUT
- Patching to these points will replace the feed to the Studio monitor amps with the patch cord signal



SURROUND ALT STUDIO MNTR AMP IN (Surround Alternate Studio Monitor Amplifier Inputs): Feeds the inputs of the Alternate Studio Monitor amplifiers

- Fed from the SURROUND STUDIO MNTR OUT patch points when the ALT OUT button in the Studio monitor controls is engaged
- Patching to these points will replace the feed to the Alternate Studio monitor amps with the patch cord signal

**CAUTION:** Extreme caution should be used when patching into the **SURROUND ALT STUDIO MNTR AMP IN** patch points as these patches bypass the Studio volume control.

**CAUTION:** Exercise great care when patching into **any** of the Amplifier Input (AMP IN) patch points. There is no level control between these patch points and the inputs to the monitor system amplifiers. Patching unattenuated signals into these patch points can result in very loud output from the Control Room monitor system.

## 14.0 User Buttons

Four (4) programmable USER buttons are provided to facilitate custom features. The programming of these buttons is unique to each installation. Please refer to the facilities engineering documentation and staff for details of the specific installation.



Each USER button functions as follows:

- Activates a contact closure when engaged
- Toggle function
- Illuminates in white when engaged

Changing the location of the upper channel 200 Slots between the Fader 1 and Fader 2 audio paths in groups of 16 channels is an example of USER button programming.

## 15.0 Oscillator/Pink Noise Generator

An Oscillator and Pink Noise generator is provided to generate test signals and tones for calibration and trouble-shooting.



The Oscillator/Pink Noise generator has the following features:

- Pink Noise with output level
- Sine Wave with output level
- Selectable frequencies
- 20 Hz to 20 kHz

The Oscillator/Pink Noise Generator can be routed to feed:

- Multitrack Summing Busses 1-24
- All Stereo and Surround Program Busses
- All Busses may be fed simultaneously

### 15.1 Oscillator/Pink Noise Generator Controls



PINK: Activates the Pink Noise generator when OSC is engaged

- Oscillator must be engaged to activate Pink noise.
- Replaces the Oscillator output with pink noise when engaged
- Dims the Control Room monitors when engaged
- Illuminates in red when engaged

PINK NOISE: Sets the output level of the Pink Noise generator



OSC (Oscillator) button: Activates the sine wave Oscillator

- Dims the Control Room monitors when engaged
- Illuminates in red when engaged

OSC (Oscillator) level: Sets the output level of the sine wave Oscillator



FREQUENCY: Selects the frequency of the sine wave Oscillator

- 20 Hz
- 50 Hz
- 100 Hz
- 300 Hz
- 500 Hz
- 1 kHz
- 2 kHz
- 3 kHz
- 5 kHz
- 8 kHz
- 10 kHz
- 20 kHz



TO BUS: Routes the output of the Oscillator/Pink Noise generator to Multitrack Summing Busses 1-24

- Illuminates in white when engaged



TO ST/5.1 (Stereo/5.1): Routes the output of the Oscillator/Pink Noise generator to Stereo Program Busses A, B, and C and the Surround Program Bus.

- Illuminates in white when engaged

**CAUTION:** Exercise great care when activating and routing the Oscillator/Pink Noise Generator. Cue systems and Studio monitors should be CUT and the Control Room monitors should be turned down to a low level and/or Dimmed.

## 15.2 Oscillator/Pink Noise Generator Patch Points



OSC OUT (Oscillator Output): Output of the Oscillator/Pink Noise generator

- Active when either the PINK or OSC buttons are engaged
- Independent of routing to Busses

## 16.0 Meters and Peak Indicators

The Vision console provides the following options for monitoring levels:

- VU Meter Bridge
- Channel Peak Indicators
- Penguin Surround Meter software
- Module meters

In combination, these meter options provide a complete suite of metering tools for any application.

Auxiliary and Cue Send levels are displayed on the 227L Cue Send module LED meters.

The following 200 Series modules have built-in LED output meters:

- 205L Direct Input
- 212L Microphone Preamp

The following 200 Series modules have built-in LED gain reduction meters:

- 225L Compressor/Limiter
- 235L Noise Gate/Expander

### 16.1 VU Meter Bridge

The Meter Bridge is populated only with VU meters.

The Meter Bridge provides the ability to monitor the levels of the following signal paths:

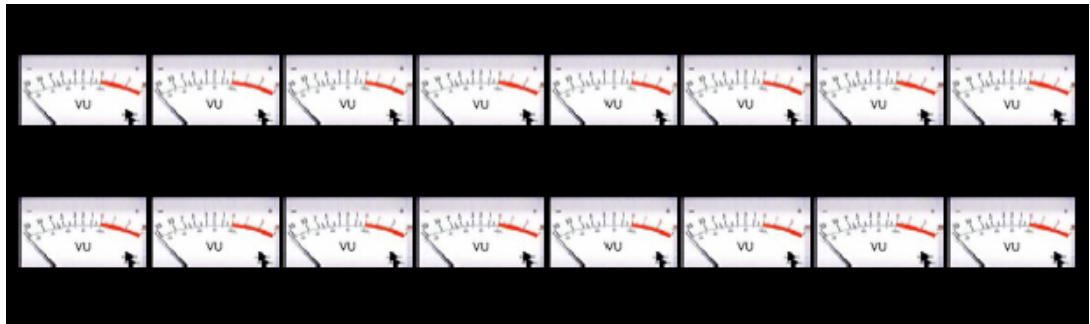
- Channel (Fader 1, Fader 2, Direct Out)
- Multitrack Summing Bus
- Stereo and Surround Program Busses
- Solo Bus
- Lt Rt Fold Down Matrix

The Meter Bridge has two sections:

- Channel Meters
- Program Meters

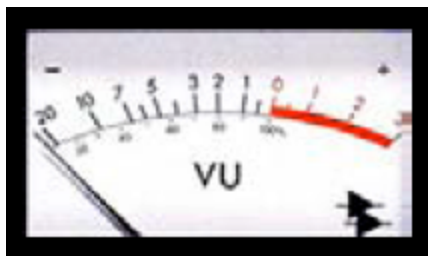
*NOTE: Auxiliary and Cue Send levels are displayed on the 227L Cue Send module LED meters.*

#### 16.1.1 Channel Meters



The Channel Meters are organized in banks of sixteen (16), one for each installed channel bucket.

The Channel Meters are stacked in pairs with 1 over 2, 3 over 4, and so on.



Each Channel Meter can be fed from the following points:

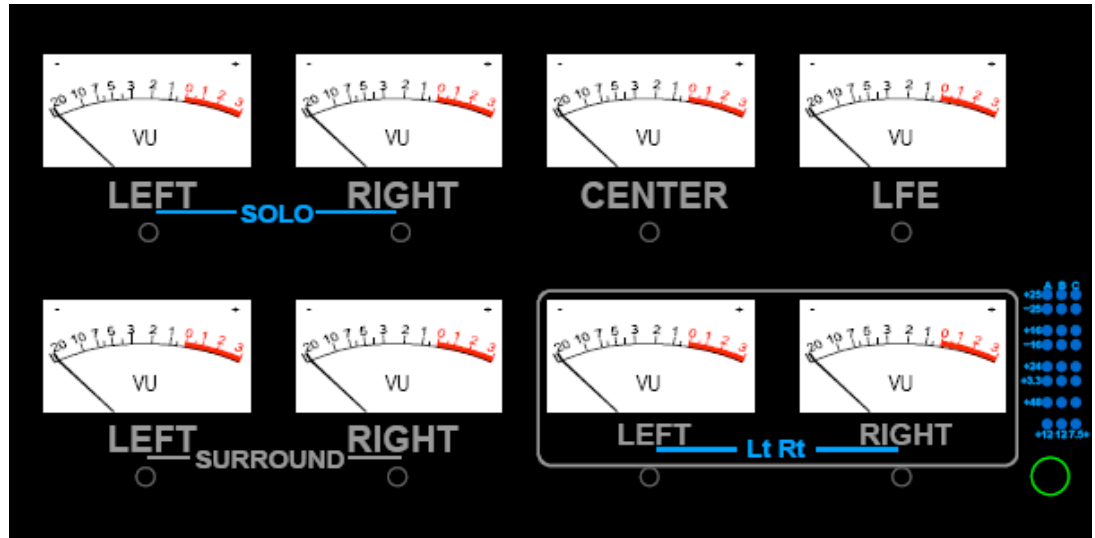
- Fader 1 Channel Input
- Fader 2 Channel Input
- Direct Output
- Multitrack Summing Bus 1-24

The Channel Meter is fed from the Fader 1 Channel Input by default (no buttons engaged).



See Meter Controls later in the chapter for detailed meter routing information.

### 16.1.2 Program Meters



A full set of Program Meters is installed above the Master Faders and Center Section.

The Program Meters can be fed from the following points:

- Stereo Program Grand Master outputs
- Surround Program Master outputs
- Solo Bus
- Lt Rt Fold Down Matrix outputs

The Program Meters are organized as follows:

- LEFT and RIGHT (SOLO)
- CENTER
- LFE
- LEFT and RIGHT SURROUND
- LEFT and RIGHT (Lt Rt)

Under normal circumstances, the Program Meters display the level of the Stereo/Surround Program Master outputs.

The LEFT and RIGHT (SOLO) meters are used for stereo only applications.

When a PFL or AFL SOLO is engaged, the LEFT and RIGHT (SOLO) meters display the output of the Solo Bus.

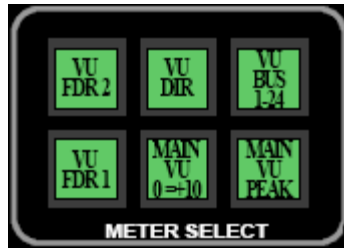
The LEFT and RIGHT (Lt Rt) meters display the output of the A/B Program Master. When the output of the Lt Rt Fold Down Matrix is engaged, the LEFT and RIGHT (Lt Rt) meters display the Left Total and Right Total output of the matrix.

A -10 dB attenuator can be inserted before the Program Meters (MAIN VU 0=+10) for better resolution of high-level signals.

The ballistics of the Program Meters can be changed from VU to peak hold (MAIN VU PEAK).

Refer to section 28.12 Program Meter Calibration for a master meter calibration procedure.

### 16.1.3 Meter Controls (METER SELECT)



METER SELECT: The feed to the Channel Meter and Program Meter ballistics are determined by the METER SELECT controls in the Center Section.

The METER SELECT controls function as follows:



VU FDR 1 (Fader 1): Assigns the channel meters to the Fader 1 Channel Input

- Defeats VU FDR2 or VU DIR when engaged
- Illuminates in green when engaged



VU FDR 2 (Fader 2): Assigns the channel meters to the Fader 2 Channel Input

- Defeats VU FDR1 or VU DIR when engaged
- Illuminates in green when engaged



VU DIR (Direct Output): Assigns the channel meters to the channel Direct Output

- Defeats VU FDR1 or VU FDR 2 when engaged
- Illuminates in green when engaged



VU BUS 1-24 (Direct Output): Assigns the channel meters to the outputs of Multitrack Summing Busses 1-24

- Illuminates in green when engaged



MAIN VU 0 = +10: Sets the Program (MAIN) Meters VU scale to 0 VU equals +14 dBu

- Allows accurate level indication for signals hotter than +3 VU
- A -10 dB pad is inserted before the meters, off-setting the scale by 10dB
- 0 VU equals +4 dBu when not engaged
- Illuminates in green when engaged



MAIN VU PEAK: Changes the ballistics Program (MAIN) meters from VU to Peak

- A peak-hold circuit feeds the meters
- -7VU = +4dBu
- The decay rate is fixed and slow
- Illuminates in green when engaged

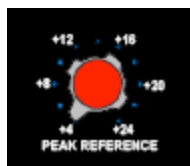
## 16.2 Channel Peak Indicators and Reference Level Control

Each channel is equipped with a LED Peak Indicator in each path (Fader 1 and Fader 2).



PEAK: A red LED illuminates when the preset Peak Reference level is reached in the audio path

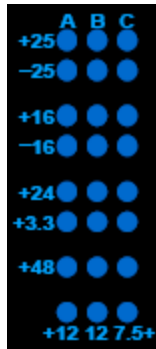
The Peak Reference Level is selected by the PEAK REFERENCE selector in the Center Section.



PEAK REFERENCE: Sets the Peak Reference level for the channel Peak Indicators

- +4 dBu to +24 dBu Range
- 2 dB increments

### 16.3 Power Supply Voltage Indicators



LED Voltage Indicators are provided for up to three (s) power supply units (PSU):

- A
- B
- C

The number of PSUs installed is determined by the size of the console. Voltage LEDs illuminate only when a PSU is installed and powered up.

A LED is provided for each of the following Voltages:

- +25 volts
- -25 volts
- +16 volts
- -16 volts
- +24 volts
- +3.3 volts
- +48 volts
- +12 volts (A)
- +12 volts (B)
- +7.5 volts (C)

LED Voltage Indicators provide a quick visual indication of the status of the console and are most often used in maintenance and trouble-shooting applications.

### 16.4 Pinguin Meter Software

Every Vision console comes with Pinguin Surround Meter software that runs on the Vision computer. This software provides comprehensive stereo and surround meter functions.

Any audio that is fed to the Program Meters is also fed to the Pinguin meters.

The Pinguin software is fed from the outputs of the Surround Program meter buffer amplifiers. An audio harness is fed directly from the meter bridge to a card in the automation computer. The Pinguin meter does not appear in the patch bay.

Please refer to the Pinguin software manual for operational details.

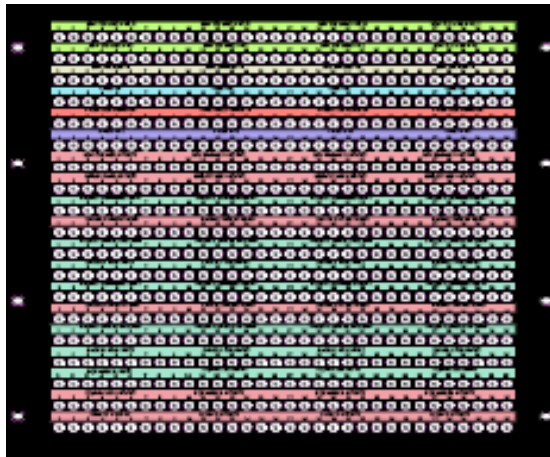
## 17.0 Patch Bay

The Vision Patch Bay provides a comprehensive set of patch points that support all of the systems and functions the console provides.

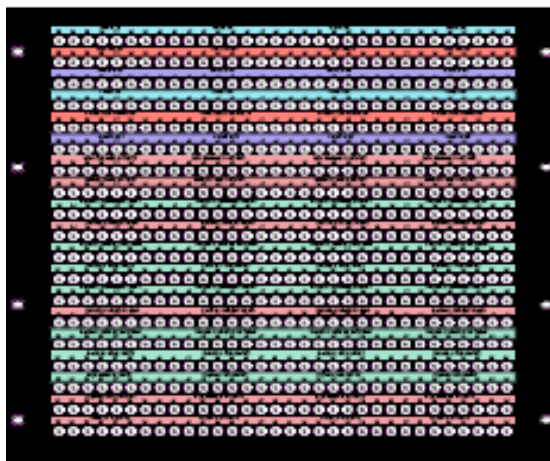
The Patch Bay is mounted in an external equipment rack (not supplied) and is not mounted within the console Mainframe.

The Patch Bay has several sections that support different sections of the console and studio. These sections are as follows:

- Channel Patch Bay
- Multitrack Summing Bus Patch Bay
- Upper System Patch Bay
- Lower System Patch Bay (with Phase Reverse and Multiples)
- Custom User Patch Bay (not shown)



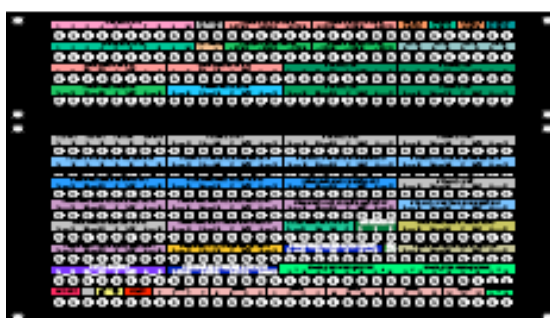
Channel Patch Bay



Channel Patch Bay



Multitrack Summing Bus and  
Multitrack Send Patch Bay



Upper System Patch Bay



Lower System Patch Bay

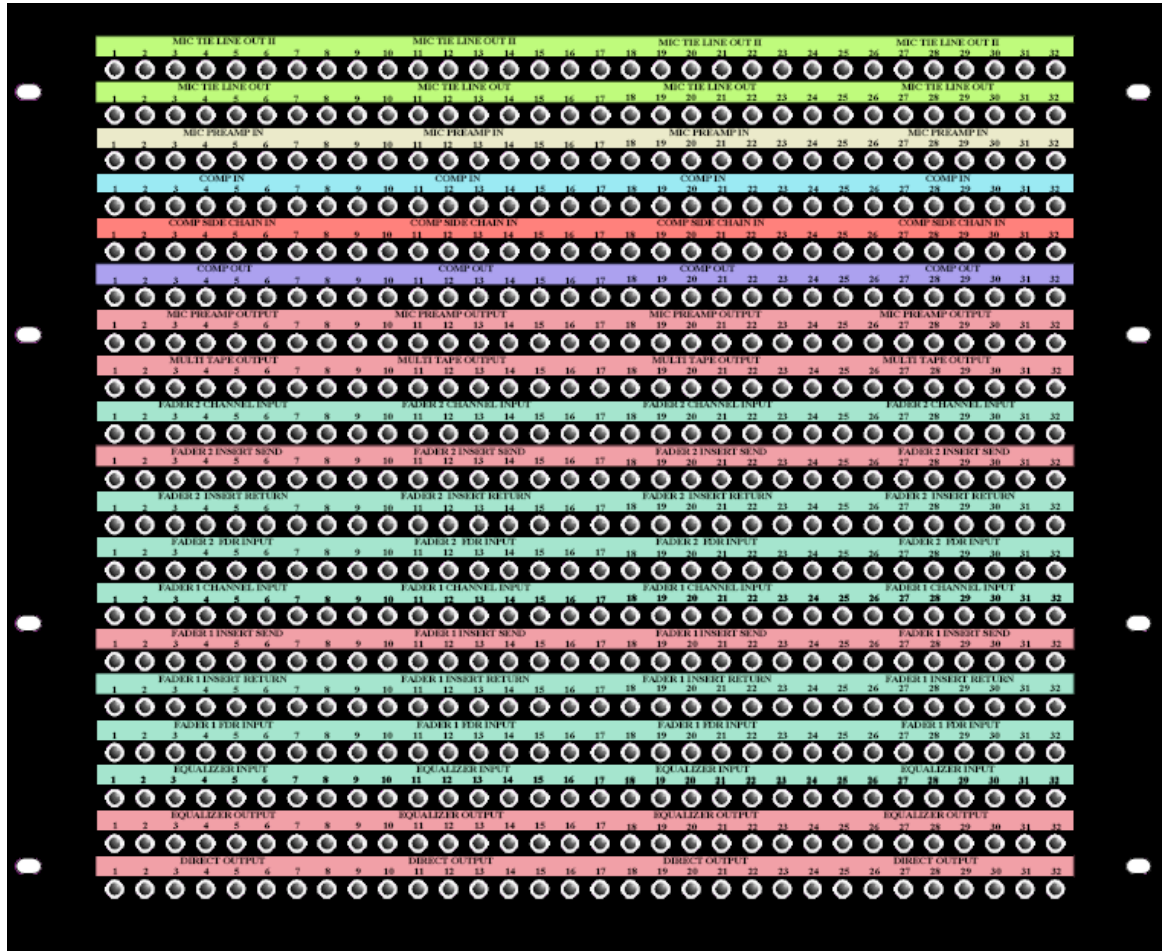
## 17.1 Patch Bay Normals

Outputs: All output Patch Points “split” when a patch cord is inserted. In other words, the signal continues to its Normalled destination, as well as through the inserted patch cord, in essence creating a “Y-cord.”

*NOTE: The MIC TIE LINE OUT Patch Points are the only Patch Points that “break” when a patch cord is inserted.*

Inputs: All input Patch Points “break” when a patch cord is inserted. In other words, the signal is diverted through the inserted patch cord and does not continue on to its normalled destination.

## 17.2 Channel Patch Bay

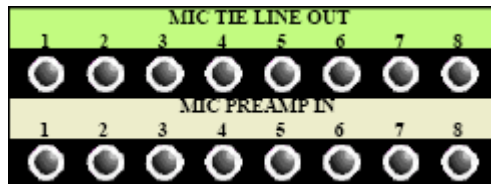


There is a comprehensive set of Patch Points associated with the complete Vision channel including:

- Microphone Tie Lines
- Upper 200 Slots
- Lower 200 Slots
- 500 Slot
- 1068L Input module (Fader 1 and Fader 2 audio path)
- Multitrack Recorder Returns

*IMPORTANT NOTE: To accommodate the space restrictions of this manual, only the first eight (8) patch points are shown for each row. The total number of these points in an actual patch bay will be determined by frame size. For example, a 48 channel frame will have 48 patch points for each of sections outlined below.*

### 17.2.1 Complete Channel Patch Points

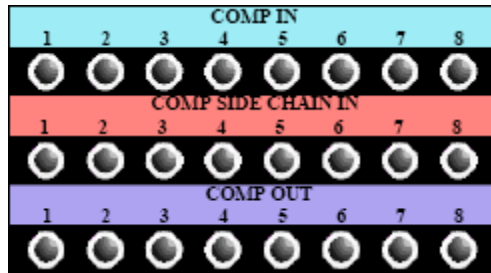


MIC TIE LINE OUT: Studio Microphone Tie-line Outputs

- Fully-normalled to MIC PREAMP IN

MIC PREAMP IN: Connection point to the Preamp Input (Upper 200 Slot or Options Bucket In)

- Feeds the preamp input
- Fully-normalled from MIC TIE LINE OUT
- Patching to these points will replace the mic tie-line feed to the preamp with the patch cord signal.
- Not used with 205L Direct Input Module



COMP IN: Compressor Input (200 Slot Input)

- Half-normalled to COMP SIDE CHAIN IN

COMP SIDE CHAIN IN: Compressor Side-Chain Input (200 Slot Side-chain Input)

- Half-normalled from COMP IN

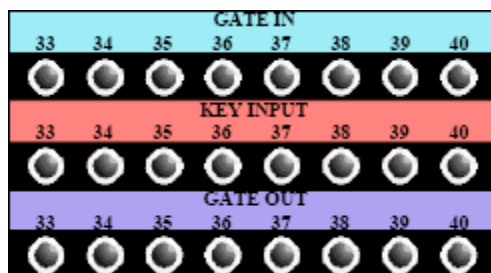
COMP OUT: Compressor Output (200 Slot Output)

- Returns Pre or Post EQ in the programmed audio path (Fader 1 or Fader 2)

*NOTE: Patching into the COMP SIDE CHAIN IN will replace the Compressor Input as the input to the module's detection path (side-chain)*

*NOTE: The "COMP SIDE CHAIN IN" patch point for the 225 compressor is only active when the NEW type is selected. This is due to path to the detector circuit being fed after the gain reduction element (VCA) when OLD type is selected.*

**or**



GATE IN: Gate Input (200 Slot Input)

- Half-normalled to KEY INPUT

KEY IN: Gate Key Input (200 Slot Key Input)

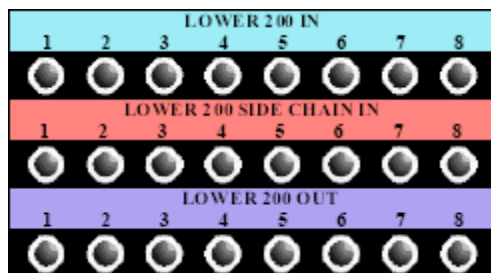
- Half-normalled from GATE IN

GATE OUT: Gate Output (200 Slot Output)

- Returns Pre or Post EQ in the programmed audio path (Fader 1 or Fader 2)

*NOTE: Patching into the KEY INPUT will replace the Gate Input as the input to the module's detection path (key input)*

**or**



LOWER 200 IN: Lower 200 Slot Input

- Half-normalled to LOWER 200 SIDE CHAIN IN

LOWER 200 SIDE CHAIN IN: Lower 200 Slot Side-chain Input

- Half-normalled from LOWER 200 IN

LOWER 200 OUT: Lower 200 Slot Output

- Returns Pre or Post EQ in the programmed audio path (Fader 1 or Fader 2) (See 200 Slot Patching below)

*NOTE: Patching into the SIDE CHAIN IN will replace the Lower 200 Input as the input to the module's detection path (side-chain input)*





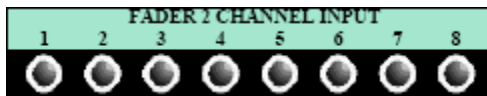
**MIC\_PREAMP\_OUTPUT:** Preamplifier Output (Upper 200 Slot or Options Bucket Out)

- Feeds the input to the channel Input Selector switch (MIC and TAPE) in both paths (Fader 1 and Fader 2)
- The MIC\_PREAMP\_OUTPUT is the default source for Fader 2
- Fader 1 will receive the MIC\_PREAMP\_OUTPUT when the Fader 1 MIC switch is engaged
- Both paths may receive the signal from MIC\_PREAMP\_OUTPUT simultaneously



**MULTITAPE\_OUTPUT:** Multitrack Recorder Output (Multitrack Return)

- Feeds the input to the channel Input Selector switch (MIC and TAPE) in both paths (Fader 1 and Fader 2)
- The MULTITAPE\_OUTPUT is the default source for Fader 1
- Fader 2 will receive the MULTITAPE\_OUTPUT when the Fader 2 TAPE switch is engaged
- Both paths may receive the signal from MULTITAPE\_OUTPUT simultaneously

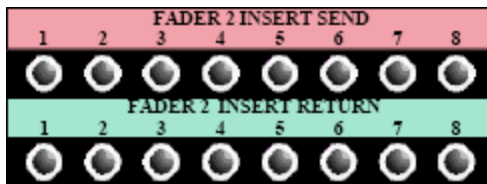


**FADER 2\_CHANNEL\_INPUT:** Fader 2 audio path input

- Replaces the feed to the Fader 2 Channel Input

The FADER 2 CHANNEL INPUT is located:

- Post the Input Selector switch or the 200 Slot Output if so programmed
- Pre EQ



**FADER 2\_INSERT\_SEND:** Fader 2 Insert Send

- Always active

**FADER 2\_INSERT\_RETURN:** Fader 2 Insert Return

- Replaces the feed to the channel Fader Input when the Fader 2 INS switch is engaged

The Fader 2 Insert is Located:

- Post EQ or the 200 Slot Output if so programmed
- Pre FADER 2 FDR INPUT



**FADER 2\_FDR\_INPUT:** Fader 2 Fader Input

- Replaces the feed to the Fader 2 Fader Input

The Fader 2 Fader Input is located:

- Post Insert Return
- Pre Phase Reverse (Polarity Inverter)

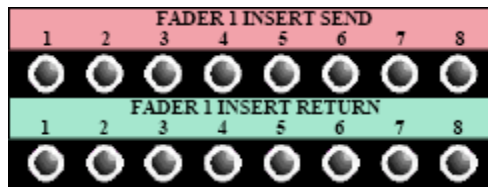


**FADER 1\_CHANNEL\_INPUT:** Fader 1 audio path input

- Replaces the feed to the Fader 1 Channel Input

The FADER 1 CHANNEL INPUT is located:

- Post the Input Selector switch or the 200 Slot Output if so programmed
- Pre EQ



FADER 1 INSERT SEND: Fader 1 Insert Send

- Always active

FADER 1 INSERT RETURN: Fader 1 Insert Return

- Replaces the feed to the channel Fader Input when the Fader 1 INS switch is engaged

The Fader 1 Insert is Located:

- Post EQ or the 200 Slot Output if so programmed
- Pre FADER 1 FDR INPUT

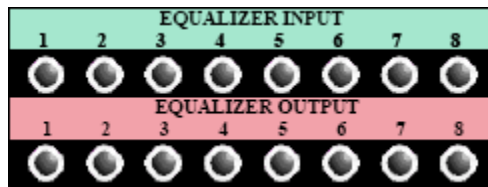


FADER 1 FDR INPUT: Fader 1 Fader Input

- Replaces the feed to the Fader 1 Fader Input

The Fader 1 Fader Input is located:

- Post Insert Return
- Pre Phase Reverse (Polarity Inverter)



EQUALIZER INPUT: Equalizer Input (500 Slot In)

- Replaces the feed to the Equalizer Input
- Post the CHANNEL INPUT

EQUALIZER OUTPUT: Equalizer Output (500 Slot Out)

- Always active

The Equalizer is located:

- Post the CHANNEL INPUT
- Pre INSERT SEND or the 200 Slot Input if so programmed
- Assignable to Fader 1 or Fader 2 audio path

**IMPORTANT NOTE:** *It is possible to patch round the Equalizer by patching the output of the Input Source (preamp or multitrack return) directly to the FADER Input for the desired audio path. This will also bypass the 200 Slot routing and insert for that path.*



DIRECT OUTPUT: Channel Direct Output

- Fed from FADER 1 by default
- Will be fed from Fader 2 if the DIR switch is engaged

The Direct Output is located:

- Post the Direct Output switch (Post-fader)

### 17.2.2 Channel Patch Points for Multitrack Recording

The next two sections will show the channel patch points normally associated with each path during a typical multitrack recording session. The following conditions apply:

- 212L Mic Preamp, 225L Compressor, and 550L EQ are fitted in their respective slots
- Input Selectors are in their default positions (Fader 2 MIC, Fader 1 TAPE)
- The EQ is assigned to Fader 2 and is engaged
- The multitrack recorder is patched to be fed from the Direct Output (not shown)
- The Direct Output is assigned to Fader 2 (DIR switch engaged) and patched to a multitrack recorder
- The Lower 200 Slot is programmed to be Pre EQ in Fader 1



## Fader 2 Patch Points (Multitrack Send Audio Path)

The patch points below are the patch points normally associated with the Fader 2 audio path during a typical multitrack recording session. In this scenario, Fader 2 is used to route microphone inputs to a multitrack recorder via the Direct Output.



MIC TIE LINE OUT: Studio Microphone Tie-line Outputs

- Fully-normalled to MIC PREAMP IN

MIC PREAMP IN: Connection point to the Preamp Input (Upper 200 Slot or Options Bucket In)

- Feeds the preamp input
- Fully-normalled from MIC TIE LINE OUT
- Patching to these points will replace the mic tie-line feed to the preamp with the patch cord signal.
- Not used with 205L Direct Input module



MIC PREAMP OUTPUT: Preamplifier Output (Upper 200 Slot or Options Bucket Out)

- Feeds the input to the channel Input Selector switch (MIC and TAPE) in both paths (Fader 1 and Fader 2)
- The MIC PREAMP OUTPUT is the default source for Fader 2
- Fader 1 will receive the MIC PREAMP OUTPUT when the Fader 1 MIC switch is engaged
- Both paths may receive the signal from MIC PREAMP OUTPUT simultaneously

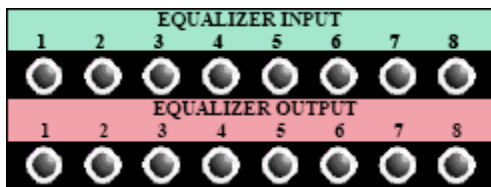


FADER 2 CHANNEL INPUT: Fader 2 audio path input

- Replaces the feed to the Fader 2 Channel Input

The FADER 2 CHANNEL INPUT is located:

- Post the Input Selector switch or the 200 Slot Output if so programmed
- Pre EQ



EQUALIZER INPUT: Equalizer Input (500 Slot In)

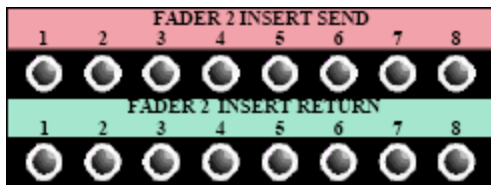
- Replaces the feed to the Equalizer Input
- Post the CHANNEL INPUT

EQUALIZER OUTPUT: Equalizer Output (500 Slot Out)

- Always active

The Equalizer is located:

- Post the CHANNEL INPUT
- Pre INSERT SEND or the 200 Slot Input if so programmed
- Assignable to Fader 1 or Fader 2 audio path



FADER 2 INSERT SEND: Fader 2 Insert Send

- Always active

FADER 2 INSERT RETURN: Fader 2 Insert Return

- Replaces the feed to the channel Fader Input when the Fader 2 INS switch is engaged

The Fader 2 Insert is Located:

- Post EQ or the 200 Slot Output if so programmed
- Pre FADER 2 FDR INPUT



#### FADER 2 FDR INPUT: Fader 2 Fader Input

- Replaces the feed to the Fader 2 Fader Input

The Fader 2 Fader Input is located:

- Post Insert Return
- Pre Phase Reverse (Polarity Inverter)



#### DIRECT OUTPUT: Channel Direct Output

- Fed from FADER 1 by default
- Will be fed from Fader 2 if the DIR switch is engaged

The Direct Output is located:

- Post the Direct Output switch (Post-fader)

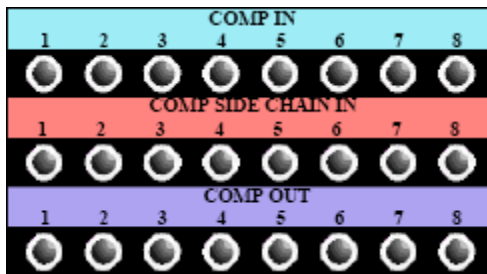
### Fader 1 Patch Points (Multitrack Return Audio Path)

The patch points below are the Patch Points normally associated with the Fader 1 audio path during a typical multitrack recording session. In this scenario, Fader 1 is used to route multitrack returns to a mix bus (not shown).



#### MULTITAPE OUTPUT: Multitrack Recorder Output (Multitrack Return)

- Feeds the input to the channel Input Selector switch (MIC and TAPE) in both paths (Fader 1 and Fader 2)
- The MULTITAPE OUTPUT is the default source for Fader 1
- Fader 2 will receive the MULTITAPE OUTPUT when the Fader 2 TAPE switch is engaged
- Both paths may receive the signal from MULTITAPE OUTPUT simultaneously



#### COMP IN: Compressor Input (200 Slot Input)

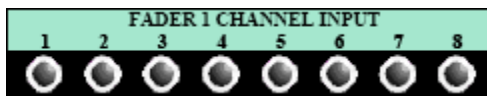
- Half-normalled to COMP SIDE CHAIN IN

#### COMP SIDE CHAIN IN: Compressor Side-Chain Input (200 Slot Side-chain Input)

- Half-normalled from COMP IN

#### COMP OUT: Compressor Output (200 Slot Output)

- Returns Pre or Post EQ in the programmed audio path (Fader 1 or Fader 2)

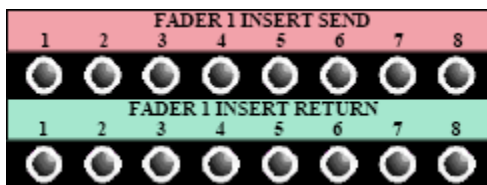


#### FADER 1 CHANNEL INPUT: Fader 1 audio path input

- Replaces the feed to the Fader 1 Channel Input

The FADER 1 CHANNEL INPUT is located:

- Post the Input Selector switch or the 200 Slot Output if so programmed
- Pre EQ



#### FADER 1 INSERT SEND: Fader 1 Insert Send

- Always active

#### FADER 1 INSERT RETURN: Fader 1 Insert Return

- Replaces the feed to the channel Fader Input when the Fader 1 INS switch is engaged

The Fader 1 Insert is Located:

- Post EQ or the 200 Slot Output if so programmed
- Pre FADER 1 FDR INPUT



**FADER 1 FDR INPUT:** Fader 1 Fader Input

- Replaces the feed to the Fader 1 Fader Input
- The Fader 1 Fader Input is located:
- Post Insert Return
  - Pre Phase Reverse (Polarity Inverter)

### 17.3 Multitrack Summing Bus/Multitrack Send Patch Bay



The Multitrack Summing Bus/Multitrack Send Patch Bay supports the outputs of Multitrack Summing Bus1-24 and the sends to the multitrack recorder.

**IMPORTANT NOTE:** To accommodate the space restrictions of this manual, only the first eight (8) BUS OUTPUT and MULTITRACK IN patch points are shown. The total number of these points in an actual patch bay will be determined by frame size.



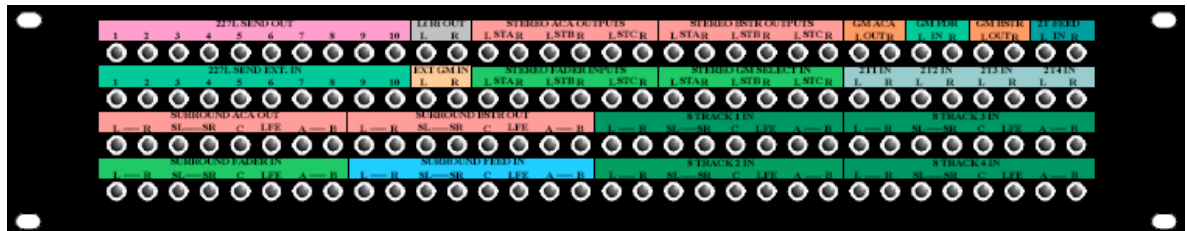
**BUS OUTPUT:** Multitrack Summing Bus outputs

- Half-normalled to MULTITRACK IN

**MULTITRACK IN:** Input to the multitrack recorder

- Feeds the multitrack recorder inputs
- Half-normalled from BUS OUTPUT
- Patching to these points will replace the feed to the multitrack recorder with the patch cord signal

### 17.4 Upper System Patch Bay



The Upper System Patch Bay contains patch points that support the following:

- 227L Cue Send modules output and external input
- Stereo Program ACAs and Master Faders
- Stereo Grand Master
- Surround Program ACAs and Master Faders
- 2-Track and 8-Track Mix Recorder Feeds
- Lt Rt Outputs

#### 17.4.1 227L Cue Send Patch Points



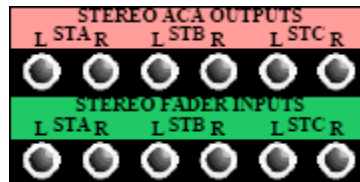
**227L SEND OUT:** Output of the 227L Cue Send modules



**227L SEND EXT. IN (External Input):** External inputs to the 227L modules

- Active when the EXT IN switch is engaged on the 227L module

## 17.4.2 Stereo Program Patch Points



STEREO ACA OUTPUTS: Stereo Active Combining Amplifier outputs

- Half-normalled to STEREO FADER INPUTS

STEREO FADER INPUTS: Stereo Master Fader inputs

- Feeds the stereo Master Fader inputs
- Half-normalled from STEREO ACA OUTPUTS
- Patching to these points will replace the feed to the Stereo Master Faders with the patch cord signal.



STEREO BSTR OUTPUTS: Stereo Booster outputs

- Half-normalled to STEREO GM SELECT IN

STEREO GM SELECT IN: Stereo Grand Master selector inputs

- Feeds the Stereo Grand Master Select inputs
- Half-normalled from STEREO BSTR OUTPUTS
- Patching to these points will replace the feed to the Stereo Grand Master Selector with the patch cord signal.



EXT GM IN: Stereo external Grand Master inputs

- Allows an external stereo source to be added to the Grand Master mix
- Feeds the Grand Master ACA
- Active only when the EXT switch in the Grand Master Select controls is engaged



GM ACA OUT: Stereo Grand Master ACA output

- Half-normalled to GM FDR IN

GM FDR IN:

- Feeds the Grand Master Fader
- Half-normalled from GM ACA OUT
- Patching to these points will replace the feed to the Grand Master Fader with the patch cord signal.



GM BSTR OUT: Stereo Grand Master Booster output

- Primary Stereo Program Output
- Half-normalled to 2T FEED IN

2T FEED IN:

- Distributed feed to four (4) 2-track recorders
- Half-normalled from GM BSTR OUT
- Half-normalled to 2T IN 1-4
- Patching to these points will replace the feed to the 2-track recorders with the patch cord signal.



2T1 IN: Input to 2-track recorder #1

- Half-normalled from 2T FEED IN

2T2 IN: Input to 2-track recorder #2

- Half-normalled from 2T FEED IN

2T3 IN: Input to 2-track recorder #3

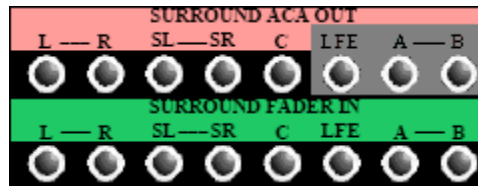
- Half-normalled from 2T FEED IN

2T4 IN: Input to 2-track recorder #4

- Half-normalled from 2T FEED IN

Patching to these points will replace the feed to the 2-track recorder with the patch cord signal.

### 17.4.3 Surround Program Patch Points

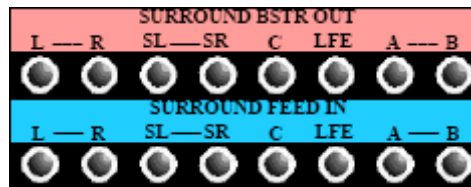


SURROUND ACA OUT: Surround Active Combining Amplifier outputs

- Half-normalled to SURROUND FADER IN
- There is no LFE or A-B Program Bus or ACA
- The LFE and A-B SURROUND ACA OUT patch points are not connected and carry no audio

SURROUND FADER IN: Surround Master Fader inputs

- Feeds the Surround Master Fader inputs
- An LFE Program feed can be created by patching LFE audio to the LFE SURROUND FADER IN
- Half-normalled from SURROUND ACA OUT
- Patching to these points will replace the feed to the Surround Master Faders with the patch cord signal

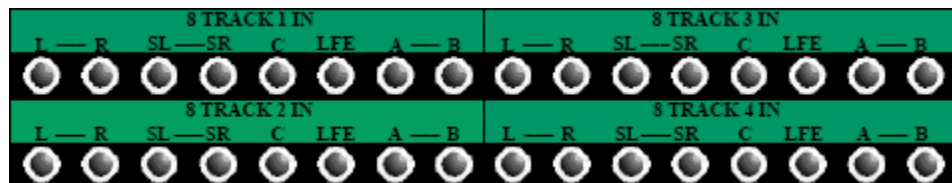


SURROUND BSTR OUT: Surround Booster outputs

- Half-normalled to SURROUND FEED IN

SURROUND FEED IN:

- Distributed feed to four (4) 8-track recorders
- Half-normalled from SURROUND BSTR OUT
- Half-normalled to 8TRACK IN 1-4
- Patching to these points will replace the feed to the 8-track surround recorders with the patch cord signal.



8TRACK1 IN: Input to 8-track surround recorder #1

- Half-normalled from SURROUND FEED IN

8TRACK2 IN: Input to 8-track surround recorder #2

- Half-normalled from SURROUND FEED IN

8TRACK3 IN: Input to 8-track surround recorder #3

- Half-normalled from SURROUND FEED IN

8TRACK4 IN: Input to 8-track surround recorder #4

- Half-normalled from SURROUND FEED IN

Patching to these points will replace the feed to the 8-track surround recorder with the patch cord signal.

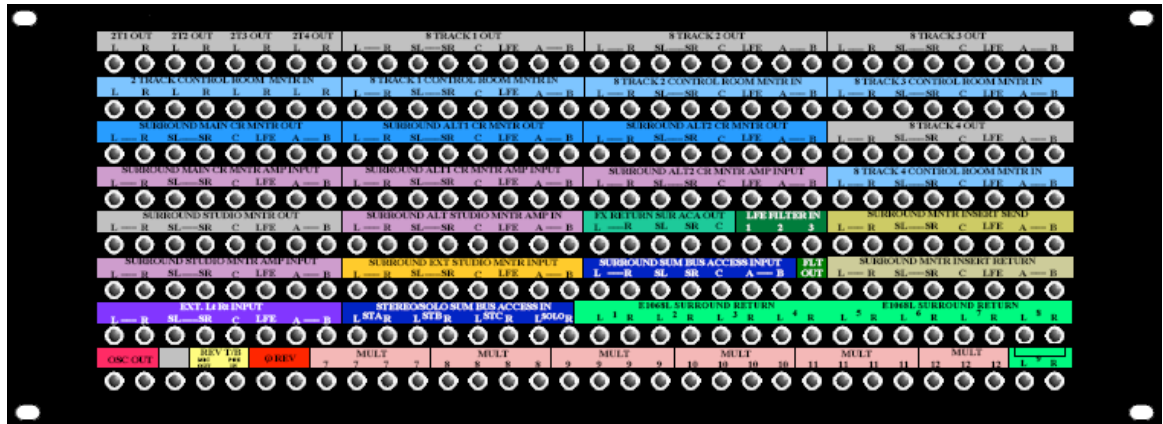
### 17.4.4 Lt Rt Fold Down Matrix Output Patch Points



Lt Rt OUT (Left Total- Right Total Output): Output of the Lt Rt Fold Down Matrix

- May be routed to the Grand Master Program Bus when the TO GM switch is engaged on the Lt Rt Fold Down Matrix

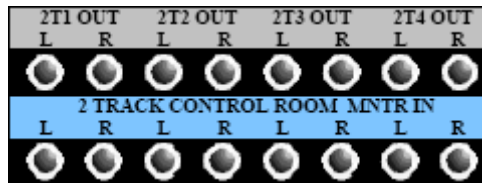
## 17.5 Lower System Patch Bay



The Lower System Patch Bay contains patch points that support the following:

- 2-Track and 8-Track record/playback device returns
- Stereo and Surround monitor source inputs
- Control Room monitor and Studio monitor outputs
- Control Room monitor and Studio amplifier inputs
- E1068L inputs and outputs
- LFE inputs and output
- Control Room Monitor Inserts
- Stereo, Surround, and Solo Summing Bus Access
- Lt Rt External Inputs
- Oscillator/Pink Noise generator
- Talk Back
- Phase Reverse (polarity inverter)
- Multiples (MULT)

### 17.5.1 2-Track and 8-Track Record/Playback Device Returns and Stereo and Surround Monitor Source Inputs

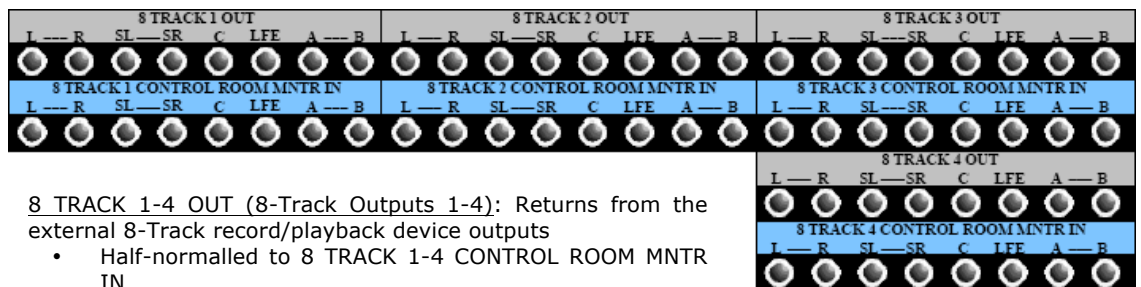


2T 1-4 OUT (2-Track Outputs 1-4): Returns from the external 2-Track record/playback device outputs

- Half-normalled to 2 TRACK 1-4 CONTROL ROOM MNTR IN

2 TRACK CONTROL ROOM MNTR IN (2-Track Control Room Monitor Inputs): Feeds the Control Room monitor stereo Playback selectors

- Feeds the 2T1, 2T2, 2T3, and 2T4 Playback Monitor Selectors
- Half-normalled from 2T 1-4 OUT
- Patching to these points will replace the feed to the 2-Track Monitor Selectors with the patch cord signal.



8 TRACK 1-4 OUT (8-Track Outputs 1-4): Returns from the external 8-Track record/playback device outputs

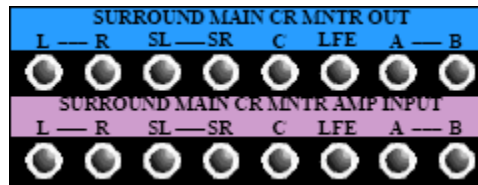
- Half-normalled to 8 TRACK 1-4 CONTROL ROOM MNTR IN

8 TRACK CONTROL ROOM MNTR IN (8-Track Control Room Monitor Inputs): Feeds the Control Room monitor surround Playback selectors

- Feeds the 6T1, 6T2, 6T3, and 6T4 Playback Monitor Source Selectors
- Half-normalled from 8 TRACK 1-4 OUT
- Patching to these points will replace the feed to the 6-Track Monitor Selectors with the patch cord signal.



## 17.5.2 Control Room Monitor and Studio Monitor Outputs and Control Room Monitor and Studio Amplifier Inputs



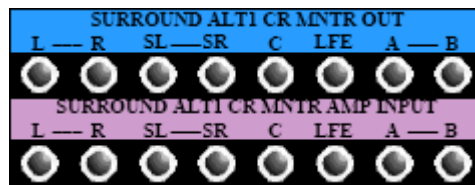
**CAUTION: Extreme caution should be used when patching into the SURROUND MAIN CR MNTR AMP INPUT patch points as these patches bypass the Control Room volume control.**

SURROUND MAIN CR MNTR OUT (Surround Main Control Room Monitor Outputs): Control Room Main Monitor output feeds

- Active only when the MAIN SPKR (Main Speakers) button is engaged
- Half-normalled to SURROUND MAIN CR AMP INPUT

SURROUND MAIN CR AMP INPUT (Surround Main Control Room Amplifier Inputs): Feeds the inputs of the Control Room Main Monitor amplifiers

- Half-normalled from SURROUND MAIN CR MNTR OUT
- Patching to these points will replace the feed to the Main Monitor amps with the patch cord signal



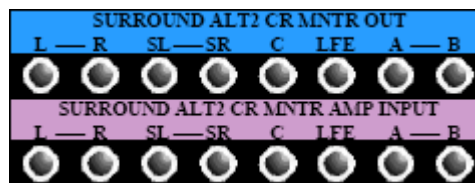
**CAUTION: Extreme caution should be used when patching into the SURROUND ALT 1 CR MNTR AMP INPUT patch points as these patches bypass the Control Room volume control.**

SURROUND ALT 1 CR MNTR OUT (Surround Alternate 1 Control Room monitor Outputs): Control Room Alternate 1 monitor output feeds

- Active only when the ALT 1 (Alternate 1 Speakers) button is engaged
- Half-normalled to SURROUND ALT 1 CR AMP INPUT

SURROUND ALT 1 CR AMP INPUT (Surround Alternate 1 Control Room Amplifier Inputs): Feeds the inputs of the Control Room Alternate 1 monitor amplifiers

- Half-normalled from SURROUND ALT 1 CR MNTR OUT
- Patching to these points will replace the feed to the Alt 1 Monitor amps with the patch cord signal



**CAUTION: Extreme caution should be used when patching into the SURROUND ALT 2 CR MNTR AMP INPUT patch points as these patches bypass the Control Room volume control.**

SURROUND ALT 2 CR MNTR OUT (Surround Alternate 2 Control Room Monitor Outputs): Control Room Alternate 2 Monitor output feeds

- Active only when the ALT 2 (Alternate 2 Speakers) button is engaged
- Half-normalled to SURROUND ALT 2 CR AMP INPUT

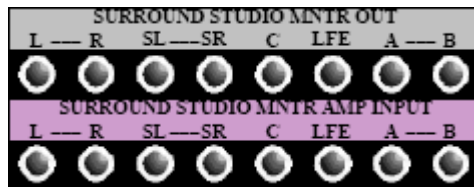
SURROUND ALT 2 CR AMP INPUT (Surround Alternate 2 Control Room Amplifier Inputs): Feeds the inputs of the Control Room Alternate 2 Monitor amplifiers

- Half-normalled from SURROUND ALT 2 CR MNTR OUT
- Patching to these points will replace the feed to the Alt 2 Monitor amps with the patch cord signal



SURROUND EXT STUDIO MNTR INPUT (Surround External Studio Monitor Input): External Surround Studio monitor inputs

- Allows an external surround source to be routed to the Studio monitor EXT IN source selector
- Active only when the EXT IN switch in the Studio monitor controls is engaged



**CAUTION: Extreme caution should be used when patching into the SURROUND STUDIO MNTR AMP INPUT patch points as these patches bypass the Studio volume control.**

SURROUND STUDIO MNTR OUT (Surround Studio Monitor Outputs): Studio monitor output feeds

- Half-normalled to SURROUND STUDIO MNTR AMP INPUT
- Feeds the SURROUND ALT STUDIO MNTR AMP IN patch points when the ALT OUT button in the Studio monitor controls is engaged

SURROUND STUDIO MNTR AMP INPUT (Surround Studio Monitor Amplifier Inputs): Feeds the inputs of the Studio Monitor amplifiers

- Half-normalled from SURROUND STUDIO MNTR OUT
- Patching to these points will replace the feed to the Studio monitor amps with the patch cord signal.



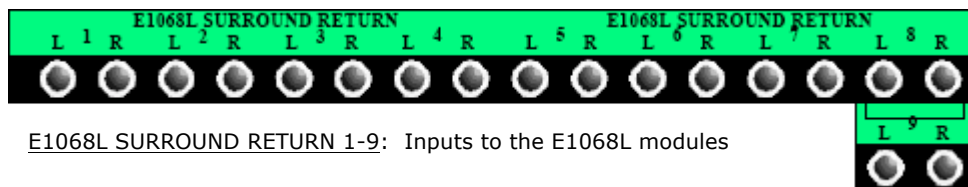
**CAUTION: Extreme caution should be used when patching into the SURROUND ALT STUDIO MNTR AMP IN patch points as these patches bypass the Studio volume control.**

SURROUND ALT STUDIO MNTR AMP IN (Surround Alternate Studio Monitor Amplifier Inputs): Feeds the inputs of the Alternate Studio Monitor amplifiers

- Fed from the SURROUND STUDIO MNTR OUT patch points when the ALT OUT button in the Studio monitor controls is engaged
- Patching to these points will replace the feed to the Alternate Studio monitor amps with the patch cord signal.

**CAUTION:** Exercise great care when patching into any of the Amplifier Input (AMP IN) patch points. There is no level control between these patch points and the inputs to the monitor system amplifiers. Patching unattenuated signals into these patch points can result in very loud output from the Control Room monitor system.

### 17.5.3 E1068L and Options Bucket Patch Points



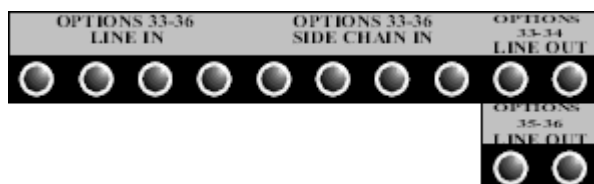
E1068L SURROUND RETURN 1-9: Inputs to the E1068L modules



FX RETURN SUR ACA OUT Effects Return Surround ACA Output): Outputs from the Surround Effects Return ACAs

- All E1068L modules feed the Effects Return ACAs

Patch points for 200 Slot modules in the Options Bucket may appear in the patch bay in various configurations.



OPTIONS LINE IN: Options Bucket 200 Slot Input

- Half-normalled to OPTIONS SIDE CHAIN IN

OPTIONS SIDE CHAIN IN: Options Bucket 200 Slot Side-chain Input

- Half-normalled from OPTIONS LINE IN

OPTIONS LINE OUT: Options Bucket 200 Slot Line Output

**NOTE:** Patching into the OPTIONS SIDE CHAIN IN will replace the Options Line Input as the input to the module's detection path (side-chain input)



#### 17.5.4 LFE Filter Patch Points



LFE FILTER IN 1, 2, 3: LFE low-pass filter inputs

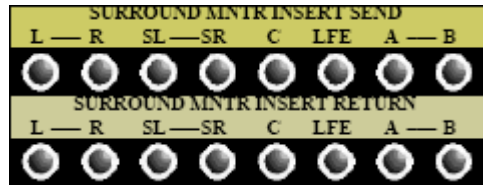
- Feeds the LFE Filter input
- The signals patched to these points are summed together and fed to the LFE
- Three parallel input patch points (hardwired multiple)
- Fed by Surround to LFE fold down when the 5 TO LFE switch is engaged on the LFE C/R Insert control panel



FLT OUT (Filter Out): Output of the LFE low-pass filter

- The LFE FLTR button must be engaged to activate this output
- May be routed to the Left, Center, and Right monitor feeds when the LFE TO LCR button is engaged

#### 17.5.5 Control Room Monitor Insert Patch Points



SURROUND MNTR INSERT SEND (Surround Monitor Insert Send): 8-channel Control Room Monitor Insert Send

- L-R, SL-SR, C, LFE, and A-B channels are supported
- Always active

SURROUND MNTR INSERT RETURN (Surround Monitor Insert RETURN): 8-channel Control Room Monitor Insert Return

- L-R, SL-SR, C, LFE, and A-B channels are supported
- Replaces the Control Room monitor feed when the C/R INS switch is engaged

The Control Room Insert is Located:

- Post Monitor Source selectors
- Pre Control Room Level control

#### 17.5.6 Stereo, Surround, and Solo Summing Bus Access



STEREO/SOLO SUM BUS ACCESS IN: Stereo and Solo Summing Bus Access Inputs

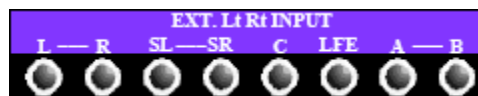
- Normalled to the Stereo A, B, C, and SOLO busses
- Signals patched into the STEREO SUM BUS ACCESS IN patch points will be added the bus before the Stereo and Solo ACAs



SURROUND SUM BUS ACCESS INPUT: Surround Summing Bus Access Inputs

- Normalled to the Surround Program busses
- Signals patched into the SURROUND SUM BUS ACCESS INPUT patch points will be added the bus before the Surround Program ACAs

#### 17.5.7 Lt Rt Fold Down Matrix External Inputs



EXT. Lt Rt INPUT: External surround inputs to the Lt Rt Fold Down Matrix

- Feeds the Lt Rt Fold Down Matrix
- Active when the EXT switch is engaged on the Lt Rt Fold Down Matrix

#### 17.5.8 Oscillator/Pink Noise Generator Patch Points



OSC OUT (Oscillator Output): Output of the Oscillator/Pink Noise generator

- Active when either the PINK or OSC buttons are engaged
- Independent of routing to Busses

#### 17.5.9 Talk Back Patch Points



REV T/B MIC OUT: Dedicated Reverse Talk Back microphone tie-line from studio

REV T/B PRE IN: Input to the Reverse Talk Back microphone preamplifier in the 227M Cue Master module

### 17.5.10 Phase Reverse (polarity inverter) and Multiple (MULT) Patch Points



- Ø REV (Reverse): The two points are wired out of polarity with each other
- A signal patched into one jack will be out of polarity (phase reversed) at the other point



MULT (Multiple): 3 or 4 paralleled patch points

- Hardwired split (no buffer)
- Signals patched into one of these points is available at the other points
- Six (6) Multiples are typically provided

## 17.6 Custom User Patch Bay

Custom Patch Bays to support other studio equipment are typically installed along with the console. These Patch Bays may be supplied by API as an add-on option or by the studio. Please refer to the studio engineering documentation and staff for details about specific installations.

## 18.0 Vision Computer Control

Each Vision console is equipped with a PC computer and a display mounted in the center section. The computer uses a Windows operating system and runs the Vision console and Pinquin meter software applications.

### 18.1 System Overview

The Vision software system facilitates several console features and functions:

- Automation: Fader, mute, and switch automation
- Groups: Fader, mute, automation switch groups
- Recall: Software control of channel input and output assignments, and recallable switches positions
- Snapshots: Capture, store, and load static “snapshots” of faders, mutes, and recall settings
- DAW Control Surface: Console control of DAW fader, mute, solo, and record ready via HUI over MIDI
- File Management: Projects, songs, snapshots, and mixes

Vision software interfaces with the console hardware via two primary systems, automation and recall. Each system operates independently of the other.

### 18.2 Hardware and Software Interface

The **Recall System** provides the means to set the state of controls that typically change infrequently once they are set during a session. The following settings are part of the recall system:

- Fader 1 Routing
- Fader 1 Switches
- Fader 2 Routing
- Fader 2 Switches
- Multitrack Summing Bus Assignments
- Auxiliary Send Routing
- Global Settings
- Clear Settings

Recall settings may be set on one or more channels via Recall Settings window. The current recall settings, whether set via software or on the console, may be read globally from the console and stored as part of a snapshot. Operation of the recall system is explained in detail in section 24.0 Recall System.

The **Automation System** records fader, mute, and switch moves to SMPTE or MIDI timecode. These moves can be played back and edited as needed. The following controls are part of the automation system:

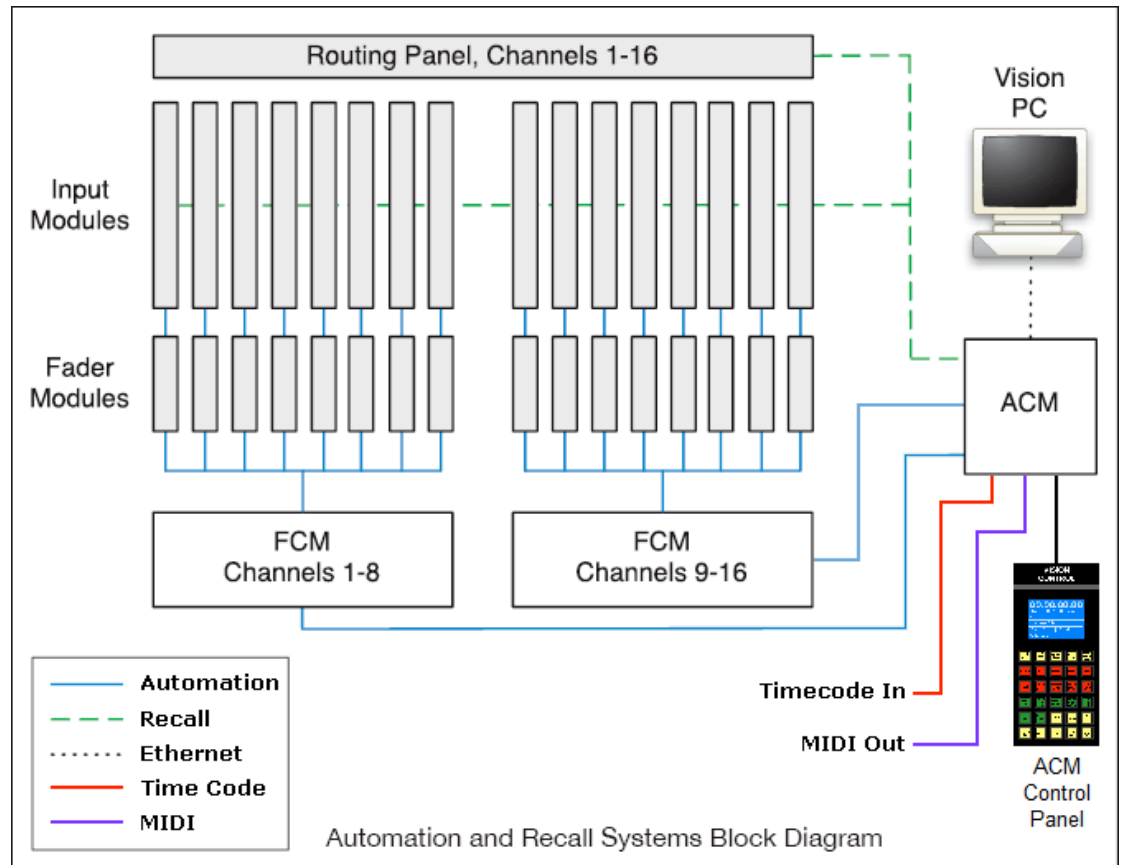
- Fader 1 Fader and Mute
- Fader 2 Fader and Mute
- Fader 1 and 2 Inserts
- EQ Bypass
- Auxiliary Send On/Off

Automation data is recorded using both hardware controls and software interfaces. The current settings of the automation controls may be read globally from the console and stored as part of a snapshot. Operation of the automation system is explained in detail in section 26.0 Automation System.

## 18.3 System Architecture

The hardware and processing for both recall and automation are distributed among seven subsystems:

- Vision PC: PC computer running Vision software
- Automation Control Module (ACM): Interface with Vision PC and console hardware
- ACM Control Panel (Vision Control): Console automation control panel
- Fader Control Module (FCM): 8-channel fader control module
- Fader Module: Fader and mute for the Fader 1 audio path and automation controls for the channel
- 1068L Module: Channel input/output module including fader and mute for the Fader 2 audio path and the mute for the Fader 1 audio path
- Output Assignment Module (Routing Panel): Channel Output Assignment module



### 18.3.1 Vision PC Computer

The Vision PC computer has a display mounted in the Center Section of the console, with keyboard and pointing device nearby. The PC itself is typically mounted in the same rack as the console power supplies. Additional monitors can be used.

The PC is a convenient controller for the console, giving you access to all of the recall and automation functions in one place. Since it is connected by Ethernet to the Automation Control Module (ACM), you can also run the Vision software on any PC laptop that meets the minimum requirements, should the need arise.

The PC's we use are usually very reliable, however all computers are notorious for failures at inopportune moments. Should the PC ever crash, the automation system will keep running like nothing happened and the current mix will be retained in the ACM memory. Of course, you won't be able save your work until the PC is functioning again.

### 18.3.2 Automation Control Module (ACM)

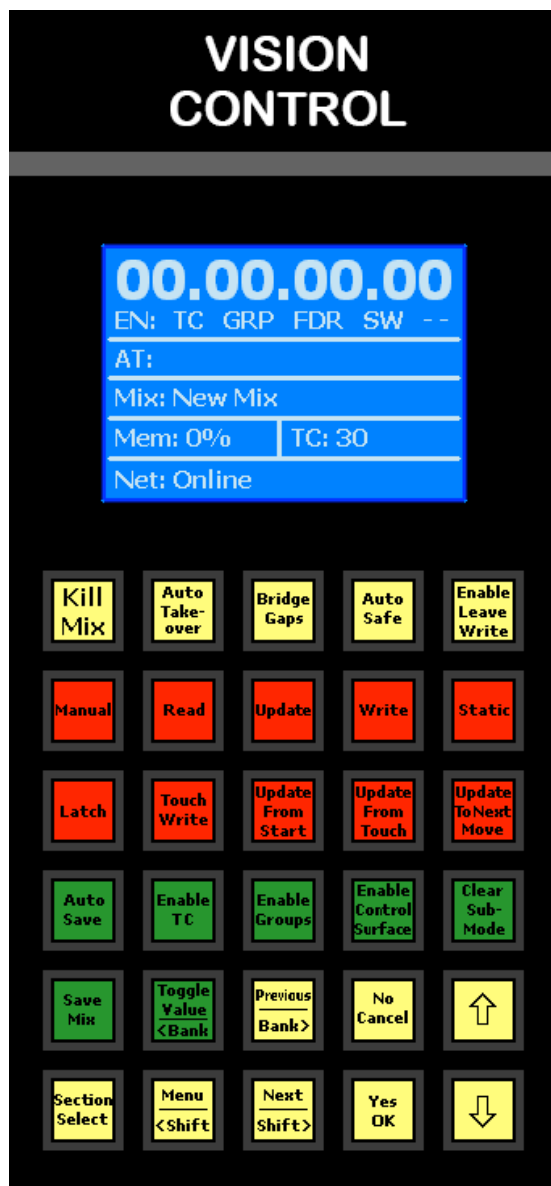
The Automation Control Module (ACM) is the master controller and computer interface for both the recall and automation systems.

The ACM is responsible for all real time automation features and always holds the last mix pass in its volatile RAM memory. If the computer crashes, it is still possible to continue working and recover the last mix pass from the ACM, as long as power is not lost. In fact, the ACM can function perfectly well without the computer, with the exception of a few inaccessible commands and the ability to save your work to disk.

If the ACM fails, all of the automation functions are inaccessible, and your most recent mix pass is lost. However the console remains active for manual control and all of your saved mixes are safe in the Vision PC.

The ACM also provides the SMPTE and MIDI timecode interfaces for automation and the MIDI interface for DAW control. The ACM may be mounted under the console or installed in an external rack.

### 18.3.3 ACM Control Panel (Vision Control)



ACM Control Panel (Vision Control): The ACM Control Panel is the user interface and display for the ACM. It provides a 5 by 6 matrix of automation control buttons and a backlit LCD display.

The main display shows Timecode, Mix Name, Memory used, Timecode frame-rate, and connection status. It can also display fader levels, ACM menus, and messages.

The top row of yellow buttons control Global Functions.

The two rows of red buttons automation modes and submode assignment.

The green buttons enable various aspects of the automation system, as well as a "Clear Sub-Mode" button.

The bottom rows of yellow and green buttons control the selection of channel sections, saving mixes, and navigation.

The ACM Control Panel is located next to the master faders in the Center Section.

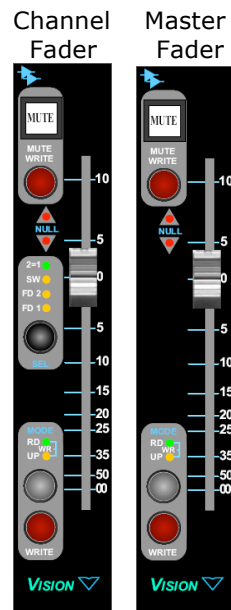
#### 18.3.4 Fader Control Modules (FCM)

The Fader Control Module (FCM) is a circuit board that controls up to eight fader modules and eight 1068L Input modules. It is mounted directly beneath the faders. Its job is control of automation functions for faders and 1068L modules.

FCMs play no role in the recall system.

FCMs are controlled by the Automation Control Module (ACM). If a FCM fails, most parts of the fader and input modules under its control will stop working. However, the audio paths will continue to operate. No mix data is stored in the FCM, so a FCM failure will not cause any loss of data.

#### 18.3.5 Fader Modules



The Channel Fader Module contains the fader and mute for the Fader 1 audio path. It also contains a channel section selector, automation mode selector, and null indicator lights.

Fader modules are connected to the automation system via Fader Control Module (FCM), which is mounted directly below them.

The Master Fader Module contains the fader and mute for the Program and Group Master. It also contains an automation mode selector and null indicator lights.

There are no recall functions on either fader module. A static fader and mute position for both faders can be stored to a snapshot.

#### 18.3.6 1068L Input Modules



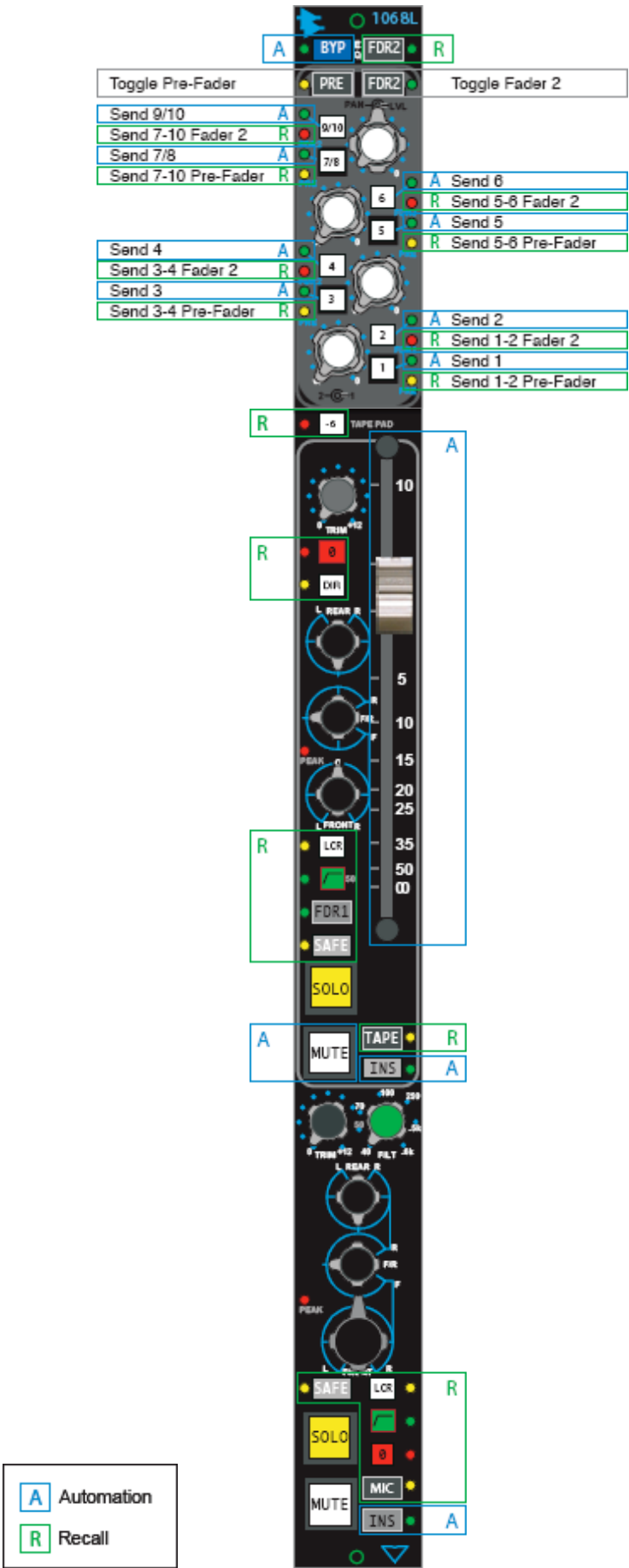
The 1068L Input module contains the fader and mute for the Fader 2 audio path. It also contains all of the automated switches for the entire channel strip (Inserts, EQ By-pass, Aux Send On/Off).

It also contains the controls for Auxiliary Send routing, EQ routing, and the channel switches controlled by the recall system.

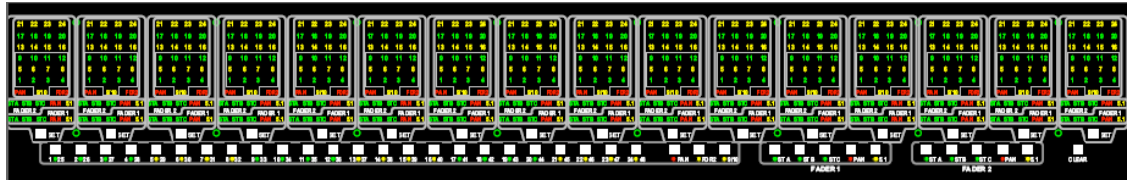
The 1068L Input modules are connected to their associated Fader Control Modules for Automation control. They are also connected directly to the ACM for recall system control.

*NOTE: The Fader 1 mute button on the 1068L module is not part of the recall or automation systems, but is activated by the automated mute on the fader module. When engaged, it is not disengaged but the automation system.*

The diagram below indicates which 1068L parameters are controlled by the automation or recall system:



### 18.3.7 Output Assignment Modules (Routing Panels)



The Output Assignment module displays the bus routing for each of the sixteen channels it is associated with. Channel output assignments may be made using the recall system or directly from buttons on the module.

These modules are connected to the recall system via the Automation Control Module (ACM). They are also connected to the relay cards on the rear of the console, where the actual audio routing takes place.

There are no automation functions on the Output Assignment module.



# 19.0 Vision Software

The Vision software is primary user interface for the automation and recall systems, snapshots, groups, DAW control, file management, and setup and maintenance functions.

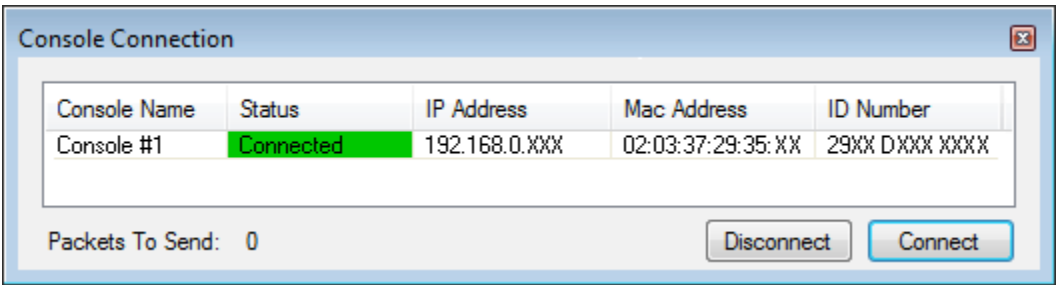
## 19.1 Starting Vision Software

Start the Vision Software by double-clicking the shortcut located on the Windows desktop, selecting "API Vision" from Windows "Start menu," or running the Vision.exe program.

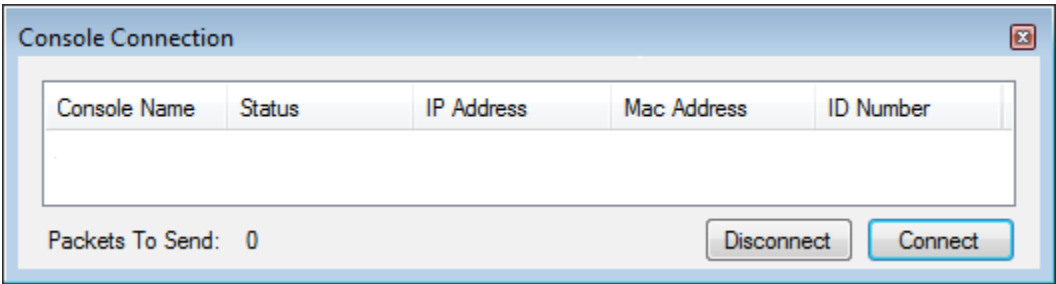


### Console Connection Window

When started, the software will attempt to establish communication with the Automation Control Module (ACM) via Ethernet. The connection will usually be made right away and the Console Connection window will display the details of the connection.



If this communication cannot be established, the Console Connection window will appear empty. Be sure the console is fully powered up and click the "Connect" button to attempt establishing the connection again.



The connection between the Vision PC and the console ACM can be broken by clicking the "Disconnect" button. Breaking the connection is part of normal operation, but may be used during maintenance and troubleshooting procedures.

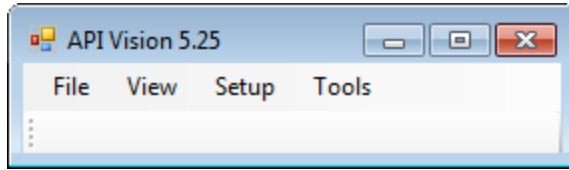
*NOTE: If you suspect the communication between the Vision PC and the Automation Control Module (ACM) is corrupted, try resetting the interface by clicking the "Disconnect" button, followed by the "Connect" button.*

Rarely, communications errors will crop up and an error box will report the exact messages. Most errors are handled automatically and you do not need to take any action when you see the error box.

There is one type of error that is not handled automatically. If you get a communications error while trying to save a mix from the ACM to the program, that mix file may not appear in the Mix Tree tab. If you think this has happened, just save the mix file again.

## 19.2 Main Window

Once the software loads the Main Vision software window will open.

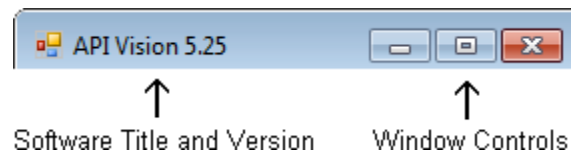



The Main window provides the Title Bar, menu Bar, and window controls. The menus in this window provide access to all other software controls and features.

The Main window is always active when the Vision software is online, although it can be minimized and not shown on the screen.

### 19.2.1 Title Bar

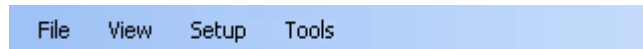
The Title Bar displays Vision software title, version, and window controls.



**IMPORTANT NOTE:** To exit the Vision software application click on the  icon. The File menu does not contain an exit option.

### 19.2.2 Menu Bar

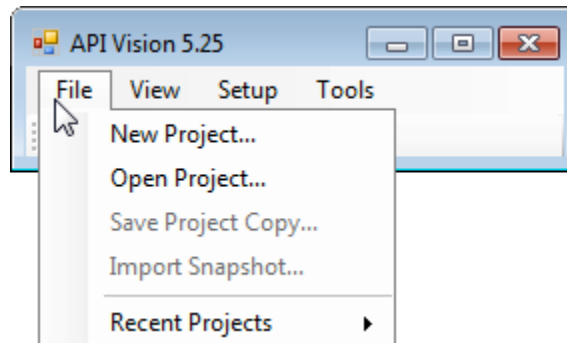
The Menu Bar contains the various menus needed for software operation. It is populated with three (3) pull-down menus, each of which provides access to a collection of software and console functions.



To access each menu, use the familiar drag-click methods used with most applications. Each menu will be explained below.

#### 19.2.2.1 File Menu

The File menu facilitates the management of projects and snapshots.

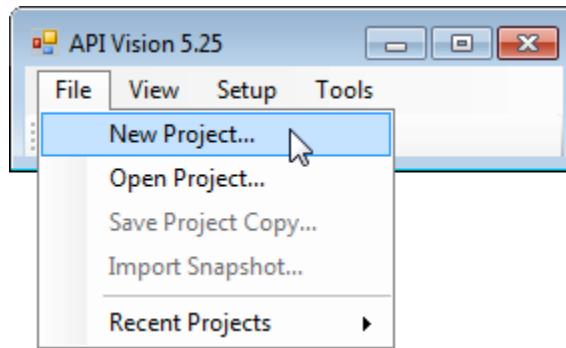


The File menu has five submenus:

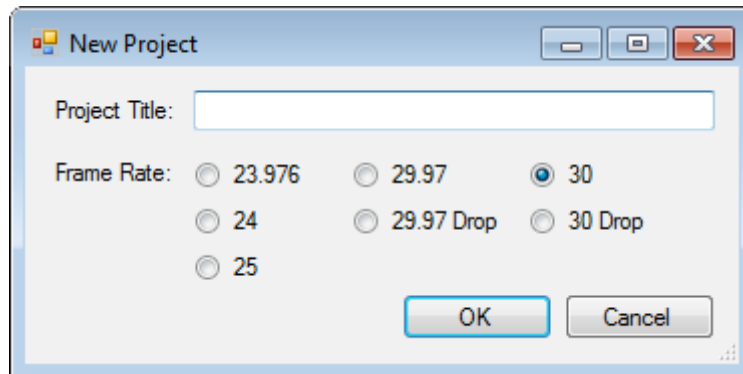
- New Project...
- Open Project...
- Save Project Copy...
- Import snapshot...
- Recent Projects >

#### 19.2.2.1.1 New Project

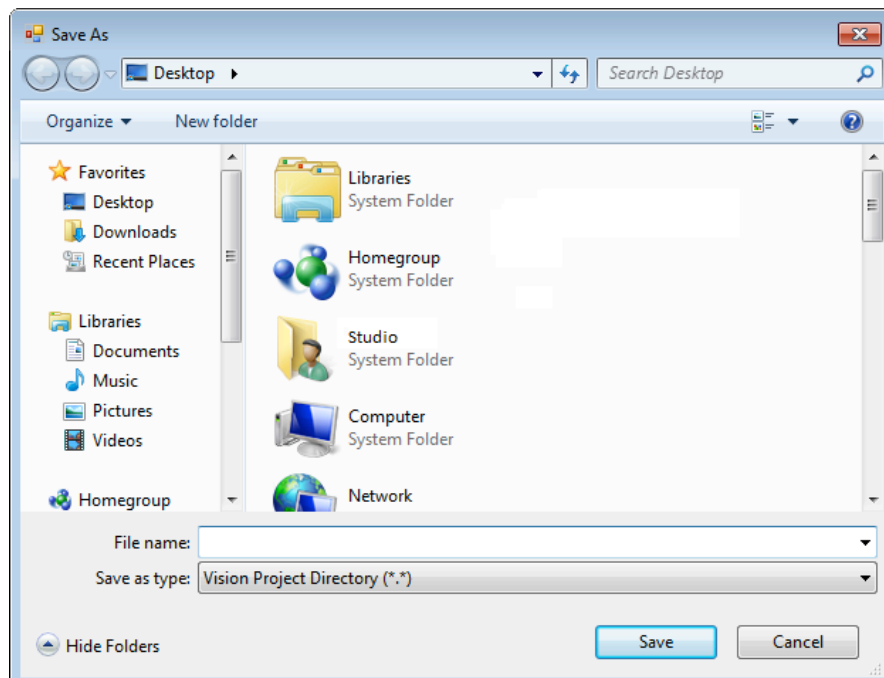
The New Project... submenu allows the creation of new Project Files.



Selecting the "New Project..." submenu will open the New Project dialog box.



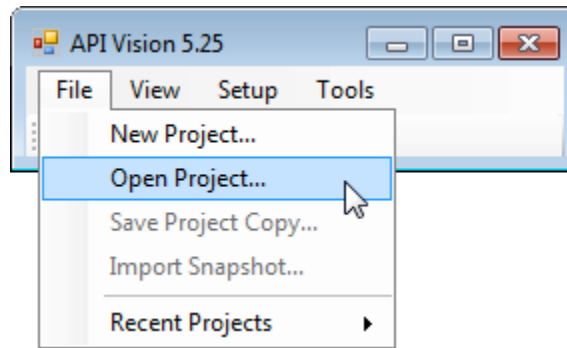
To create a new Project File, enter a Project Title, select a timecode frame rate, and click the "OK" button. A "Save As" window will open at the folder selected in the Program Options window (Setup menu) for the default location for new projects. A new "Project Folder" (formally known as the "Vision Project Directory") and a new "Project File" can be saved in this location or a different location using normal navigation techniques.



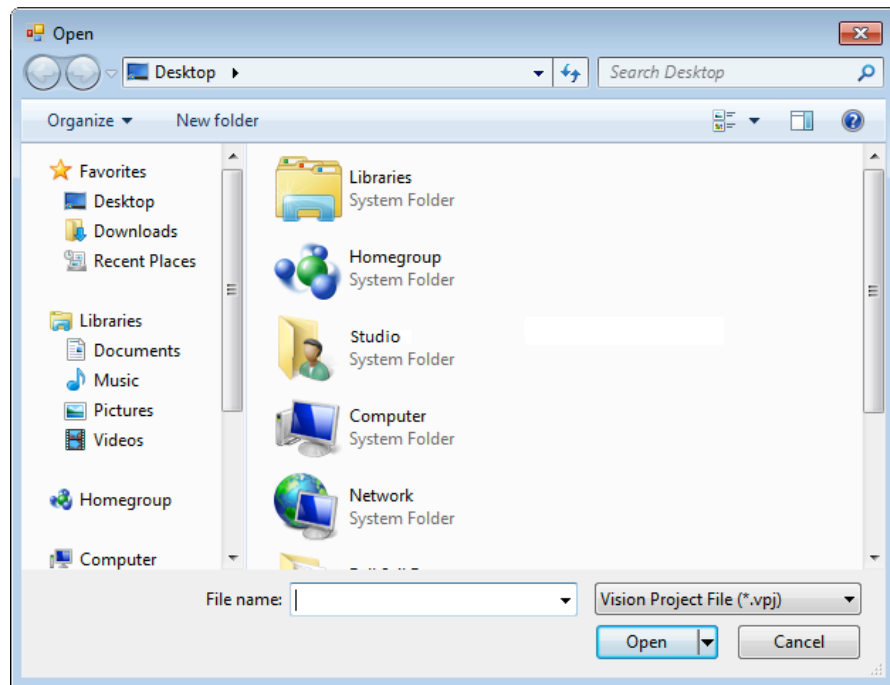
Enter a name in the "File name" entry field. This name will be used for both the new Project Folder and "Project File." Click "Save" and the new folder and file will be created in the selected location.

#### 19.2.2.1.2 Open Project

The Open Project... submenu allows existing projects to be opened.



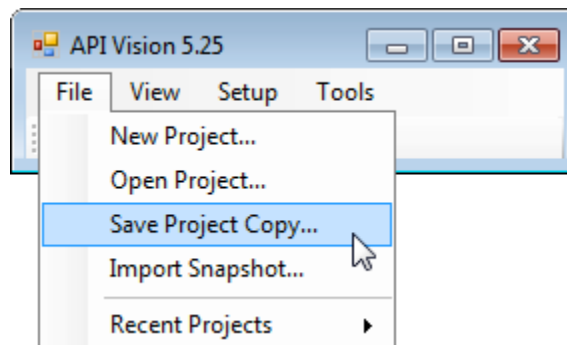
Selecting the "Open Project..." submenu will open an "Open" dialog box.



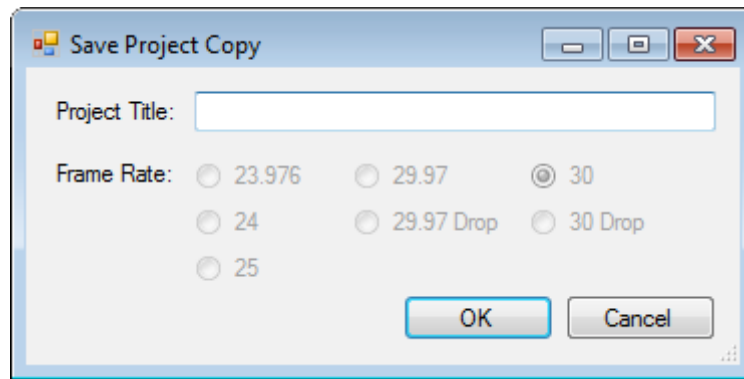
To open an existing project, navigate to the desired project folder, select the project file, and click the "Open" button. Double-clicking the Project File name will also open the project. The selected project will be loaded and become active.

#### 19.2.2.1.3 Save Project Copy

The Save Project Copy... submenu allows a copy of the currently open project to be saved.



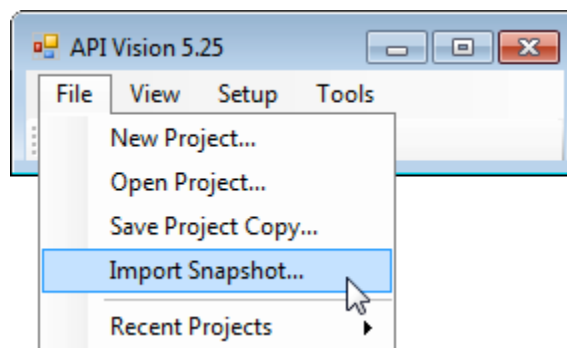
Selecting the "Save Project Copy..." submenu will open the "Save Project Copy" dialog box.



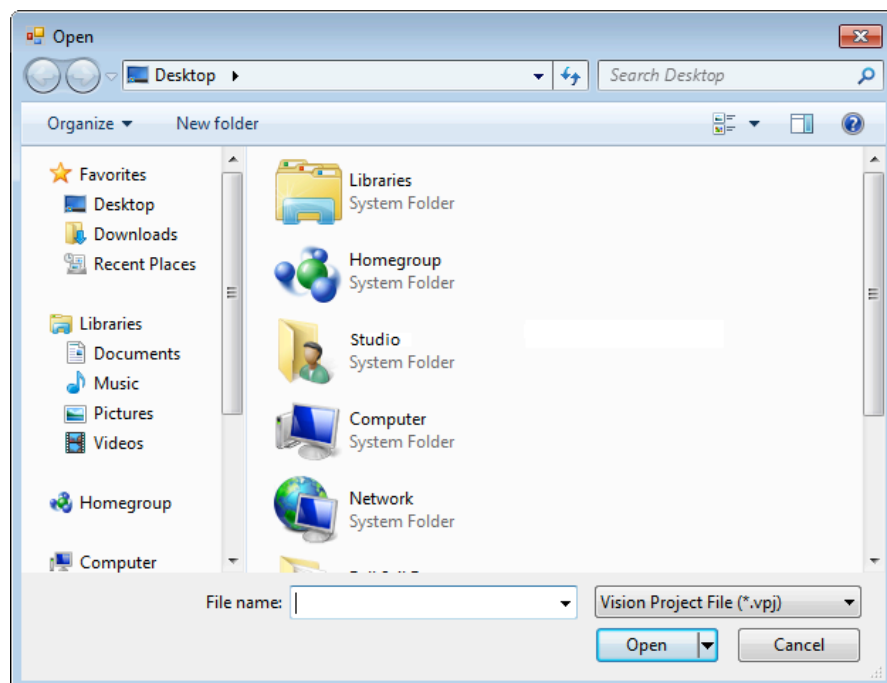
To save a copy of the currently open project, enter a new Project Title (project folder name), select a different timecode frame rate (if desired), and click the "OK" button. A Save Project Copy window will open at the folder selected in the Program Options tab (Setup menu) for the default location for new projects. The resulting "Project File" can be renamed and saved in a new "Project Folder" in this, or a different location, using normal navigation techniques.

#### 19.2.2.1.4 Import Snapshot

The Import Snapshot... submenu allows snapshots to be imported to the current project.



Selecting the "Import Snapshot..." submenu will open an "Open" dialog box.

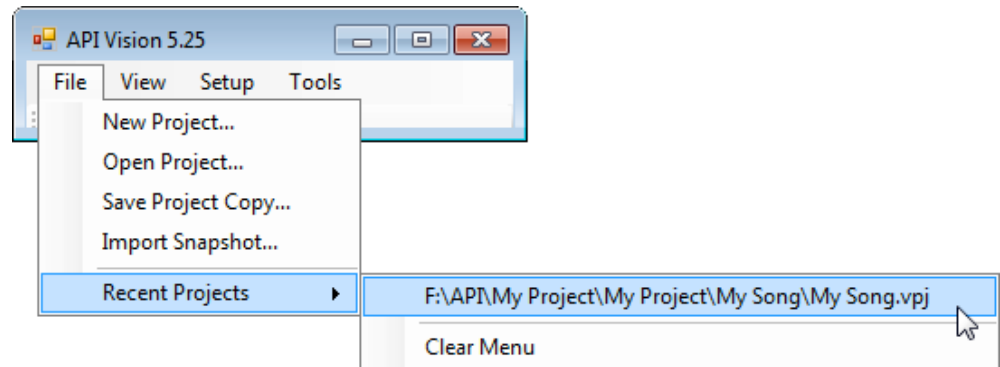


To import a snapshot, navigate to the desired project folder, select the desired snapshot file, and click the "Open" button. The selected snapshot will be loaded

into the current project. It can be then be loaded to the console using the snapshot controls in the Project window.

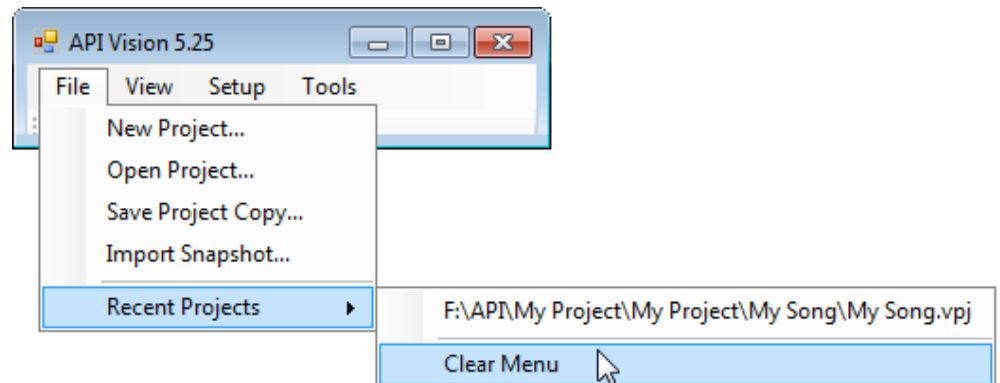
#### 19.2.2.1.5 Recent Projects

The Recent Projects submenu allows recent projects to be opened quickly without the need for navigation. The Vision software keeps track of the most recently used projects and provides quick access to them via a list on this submenu.



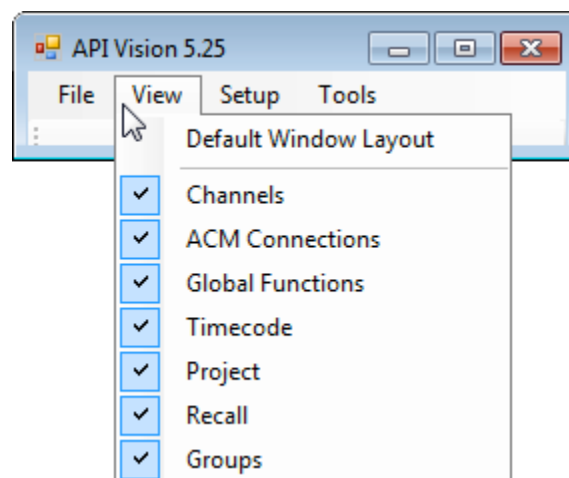
To open a recent project, select the desired project file from the Recent Projects list. The selected project will be loaded and become active.

Selecting "Clear Menu" from the submenu will clear the Recent Projects list.



#### 19.2.2.2 View Menu

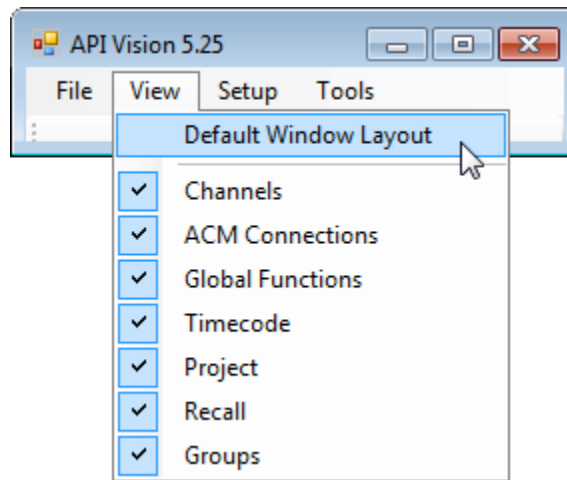
The View menu manages the primary Vision software windows.



The View menu opens and closes the seven primary software windows:

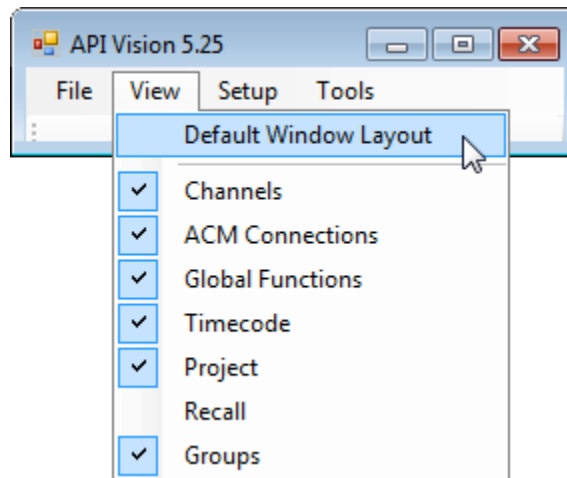
- Channels
- ACM Connections
- Global Functions
- Timecode
- Project
- Recall
- Groups

A standard set of windows, sizes, and placement can be set by selecting "Default Window Layout" in the View menu. When selected, all windows, except the Recall Settings window, will open and snap to position in a user-friendly grid.



The image above shows the View menu with all primary windows open.

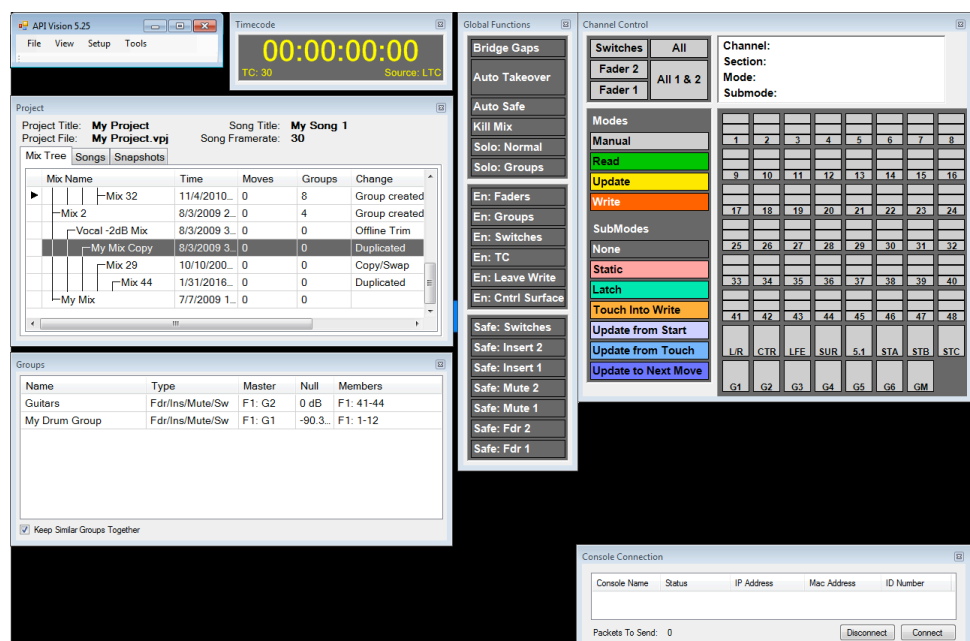
Check-boxes ☒ indicate which windows are open. Selecting the "Default Window Layout" will open the Channels, ACM Connections, Global Functions, Timecode, Project, and Group windows in default locations and sizes.



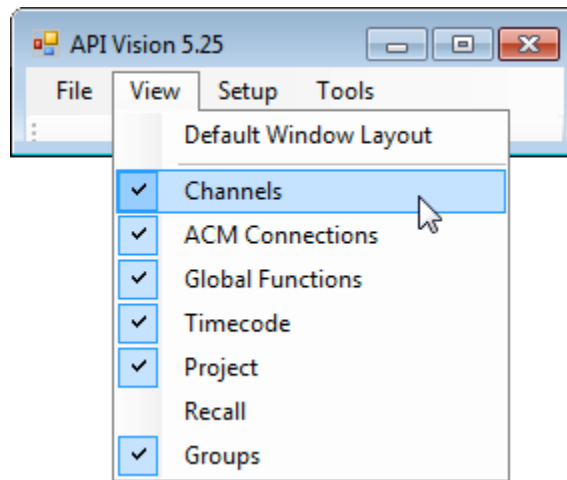
Selecting "Default Window Layout" will open the following windows:

- Channels
- ACM Connections
- Global Functions
- Time Code
- Project
- Groups

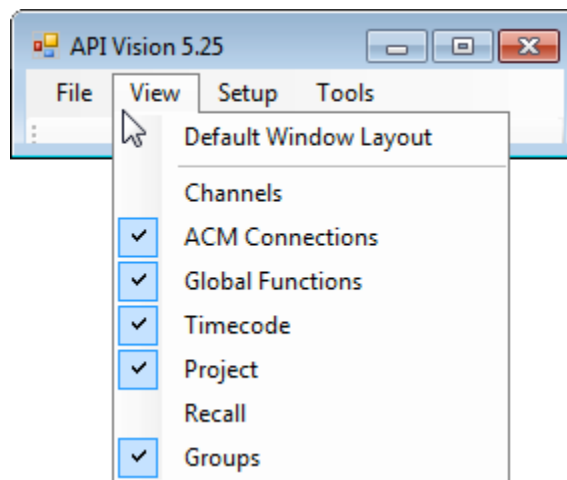
If open, the Recall Settings window will close.



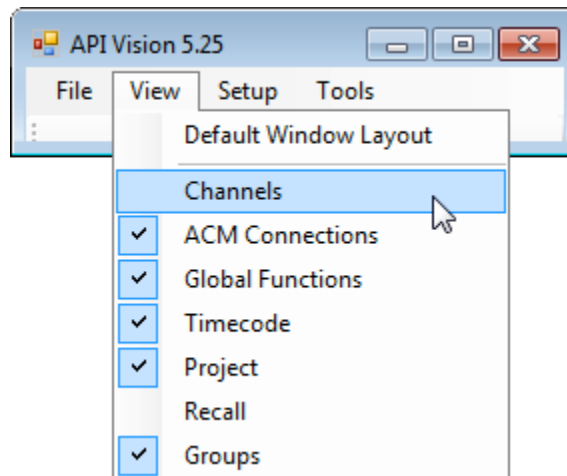
To close a window, click on its exit box



The selected window will close and its check-box will not be shown in the View menu.



To open a closed window, click on the desired window's name.

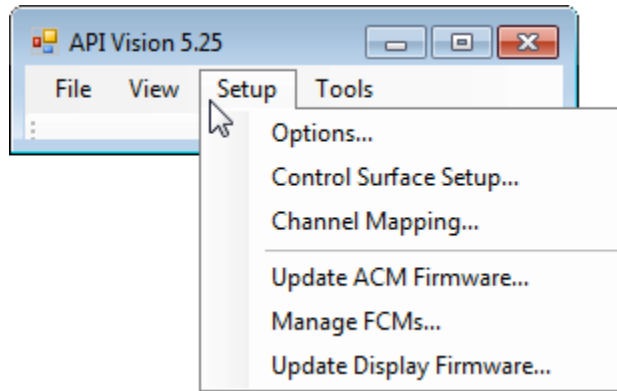


### 19.2.2.3 Setup Menu

The Setup menu provides access to a set of utilities used to setup, maintain, and update the console automation and recall systems.

All of the Setup submenu functions are explained in detail in section 28.0 System Setup, Maintenance, and Updates.



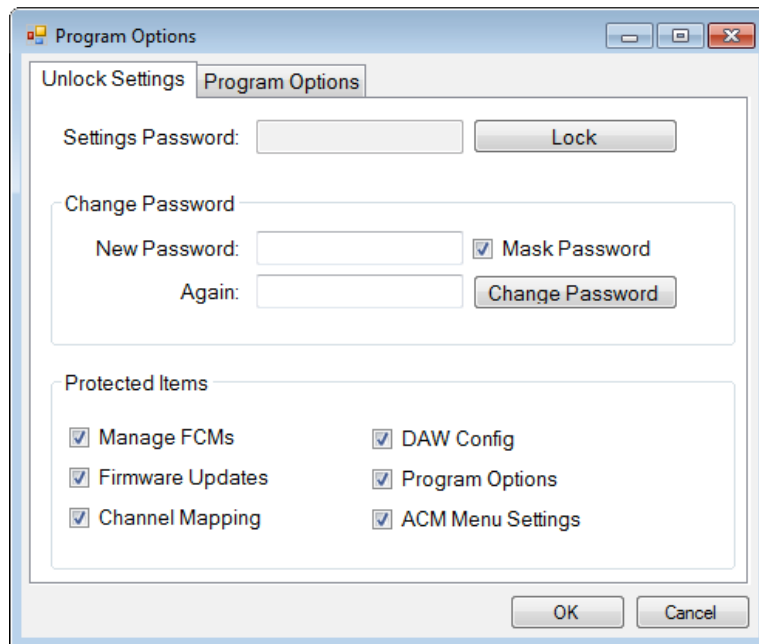


The Setup menu has six submenus:

- [Options...](#)
- [Control Surface Setup...](#)
- [Channel Mapping...](#)
- [Update ACM Firmware...](#)
- [Manage FCMs...](#)
- [Update Display Firmware...](#)

#### 19.2.2.3.1 Unlock Settings Tab

The Unlock Settings tab provides the means to apply password protection to selected administrative settings within the Vision software.



The following can be selected as “Protected Items” with password protection when whenever Setting are “locked:”

- Manage FCMs Menu: Fader control module firmware programming and fader calibration
- Firmware Updates: FCM, ACM, and ACM display firmware programming
- Channel Mapping Menu: Makes connections between software and console hardware
- DAW Configuration Menu: Control surface setup and channel mapping
- Program Options Tab: Default location for project folders and firmware files
- ACM Menu Settings (ACM menu):
  - [Defaults](#): Burn State, Burn Snapshot, and Burn Group
  - [Console Settings](#): Touch Level, IP Source, and IP address

To select items for protection, select the associated checkboxes ☒ and set a password.

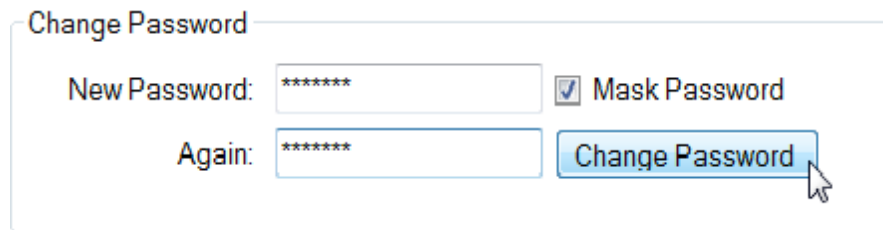
To set a password, enter the desired password in the “New Password” and “Again” entry fields.

If “Mask Password” is selected, the characters entered in the “New Password” and “Again” entry fields will be displayed as asterisks.

☒ **Mask Password**

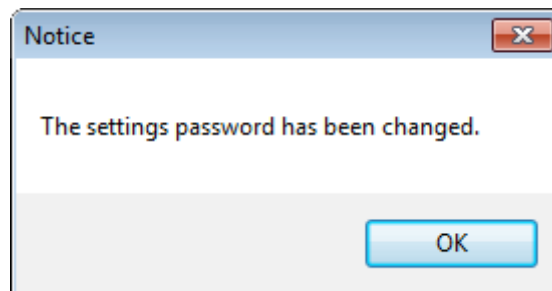
If "Mask Password" is not selected, the characters entered in the "New Password" and "Again" entry fields will be displayed normally.

To change to the entered password, click the "Change Password Button."



A dialog box titled "Change Password" with a light blue border. It contains two text input fields: "New Password:" and "Again:", both containing seven asterisks. To the right of the "New Password:" field is a checked checkbox labeled "Mask Password". To the right of the "Again:" field is a blue button labeled "Change Password". A mouse cursor is pointing at the "Change Password" button.

A dialog box indicating the password has been changed will appear. Click "OK" to acknowledge the change.



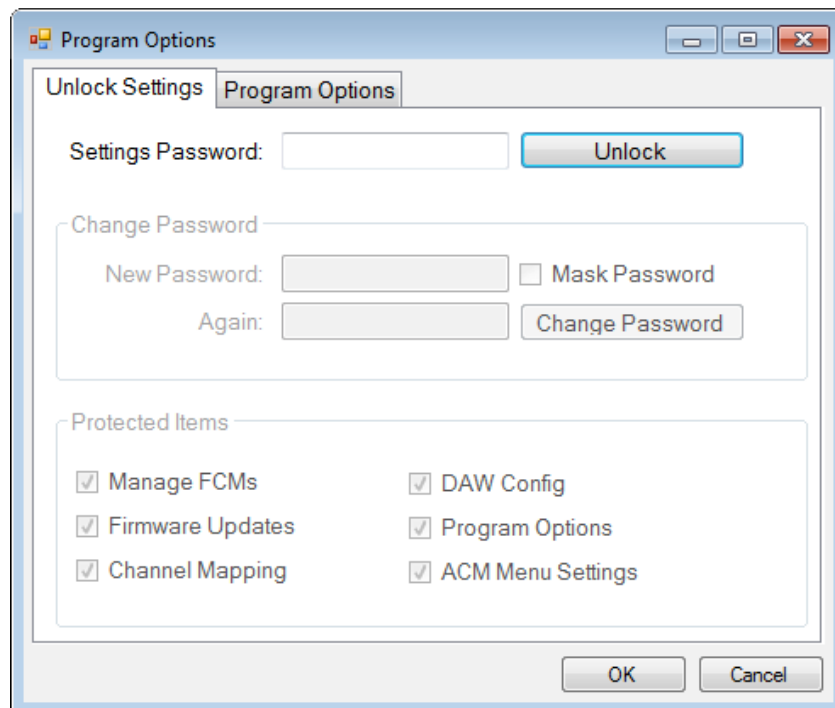
A small dialog box titled "Notice" with a blue header and a red close button. The text inside says "The settings password has been changed." At the bottom right is a blue button labeled "OK".

Once the desired Protected Items have been selected and password has been set, click "Lock" to activate protection.



The text "Settings Password:" is followed by a greyed-out text input field. To the right of the field is a blue button labeled "Lock". A mouse cursor is pointing at the "Lock" button.

When the settings are locked, the protected areas of the Unlock Settings tab will be "greyed-out" to indicate they are not accessible and the menus for the selected protected items will be inaccessible in the Setup menu.



A dialog box titled "Program Options" with a blue header and standard window controls. It has two tabs: "Unlock Settings" and "Program Options". The "Program Options" tab is selected. Inside the tab, there is a "Settings Password:" label followed by a greyed-out text input field and a greyed-out "Unlock" button. Below this is a "Change Password" section with "New Password:" and "Again:" labels followed by greyed-out text input fields, a greyed-out "Mask Password" checkbox, and a greyed-out "Change Password" button. At the bottom is a "Protected Items" section with a list of items, each with a checked checkbox: "Manage FCMs", "Firmware Updates", "Channel Mapping", "DAW Config", "Program Options", and "ACM Menu Settings". At the bottom right are "OK" and "Cancel" buttons.

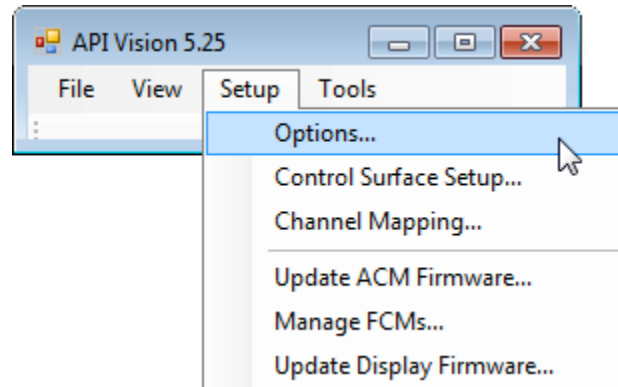
To unlock settings, enter the password in the "Settings Password" entry field and click the "Unlock" button. If the proper password is entered, access to protected setting will be restored.

Settings Password:

*NOTE: If a password has been set, the Vision software will open in "locked" mode even if it was unlocked when the software was exited.*

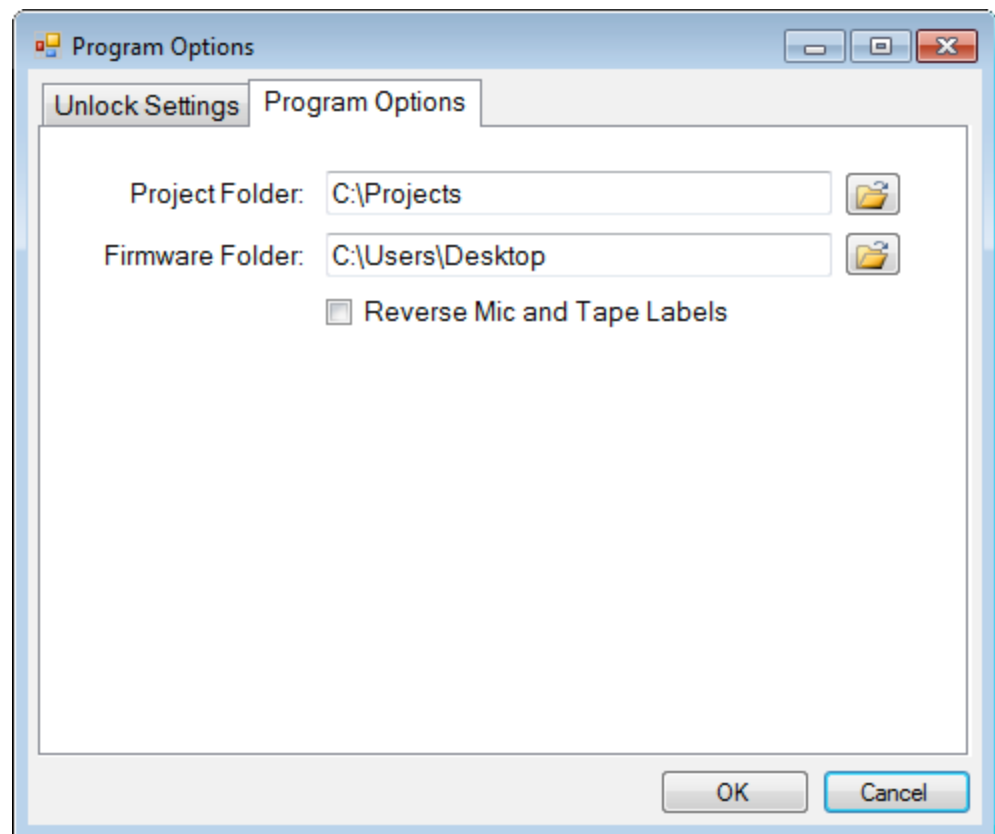
### Program Options Window

Selecting the "Options..." submenu will open the Program Options window.



#### 19.2.2.3.2 Program Options Tab

The Program Options tab contains navigation menus that allow selection of default storage locations for the project and firmware folders on the Vision PC.



The Program Options tab also contains a check-box that reverses the assignment of the "Mic" and "Tape" labels in the Recall Settings window.

#### ☒ Reverse Mic and Tape Labels

If "Reverse Mic and Tape Labels" is selected, the "Tape" label will appear for the Fader 1 input switch and the "Mic" label will appear for the Fader 2 input switch in the Recall Settings window.

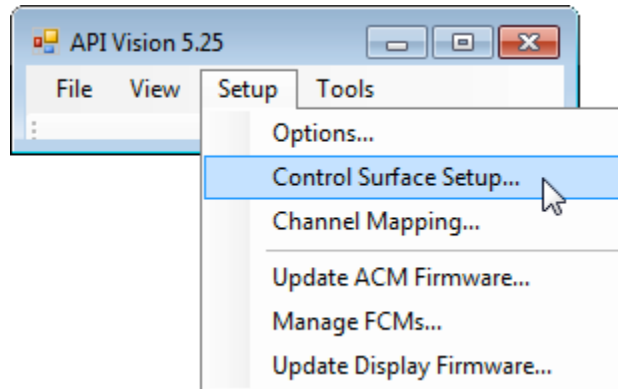
### ☐ Reverse Mic and Tape Labels

If "Reverse Mic and Tape Labels" is not selected, the "Mic" label will appear for the Fader 1 input switch and the "Tape" label will appear for the Fader 2 input switch in the Recall Settings window. This is the default condition.

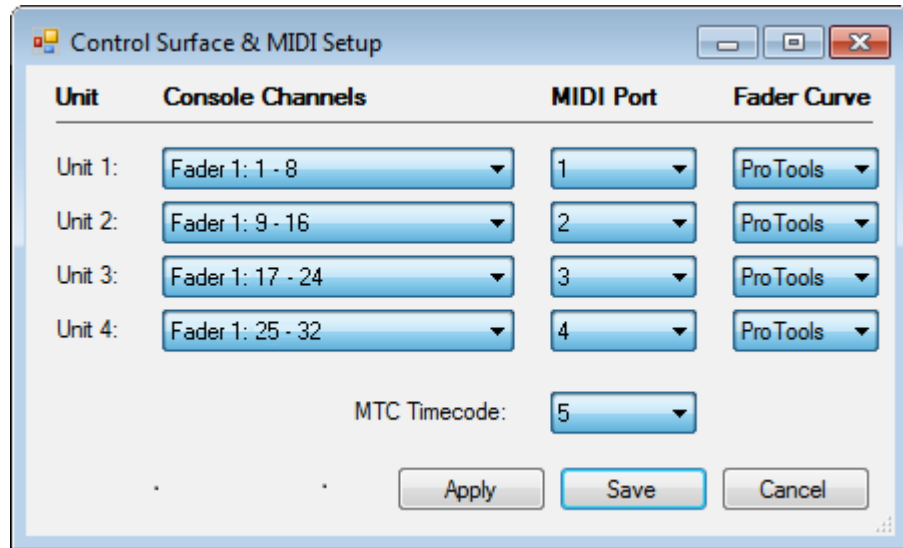
This feature accommodates either preference depending on how the console was configured when it was ordered.

#### 19.2.2.3.3 Control Surface Setup

Selecting the "Control Surface Setup..." submenu will open the Control Surface & MIDI Setup window.



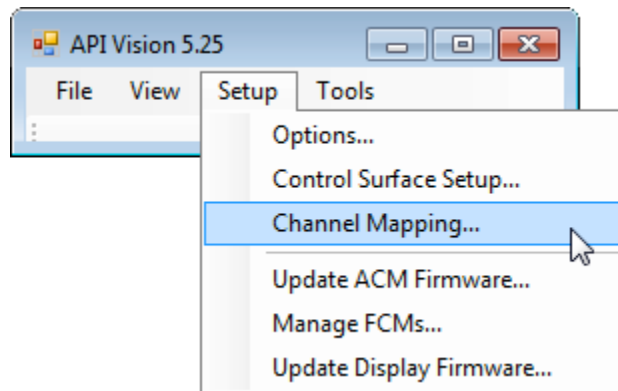
The Control Surface & MIDI Setup window defines the mapping of the console faders, mutes, and solos to the MIDI ports on the Automation Control Module (ACM) for DAW control. It is also used to select a MIDI port for MIDI timecode (MTC) for synchronization of the automation system over MIDI.



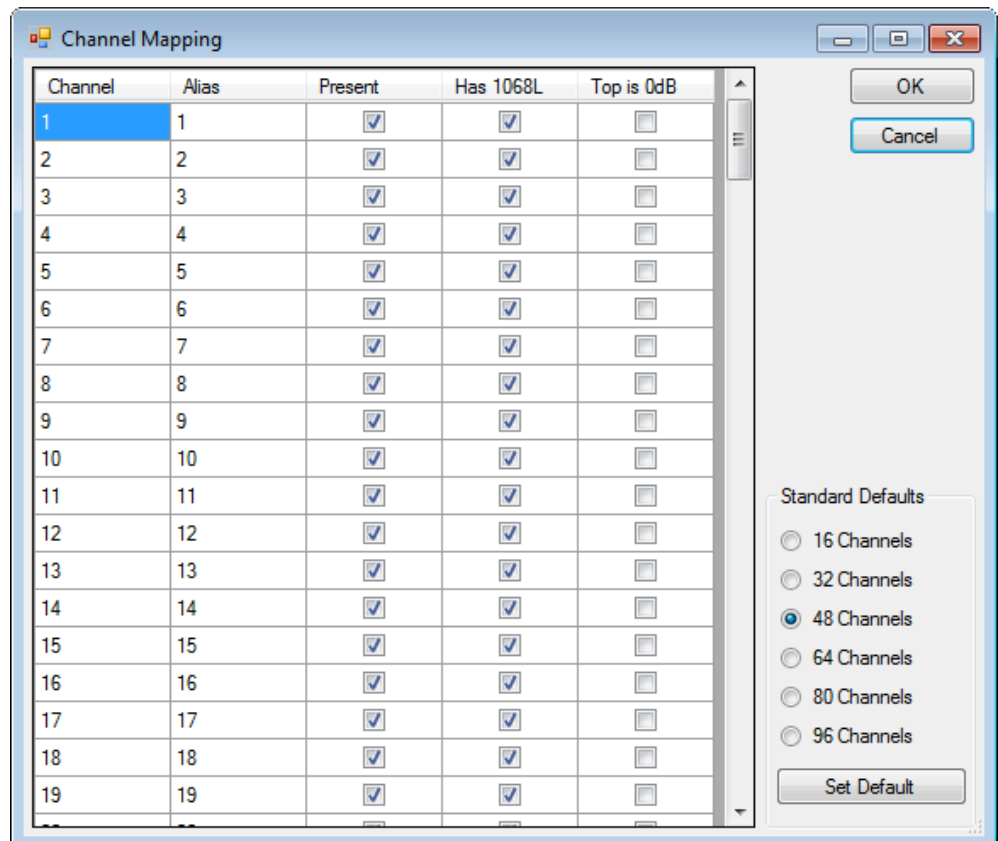
Worksurface setup and DAW control are explained in detail in section 27.0 DAW Control.

#### 19.2.2.3.4 Channel Mapping

Selecting the "Channel Mapping..." submenu will open the Channel Mapping window.



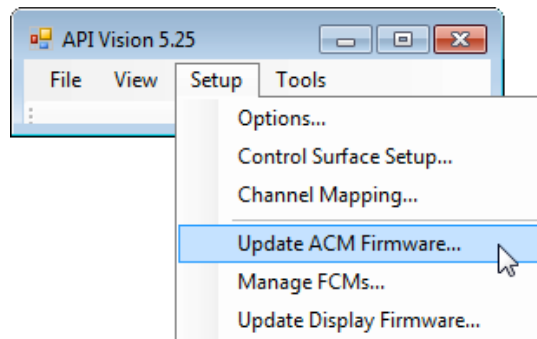
The Channel Mapping window defines connections and settings between the Vision software and the console hardware.



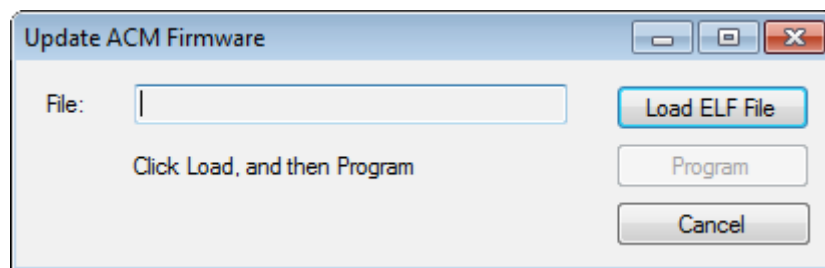
Channel Mapping is explained in detail in section 28.4 Channel Mapping.

#### 19.2.2.3.5 Update ACM Firmware

Selecting the "Update ACM Firmware..." submenu will open the Update ACM Firmware window.



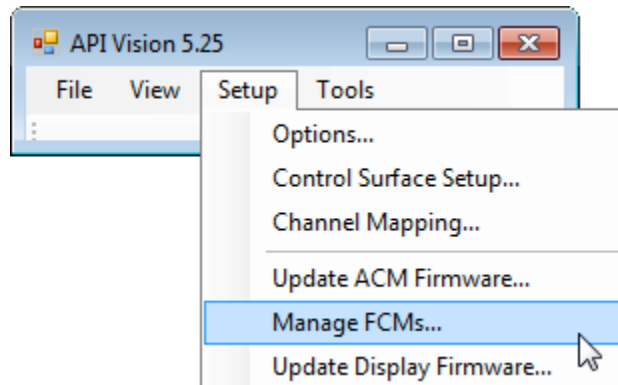
The Update ACM Firmware window provides the means to update the firmware for the ACM.



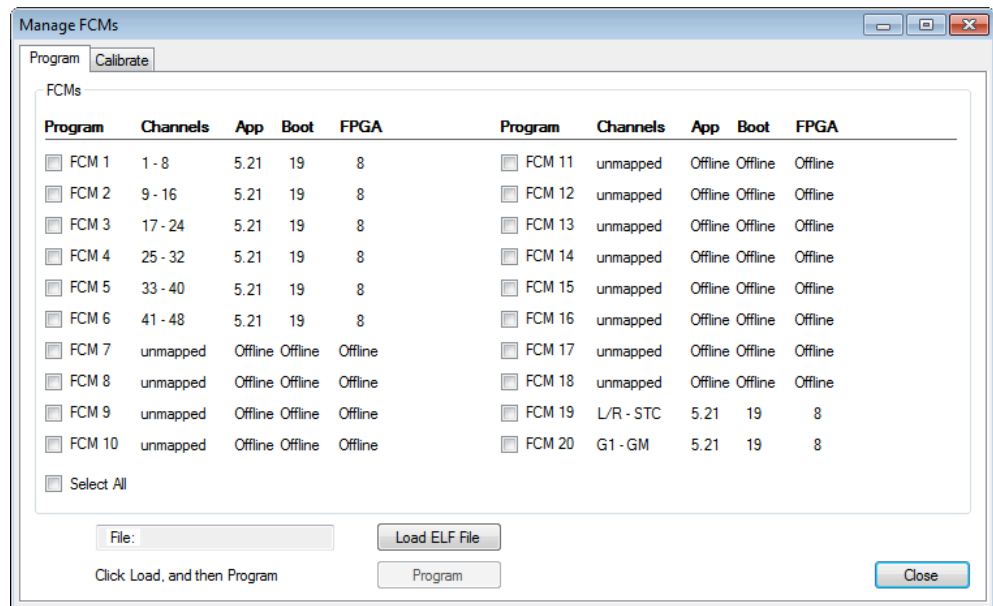
Programming ACM firmware is explained in detail in section 28.3.2 Updating ACM Firmware.

#### 19.2.2.3.6 Manage FCMs

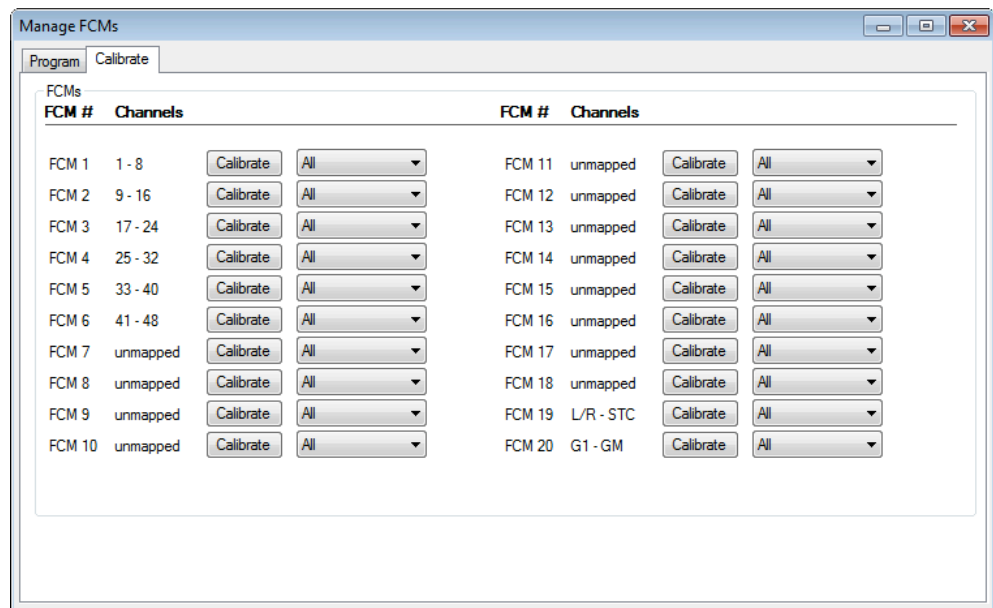
Selecting the "Manage FCMs..." submenu will open the Manage FCMs window.



The Manage FCMs window displays the current firmware versions installed in the Fader Control Modules (FCM) and provides the means to load and program firmware updates. A fader calibration utility is also provided.



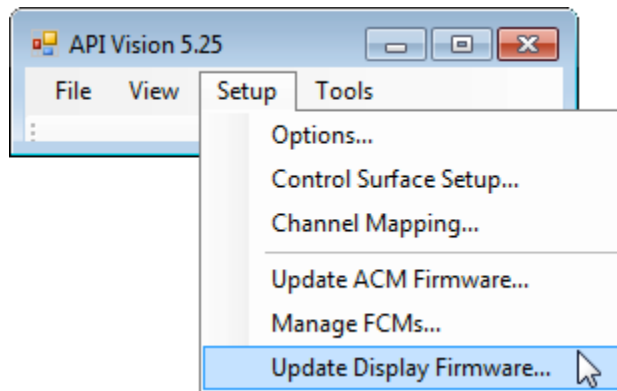
The Manage FCMs window has two tabs "Program" (above) and "Calibrate" (below). The "Program" tab is used to update FCM firmware and the "Calibrate" tab is used for fader calibration.



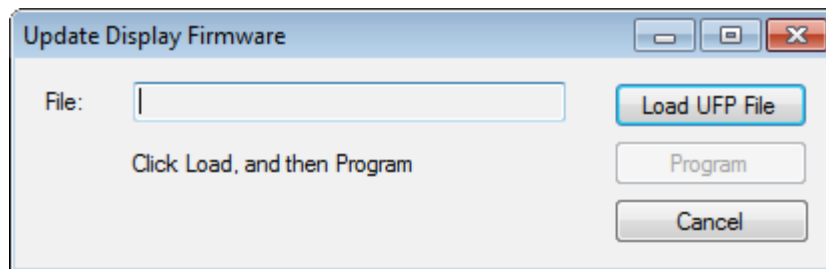
Programming FCM firmware and fader calibration are explained in detail in sections 28.6 Fader Calibration and 28.3.3 Updating FCM Firmware.

#### 19.2.2.3.7 Update Display Firmware

Selecting the "Update Display Firmware..." submenu will open the Update Display Firmware window.



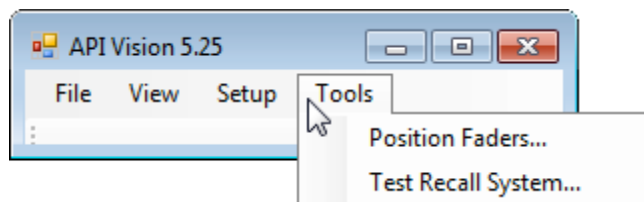
The Update Display Firmware window provides the means to update the firmware for the ACM Control Panel backlit display.



Programming display firmware is explained in detail in section 28.3.4 Updating FCM Firmware.

#### 19.2.2.4 Tools Menu

The Tools menu provides access to a utility used to set the faders to a common position.



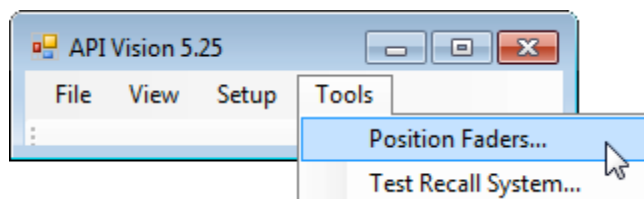
The Tools menu has two submenus:

- [Position Faders...](#)
- [Test Recall System...](#)

##### 19.2.2.4.1 Position Faders

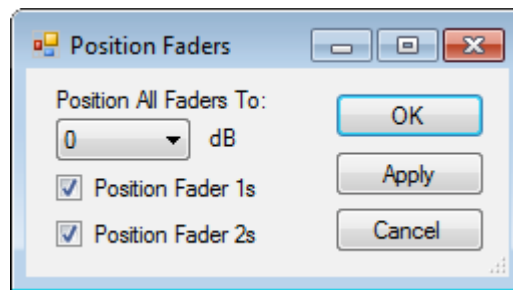
The Position Faders function allows faders to be set to a specific level.

To position faders, select "Position Faders..." from the Tools menu in the Main software window.



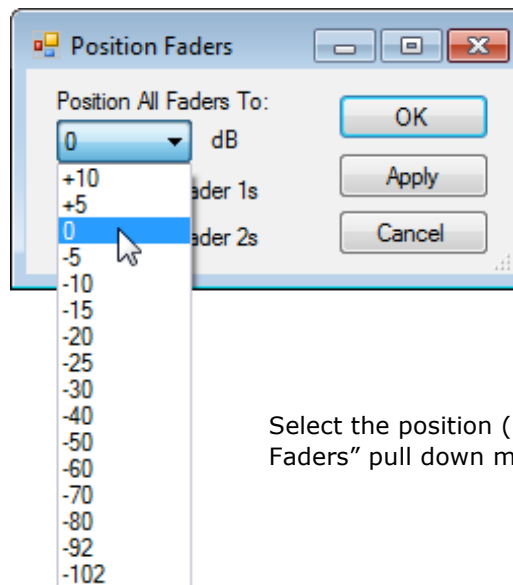


The Position Faders window will open.

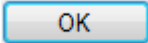


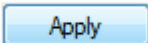
☒ Position Fader 1s  
☒ Position Fader 2s

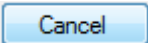
Select the set of faders to position by clicking in the appropriate checkbox.



Select the position (level) for all faders using the "Position All Faders" pull down menu.

Click  to apply the selected fader position to the selected faders and close the window.

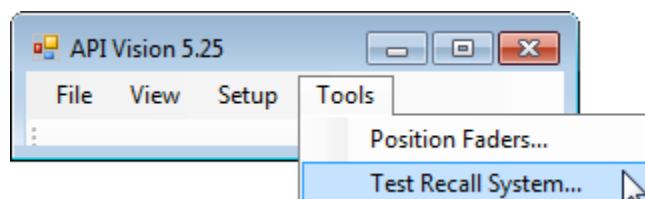
Click  to apply the selected fader position to the selected faders and leave the window open.

Click  to cancel the operation without positioning the faders and close the window.

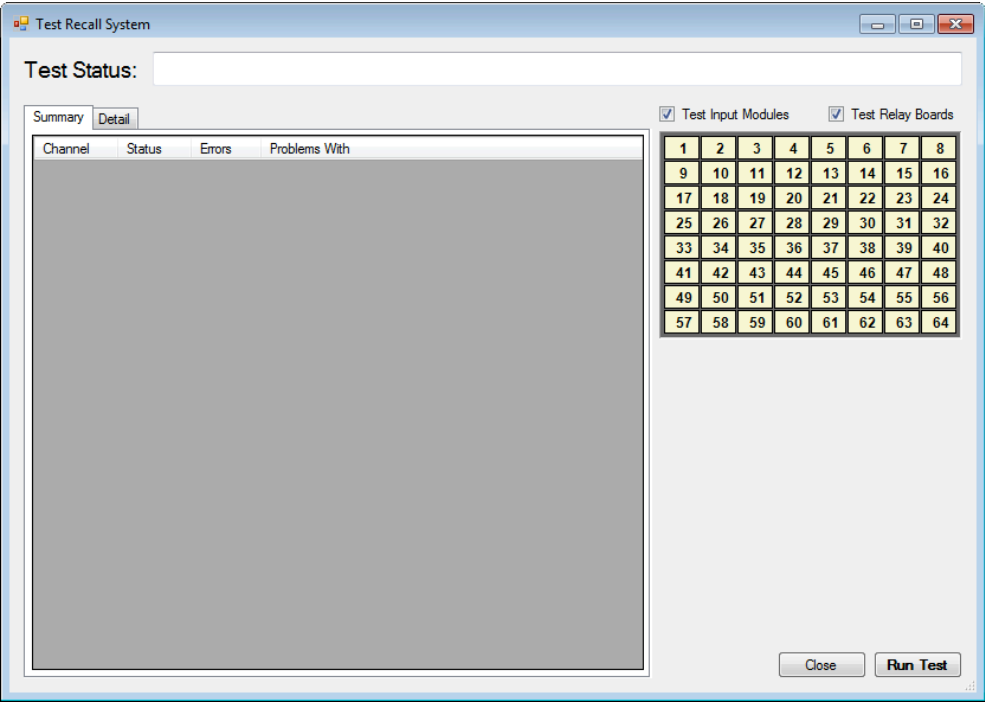
*IMPORTANT NOTE: Positioning faders will move the selected faders from their current positions. Any current mix positions will be lost if not already stored in a snapshot or in automation. There is no "undo" after fader positions have been set.*

#### 19.2.2.4.2 Test Recall System

Selecting the "Test Recall System..." submenu will open the Test Recall System window.



The Test Recall System window allows input modules and relay boards to be tested on a global, individual, or sub-set basis.




The Test Recall System function is explained in detail in section 28.7 Test Recall System.

## 19.3 Primary Windows

In addition to the Main window, there are seven primary windows that provide facilitate various aspects of the Vision system:

- Channel Control
- ACM Connection
- Global Functions
- Timecode
- Project
- Recall Settings
- Groups

Each of the primary windows may be opened and closed using the View menu in the Main window. The primary windows may also be closed by clicking on the  icon in the window Title bar.

The Main window and all primary windows can be arranged on the screen anyway the user desires. All primary windows except Global Functions can be resized as needed. A "Default Window Layout" can be selected and applied from the View menu.

The columns in the Project, Groups, and ACM Connection windows may be resized to show their data as needed.

The feature and operation of each primary window is explained in detail in subsequent sections of this manual. Each is shown here for organizational and familiarity purposes.

### 19.3.1 Channel Control

The Channel Control window is the main software interface for setting automation modes and submodes.



The Channel Control window has five sections:

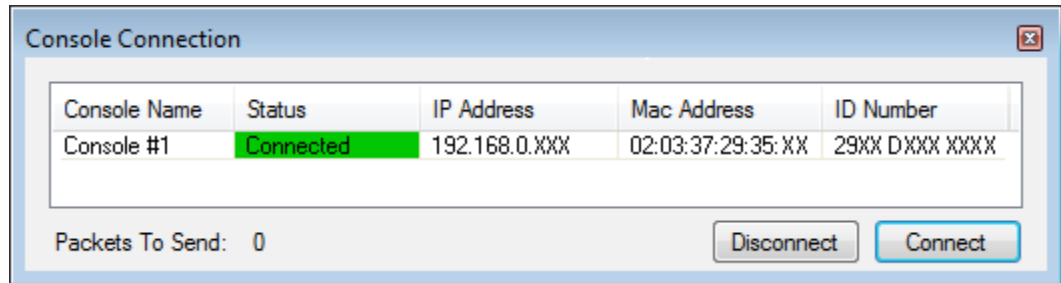
- Channel Grid: Channel section selector grid
- Channel Display: Status display for the selected channel section
- Global Channel Section Selectors: Selectors for global mode assignment
- Automation Mode Selectors: Automation mode selectors
- Automation Submode Selectors: Automation submode selectors

*NOTE: The automation mode and submode selectors are mirrored on the ACM Control Panel.*

Operation of the Channel Control window is explained in detail in section 26.0 Automation System.

### 19.3.2 ACM Connection

The Console Connection window displays the current status of the ethernet connection between the Automation Control Module (ACM) and computer and contains "Disconnect" and "Connect" buttons.



The Console Connection window displays the following information:

- Console Name: Name of the connected console
- Status: Current connection status
- IP Address: Internet Protocol Address of the connected ACM
- Mac Address: Mac Address of the connected ACM
- ID Number: Console ID Number
- Packets to Send: Number of remaining information packets to communicate

In addition to the connection display, the Console Connection window also contains "Disconnect" and "Connect" buttons for making and breaking the connection to the ACM.

### 19.3.3 Global Functions



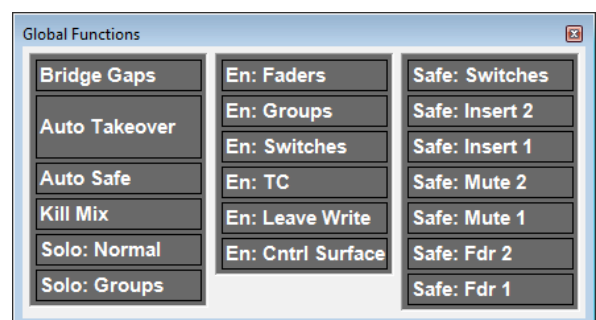
The "Global Functions" window provides automation controls that affect the entire console. The controls are organized in three sections:

- Global Automation Functions: Automation functions that apply to the overall system and are not channel oriented
- Function Enables: Enables for Faders, Groups, Switches, Timecode, Leave Write, and Control Surface (DAW control)
- Automation Section Safe Modes: Safeties that prevent changes to automation data for Switches, Insert 2, Insert 1, Mute 2, Mute 1, Fader 2 and Fader 1

*NOTE: These Global Function Selectors are mirrored on the Vision Control Panel (ACM Control Panel).*

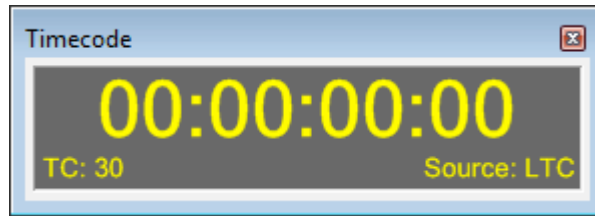
Operation of the "Global Functions" window is explained in detail in section 26.0 Automation System.

The orientation of the "Global Functions" window can be changed from vertical to horizontal by click-dragging a lower corner upward and to the side.

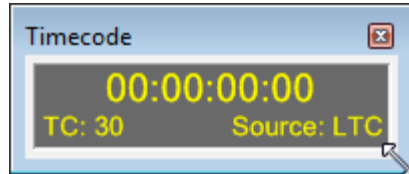


### 19.3.4 Timecode

The Timecode window displays the current SMPTE or MIDI timecode location, frame rate, and source.



The Timecode window will scale to the window size when the window is resized.



TC: Timecode frame rate display (frames per second)

- 23.976
- 24
- 25
- 29.97
- 29.97 Drop
- 30
- 30 Drop

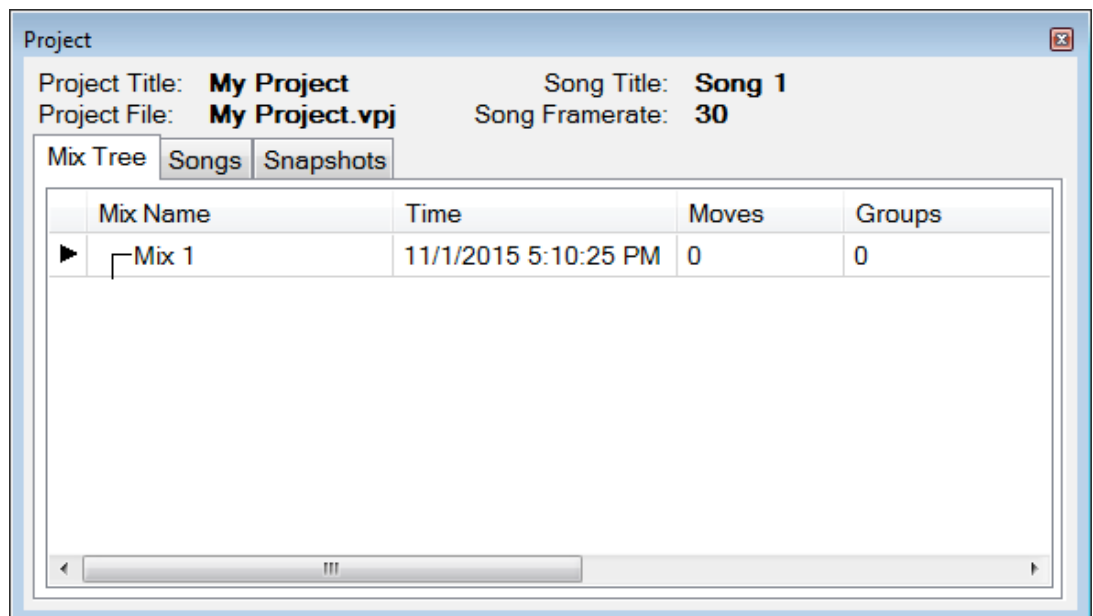
Source: Source of the timecode being displayed

- LTC: Longitudinal Time Code (SMPTE)
- MTC: MIDI Time Code
- VITC: Vertical Interval Time Code (select "----" as the Timecode Source for VITC)

*NOTE: The Timecode Source is selected using the Console Settings menu in the ACM. Refer to section 26.2.8 Timecode and Synchronization, 28.4 Timecode Setup, and 26.7.3.8 Console Settings for details regarding timecode setup.*

### 19.3.5 Project

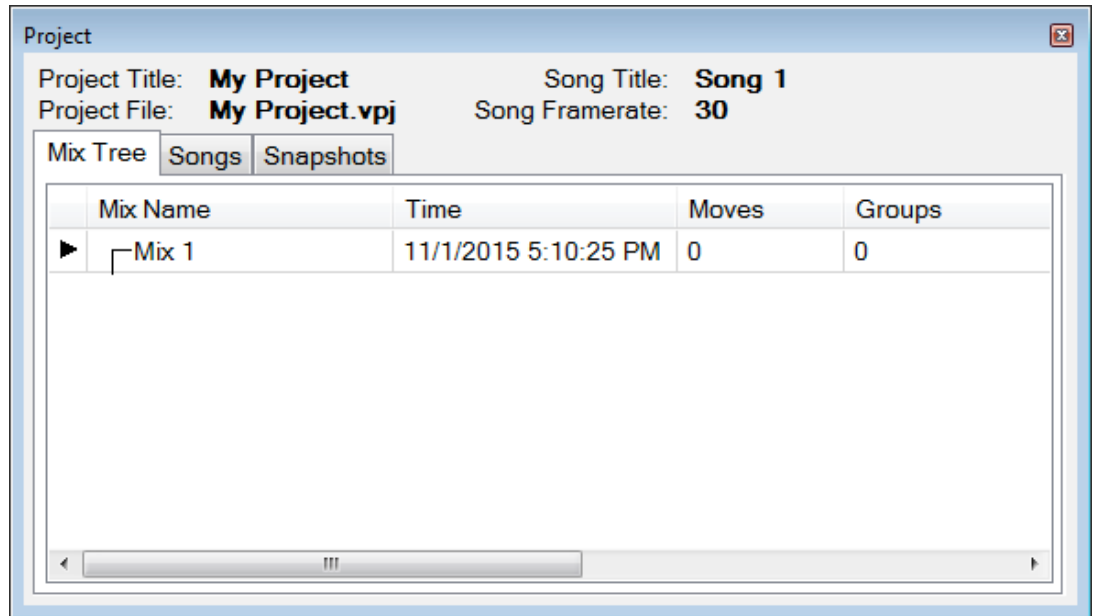
The Project window is used for the creation and management of mix files, songs, and snapshots.



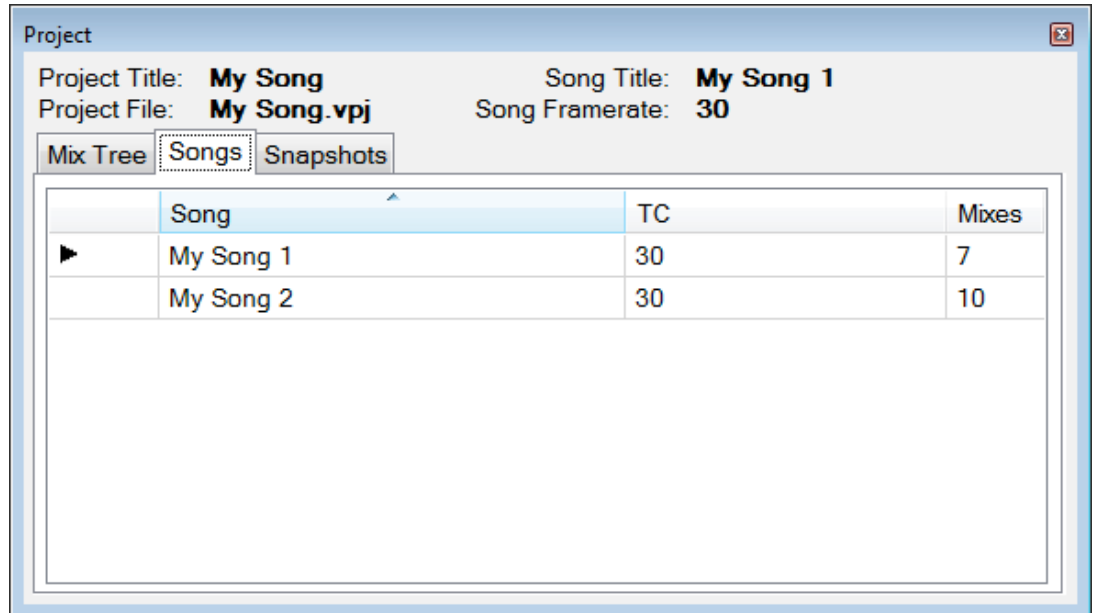
The Project window has three tabs that support the following functions:

- Mix Tree: Mix file management
- Songs: Song creation and management
- Snapshots: Snapshot creation and management

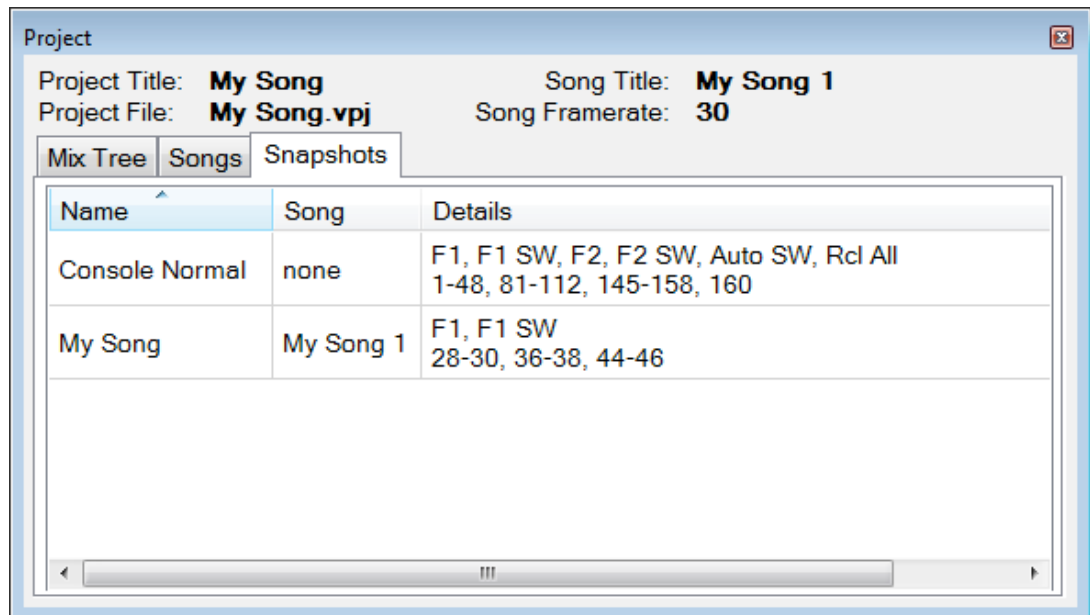
The Mix Tree tab (shown below) manages the mix files sent to the computer from the Automation Control Module (ACM). It also provides a menu of tools to manage mix files.



The Songs tab (shown below) allows the user to create and manage songs. Songs are typically used contain a collection of mixes for the same recording.



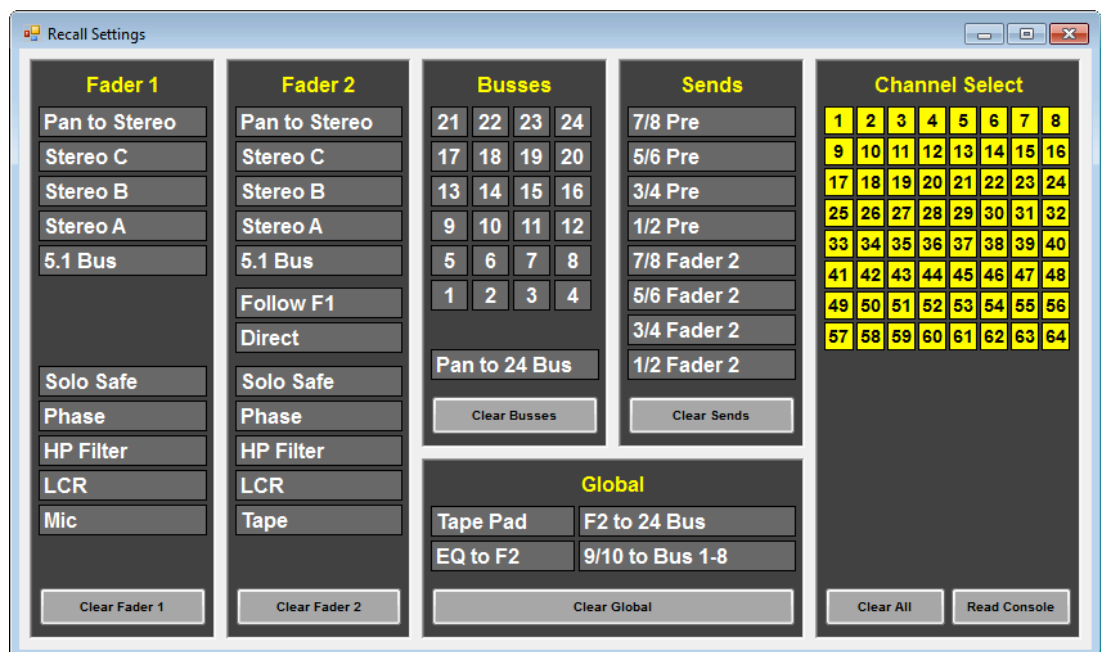
The Snapshots tab (shown below) allows the user to create and manage snapshots. Snapshots can capture the settings of the console faders, mutes, automation switches, and recall settings at a single point in time and load those setting back to the console as needed.



Operation of the Project window is explained in detail in sections 20.0 File Management, 21.0 Project Window, 22.0 Songs, 23.0 Snapshots, and 26.0 Automation System.

### 19.3.6 Recall Settings

The Recall Settings window is the main software interface for the recall system. It provides the means to set channel input and output assignments and recallable channel switches.



The Recall Settings window has nine (9) sections:

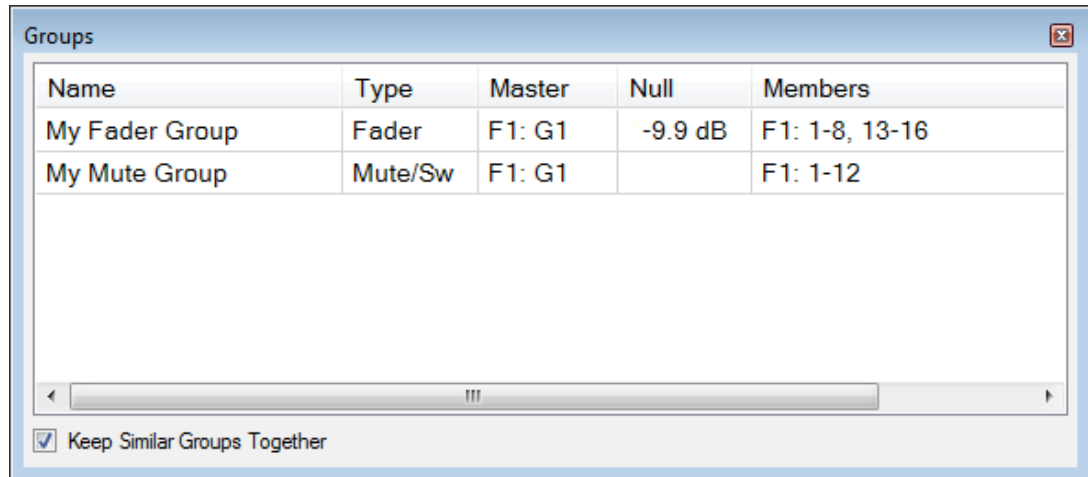
- Channel Select: Channel selection grid
- Fader 1: Fader 1 switches and Program Bus routing
- Fader 2: Fader 2 switches and Program Bus routing
- Busses: Multitrack Summing Bus Assignments
- Sends: Auxiliary Send routing
- Global: Global console settings

When the “Read Console” button is clicked, the recall system will “read” the current states of the recall settings from the console. These settings can then be stored as part of a snapshot.

Operation of the Recall Settings window is explained in detail in section 24.0 Recall System.

### 19.3.7 Groups

The Groups window provides the means to create and edit fader, mute, and automation switch control groups.



The Groups window displays the following information:

- Name: Group name
- Type: Group type (Fader, Insert, Mute, or Switch)
- Master: ID number of the controlling Master Fader/Module
- Null: Null position for the Master Fader
- Members: A list of the faders and modules that are group members

Operation of the Groups window is explained in detail in section 25.0 Groups.



## 20.0 File Management

The Vision software is designed for easy management of the various files generated by the system during use. The File menu and Project window are the primary tools for file management. The Folders Option in the Setup menu allows the user to determine the storage location for folders and files.

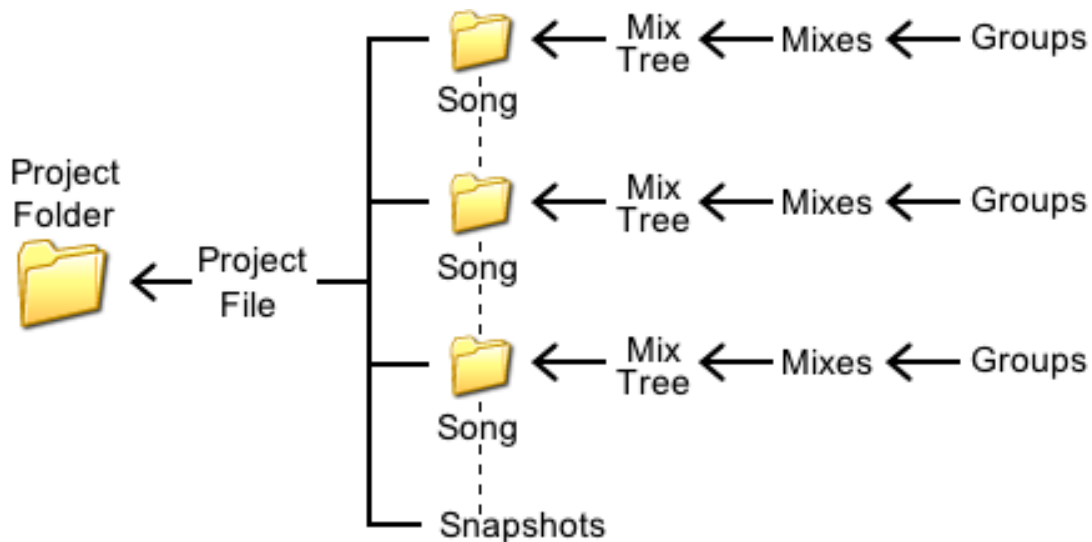
A "project" is intended to support one or more individual audio recordings that are part of a larger work, like a CD or movie. The mixes for an individual composition/scene are typically stored as "song" in the form of a "Mix Tree." The song and the snapshots created to support the recording are stored within a Project File. For a music recording project, individual compositions would be organized as songs and the entire album project would be saved as a "project." For film/video projects, individual scenes could be stored as songs within a project that represents the entire program. This concept is not enforced, so when working with a concert or other lengthy source material, it might be desirable to mix multiple compositions or scenes as a single song or whatever method is appropriate.

### 20.1 File Structure and Location

The Vision software generates the following project elements:

- Project Folder: Main folder for all files associated with a project
- Project File: Vision software file for each project
- Project Title: Name of the overall project
- Songs: "Virtual folders" that contain all the mixes (Mix Tree) for each recording
- Mixes: Mix files from the automation system
- Groups: Fader, mute, insert, and switch control groups stored within mixes
- Snapshots: Static positions of faders, mutes, and/or automation/recall switches

The diagram below illustrates the structure of the Vision folders and files.



Projects, songs, snapshots, mixes, and groups are organized as follows:

- The Project Folder contains the Project File
- The Project File contains songs and snapshots
- Songs contain Mix Trees
- Mix Trees contain mixes
- Groups are created and stored within mixes
- Snapshots are associated with a particular song but are available for use in any song

In the Project Folder, the Project File ends with a ".vpj" suffix. Mix files are stored as individual files that end with a ".vmx" suffix. Exported snapshot files end with a ".vss" suffix.

The "Project Title" is intended to be name for the larger view of a project. For example, the Project Title might be the name of a CD or film.

Project Folders and Project Files are named at the same time. For example, a Project Folder and Project File might be the name of an artist or production company. If the project is does not have multiple pieces, the Project Folder and file might use the name of a work itself.

For organizational purposes, it might be helpful to use the following naming convention for project components:

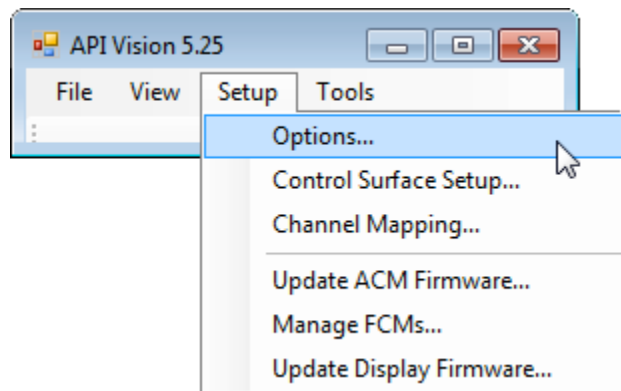
- Project Folder and File: Name of the artist, client, label/production company, etc.
- Project Title: Name of CD, DVD, film, etc.
- Songs: Name of each song or scene
- Mixes: Various mix versions labeled as needed
- Snapshots: Various snapshots labeled as needed

## 20.2 File Storage

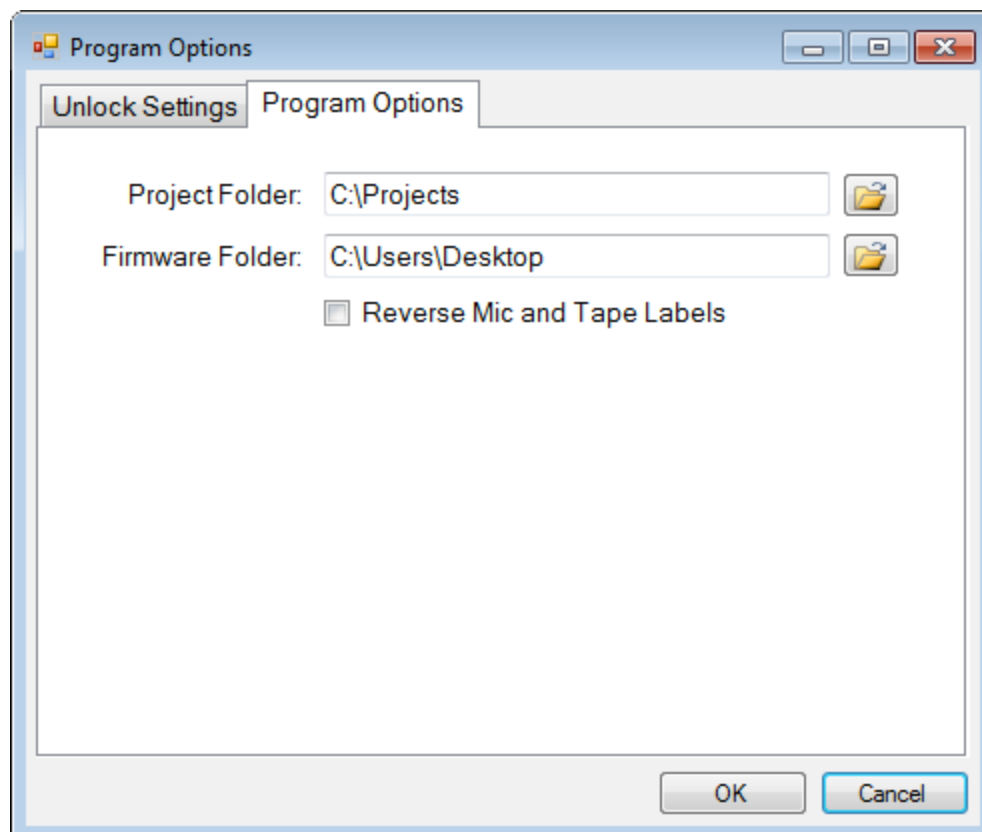
The default locations for new Project Folders (a.k.a. Vision Project Directory) and the Firmware Folder are determined by the settings in the Program Options window.


Select the "Options..." submenu in the Setup menu to open Program Options window.

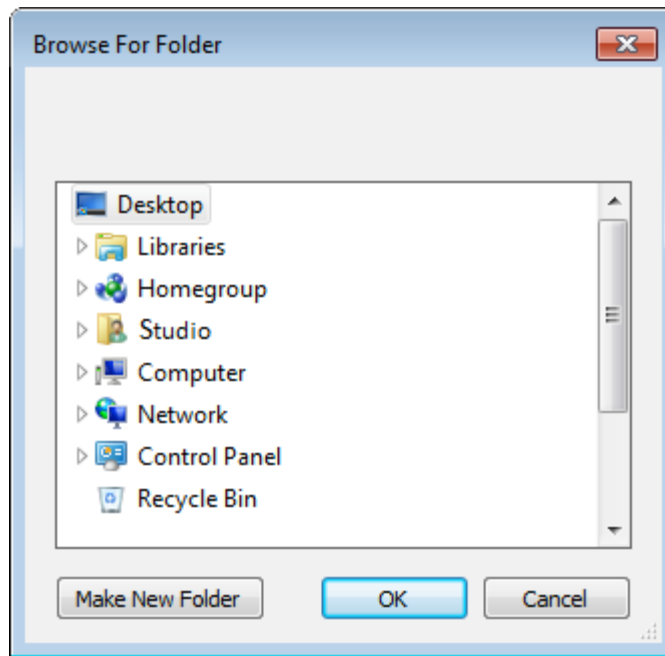
*NOTE: Settings must be unlocked to access this tab.*



Click on the Program Options tab if the needed. The locations where new project folders will be stored and where the Firmware Folder is stored will be displayed in the window.



To change the location for either folder, click on the  icon to open the "Browser For Folder" window.



Using the directory controls in the "Browse For Folder" window, select a location for the default location for new Project Folders and Files or Firmware Folder.

A new folder can be created in any chosen location by clicking on the "Make New Folder" button.

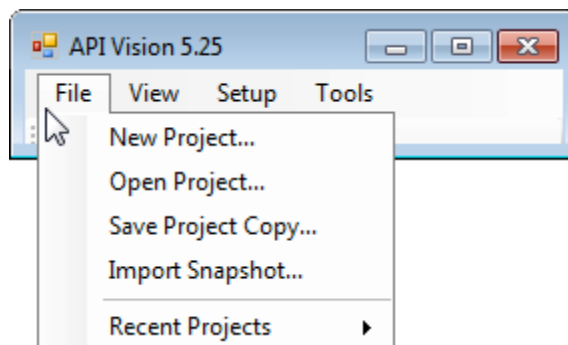
The folders are typically located on the C: drive of the Vision PC computer, in either the Documents folder or in a dedicated folder for Vision projects. Any location can be selected as desired.

Back-ups of project and firmware folders may be saved to CD, DVD, jump-drive, or other removable media.

## 20.3 File Menu

The File menu facilitates the creation, storage, and retrieval of project files and folders. Existing snapshots can also be imported into the current project via the File menu.

*NOTE: The Project window also plays a major role in file management. See section 21.0 Project Window for additional information.*

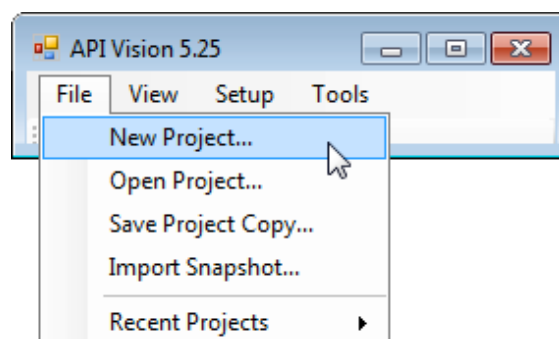


The File menu has five submenus:

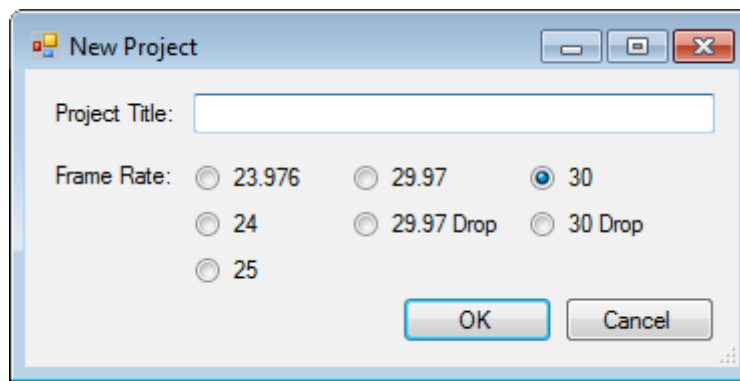
- New Project...
- Open Project...
- Save Project Copy...
- Import snapshot...
- Recent Projects

### 20.3.1 Create a New Project

To create a new project, select "New Project..." from the File menu.

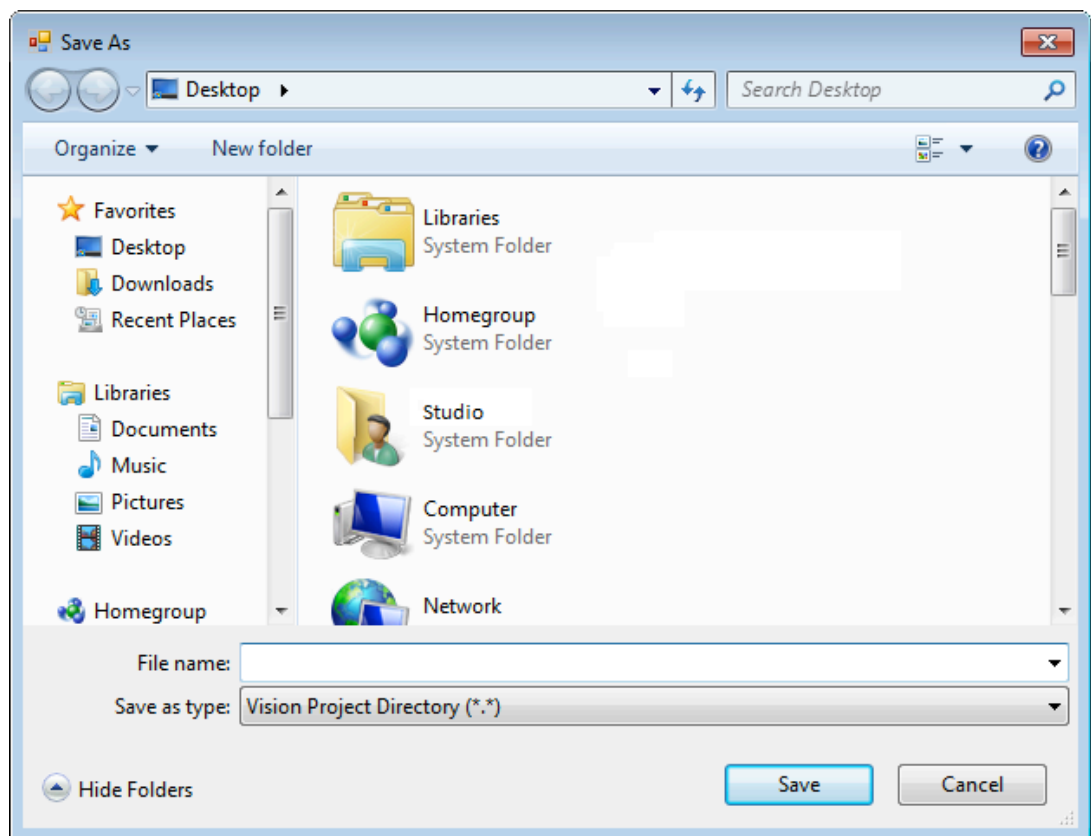


The New Project dialog box will open.



Enter a name for the Project Title, select a timecode Frame Rate, and click the "OK" button.

The "Save As" window will appear.



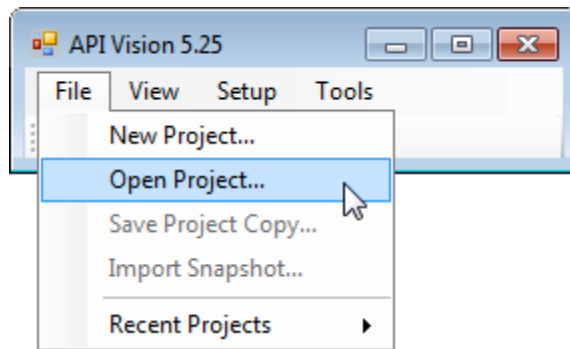
The "Save As" window opens at the default location for Project Folders and Files as determined in the "Options..." submenu in the Setup menu. An alternative location can be selected by navigating to that location. Enter a File Name, and click "Save." A new "Vision Project Directory" (or Project Folder) and Project File will be created in the selected location. Both the Project Folder and Project File will be named with the name entered in the File Name field.

### 20.3.2 Using Existing and Recent Projects

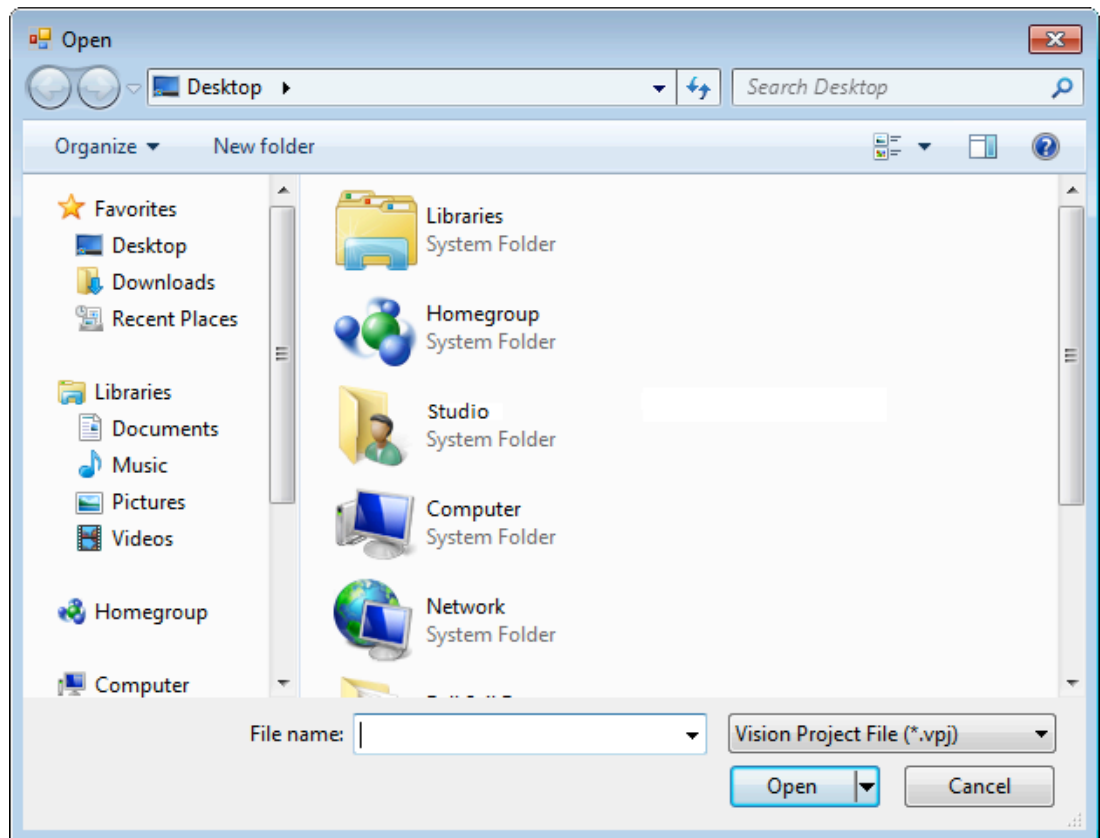
Existing projects can be opened in one of two ways:

- Using the Open Project dialog box
- Selecting a project from the Recent Projects menu

To open an existing project, select "Open Project..." from the File menu.

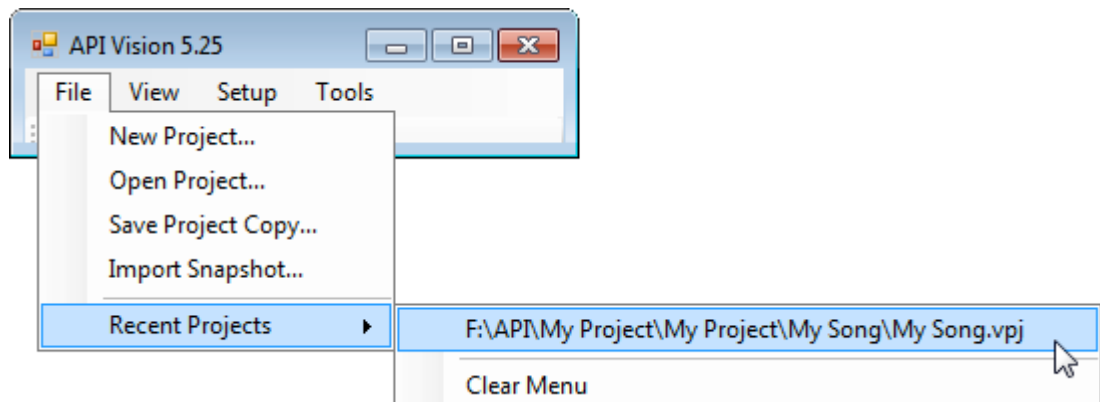


The Open Project dialog box will open.

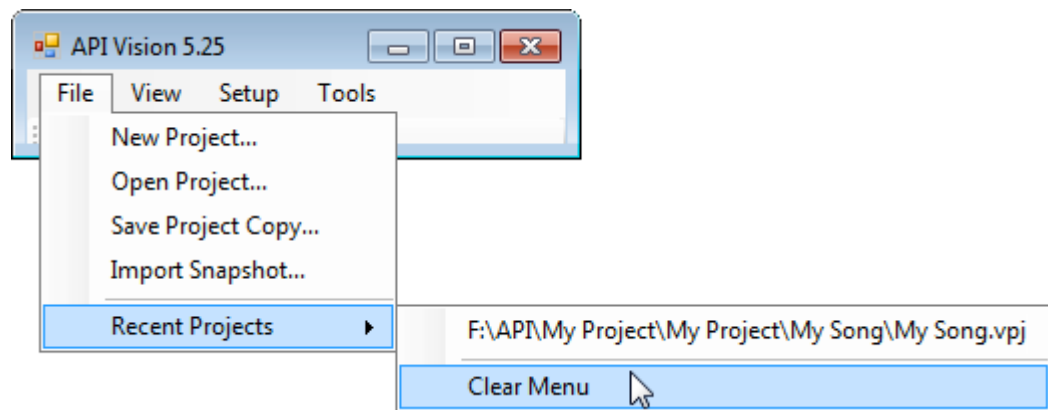


Navigate to the desired Project Folder, select the Project File, and click the "Open" button. Double-clicking the Project File name will also open the project. The selected project will be loaded and become the "active project" or "current project."

If the project has been used recently, it can be opened directly from the Recent Project menu. To open a Recent Project, select "Recent Project..." from the File menu and select the desired project from the menu.



The Recent Projects menu can be cleared by selecting "Clear Menu."

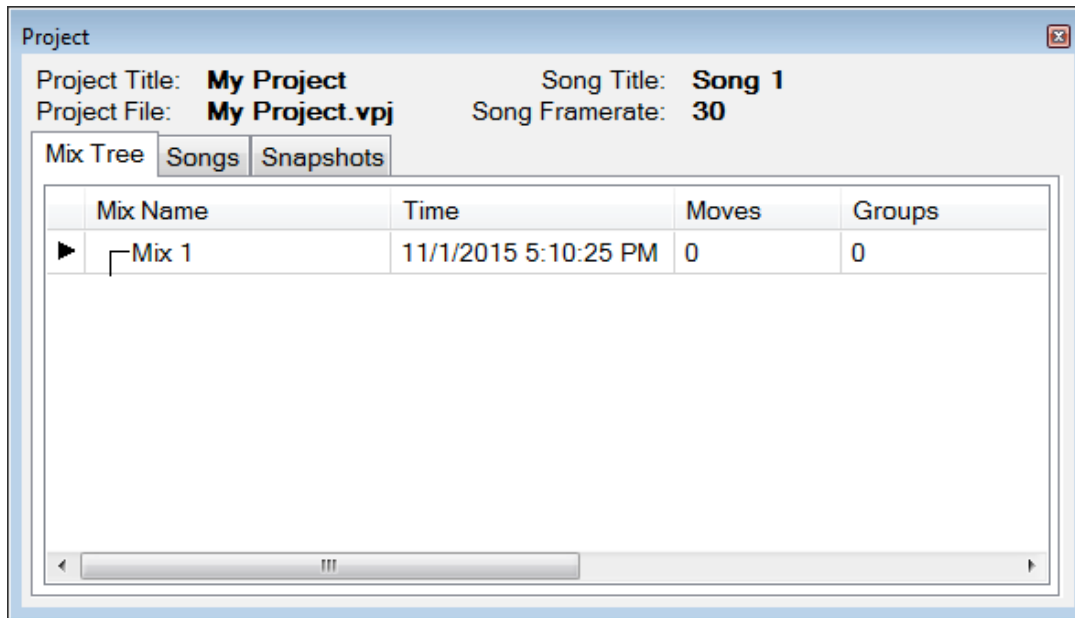


## 20.4 Deleting Project Files and Folders

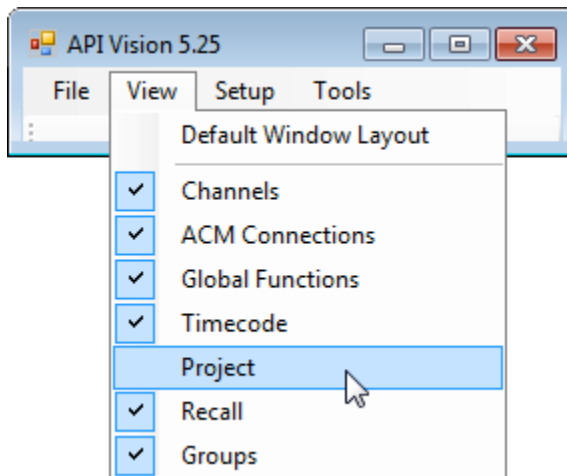
Project folders and files cannot be deleted using the Vision software. However, they can be deleted by accessing the device where they are stored and deleting them directly.

## 21.0 Project Window

The Project window facilitates the creation, storage, retrieval, and modification of mixes, songs, and snapshots. It provides the primary interface for management of the files that belong to the currently open project.



The Project window is opened by selecting "Project" from the View menu in the Main window.



The top part of the Project window displays the following information:

- Project Title: Name of the current Project Folder
- Project File: Name of the current Project File (name.vpj)
- Song Title: Name of the current song folder
- Song Framerate: The SMPTE timecode frame rate of the current project



The Project window has three tabs:

#### Mix Tree

Display and management tools for the mix files in the current song

#### Songs

Display and management tools for the song folders within a project

#### Snapshots

Display and management tools for snapshot files within a project

Each of the tabs has columns that list the contents and attributes of each mix, song, or snapshot. The order of the lists can be changed by clicking on the list header and selecting the up ▲ or down ▼ arrow.

Clicking the up-arrow ▲ will order the list in descending order from the top.

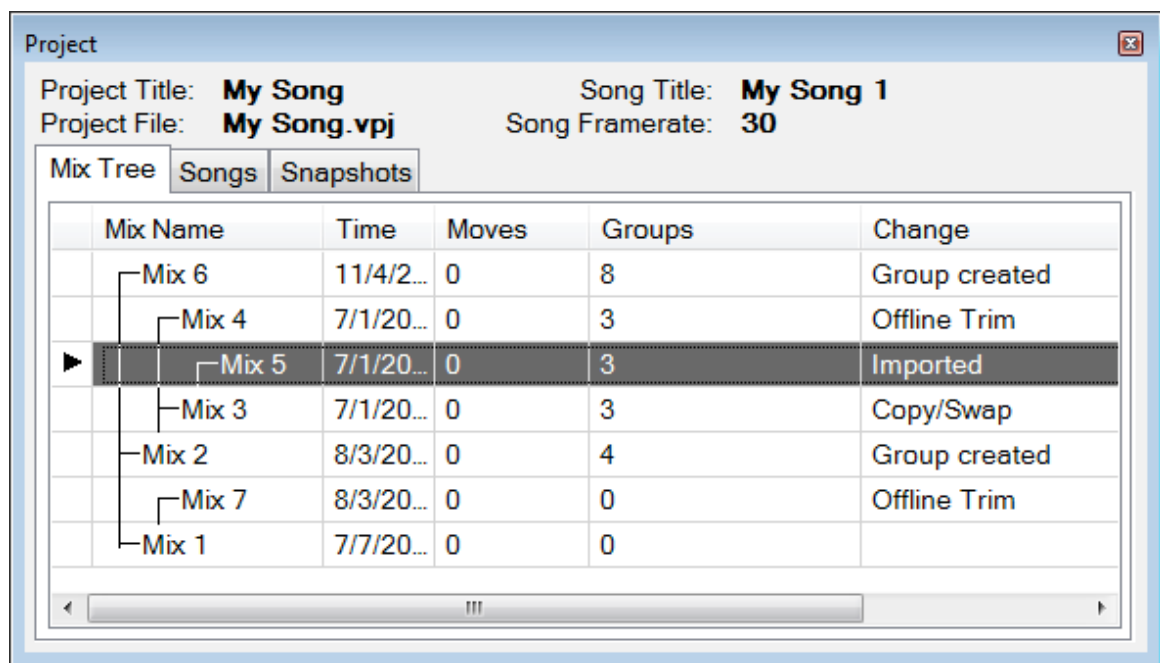
Clicking the down-arrow ▼ will order the list in ascending order from the top

Each of the tabs will be presented in brief in the remainder of this section. For complete information refer to sections 26.8 Mix Tree, 22.0 Songs, and 23.0 Snapshots.

### 21.1 Mix Tree Tab

The “Mix Tree” contains and displays the mix files for the current project. This includes the mix files created on the console Automation Control Module (ACM) and using the tools in the Mix Tree menu.

Click the Mix Tree tab to open the Mix Tree.

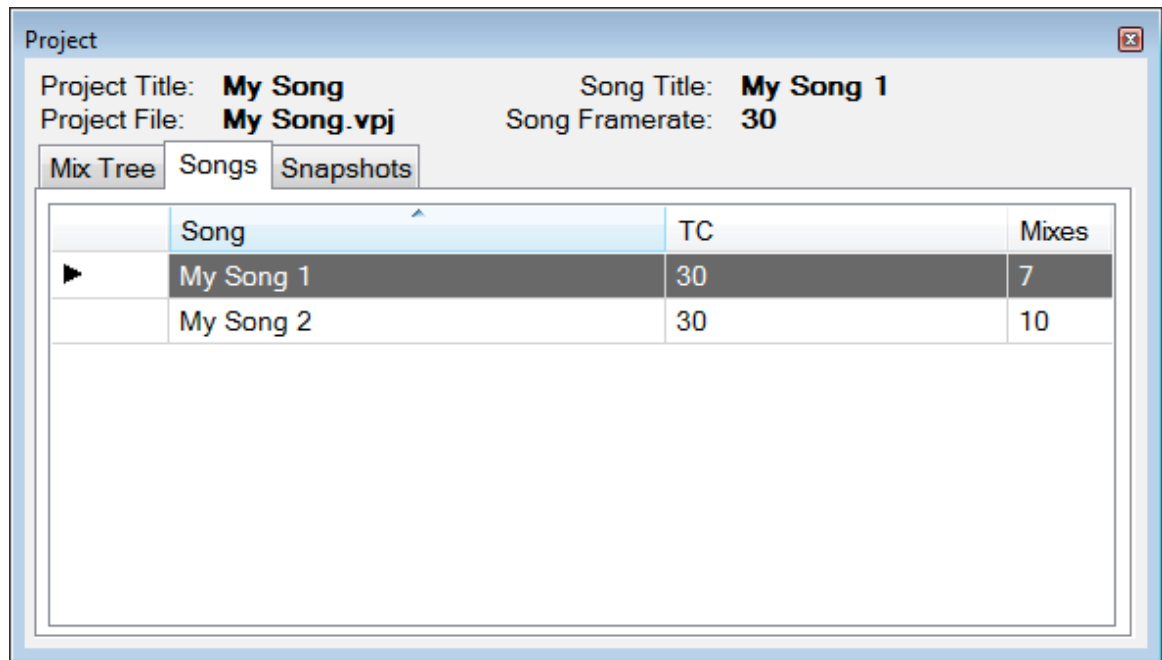


The Mix Tree is explained in detail in section 26.8 Mix Tree.

### 21.2 Songs Tab

A “song” is essentially a virtual folder within the Project File that stores the mix files displayed in the Mix Tree. Multiple songs can be saved in a project. A separate song can be created for each recording in a music project or each scene in a film or video project.





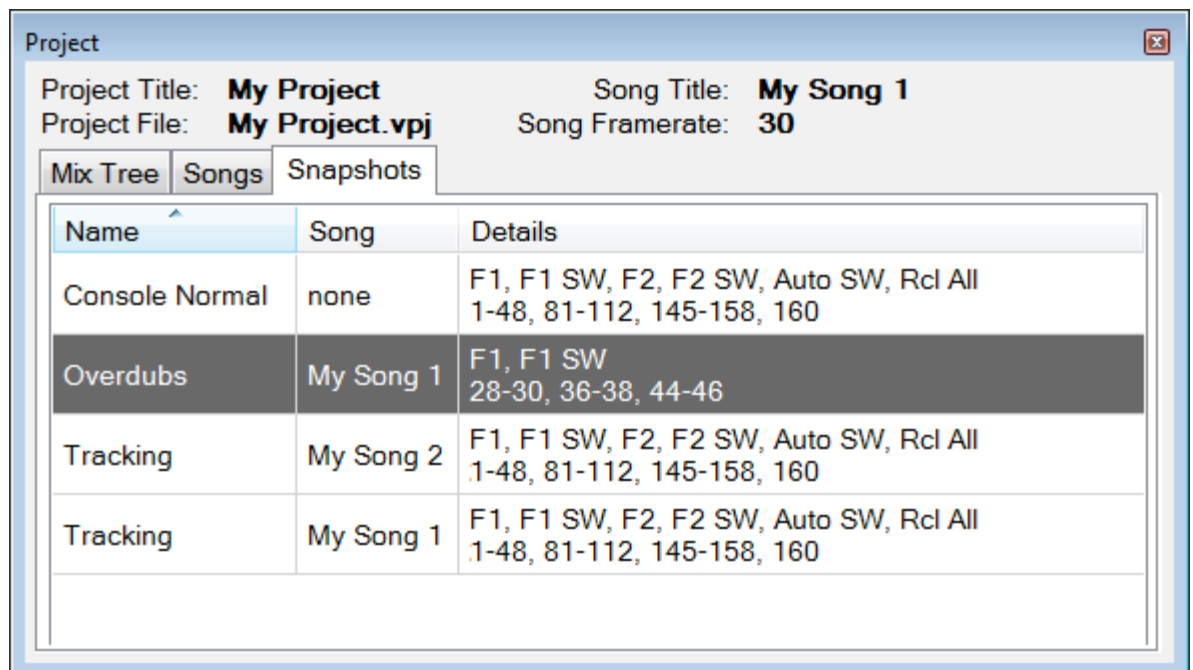
Songs are explained in detail in section 22.0 Songs.

### 21.3 Snapshots Tab

A “snapshot” is a captured static image of selected parameters controlled by the automation and recall systems for a selected number of channels. In other words, a snapshot is a stored set of settings of the automation faders, mutes, and switches and/or the recall settings for one or more channels from a single moment in time.

Snapshots are stored with in the Project File. They are associated with a particular song, but are available for use within and song within the project. Multiple snapshots can be saved in a project. Snapshots can be very useful for quickly storing and recalling most major console settings when moving between projects and songs or storing setting for use at a later time.

The Snapshots tab provides the means to create, display, and manage snapshot files. Click the Snapshots tab to open the Snapshot list.



Snapshots are explained in detail in section 23.0 Snapshots.

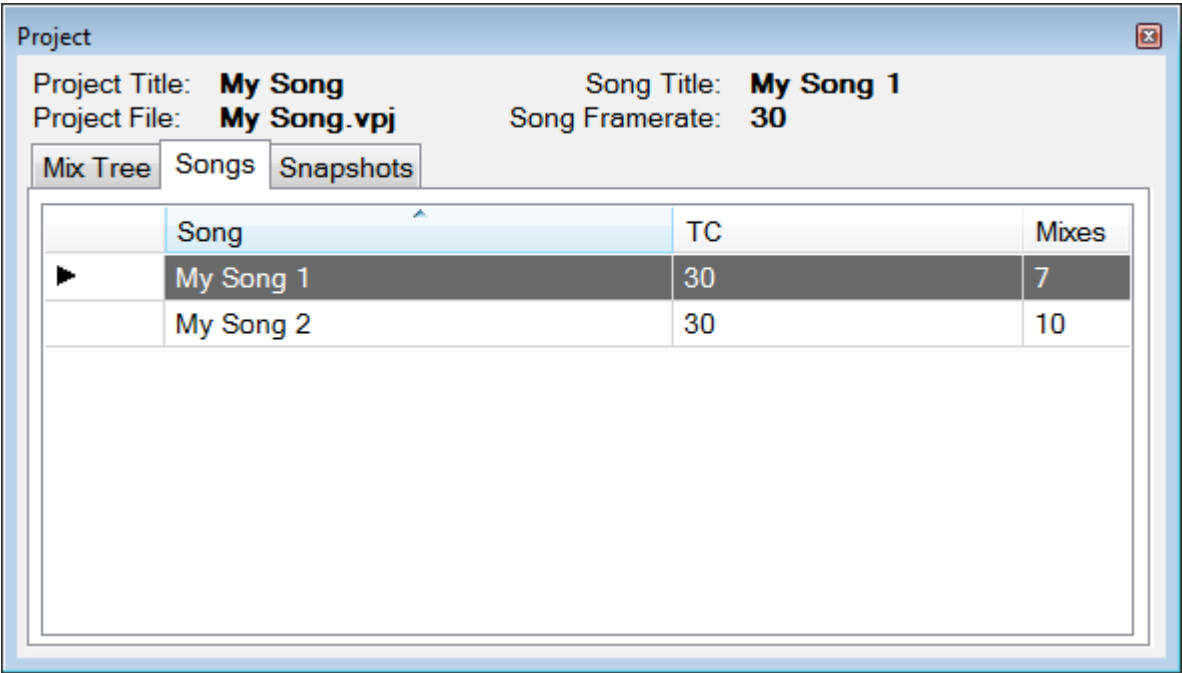
# 22.0 Songs

A “song” is essentially a virtual folder within the Project File that stores the mix files displayed in the Mix Tree. Multiple songs can be saved in a project.

A Project File must be open in order to make and use songs.

In common practice, a separate song can be created for each recording (song) in a music project or each scene in a film or video project. A song contains the Mix Tree for each individual recording. Snapshots created to support the recording are associated with the song, but are available to any song within a project and can exported for use in other projects. For a music recording project, individual compositions would be organized as songs and the entire album project would be saved as a project. For film/video projects, individual scenes could be stored as songs within a project that represents the entire program. This concept is not enforced, so when working with a concert or other lengthy source material, it might be desirable to snapshot and mix multiple compositions or scenes as a single song or whatever method is appropriate.

The Songs tab provides a list of the songs in the current project (Song list) and the means to create and delete songs.



The Song Title and Song (timecode) Framerate of the current song are always displayed at the top of the Project window in the associated fields.



### 22.1 Song List

The Song list contains all the songs that have been created within a project.

	Song	TC	Mixes
▶	My Song 1	30	7
	My Song 2	30	10

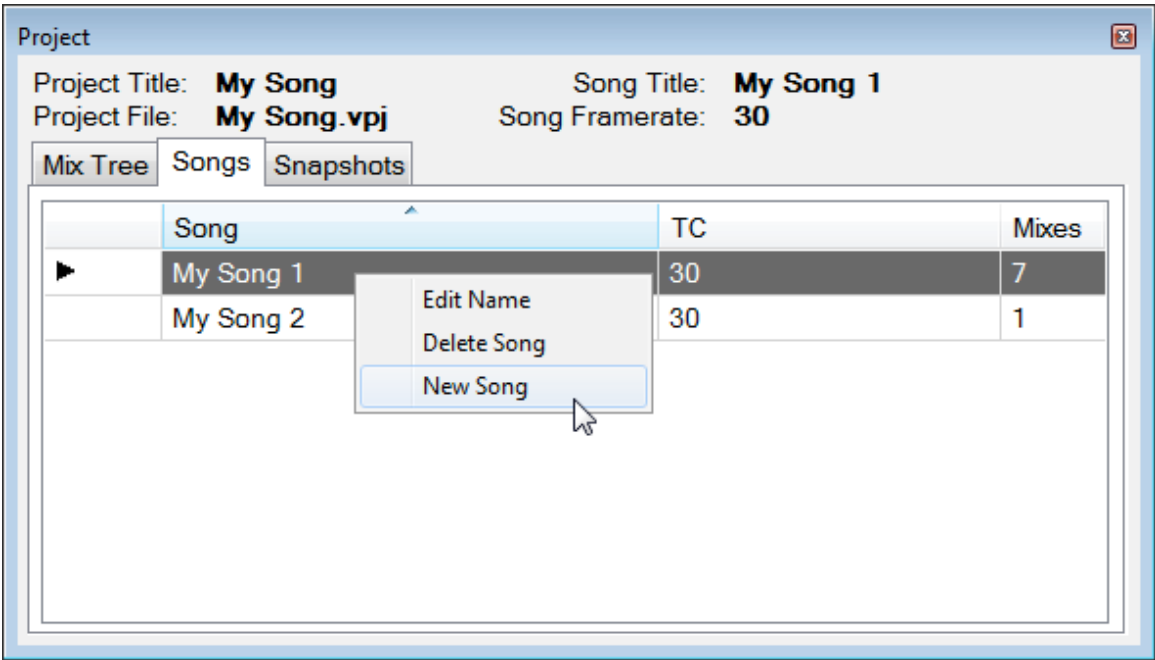
The Song list displays the following information for each song:

- ▶: Active song arrow (indicated which song is currently active)
- Song: Song Title
- TC (Timecode): Timecode frame rate
- Mixes: The number of mixes contained within the song

### 22.2 Creating a New Song

A new song can be created from the right-click menus in the Song or the Mix Tree tabs.

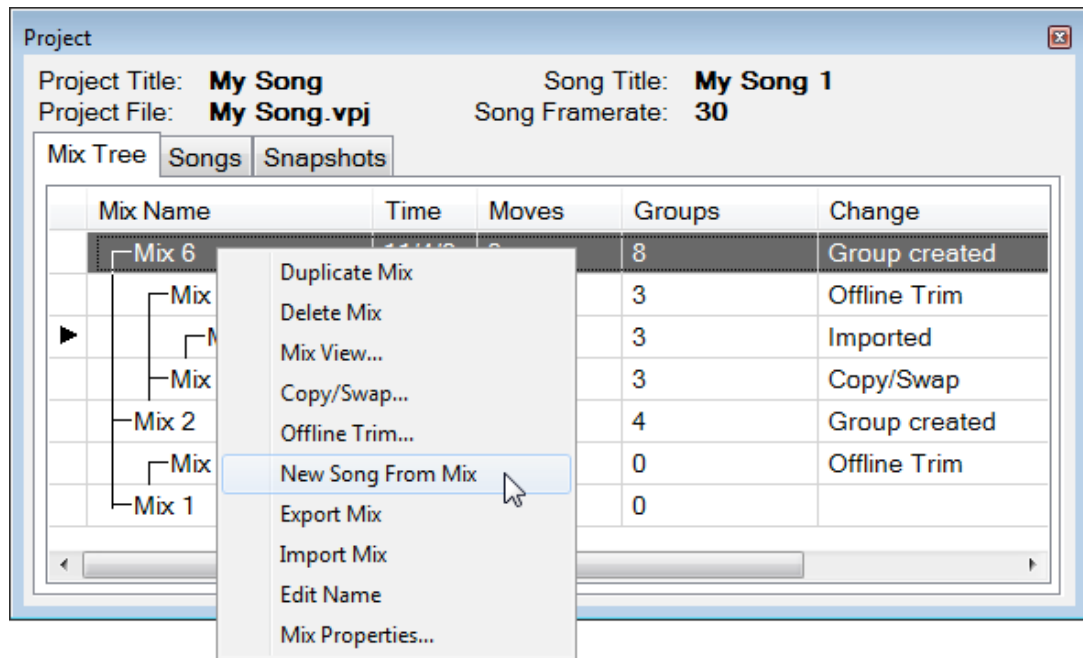
To create a new song from the Songs tab, right-click within the Songs tab and select "New Song" from the pop-up menu.



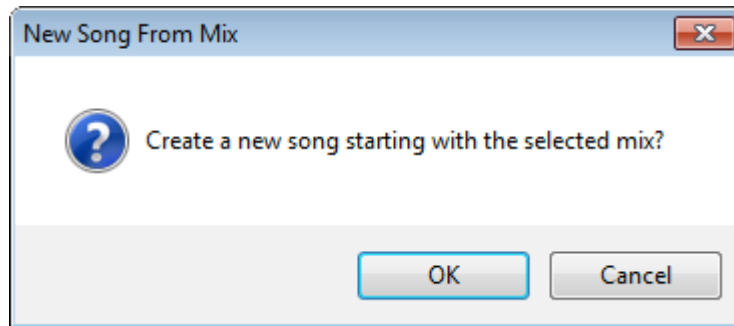
A new song will be created and will become the active song. The new song will be labeled with the next available number.

A new song can also be created from an existing mix in the Mix Tree belonging to the current or a different song. The new song will have a new Mix Tree with a copy of the highlighted mix.

To create a new song (and Mix Tree) from an existing mix, highlight the mix, right-click in the Mix Tree, and select "New Song From Mix" from the Mix Tree menu.



The "New Song From Mix" dialog box will appear.

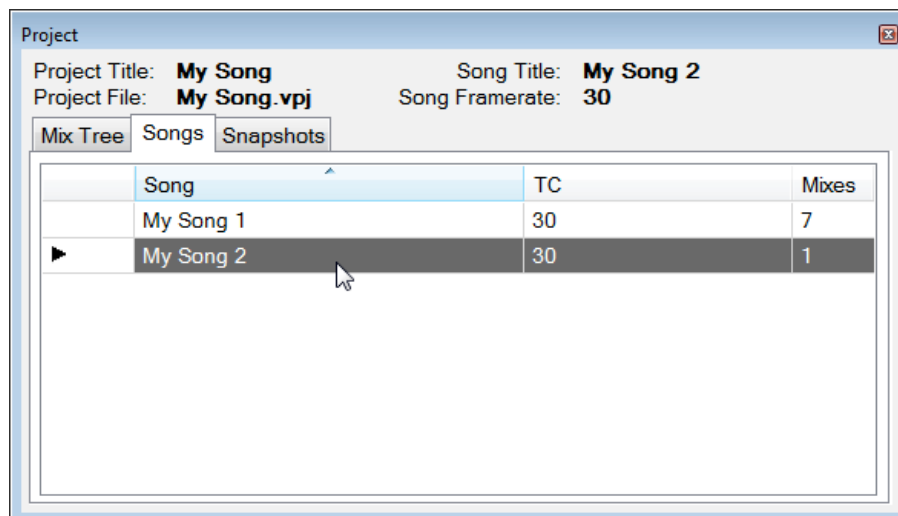


Click **OK** to create a new song and Mix Tree will be created.

Click **Cancel** to cancel the operation and close the window.

## 22.3 Opening an Existing Song

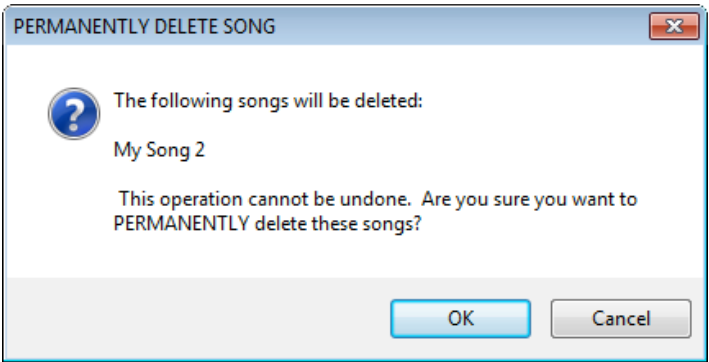
The Song list is populated when a Project file is opened. To make a song the "active" or "current" song, double-click the song title in the Song list. The Mix Tree will change to display the mixes contained within the active song.

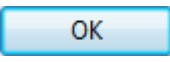



## 22.4 Deleting a Song

To delete a song, right-click within the Songs tab and select “Delete Song” from the pop-up menu.

The Permanently Delete Song dialog box will appear.



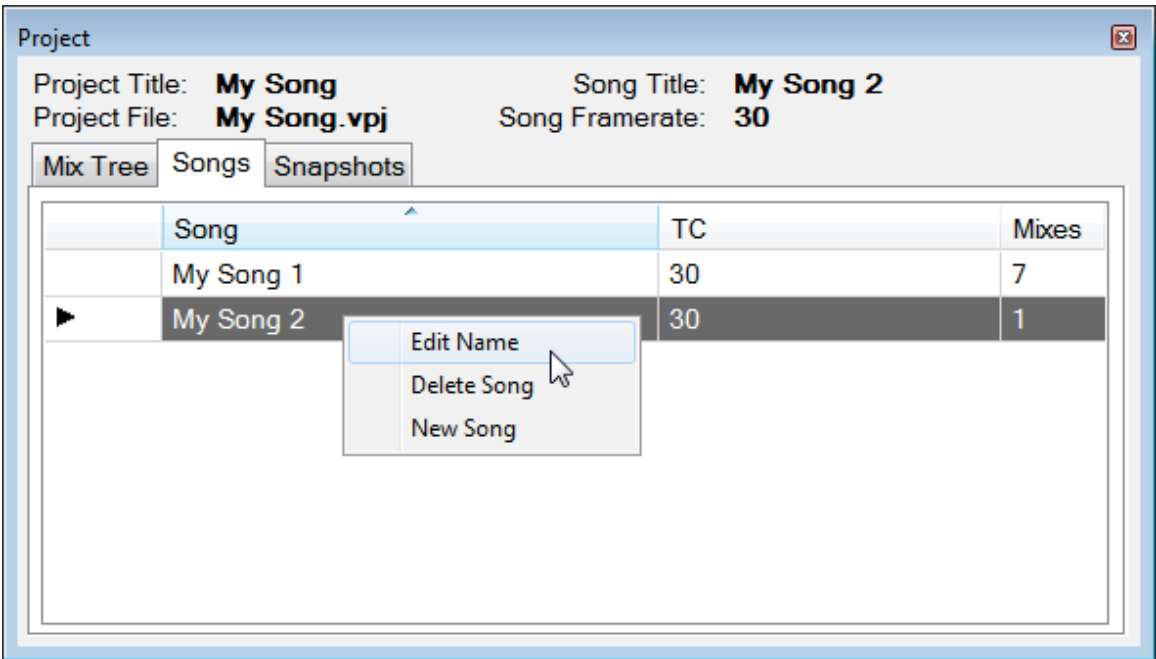
Click  to delete the highlighted song and all of the mixes it contains.

Click  to cancel the operation and close the window.

Multiple songs can be deleted by holding down the “shift” key and selecting a range of songs.

## 22.5 Editing a Song Title

To change a song title, right-click within the song title and select “Edit Name” from the pop-up menu.



The title of the selected song will become a text-entry field where the title can be changed.

Project

Project Title: **My Song**      Song Title: **My Song 2**  
Project File: **My Song.vpj**      Song Framerate: **30**

Mix Tree   Songs   Snapshots

Song	TC	Mixes
My Song 1	30	7
My Song 2		

Enter a new song title or edit the existing one and press the "Return" key on the computer keyboard to accept the new song title.

## 23.0 Snapshots

A “snapshot” is a captured static image of selected parameters controlled by the automation and recall systems for a selected number of channels. In other words, a snapshot is a stored set of settings of the automation faders, mutes, and switches and/or the recall settings for one or more channels from a single moment in time.

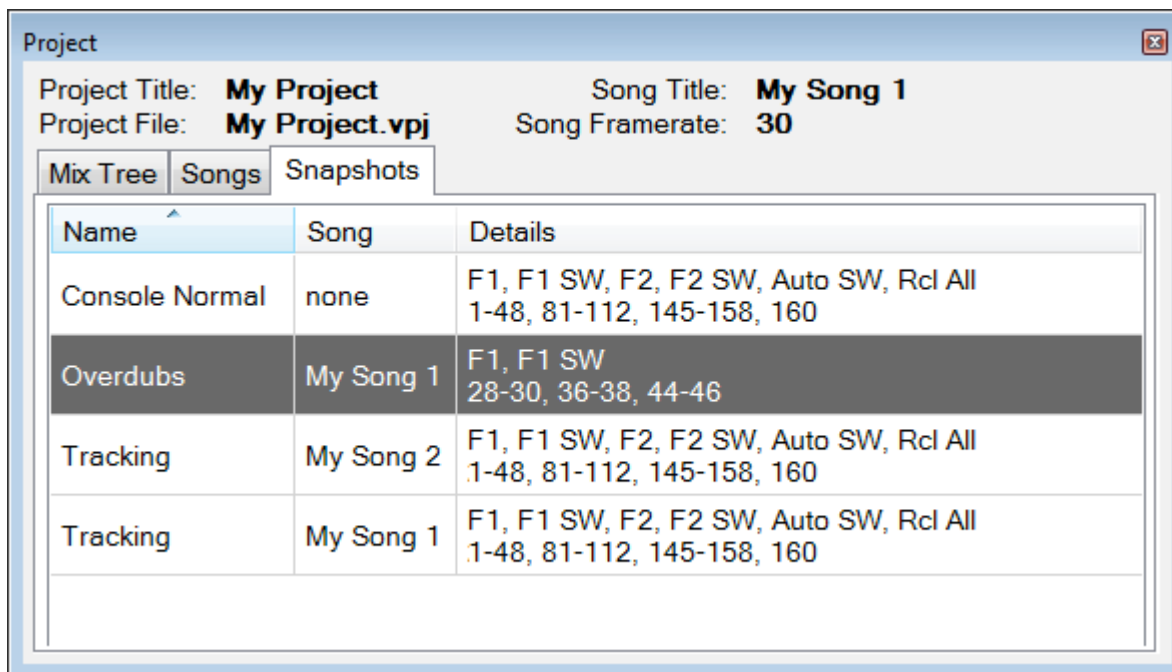
The tools in Snapshot menu (right-click), allow the operator to “take” a snapshot of selected parameters on selected channels and store it in the Snapshot list. The snapshots in the list can be “applied” and further managed as needed.

A Project File must be open in order to make and use snapshots.

Snapshots are stored within the Project Files. When snapshots are created they are automatically associated with the current song. Snapshots are available to any song within a project and the association with a song can be changed. Multiple snapshots can be associated with the same song. Snapshots can also be exported for use in other projects.

In common practice, snapshots can be very useful for quickly storing and recalling most major console settings when moving between songs in a specific project, when moving between projects, or storing settings for use at a later time.

The Snapshots tab provides the means to create, display, and manage snapshots and snapshot files. Click the Snapshots tab in the Project window to open the Snapshot list.



The screenshot shows the 'Project' window with the 'Snapshots' tab selected. The window displays the following information:

- Project Title: **My Project**
- Project File: **My Project.vpj**
- Song Title: **My Song 1**
- Song Framerate: **30**

The 'Snapshots' tab contains a table with the following data:

Name	Song	Details
Console Normal	none	F1, F1 SW, F2, F2 SW, Auto SW, Rcl All 1-48, 81-112, 145-158, 160
Overdubs	My Song 1	F1, F1 SW 28-30, 36-38, 44-46
Tracking	My Song 2	F1, F1 SW, F2, F2 SW, Auto SW, Rcl All 1-48, 81-112, 145-158, 160
Tracking	My Song 1	F1, F1 SW, F2, F2 SW, Auto SW, Rcl All 1-48, 81-112, 145-158, 160

## 23.1 Snapshot List

For each snapshot, the following information is displayed:

- Name: Title of the snapshot
- Song: The song the snapshot is associated with
- Details: Information about the contents of the snapshot

Name	Song	Details
Console Normal	none	F1, F1 SW, F2, F2 SW, Auto SW, Rcl All 1-48, 81-112, 145-158, 160
Overdubs	My Song 1	F1, F1 SW 28-30, 36-38, 44-46
Tracking	My Song 2	F1, F1 SW, F2, F2 SW, Auto SW, Rcl All 1-48, 81-112, 145-158, 160
Tracking	My Song 1	F1, F1 SW, F2, F2 SW, Auto SW, Rcl All 1-48, 81-112, 145-158, 160

The abbreviations for the “Details” section of the display describe the channel sections that are included in the snapshot. The abbreviations stand for the following:

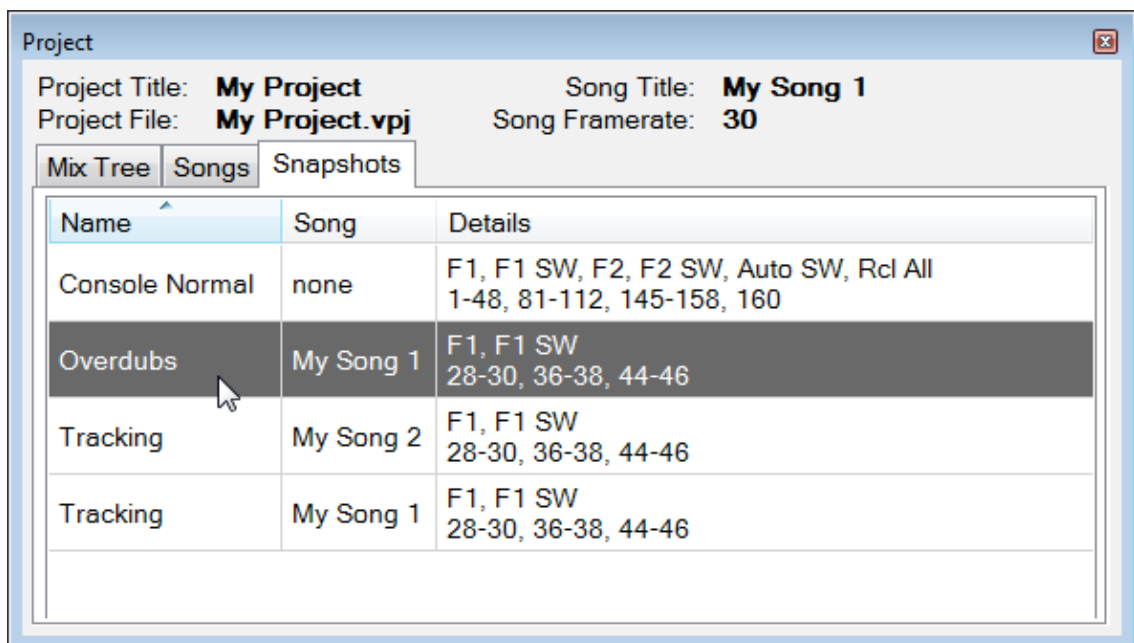
- F1: Fader 1 position
- F1 SW: Fader 1 mute and insert switches
- F2: Fader 2 position
- F2 SW: Fader 2 mute and insert switches
- Auto SW: Automation switches (EQ Bypass and Aux Send On/Off)
- Rcl All: All recall settings (routing and recall switches)

The numbers under the channel sections (1-48, 81-112, etc.) indicate the range of channels included in the snapshot.

## 23.2 Snapshot Selection

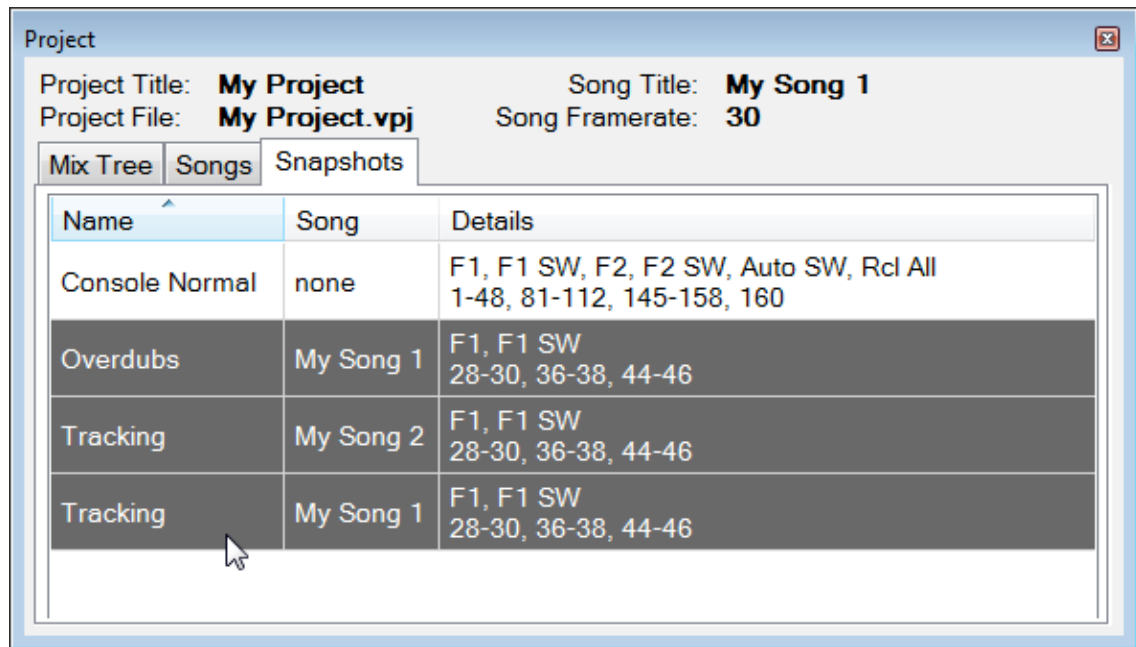
At least one or more snapshot must be selected or “highlighted” to use the tools in the Snapshot menu. The exception to this rule is “Take Snapshot,” which can be selected at any time.

A single snapshot can be highlighted by clicking somewhere within its row in the Snapshot list.

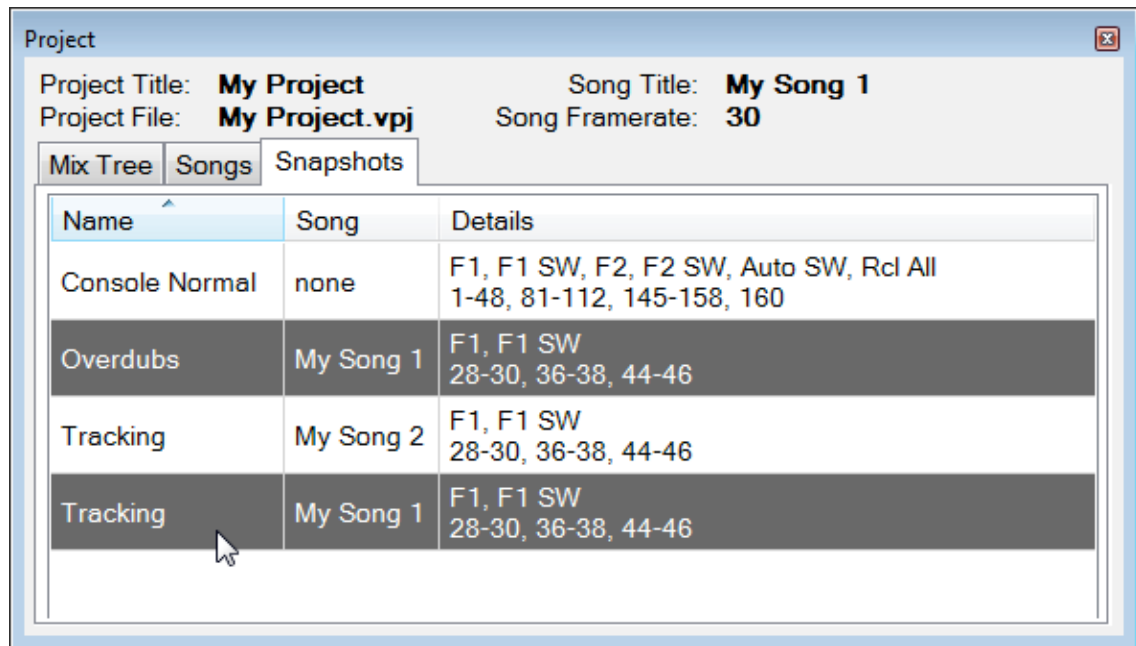


Multiple consecutive snapshots can be highlighted using the Shift+Click method.





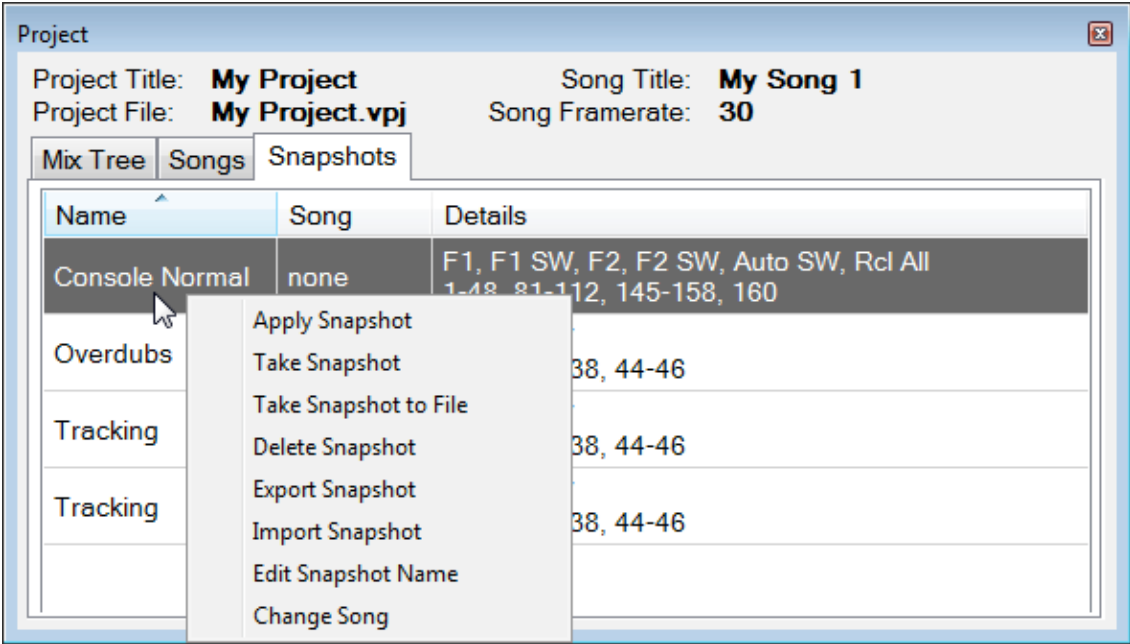
Multiple non-consecutive snapshots can be highlighted using the Ctrl+Click method.



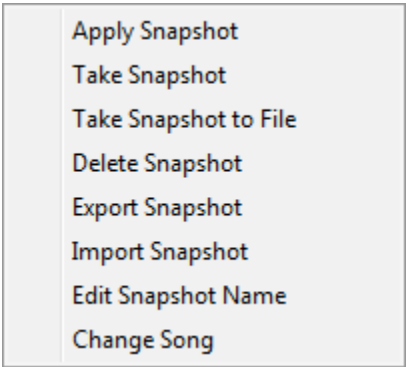
Once the desired snapshot(s) are selected, right-click to open the Snapshot menu.

### 23.3 Snapshot Menu

Right-clicking anywhere within the Snapshot list will open the Snapshot menu.



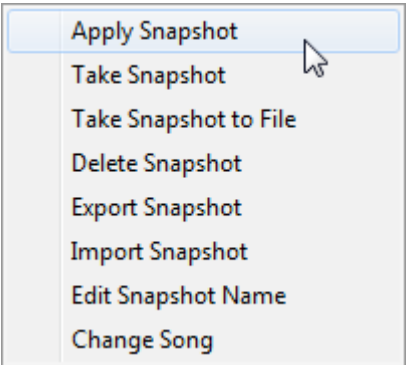
This menu contains controls for snapshot management.



The Snapshot menu contains eight (8) selections whose primary functions facilitate the creation and management of snapshots:

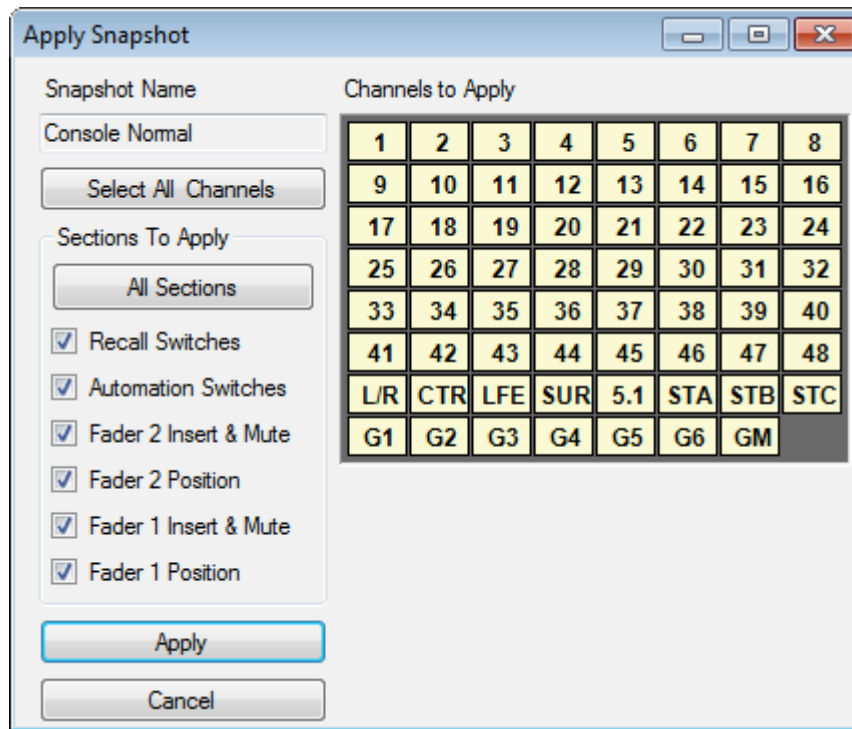
- Apply Snapshot: Opens the "Apply Snapshot" window to apply the highlighted snapshot
- Take Snapshot: Opens the "Take Snapshot" window for the creation of a new snapshot
- Take Snapshot to File: Opens the "Take Snapshot" window for the creation of a new snapshot and saves it as file
- Delete Snapshot: Deletes the highlighted snapshot
- Export Snapshot: Exports the highlighted snapshot as a file
- Import Snapshot: Imports a snapshot file
- Edit Snapshot Name: Name editor for the highlighted snapshot
- Change Song: Opens a menu to select the song that will contain the snapshot

#### 23.3.1 Apply Snapshot



To apply an existing snapshot to the console, highlight the desired snapshot and select "Apply snapshot" from the snapshot menu.

The "Apply Snapshot" window will open.



The Apply Snapshot window allows the following to be selected:

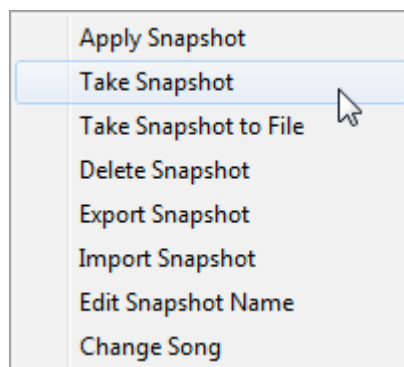
- Channels to Apply
- Sections to Apply

To "Apply" a snapshot, select the sections and channels to apply and click the "Apply" button.

Click "Cancel" to abort the operation and close the window.

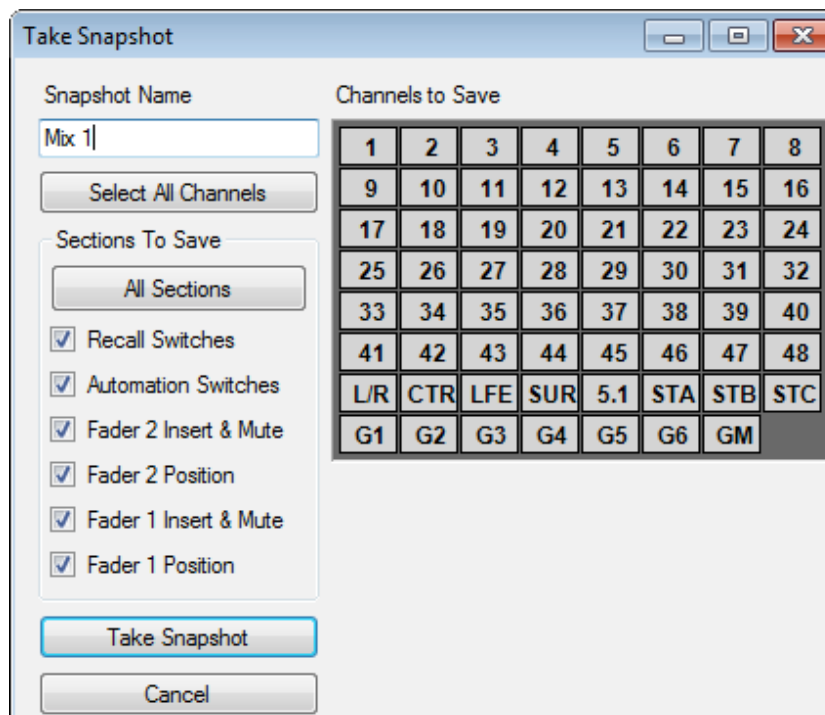
Refer to section 23.6 Apply Snapshot Window for detailed information.

### 23.3.2 Take Snapshot



To create a new snapshot, select "Take Snapshot" from the Snapshot menu.

The "Take Snapshot" window will open.



The "Take Snapshot" window allows the following to be selected:

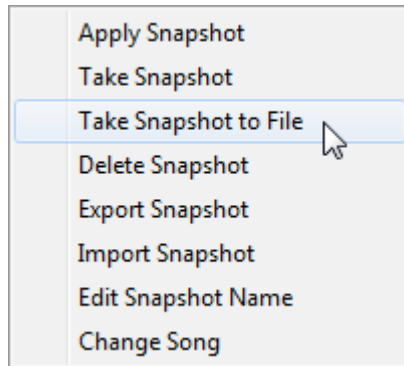
- Snapshot Name
- Channels to Save
- Sections to Save

To "take" a snapshot, enter a Snapshot Name, select the sections and channels to save, and click the "Take Snapshot" button.

Click "Cancel" to abort the operation and close the window.

Refer to section 23.5 Take Snapshot Window for detailed information about taking snapshots.

### 23.3.3 Take Snapshot to File

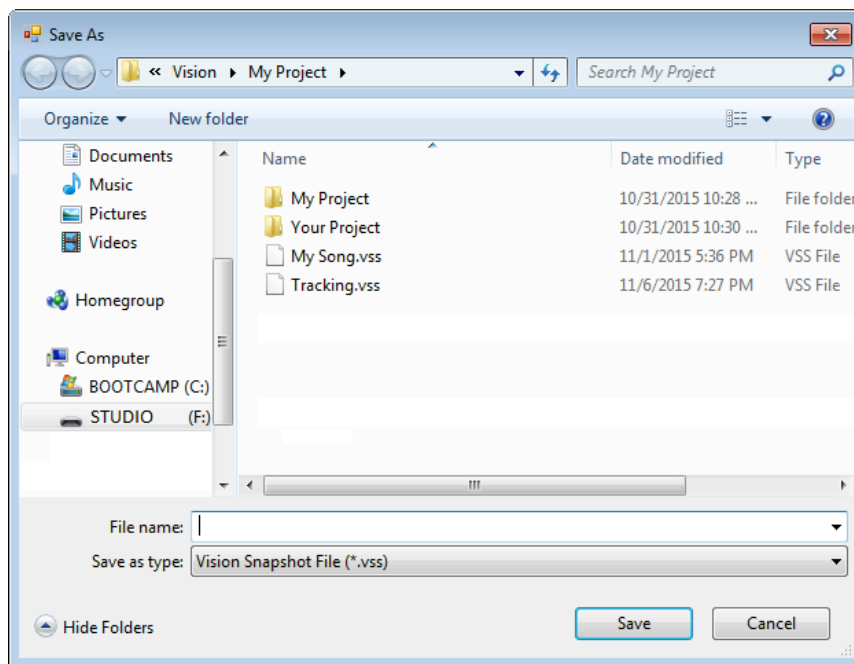


A snapshot can be taken and saved as a file without being added to the Snapshot list.

To create a snapshot and save it as a file, select "Take Snapshot to File" from the Snapshot menu.

The "Take Snapshot" window will open, along with a "Save As" window.

Use the procedure described in section 23.3.2 (above) to create the new snapshot.



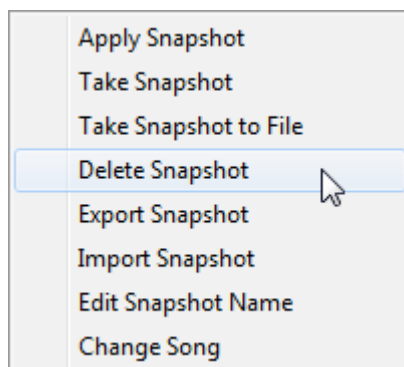
Use the "Save As" window to navigate to the desired location for the new snapshot file, and enter a File Name.

Click "Save" and the snapshot file will be created and saved at the selected location with a .vss suffix.

Click "Cancel" to abort the operation and close the window.

Refer to section 23.5 Take Snapshot window for detailed information about taking snapshots.

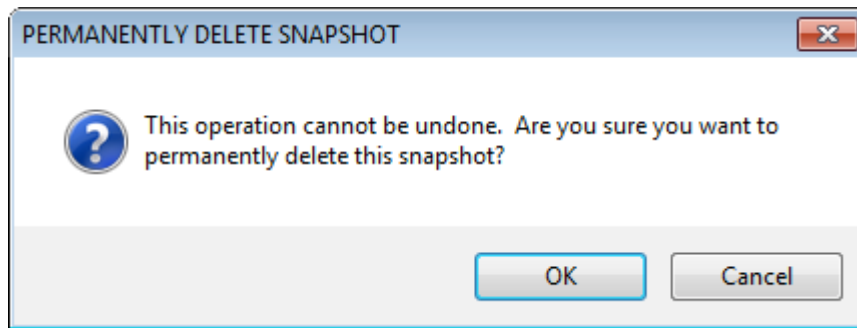
### 23.3.4 Delete Snapshot



To delete an existing snapshot, highlight the desired snapshot and select "Delete Snapshot" from the snapshot menu.

The "PERMANENTLY DELETE SNAPSHOT" dialog box will open.

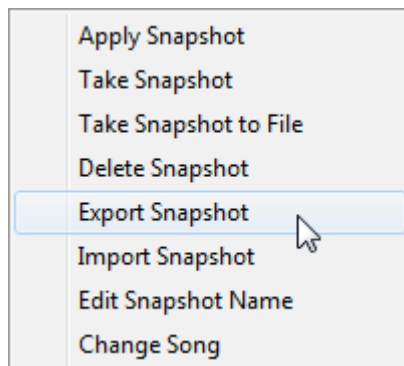
*NOTE: Deleting a snapshot cannot be undone.*



Click "OK" and the snapshot will be deleted from the Snapshot list.

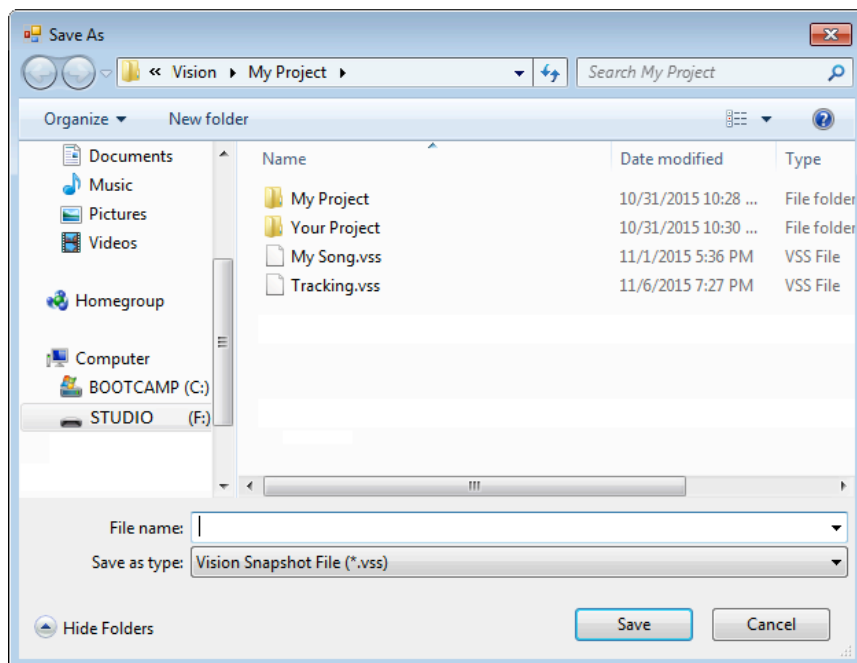
Click "Cancel" to abort the operation and close the window.

### 23.3.5 Export Snapshot



To export an existing snapshot as a file, highlight the desired snapshot and select "Export Snapshot" from the Snapshot menu.

A "Save As" window will open.

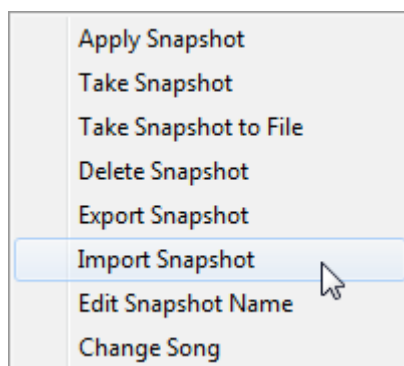


Use the "Save As" window to navigate to the desired location for the snapshot file, and enter a File Name.

Click "Save" and the snapshot file will be created and saved at the selected location with a .vss suffix.

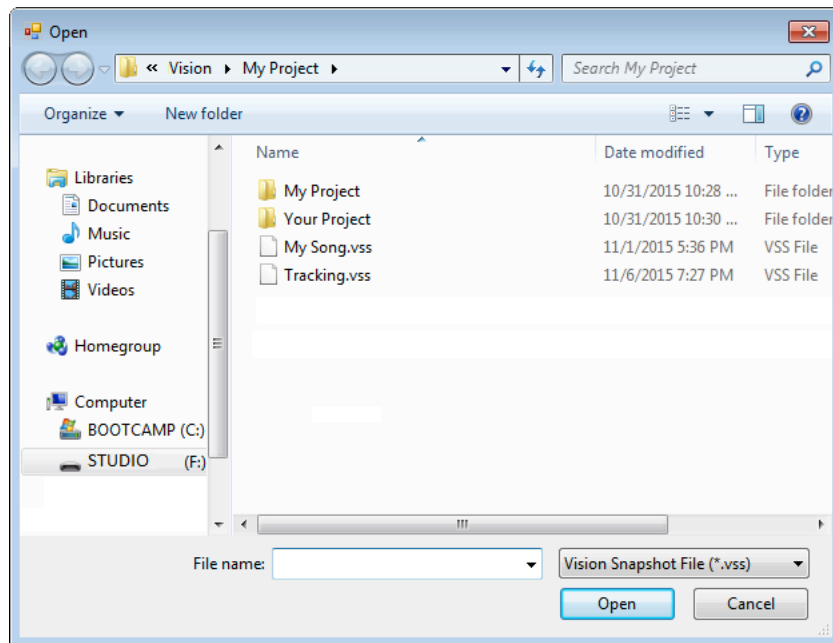
Click "Cancel" to abort the operation and close the window.

### 23.3.6 Import Snapshot



To import an existing snapshot from a file, select "Import Snapshot" from the snapshot menu.

A "Open" window will open.



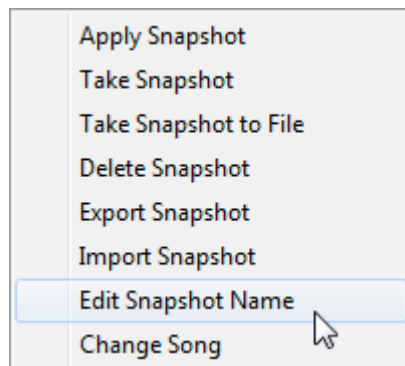
Use the "Open" window to navigate to the desired snapshot file and select it.

Only snapshot files with the .vss suffix can be imported.

Click "Open" and the snapshot file will be added to snapshots list.

Click "Cancel" to abort the operation and close the window.

### 23.3.7 Edit Name

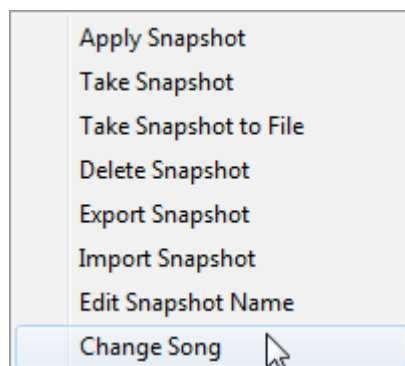


To change the name of a snapshot, highlight the desired snapshot and select "Edit Name" from the Snapshot menu.

The snapshot name will turn into a text-entry box with the current name highlighted. Edit the existing name or enter a new one. Then click elsewhere within the Snapshot list (or press "Enter" on the keyboard). The new name will be displayed.

Name	Song	Details
Console Normal	none	F1, F1 SW, F2, F2 SW, Auto SW, Rcl All 1-48, 81-112, 145-158, 160
Overdubs	My Song 1	F1, F1 SW 28-30, 36-38, 44-46

### 23.3.8 Change Song



To help keep things organized, snapshots can be associated with a song within a project.

To assign an existing snapshot to a song, highlight the desired snapshot and select "Change Song" from the snapshot menu.

A pop-up menu will appear in the "Song" section of that snapshot's listing. This menu is populated with the songs contained within the project.

Name	Song	Details
Console Normal	none	F1, F1 SW, F2, F2 SW, Auto SW, Rcl All 1-48, 81-112, 145-158, 160
Overdubs	My Song 1	F1, F1 SW 28-30, 36-38, 44-46
Tracking	My Song 2	F1, F1 SW 28-30, 36-38, 44-46
Tracking	<div> <div>none</div> <div> <div>none</div> <div>My Song 1</div> <div>My Song 2</div> </div> </div>	F1, F1 SW 28-30, 36-38, 44-46

Click on the pull-down menu, select the song to associate the snapshot with, and click elsewhere in the Snapshot list. The snapshot will be associated to the selected song. If no assignment is desired, select "none" from the menu.

## 23.4 Take Snapshot Window

The 'Take Snapshot' window allows the selection of channel sections to capture, the selection of the channels to capture, and the entry of a Snapshot Name.

The "Take Snapshot" window has four (4) sections:

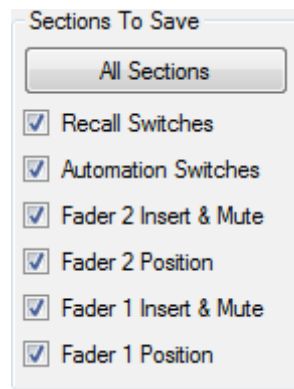
- Snapshot Name
- Channels To Save grid
- Sections To Save
- Take snapshot and Cancel buttons

### 23.4.1 Snapshot Name

Snapshot Name
Snapshot 1

A name for the new snapshot can be entered into the snapshot Name field before the "Take Snapshot" button is clicked.

### 23.4.2 Sections to Save



The "Sections To Save" section of the "Take Snapshot" window allows the selection of channel sections from both the automation and recall systems for inclusion in the new snapshot.

All sections will be selected when the window opens. To deselect one or more sections, click the checkboxes ☒ for the desired sections. Sections with empty checkboxes ☐ will not be included in the snapshot.

To select all sections, click the  button.

Only the selected channel sections will be stored when a snapshot is first created. Only these sections will be available to be re-applied back to the console at a later date.

The channel "Sections To Save" include the following controls:

- ☒ Recall Switches: All recall settings including:
  - Input/Output assignments
  - Auxiliary Send routing
  - Filter, Phase, LCR, and Solo Safe switch positions
  - Global console settings
- ☒ Automation Switches: EQ Bypass and Auxiliary Send On/Off switch positions
- ☒ Fader 2 Insert & Mute: Fader 2 insert and mute switch positions
- ☒ Fader 2 Position: Position of Fader 2
- ☒ Fader 1 Insert & Mute: Fader 1 insert and mute switch positions
- ☒ Fader 1 Position: Position of Fader 1

### 23.4.3 Channels to Save

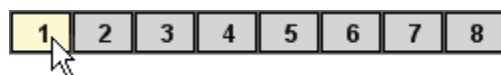


The "Channels To Save" section of the Take snapshot window allows the selection of one or more channels for inclusion in the new snapshot.

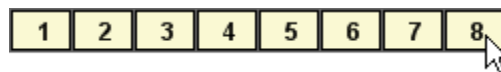
 Unselected channels are grey in color.

 Selected channels are yellow in color.

Channel selections may be made using the following methods:



Click A Single Channel: To select an individual channel



Shift + Click: To select a range of consecutive channels

- Click on the first channel to select it
- Hold down the Shift key and click on the last channel in the series
- All the channels between the first and last channels will be selected



1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

Ctrl + Click: To select a group of non-consecutive channels

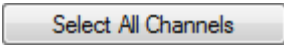
- Hold down the Ctrl key
- Click on the desired channels in any order

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

Drag + Click (Rubber-banding): To select a region of channels

- Click within the channel box of the first channel to be included
- While holding down the left mouse button, drag the mouse over the region of channels you wish to include in the selection

Clicking within the Channel Grid will clear any previous selections, unless Shift + Click or CTRL + Click methods are used. Channels or Channel can be added or deleted to previously selections using Shift + Click or CTRL + Click methods. Rubber-banding can be used in combination with Shift + Click and Ctrl + Click methods.


Clicking the  button will select all channels for inclusion in the new snapshot.

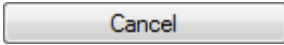
Channels to Save							
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
L/R	CTR	LFE	SUR	5.1	STA	STB	STC
G1	G2	G3	G4	G5	G6	GM	

Only the selected channels will be stored when a snapshot is first created. Only these channels will be available to be re-applied back to the console at a later date.

In the example to the left, all channels are selected.

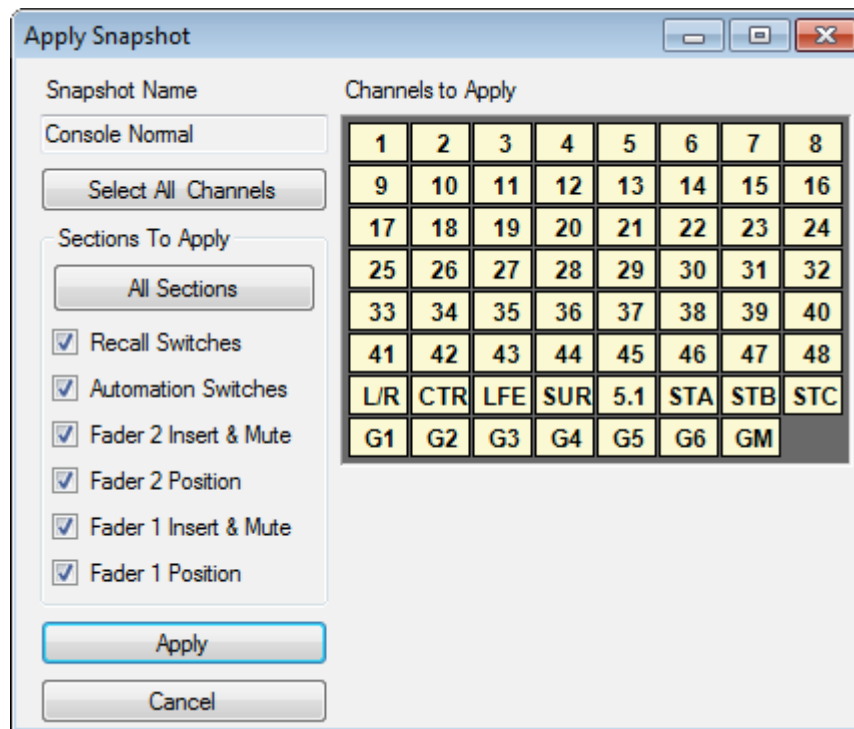
#### 23.4.4 Take Snapshot and Cancel Buttons

Once all the channels and channel sections have been selected and a Snapshot Name has been entered, click the  button to create a new snapshot.

Clicking the  button will close the Take Snapshot window without creating a new snapshot.

## 23.5 Apply Snapshot Window

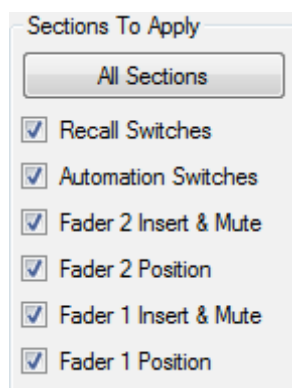
The Take Snapshot window allows the selection of channel sections to capture, the selection of the channels to capture, and the entry of a Snapshot Name.



The Apply Snapshot window has four (4) sections:

- Snapshot Name
- Channels To Apply
- Sections To Apply
- Apply & Cancel buttons

### 23.5.1 Sections to Apply



The “Sections To Apply” section of the Apply snapshot window allows the selection of channel sections from both the automation and recall systems to apply to the console.

All sections will be selected for application when the window opens. To deselect one or more sections, check the checkboxes ☒ for the desired channel sections. Sections with empty checkboxes ☐ will not be applied to the console.

To select all sections, click the  button.

*Note: Channel sections not selected will remain unaffected when the snapshot is applied.*

The channel Sections To Apply include the following controls:

- ☒ Recall Switches: All recall settings including:
  - Input/output assignments
  - Auxiliary Send routing
  - Filter, Phase, LCR, and Solo Safe switch positions
  - Global console settings
- ☒ Automation Switches: EQ Bypass and Auxiliary Send On/Off switch positions
- ☒ Fader 2 Insert & Mute: Fader 2 insert and mute switch positions
- ☒ Fader 2 Position: Position of Fader 2
- ☒ Fader 1 Insert & Mute: Fader 1 insert and mute switch positions
- ☒ Fader 1 Position: Position of Fader 1

Only the channels sections that were stored when the snapshot was made can be selected when a snapshot is applied to the console.

**Sections To Apply**

**All Sections**

☐ Recall Switches

☐ Automation Switches

☐ Fader 2 Insert & Mute

☐ Fader 2 Position

☒ Fader 1 Insert & Mute

☒ Fader 1 Position

If a channel section was not stored when the snapshot was created, it will appear "dimmed-out" and will not be available for selection.

☐ Recall Switches Unstored channel sections are "dimmed-out"

In the example to the left, only the Fader 1 insert, mute, and fader position can be selected for application to the console.

### 23.5.2 Channels to Apply

**Channels to Apply**

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
L/R	CTR	LFE	SUR	5.1	STA	STB	STC
G1	G2	G3	G4	G5	G6	GM	

The "Channels To Apply" section of the Apply Snapshot window allows the selection of one or more channels from the selected snapshot for application to the console.

☐ 1 Unselected channels are grey in color.

☒ 1 Selected channels are yellow in color.

Channel selections may be made using the following methods:

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

Click A Single Channel: To select an individual channel

1	2	3	4	5	6	7	8
---	---	---	---	---	---	---	---

Shift + Click: To select a range of consecutive channels

- Click on the first channel to select it
- Hold down the Shift key and click on the last channel in the series
- All the channels between the first and last channels will be selected

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

Ctrl + Click: To select a group of non-consecutive channels

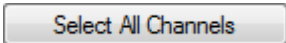
- Hold down the Ctrl key
- Click on the desired channels in any order

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16

Drag + Click (Rubber-banding): To select a region of channels

- Click within the channel box of the first channel to be included
- While holding down the left mouse button, drag the mouse over the region of channels you wish to include in the selection

Clicking within the Channel Grid will clear any previous selections, unless Shift + Click or CTRL + Click methods are used. Channels or Channel can be added or deleted to previously selections using Shift + Click or CTRL + Click methods. Rubber-banding can be used in combination with Shift + Click and Ctrl + Click methods.

Clicking the  button will select all available channels from the selected snapshot for application to the console.

Channels to Apply							
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
L/R	CTR	LFE	SUR	5.1	STA	STB	STC
G1	G2	G3	G4	G5	G6	GM	


If all channels were selected when the snapshot was first created, all channels will be available to be re-applied back to the console.

In the example to the left, all channels are selected.

Only the channels that were stored when the snapshot was made can be selected when a snapshot is applied to the console.

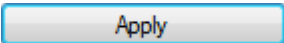
Channels to Apply							
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
L/R	CTR	LFE	SUR	5.1	STA	STB	STC
G1	G2	G3	G4	G5	G6	GM	

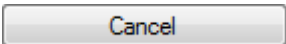
If a channel was not stored when the snapshot was created, it will appear "dimmed-out" in the channel grid and will not be available for selection.

 1 Unstored channels are "dimmed-out"

In the example to the left, only channels 28-30, 36-38, and 44-46 can be selected.

23.5.3 Apply and Cancel Buttons

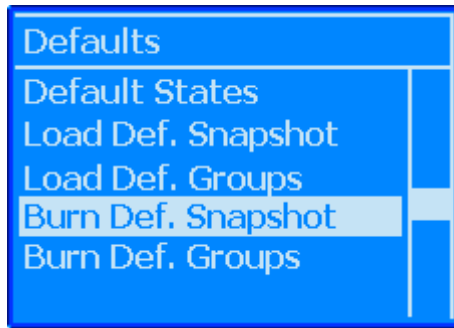
Once all the channels and channel sections have been selected, click the  button to apply the highlighted snapshot to the console.

Clicking the  button will close the Apply Snapshot window without changing the console settings.

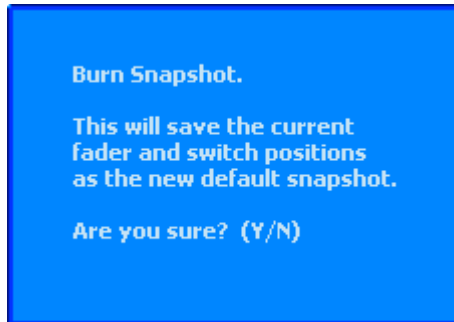
23.6 Default Snapshot

The current fader positions, switch states, and routing that were setup using the console hardware or PC software can be "burned" to the ACM as the Default Snapshot.

The Default Snapshot can be changed or cleared by setting new fader and switch position and/or routing and then burning them to the ACM again.

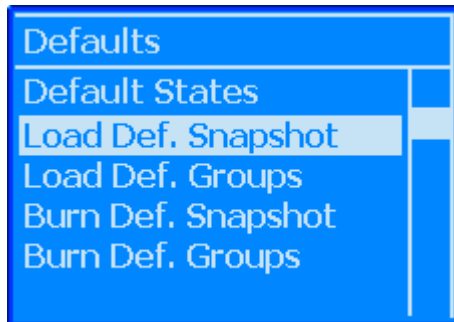


To save the Default snapshot, select "Burn Def. snapshot" from the Defaults menu and press the "Yes OK" button.

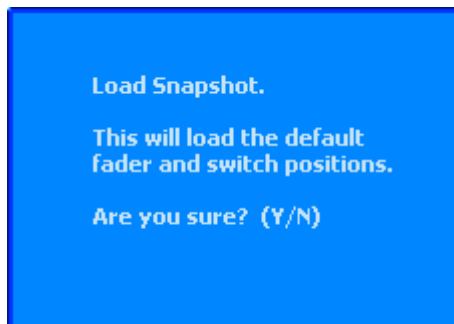


The Burn snapshot confirmation window will open.

Press "Yes OK" to set the current fader and switch positions and routing as the Default Snapshot. This operation can be canceled by pressing the "No Cancel" button.



To load the Default Snapshot, select "Load Def. snapshot" from the Defaults menu and press the "Yes OK" button.



The Load Snapshot confirmation window will open.

Press "Yes OK" to load the Default Snapshot. This operation can be canceled by pressing the "No Cancel" button.

## 23.7 Snapshot Window Control from the ACM Control Panel (Vision Control)

The Snapshots tab can be controlled directly from the console using the ACM Control Panel. Once PC Window Control is engaged for the Snapshots window, the following functions can be achieved without having to access the PC software with the mouse or touch pad:

- **Snapshot Selection:** Use the ACM Control Panel arrow buttons to move up and down the Snapshot list and click the "Yes Ok" button to select the highlighted snapshot.
- **Snapshot Menu:** Once a snapshot is highlighted, the Snapshot menu can be opened by pressing the "Menu" button. The arrow buttons can be used to select the menu item, which can be opened using the "Yes OK" button. The "Prev," "Next," "Toggle Value," "Yes OK," and "No Cancel" buttons can be used to navigate and perform the selected function.

Refer to section 26.7.3.1 PC Window Control.

## 23.8 Snapshot Procedures

For all procedures below:

1. Open a Vision Project File using the File menu in the Main window.
2. Open the Project window using the View menu in the Main window.
3. Click the Snapshots tab in the Project window
4. Open the Recall Settings window using the View menu in the Main window.

### 23.8.1 Applying an Existing Snapshot

To apply an existing snapshot to the console, perform the following procedure:

1. Make sure any needed console settings have been stored in a snapshot before applying a stored snapshot.
2. Right-click the snapshot to be edited and select "Apply Snapshot" from the menu. The Apply Snapshot window will open.
3. Select one or more channels using the "Channels To Apply" selection grid or click the "All Available" button to select all the available channels.
4. Select the channel sections to include in the snapshot using the checkboxes in the "Sections to Save" section.
5. Click the "Apply" button to apply the snapshot data to the console.
6. The Apply Snapshot window will close and the selected snapshot settings will be applied to the console.

### 23.8.2 Taking a New Snapshot

To make a new snapshot and add it to the current project, perform the following procedure:

1. Make sure the console hardware is set as desired for the new snapshot.
2. Click the "Read Console" button in the Recalls Settings window to make sure the console settings match the settings in the recall system memory buffer.
3. Right-click in the snapshot list and select "Take Snapshot" from the menu. The Take Snapshot window will open.
4. Select one or more channels using the "Channels To Save" selection grid or click the "All Channels" button to select all channels.
5. Select the channel sections to include in the snapshot using the checkboxes in the "Sections to Save" section.
6. Enter a name for the new snapshot.
7. Click the "Take Snapshot" button to create the new snapshot.
8. The Take Snapshot window will close and the new snapshot will appear in the Snapshot list.

### 23.8.3 Making a New Snapshot File without Adding it to the Project

To make a new snapshot file that's not added to the currently open project, perform the following procedure:

1. Make sure the console hardware is set as desired for the new snapshot.
2. Click the "Read Console" button in the Recalls Settings window to make sure the console settings match the settings in the recall system memory buffer.
3. Right-click in the snapshot list and select "Take Snapshot to File" from the menu. The Take Snapshot window will open along with a Save As window.
4. Select one or more channels using the "Channels To Save" selection grid or click the "All Channels" button to select all channels.
5. Select the channel sections to include in the snapshot using the checkboxes in the "Sections to Save" section.
6. Enter a name for the new snapshot.
7. Click the "Take Snapshot" button to create the new snapshot. The Take Snapshot window will close.
8. In the Save As window, navigate to the location where the file will be stored, enter a file name, and click "Save."
9. The Save As window will close and the new snapshot file with the suffix of .vss will be created and stored at the selected location.

### 23.8.4 Deleting Snapshots

To delete one or more snapshots, perform the following procedure:

1. Highlight the snapshot(s) to be deleted.
2. Right-click the highlighted snapshot(s) and select "Delete Snapshot" from the menu. A dialog box will open asking you to confirm you want to delete the snapshot(s).
3. Click "Ok" to delete the snapshot(s).
4. The selected snapshot(s) will be deleted.

*NOTE: Snapshot deletion cannot be undone. Caution should be used when deleting snapshots.*

### 23.8.5 Exporting a Snapshot

To export a snapshot, perform the following procedure:

1. Right-click the snapshot to be exported and select "Export Snapshot" from the menu. A Save As window will open.
2. Navigate to the location where the snapshot file will be stored, enter a file name, and click "Save."
3. The Save As window will close and the new snapshot file with the suffix of .vss will be created and stored at the selected location.
4. Exported snapshot files can be imported to other projects via the File menu or the Snapshot menu.

### **23.8.6 Importing a Snapshot**

Snapshots can be imported to the currently open project via the Snapshot menu or the File menu.

To import a snapshot from the Snapshot list submenu, perform the following procedure:

1. Right-click in the Snapshot list and select "Import Snapshot" from the menu. A navigation window will open.
2. Navigate to the location where the snapshot file is stored, highlight it, and click "Open." Only snapshot files with the .vss suffix can be imported.
3. The imported snapshot file will be added to the Snapshot list in the current project.

To import a snapshot from the File menu, perform the following procedure:

1. Open the File menu in the Main window and select "Import Snapshot." A navigation window will open.
2. Navigate to the location where the snapshot file is stored, highlight it, and click "Open." Only snapshot files with the .vss suffix can be imported.
3. The imported snapshot file will be added to the Snapshot list in the current project.

### **23.8.7 Editing a Snapshot Name**

To change the name of a snapshot, perform the following procedure:

1. Right-click the desired snapshot and select "Edit Snapshot Name" from the menu. A text entry field will open in the snapshot name.
2. Enter a new name or edit the existing one.
3. Click outside the text entry field or press the "Enter" key on the PC keyboard to accept the new name.
4. The selected snapshot will be renamed.

### **23.8.8 Associating a Snapshot to a Song**

To associate a snapshot to a different song, perform the following procedure:

1. Right-click the snapshot to be assigned and select "Change Song" from the menu. A pull-down menu will appear in the Song column of the Snapshot list.
2. Select the song to associate the snapshot with from the pull-down menu. If no assignment is desired, select "none" from the menu.
3. Click elsewhere in the Snapshot list to close the menu and the snapshot will be associated to the selected song.



# 24.0 Recall System

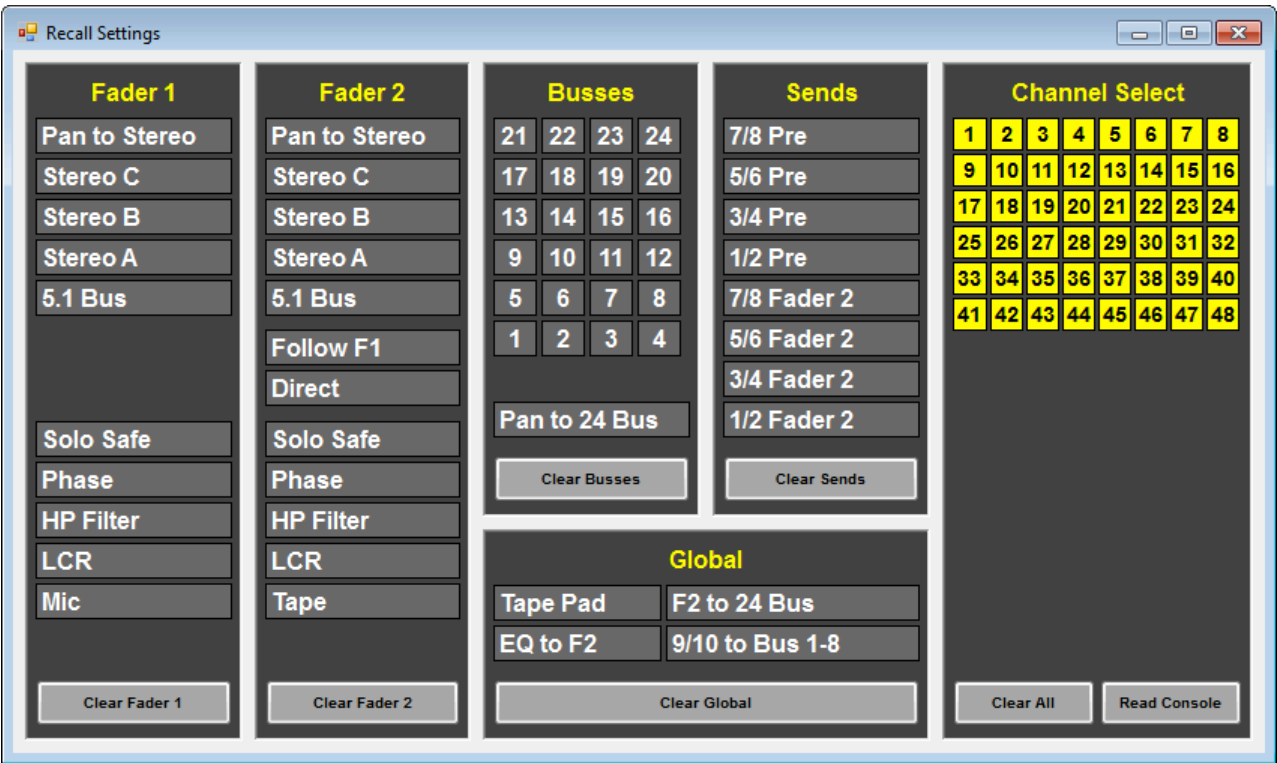
The recall system provides the means to make input and output assignments, determine Auxiliary Send routing, and set the positions of a large number of switches on one of more channels.

The 1068L Input module is fully integrated with the Vision software via the recall system can be used for the quick setup of one or more channels with switch settings, input/output assignments, auxiliary send routing, and global features.

In addition, the hardware states of these controls can be read from the console and stored as part of a snapshot. The recall settings in the snapshot can be re-applied to the console at a later time. A Project File must be open in order to make and use snapshots.

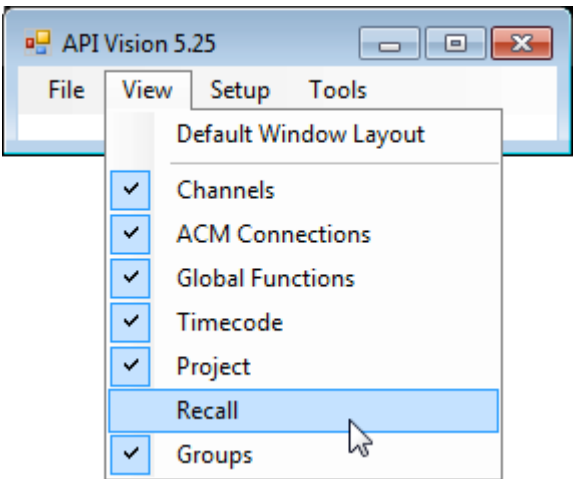
## 24.1 Recall Settings Window

The Recall Settings window is the primary interface with the recall system.



*NOTE: Depending on how the console was configured when it was ordered, the "Mic" and "Tape" buttons might appear on opposite faders. Refer to section 19.2.2.3.2 for details.*

The Recall Settings window can be opened by selecting "Recall" from the View menu.



The Recall Settings window provides control over the following channel input/output assignments and switch positions:

Fader 1 and Fader 2 Output Assignments:

- Channel Direct Output
- Multitrack Summing Busses 1-24
- Stereo Program Bus A
- Stereo Program Bus B
- Stereo Program Bus C
- Surround Program Bus
- Pan-pot Activation

Fader 1 Switches:

- Solo Safe
- Phase (polarity inverter)
- HP Filter (High-pass filter)
- LCR (Left, Center, Right panning)
- Mic (Microphone Input)

Fader 2 Switches:

- Solo Safe
- Phase (polarity inverter)
- HP Filter (High-pass filter)
- LCR (Left, Center, Right panning)
- Tape (Tape Input)
- Follow Fader 1 (Input from Fader 1)
- Direct (Direct Output)

Global:

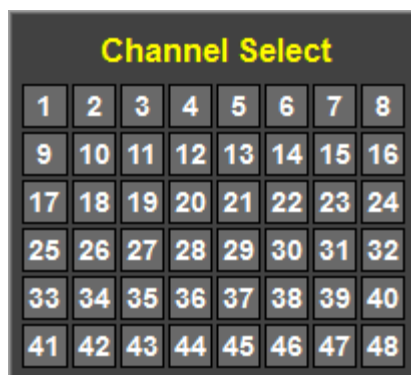
- Tape Pad
- EQ to Fader 2
- Fader 2 to Bus 1-24
- 9/10 to Bus 1-8

Stereo Sends (Auxiliary Send Routing):

- Send 1/2 -> PRE
- Send 1/2 -> FDR 2
- Send 3/4 -> PRE
- Send 3/4 -> FDR 2
- Send 5/6 -> PRE
- Send 5/6 -> FDR 2
- Send 7/8 -> PRE
- Send 7/8 -> FDR 2

*NOTE: Auxiliary Sends 9/10 follow the same routing as Auxiliary Sends 7/8.*

### 24.1.1 Channel Grid



To make channel output assignment, select one or more channels to assign. The "Channel Select" grid facilitates selection as noted below. All the selected channels will receive the same settings.

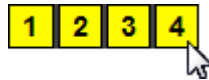
**1** Unselected channels are grey in color.

**1** Selected channels are yellow in color.

Channel selections may be made using the following methods:



Click A Single Channel: To select an individual channel



Shift + Click: To select a range of consecutive channels

- Click on the first channel to select it
- Hold down the Shift key and click on the last channel in the series
- All the channels between the first and last channels will be selected



Ctrl + Click: To select a group of non-consecutive channels

- Hold down the Ctrl key
- Click on the desired channels in any order



Drag + Click (Rubber-banding): To select a region of channels

- Click within the channel box of the first channel to be included
- While holding down the left mouse button, drag the mouse over the region of channels you wish to include in the selection

Clicking within the Channel Grid will clear any previous selections, unless Shift + Click or CTRL + Click methods are used. Channels or Channel can be added or deleted to previously selections using Shift + Click or CTRL + Click methods. Rubber-banding can be used in combination with Shift + Click and Ctrl + Click methods.

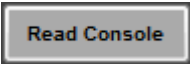
### 24.1.2 Channel Status Indication

Settings made on console controls are not automatically reflected in the Recall Settings window. To see the current recall settings on the computer screen for a single channel, click the channel in the Channel Grid.



The current position of the recall switches and bus assignments will be displayed in the Recall Settings window.

To display recall settings for two or more channels, select the channels of interest in the Channel Grid and click the “Read Console” button.

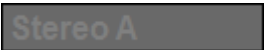


Read Console: Reads the current channel output assignments and recallable switch settings and updates the Recall Settings window. The read console settings can then be saved and recalled as part of a snapshot.

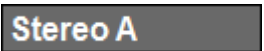
*NOTE: Clicking the Read Console button will replace the settings in the Recall Settings window with the settings from the console.*



When more than one channel is selected, the Recall Settings window will display the assignments and switch settings on the selected channels as follows:



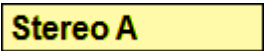
A greyed-out text label on a grey background indicates there are no channels selected in the Channel Grid.



A white text label on a grey background indicates the assignment or recall switch is not engaged on any of the channels selected in the Channel Grid. Clicking in any white label will engage that assignment or switch on the selected channel(s). The label will turn yellow, indicating the assignment has been made.



A black text label on a yellow background indicates the assignment or recall switch is engaged on all of the channels selected in the Channel Grid. Clicking the label will disengage that item on the selected channel(s).



A black text label on a faded yellow background indicates the assignment or recall switch is engaged on some, but not all of the channels selected in the Channel Grid. Clicking the label will engage that item on all selected channels.



In addition to the Recall Settings window, the current output assignments for each channel are shown on the Channel Output Displays. LED indicators will illuminate on active assignments.

Likewise, the engaged recall switches for each channel are indicated by LEDs on the input modules.

### 24.1.3 Fader 1 Assignments and Recallable Switches

The Fader 1 assignment and recallable switch selections are as follows:



Pan to Stereo: Engages the Fader 1 Pan-pot

Stereo C: Assigns Fader 1 to the Stereo C Program Bus

Stereo B: Assigns Fader 1 to the Stereo B Program Bus

Stereo A: Assigns Fader 1 to the Stereo A Program Bus

5.1: Assigns Fader 1 to the Surround Program Bus

Solo Safe: Controls the Fader 1 SOLO SAFE switch

Phase: Controls the Fader 1 Ø (Phase) switch

HP Filter: Controls the Fader 1 High-pass Filter switch

LCR: Controls the Fader 1 LCR (Left, Center, Right) switch

Mic: Controls the Fader 1 MIC switch

Clear Fader 1: Clears all Fader 1 output assignments and recallable switch settings for the selected channels

#### 24.1.4 Fader 2 Assignments and Recallable Switches

The Fader 2 assignment and recallable switch selections are as follows:



The screenshot shows a vertical stack of buttons for Fader 2 assignments. At the top is a yellow header 'Fader 2'. Below it are buttons for 'Pan to Stereo', 'Stereo C', 'Stereo B', 'Stereo A', '5.1 Bus', 'Follow F1', 'Direct', 'Solo Safe', 'Phase', 'HP Filter', 'LCR', and 'Tape'. At the bottom is a 'Clear Fader 2' button.

Pan to Stereo: Engages the Fader 2 Pan-pot

Stereo C: Assigns Fader 2 to the Stereo C Program Bus

Stereo B: Assigns Fader 2 to the Stereo B Program Bus

Stereo A: Assigns Fader 2 to the Stereo A Program Bus

5.1: Assigns Fader 2 to the Surround Program Bus

Follow Fader 1: Controls the FDR 1 switch

Direct: Controls the DIR (Direct) Switch

Solo Safe: Controls the Fader 2 SOLO SAFE switch

Phase: Controls the Fader 2 Ø (Phase) switch

HP Filter: Controls the Fader 2 High-pass Filter switch

LCR: Controls the Fader 2 LCR (Left, Center, Right) switch

Tape: Controls the Fader 2 TAPE switch

Clear Fader 2: Clears all Fader 2 output assignments and recallable switch settings for the selected channels

#### 24.1.5 Multitrack Summing Bus Routing



The screenshot shows a control panel for Multitrack Summing Buses. It has a yellow header 'Busses'. Below it is a 6x4 grid of buttons numbered 1 to 24. At the bottom of the grid is a 'Pan to 24 Bus' button. Below that is a 'Clear Busses' button.

Bus Assign 1-24: Assigns the output of the selected audio path (Fader 1 or Fader 2) to Multitrack Summing Busses 1-24

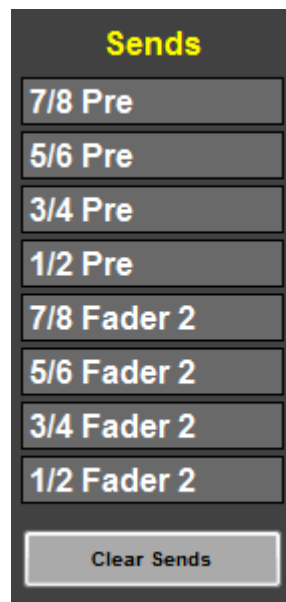
- Multitrack Summing Busses are fed by Fader 1 by default
- "Fader 2 to Bus 1-24" must be checked in the Global controls in order to route Fader 2 to the Multitrack Summing Busses
- Only one audio path (Fader 1 or Fader 2) can feed the Multitrack Summing Busses at one time

Pan to 24 Bus: Enables Odd/Even panning to the Multitrack Summing Busses

Clear Busses: Clears all Multitrack Summing assignments for the selected channels

*NOTE: Direct Output assignments are covered in the next section.*

#### 24.1.6 Auxiliary Send Routing



**Sends**

7/8 Pre

5/6 Pre

3/4 Pre

1/2 Pre

7/8 Fader 2

5/6 Fader 2

3/4 Fader 2

1/2 Fader 2

Clear Sends

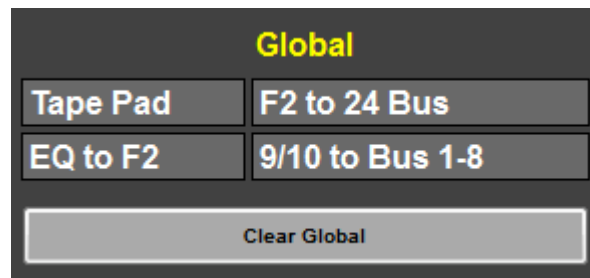
Send 1/2 thru 7/8 -> PRE: Controls the Pre-fader routing for Auxiliary Sends 1/2 thru 7/8

Send 1/2 thru 7/8 -> FDR 2: Controls the routing from Fader 2 for Auxiliary Sends 1/2 thru 7/8

*NOTE: Auxiliary Sends 9/10 follow the same routing as Auxiliary Sends 7/8.*

Clear Sends: Clears all Auxiliary Send routing settings for the selected channels

#### 24.1.7 Global Settings and Routing



**Global**

Tape Pad

F2 to 24 Bus

EQ to F2

9/10 to Bus 1-8

Clear Global

Tape Pad: Controls the -6 (TAPE PAD) switch on all channels

EQ to Fader 2: Controls the EQ to Fader 2 routing on all channels

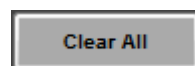
Fader 2 to Bus 1-24: Controls the Fader 2 to Bus 1-24 routing on all channels

9/10 to Bus 1-8: Controls the Auxiliary Send 9/10 to Bus 1-8 routing on all channels

Clear Global: Clears all Global recallable switch settings

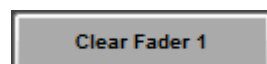
#### 24.1.8 Clear Settings

Output assignments and recallable switches may be cleared using the buttons at the bottom of each section of the Recall Settings window.



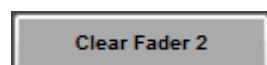
Clear All

Clear All: Clears (unchecks) all output assignments and recallable switch settings for the selected channels



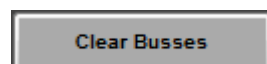
Clear Fader 1

Clear Fader 1: Clears all Fader 1 output assignments and recall switch settings for the selected channels



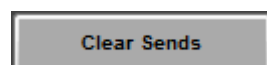
Clear Fader 2

Clear Fader 2: Clears all Fader 2 output assignments and recallable switch settings for the selected channels



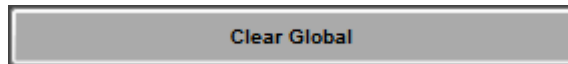
Clear Busses

Clear Busses: Clears all Multitrack Summing assignments for the selected channels



Clear Sends

Clear Sends: Clears all Auxiliary Send routing settings for the selected channels



Clear Global: Clears all Global recallable switch settings

The recall settings for the entire console can also be cleared from the ACM Control Panel.

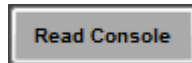


To clear all recall settings using the ACM Control Panel, perform the following procedure:

6. Press the Up or Down Arrow button on the ACM Control Panel to open the ACM Main menu
7. Press the Down Arrow button to move the cursor to "Clear Recall"
8. Press the "Yes OK" button
9. Press the "Yes Ok" button at the prompt to confirm that you want to clear all recall settings
10. The recall settings for the entire console will be cleared

*NOTE: There is no "undo" for clearing recall settings, so it is suggested that a snapshot is taken before the settings are cleared.*

#### 24.1.9 Read Console



Read Console: Reads the current output assignments and recallable switch settings from the console and updates the Recall Settings window.

When the "Read Console" button is clicked, the recall system will "Read" the current states of the recall settings from the console. These settings can then be stored as part of a snapshot.

*NOTE: Clicking the Read Console button will replace the settings in the Recall Settings window with the current settings from the console.*

### 24.2 Recall System Procedures

For all procedures below:

1. Open a Vision Project File using the File menu in the Main window.
2. Open the Project window using the View menu in the Main window.
3. Click the Snapshots tab in the Project window.
4. Open the Recall Settings window using the View menu in the Main window.

#### 24.2.1 Making Software Channel Output Assignments and Recallable Switch Settings

To make channel output assignments and to set recallable switches using the recall system, perform the following procedure:

1. Make sure any needed console settings have been stored in a snapshot before changing the settings in the Recall Settings window. (See 23.6.1 Taking a New Snapshot)
2. Select the desired channel(s) in the Channel Grid.
3. Check the desired output assignments and switch settings.
4. The output assignments will be shown on the Channel Assignment Displays and the selected recallable switches will be set



### **24.2.2 Saving Recall Settings in a Snapshot**

To save recall settings, a new snapshot must be taken. To create a new snapshot that includes the console recall settings, perform the following procedure:

1. Make sure the console hardware is set as desired for the new snapshot.
2. Click the "Read Console" button in the Recall Settings window to make sure the console settings match the settings in the recall system memory buffer.
3. Right-click in the Snapshot list and select "Take Snapshot" from the menu. The Take Snapshot window will open.
4. Select one or more channels using the Channels To Save selection grid or click the "All Channels" button to select all channels.
5. Select the channel sections to include in the snapshot using the checkboxes in the "Sections to Save" section. Make sure the "Recall Switches" checkbox is checked.
6. Enter a Name for the new snapshot.
7. Click the "Take Snapshot" button to create the new snapshot.
8. The Take Snapshot window will close and the new snapshot with the recall settings will appear in the Snapshot list.

### **24.2.3 Applying Saved Recall Settings from a Snapshot**

To apply the recall settings from an existing snapshot to the console, perform the following procedure:

1. Make sure any needed console settings have been stored in a snapshot before applying the stored settings.
2. Click on the name of the snapshot with the needed recall settings to highlight it.
3. Right-click in the Snapshot list and select "Apply Snapshot" from the menu. The Apply Snapshot window will open.
4. Select one or more channels using the Channels To Apply selection grid or click the "All Available" button to select all the available channels.
5. Select the channel sections to include in the snapshot using the checkboxes in the "Sections to Save" section. Make sure the "Recall Switches" checkbox is checked.
6. Select an Action to determine how the snapshot data will be applied.
7. Click the "Apply" button to apply the snapshot data to the console.
8. The Apply Snapshot window will close and the selected snapshot will be applied.

### **24.2.4 Clearing Recall Settings on All Channels**

To clear all recall settings using the ACM Control Panel, perform the following procedure:

1. Press the Up or Down Arrow button on the ACM Control Panel to open the ACM Main menu.
2. Press the Down Arrow button to move the cursor to "Clear Recall."
3. Press the "Yes OK" button.
4. Press the "Yes Ok" button at the prompt to confirm you want to clear all recall settings.
5. The recall settings for the entire console will be cleared.

# 25.0 Groups

## 25.1 Overview

Groups				
Name	Type	Master	Null	Members
Backing Vocals	(VCA)	F1: 32	0 dB	F1: 28-31 F2: 28-31
Backing Vocals	Switch	32		28-31
Drums	Fdr/Mute	F1: G1	0 dB	F1: 1-12
Horns	Fdr/Ins/Mute/Sw	F1: 33	0 dB	F1: 34-38
Reverb Returns	Fdr/Ins/Mute	F2: 33	0 dB	F2: 34-48
<div><div></div></div>				
<input checked="" type="checkbox"/> Keep Similar Groups Together				

Groups can be setup to control the same parameters that are controlled by the automation system. These controls include the following:

- Faders 1 and 2
- Fader 1 and 2 Mutes
- Fader 1 and 2 Inserts
- Automation Switches:
  - EQ Bypass
  - Auxiliary Send On/Off

Groups are setup with a “master” channel or fader and one or more “members.”

Groups can be “nested” by creating groups whose masters are members in other groups.

The only limit to the number of groups that can be setup is the number of 1068L and fader modules installed in the console. On a fully loaded 48-channel console frame, there is a total of 96 channel faders, 9 Program Master faders, and 6 Control Group Masters...and on a console this size a maximum of 55 groups can be setup. As long as there is at least one fader or channel available to be the master and at least one channel to be the member, a new group can be setup.

Groups can over-lap, so one group can control another, so the master of one group can be a member of another.

A Project File must be open in order to make and use groups.

Groups are stored within mixes. The number of groups in each mix is displayed in the Mix Tree. Every time a group is created, changed, or deleted, a new mix is created and the difference from the original mix is shown in the “Changes” column of the Mix Tree.

The Mix Tree below shows the changes made to the groups within each mix and the number of groups in each mix.

Changes to groups are shown in the “Change” column.

Project

Project Title: **My Project**

Project File: **My Project.vpj**

Song Title: **My Song 1**

Song Framerate: **30**

Mix Tree

Songs

Snapshots

Mix Name	Time	Moves	Groups	Change
► Mix 63	1/24...	0	13	Group created
► Mix 62	1/24...	0	10	Group created
► Mix 61	1/24...	0	6	Group created
► Mix 60	1/24...	0	2	Group(s) deleted
► Mix 59	1/24...	0	4	Group created
► Mix 58	1/24...	0	2	Group created
► Mix 57	1/24...	0	0	Group(s) deleted
► Mix 56	1/24...	0	2	Group(s) deleted

## 25.2 Group Enables

Groups will not function until they are “enabled.” Faders and switches must also be enabled to be used in groups and automation.

These Enables are controlled in three (3) ways:

- Global Functions window
- Global Functions (Global Funcs) menu in the ACM Main menu
- The “Enable Groups” button on the ACM Control Panel.

### GLOBAL FUNCTIONS WINDOW



Click the **En: Groups** button in Global Functions window to enable groups on a console-wide basis.

When groups enabled, the **En: Groups** button will be highlighted in yellow.

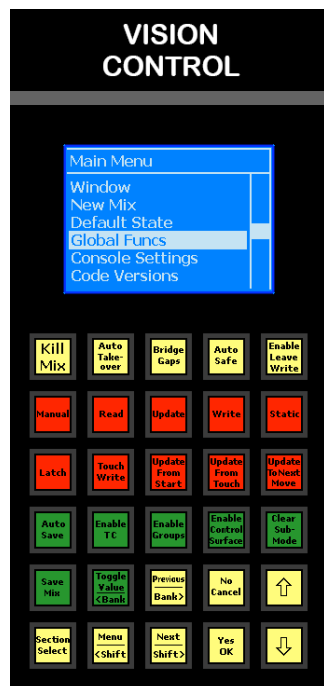
Clicking the **En: Faders** and **En: Switches** buttons will enable faders and switches for use in groups and automation on a console-wide basis.

When faders and switches are enabled, the **En: Faders** and **En: Switches** buttons will be highlighted in yellow.

*NOTE: Software and hardware enable buttons can be used to “suspend” the operation of all groups console-wide (on a global basis).*

*NOTE: Disabling a group removes the master’s offset of the members.*

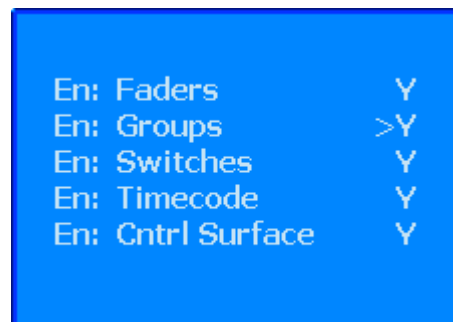
### GLOBAL FUNCTIONS ACM MENU



Access the ACM Main menu by pressing the “Up” or “Down” arrow button.

After the Main menu opens, press the “Down” arrow three more times to select the “Global Funcs” menu item. Press “Yes/OK.”

The Global Functions menu will open:



Using the “Up” and “Down” arrow buttons, navigate to the function you wish to enable or disable. When the cursor is beside the desired function, typing “Y” (Yes) will enable that function and typing “N” (No) will disable that function.

## ENABLE GROUP BUTTON



**Enable Groups:** Engaging the “Enable Groups” button on the Vision Control Panel will enable or disable groups on a console-wide basis. This provides an easy way to enable and disable groups from the console hardware without having to access a software menu.

- When groups are enabled, the “Enable Groups” button will illuminate in green

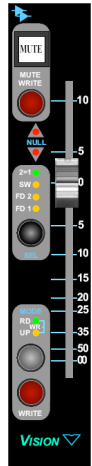
## 25.3 Group Masters

A fader must be designated the “Group Master Fader” to control the faders and mutes on the console’s channels. A “Group Master Channel” (1068L Input module) is needed to control inserts and switches on other channels.

### 25.3.1 Group Master Faders

Any fader on the console (Fader 1 or Fader 2), including the six Control Group Masters (1-6) and Program Master faders may be designated as a “Group Master Fader” or simply “Group Master.”

Fader 1 Fader 2



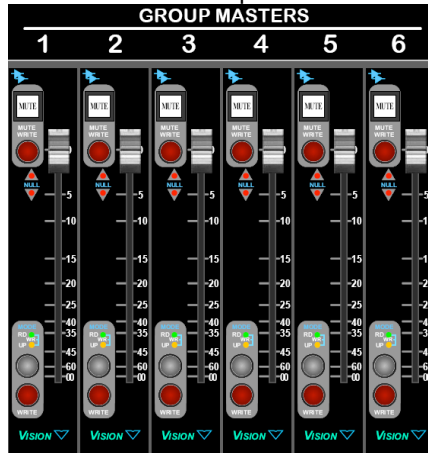
Fader 1 or Fader 2 on any channel can be designated as a Group Master. It’s common to use a fader on an unused audio path (Fader 1 or Fader 2) as a Group Master, but any fader, including one carrying audio, may be used.

Using an unused fader as Group Master allows the group members to be individually adjusted without interference from the Group Master. If the Group Master is passing audio and is adjusted, such as muted, it will affect the group members.

An advantage of using Fader 1 and Fader 2 as Master Faders is the ability to locate a Group Master near the members it controls.

Fader 1 and Fader 2 Group Masters and their associated mute switches are fully automatable and can be set up to control fader moves and mutes on their assigned “member” channels.

Control Group Masters

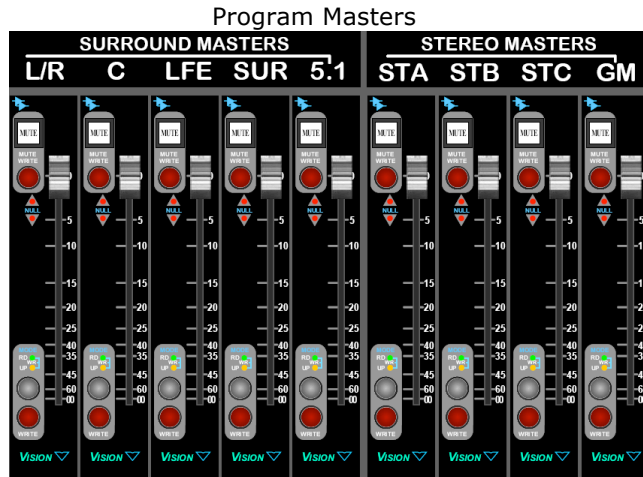


There are six (6) Control Group Master Faders in the Center Section that can be designated as a Group Master.

Control Group Masters are control devices only and cannot be used to carry audio. Control Group Master cannot control automation switches other than MUTES.

An advantage of using the Control Group Master is they do not use any channel resources and are located next to the Program Master Faders.

Control Group Master Faders and their associated mute switches are fully automatable and can be set up to control fader moves and mutes on their assigned “member” channels.



Any of the Program Master Faders in the Center Section can be designated as a Group Master.

Program Master Faders feed the console Program Outputs, so they are not commonly used as Group Master faders if they are being used to carry audio.

Unused Program Master Faders, such as the Surround Masters during a Stereo only mix, can provide additional unused faders to be used as Group Masters.

On consoles setup for 5.1 Surround, the 5.1 Program Master Fader is only a control device and does not carry audio. It serves as a permanent Group Master for the L/R, C, LFE, and SUR Program Masters. It can be designated as the Group Master of an additional group as well.

On consoles setup for 7.1 Surround, the A/B Program Master Fader carries the A/B Program Output and can be used as a Group Master as any other Program Master can.

Program Master faders and their associated mute switches are fully automatable and can be set up to control fader moves and mutes on their assigned member channels.

*NOTE: The Group Master will mute any unmuted MUTE switches on its member channels. The Fader 1 MUTE switch on the 1068L Input module is independent of the fader MUTE switch and can be used to mute a channel when the Group Master is unmuted.*

*NOTE: Since Group and Program Master faders do not have SOLO switches, a solo-in-place function is provided using Solo: Normal or Solo: Groups. See section 26:6:2:1 Solo: Normal and Solo: Groups for details.*

### 25.3.2 Group Master Channels

Any 1068L Input module on the console may be designated as a "Group Master Channel" or simply "Group Master."



Any channel (1068L Input Module) can be designated as a Group Master. It is common practice to use an unused channel as a Group Master, but any channel, including one carrying audio, may be used.

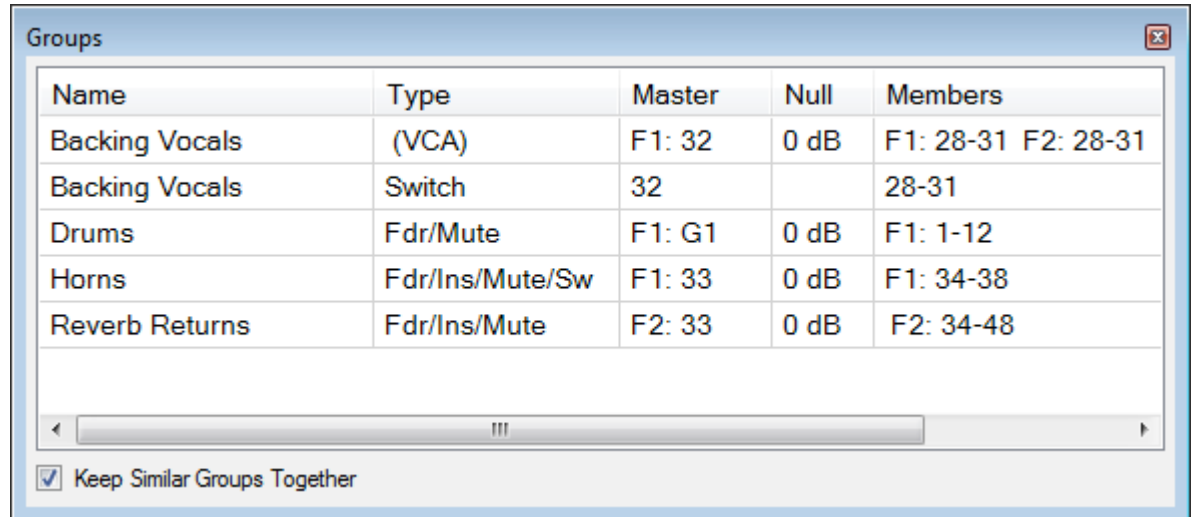
Using an unused channel as Group Master allows the group members to be individually adjusted without interference from the Group Master. If the Group Master is passing audio and is adjusted, it will affect the group members.

The Fader 1 and 2 Inserts and automation switches (EQ Bypass and Auxiliary Send On/Off) can be controlled from the Group Master. Recall settings cannot be controlled by Group Masters.

The 1068L Group Master Fader 1 and 2 Inserts and automation switches (EQ Bypass and Auxiliary Send On/Off) are fully automatable and control their member channels.

## 25.4 Groups Window

Groups are setup, modified, and deleted using the Groups window.

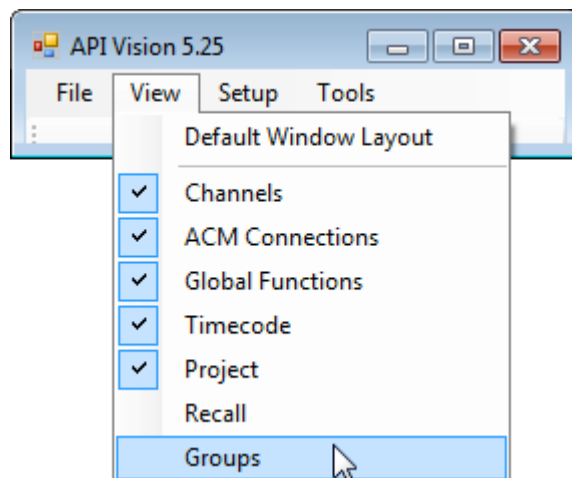


Name	Type	Master	Null	Members
Backing Vocals	(VCA)	F1: 32	0 dB	F1: 28-31 F2: 28-31
Backing Vocals	Switch	32		28-31
Drums	Fdr/Mute	F1: G1	0 dB	F1: 1-12
Horns	Fdr/Ins/Mute/Sw	F1: 33	0 dB	F1: 34-38
Reverb Returns	Fdr/Ins/Mute	F2: 33	0 dB	F2: 34-48

☒ Keep Similar Groups Together

The window above shows four (4) groups setup to support a recorded drum set returning on Fader 1 on channels 1-12 as "members," with channel 13 designated as the "master" channel.

The Groups window can be opened by selecting "Groups" from the View menu.



### 24.1.1 Groups Window Display

The Groups window displays the following information for each group in the list:

- Name: Group name
- Type: Channel Sections: Fader, Insert, Mute, and/or Switch
- Master: ID number of the controlling master fader or master channel
- Null: Null position for the master fader
- Members: A list of the faders and modules that are group members

Name	Type	Master	Null	Members
Horns	Fdr/Ins/Mute/Sw	F1: 33	0 dB	F1: 34-38

Group members and items are indicated as follows:

- **Fdr**: Fader
- **Ins**: Insert
- **Mute**: Mute
- **Sw**: Switches
- **F1**: Fader 1 Group members
- **F2**: Fader 2 Group members

The order of the groups in the window can be sorted by clicking the column header. Consecutive click in the same header will toggle the order of the groups forwards and backwards alphabetically based on the information in that column.

Groups

Name	Type	Master	Null	Members
Backing Vocals	(VCA)	F1: 32	0 dB	F1: 28-31 F2: 28-31
Backing Vocals	Switch	32		28-31
Drums	Fdr/Mute	F1: G1	0 dB	F1: 1-12
Horns	Fdr/Ins/Mute/Sw	F1: 33	0 dB	F1: 34-38
Reverb Returns	Fdr/Ins/Mute	F2: 33	0 dB	F2: 34-48

☒ Keep Similar Groups Together

24.1.2 Keep Similar Groups Together

When a group with more than one channel section (Fdr, Ins, Mute, and/or Sw) is created, a separate group for each section is created. If ☒ Keep Similar Groups Together is checked, the separate groups will appear as a single group in the Groups window.

Groups

Name	Type	Master	Null	Members
Horns	Fdr/Ins/Mute/Sw	F1: 33	0 dB	F1: 34-38

☒ Keep Similar Groups Together

If ☐ Keep Similar Groups Together is not checked, the separate groups for each channel section are displayed.

Groups

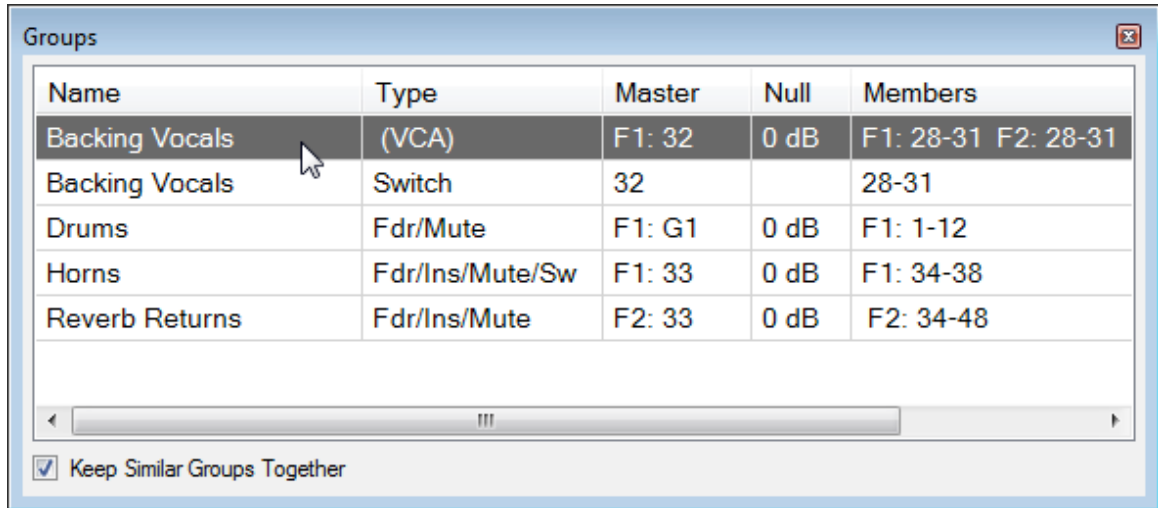
Name	Type	Master	Null	Members
Horns	Fader	F1: 33	0 dB	F1: 34-38
Horns	Insert	F1: 33		F1: 34-38
Horns	Mute	F1: 33		F1: 34-38
Horns	Switch	33		34-38

☐ Keep Similar Groups Together

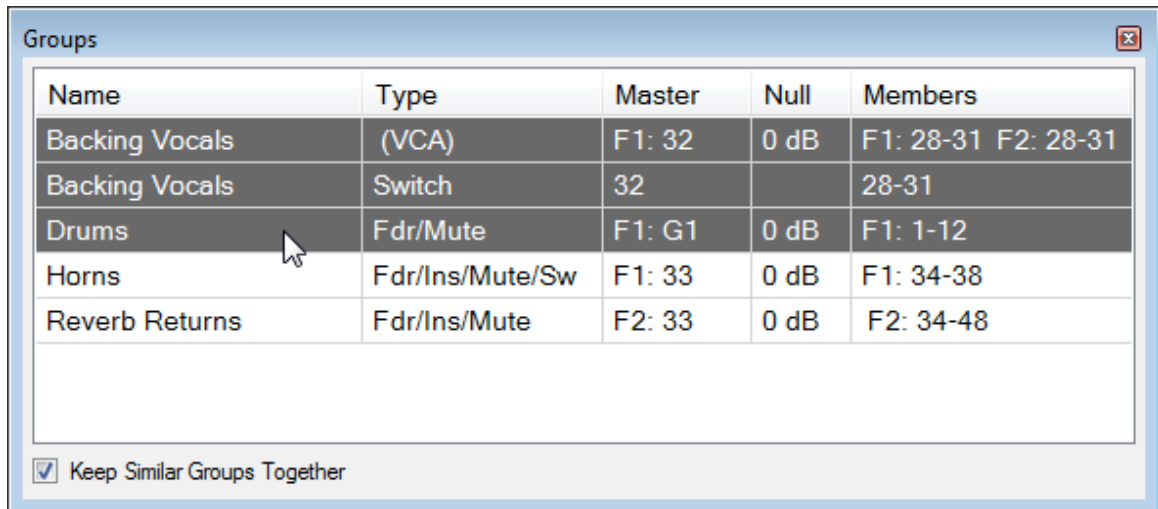
## 25.5 Group Selection

At least one or more group must be selected or “highlighted” to use the tools in the Groups menu. The exception to this rule is “New Group,” which can be selected at any time.

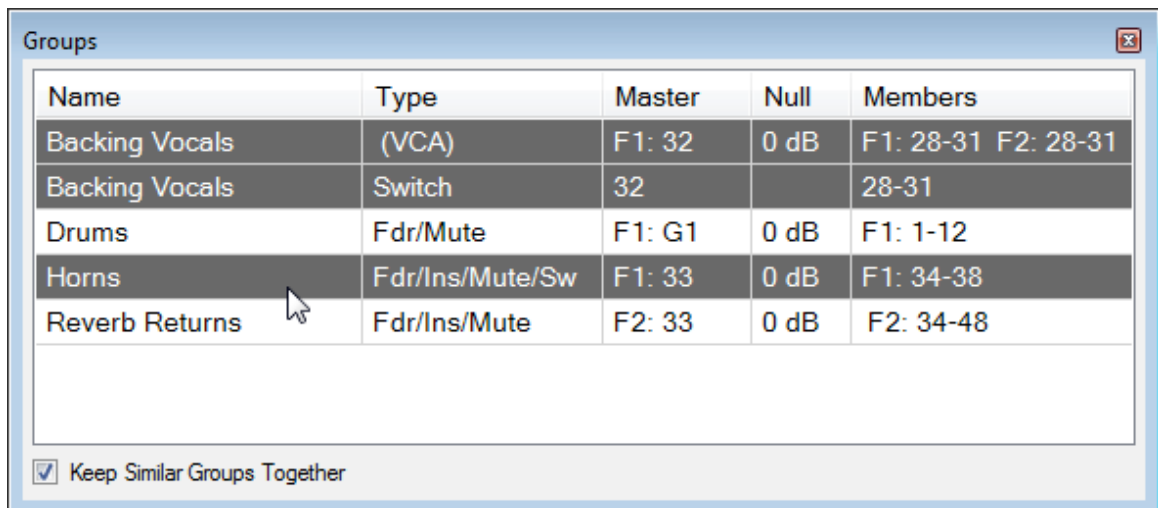
A single group can be highlighted by clicking somewhere within its row in the Group list.



Multiple consecutive groups can be highlighted using the Shift+Click method.



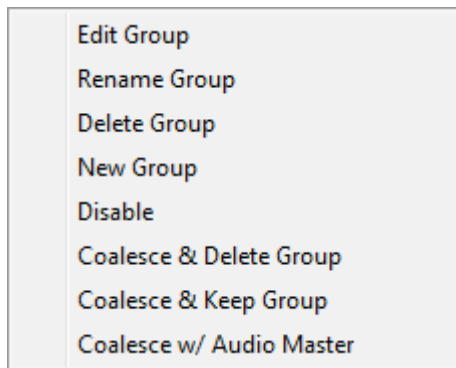
Multiple non-consecutive groups can be highlighted using the Ctrl+Click method.





## 25.6 Groups Menu

Right-clicking in the Groups window will open the Groups menu. This menu contains controls for group creation and management.



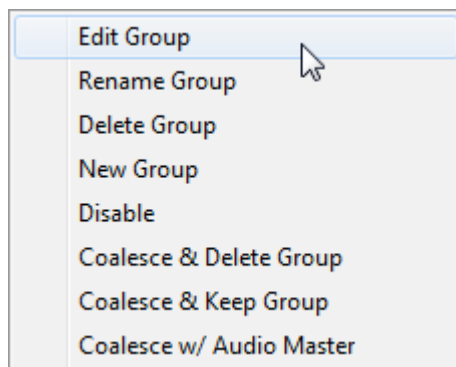
The Groups menu contains eight (8) selections whose primary functions facilitate the creation and management of groups:

- Edit Group: Opens the "Edit Groups" window for the modification of the highlighted group
- Rename Group: Opens the name field of the highlighted group for editing
- Delete Group: Deletes the highlighted group (no warning prompt)
- New Group: Opens the Edit Groups window so a new group can be created
- Disable: Disables the highlighted group
- Coalesce & Delete Group: Writes the relative automation data for all group members in the highlighted group to a new mix pass and deletes the group
- Coalesce & Keep Group: Writes the relative automation data for all group members in the highlighted group to a new mix pass and retains the Group Master and members, but deletes the master fader moves
- Coalesce w/ Audio Master: Writes the relative automation data for all group members in the highlighted group to a new mix pass and retains the Group Master and members, but keeps the master fader moves

Whenever a group is created, deleted, edited, or coalesced, a new mix is added to the Mix Tree. This mix is automatically sent to the ACM for immediate use.

**IMPORTANT NOTE:** *When a mix is created by creating, deleting, editing, or coalescing a group the mix is automatically sent to the Automation Control Module (ACM) and becomes the active mix. This will replace the current mix in the ACM. If the mix in the ACM has not been saved to the PC, it could accidentally be deleted when a group is altered.*

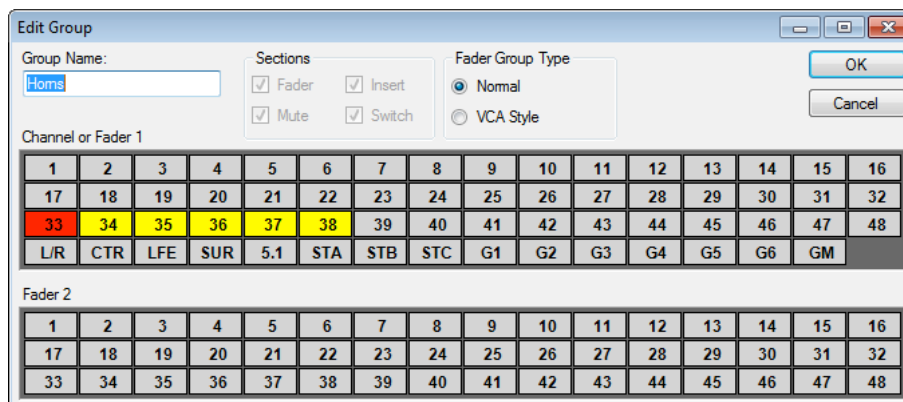
### 25.6.1 Edit Group



To modify an existing group, highlight the desired group and select "Edit Group" from the Groups menu. The Edit Group window will open.

Double-clicking on the group will also open the Edit Group window.

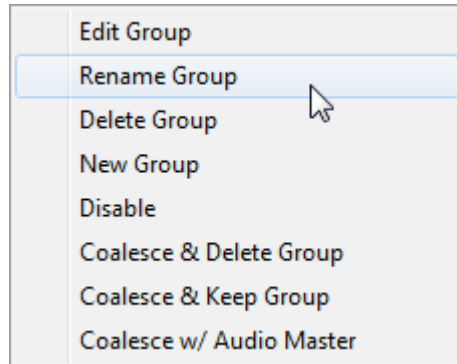
The Edit Group window allows the group master, group members, Fader Group Type, and the Group Name to be changed. Channel sections cannot be changed.



Editing a group will result in the creation of a new mix in the Mix Tree that contains the edited group.

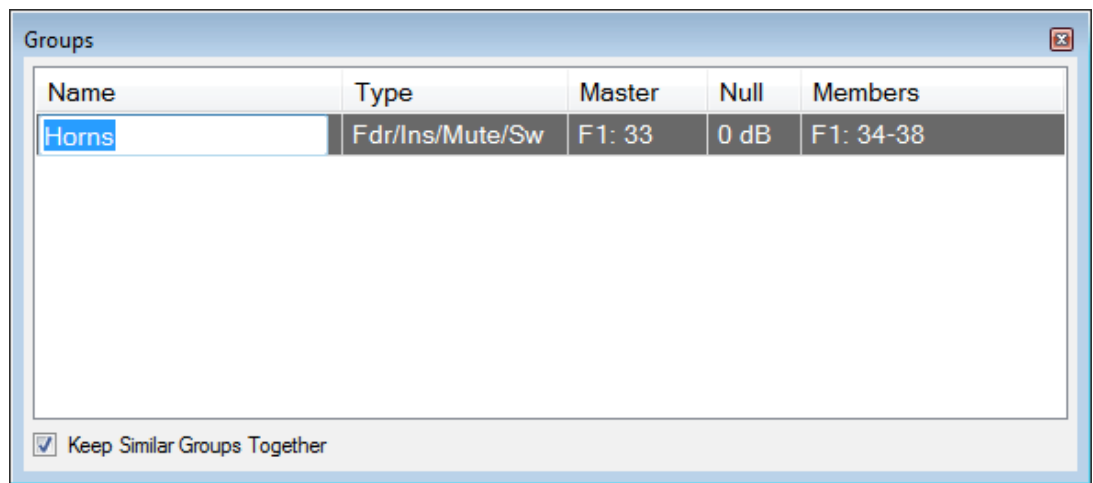
See section 25.7 Edit Group Window for detailed information about editing groups.

### 25.6.2 Rename Group



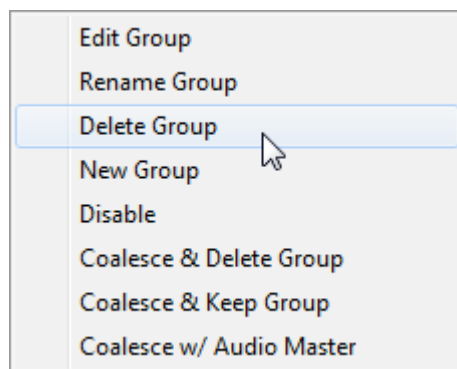
To change the name of a group, highlight the desired group and select "Edit Group Name" from the Groups menu.

The Group Name will turn into a text-entry box with the current name highlighted. Change the existing name or enter a new one and then click on the name. The name edit field will close and the new group name will be displayed.



The name of a group can also be changed in the Edit Group window.

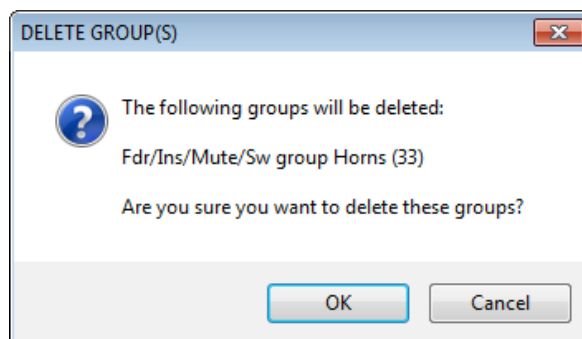
### 25.6.3 Delete Group




To delete an existing group or groups, highlight the desired group(s) and select "Delete Group" from the Groups menu.

A "Delete Group(s)" warning prompt will open asking for confirmation to delete the selected group(s).

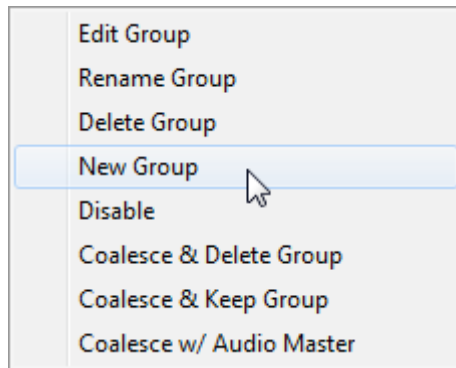
Deleting a group will result in the creation of a new mix in the Mix Tree that does not contain the deleted mix.



Click  to delete the group(s) indicated in the window.

Click  to cancel the operation and leave the selected group(s) intact.

#### 25.6.4 New Group



To create a new group, select “New Group” from the Groups menu.

The “New Group” window will open allowing a new group to be created.

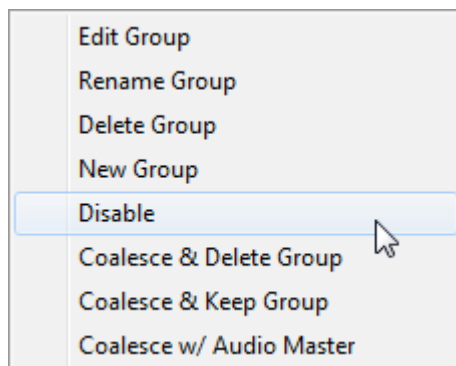
Creating a group will result in the creation of a new mix in the Mix Tree that contains the new group.

See section 25.7 Edit Group Window for detailed information about editing groups.

The 'New Group' dialog box contains the following elements:

- Group Name:** A text field containing 'Group 1'.
- Sections:** Four checkboxes: Fader (checked), Insert, Mute, and Switch.
- Fader Group Type:** Two radio buttons: Normal (selected) and VCA Style.
- Channel or Fader 1:** A 4x4 grid of buttons labeled 1 through 48, with additional labels L/R, CTR, LFE, SUR, 5.1, STA, STB, STC, G1, G2, G3, G4, G5, G6, and GM.
- Fader 2:** A 4x4 grid of buttons labeled 1 through 48.
- Buttons:** OK and Cancel buttons.

#### 25.6.5 Disable



To “Disable” a group or groups, highlight the desired Group(s) and select “Disable” from the Groups menu.

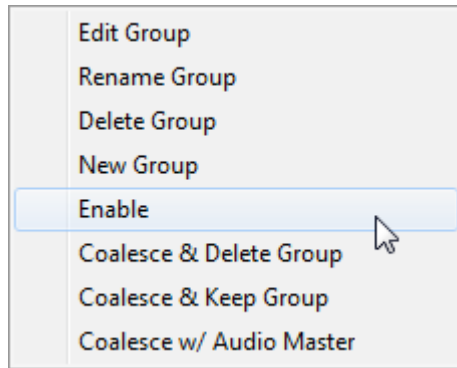
The selected group(s) will be deactivated, but will remain intact. Its information will be dimmed in the Groups List.

The group that controls Switches is “Disabled” in the Groups window below.

The 'Groups' window displays a table with the following data:

Name	Type	Master	Null	Members
Backing Vocals	(VCA)	F1: 32	0 dB	F1: 28-31 F2: 28-31
Backing Vocals	Switch	32		28-31
Drums	Fdr/Mute	F1: G1	0 dB	F1: 1-12
Horns	Fdr/Ins/Mute/Sw	F1: 33	0 dB	F1: 34-38
Reverb Returns	Fdr/Ins/Mute	F2: 33	0 dB	F2: 34-48

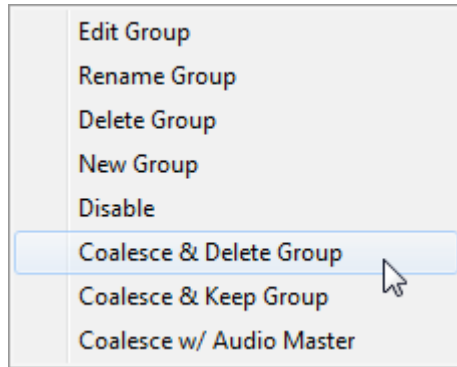
At the bottom of the window, there is a checkbox labeled 'Keep Similar Groups Together' which is checked.



To "Enable" a "Disabled" group or groups, highlight the desired group(s) and select "Enable" from the Groups menu.

The selected group(s) will be reactivated and its information will no longer be dimmed in the Groups window.

#### 25.6.6 Coalesce & Delete Group



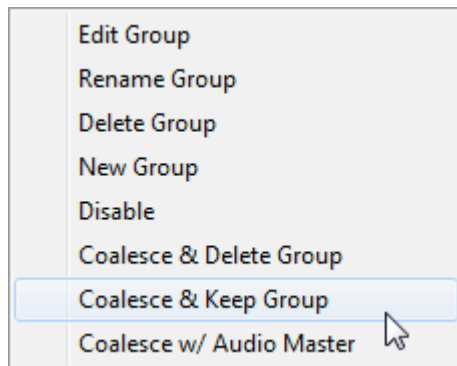
Selecting "Coalesce & Delete Group" will cause the automation system to write a new mix pass with the following attributes:

- Applies the Group Master's moves to the group members
- Deletes all Group Master moves
- Deletes the group

This is useful when you are finished working with a group, but want to keep the moves that were made. Once the group is deleted, the Group Master and members can be reassigned to other groups.

Selecting "Coalesce & Delete Group" will result in the creation of a new mix in the Mix Tree that contains the coalesced data from the group, but does not contain the group.

#### 25.6.7 Coalesce & Keep Group



Selecting "Coalesce & Keep Group" will cause the automation system to write a new mix pass with the following attributes:

- Applies the Group Master's moves to the group members
- Deletes all Group Master moves
- Keeps the group

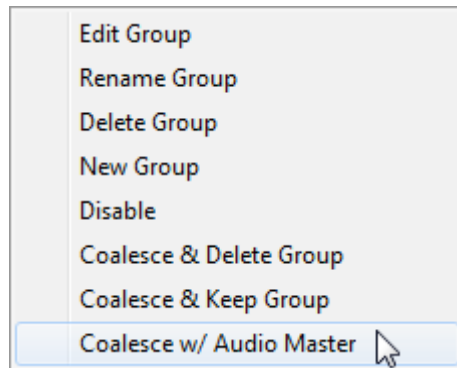
This is useful when you want to keep the moves that were made using the group, but want to "clear" all the moves of the Group Master. This allows the Group Master to be moved to a more convenient location and additional moves can be made from the Group Master from the new, non-moving position.

Typically this option is used when an unused audio channel or fader is used as the Group Master.

This option may not be appropriate when the Group Master is carrying audio as part of a group (such as when the bass drum channel/fader is the master for a drum group).

Selecting "Coalesce & Keep Group" will result in the creation of a new mix in the Mix Tree that contains the coalesced data from the group as well as the group.

### 25.6.8 Coalesce w/ Audio Master



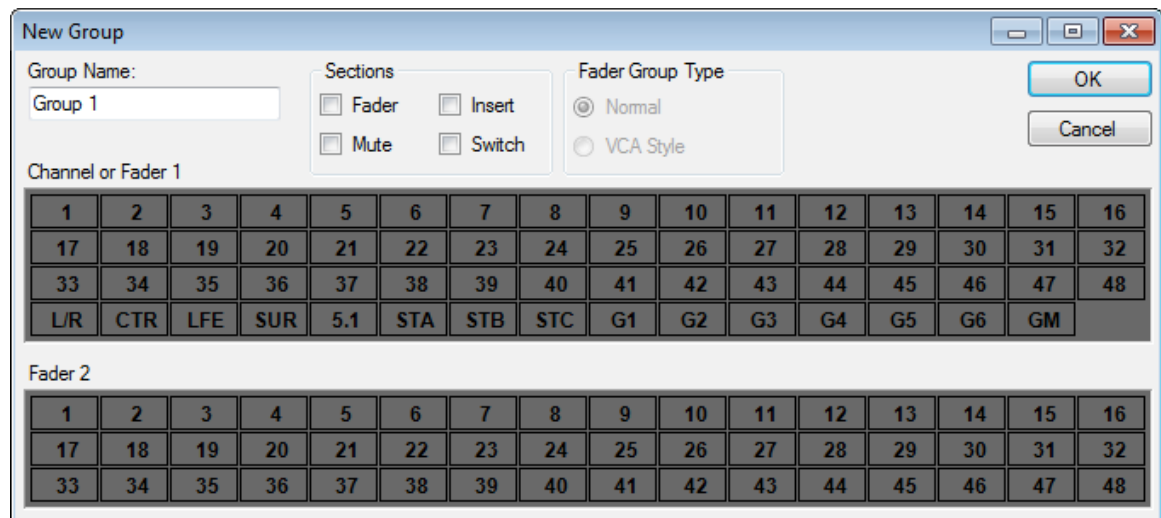
Selecting “Coalesce w/ Audio Master” will cause the automation system to write a new mix pass with the following attributes:

- Applies the Group Master's moves to the group members
- Keeps all Group Master moves
- Deletes the group

This is useful when you are finished with working with a group, but the Group Master is carrying audio as part of the group (such as the bass drum channel/fader being the Group Master in a drum group). In such a case, it would be inappropriate to delete the moves made to the Group Master (bass drum) since its audio should change with the rest of the group.

## 25.7 New/Edit Group Window

Groups are set up and modified using the “New Group” and “Edit Group” windows.

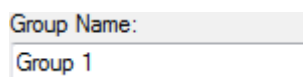


The New/Edit Group window has the following sections:

- Group Name: Text-entry box for the naming of the group
- Sections: Checkboxes for the selection of channels sections to be controlled by a new group (Fader, Mute, Insert, Switch)
- Group Type: Radio buttons for the selection of the functionality of a new (Normal or VCA Style)
- Channel or Fader 1: Channel/Fader 1 selection grid for group masters and members
- Fader 2: Fader 2 selection grid for group masters and members
- OK and Cancel Buttons: Buttons to accept the changes or cancel them

### 25.7.1 Group Name

The “Group Name” text-entry box allows a new group to be named and the editing of the name of an existing group.



Click in the text-entry box to enter or change a Group Name.

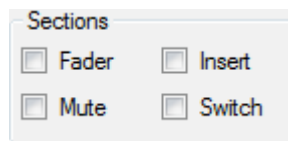
### 25.7.2 Sections

Four different channel “sections” can be selected to be part of a new group:

- Fader: Fader 1 and Fader 2 on all channels
- Mute: Fader 1 and Fader 2 MUTE switches on all channels
- Insert: Fader 1 and Fader 2 INSERT switches on all channels
- Switch: EQ BYP (EQ Bypass) and Auxiliary Send On/Off

*IMPORTANT NOTE: Channel sections must be selected before the group master and members are selected. Any masters or members selected before the channel sections are selected will be cleared when sections are selected.*

When the Edit Groups window is opened by selecting “New Group” from the Groups menu or by clicking the “New Group” button, the “Sections” checkboxes are active. The checkboxes are used to select which channel sections will be part of a new group.



Fader: Selects faders for group control

Mute: Selects mute switches for group control

Insert: Selects the channel inserts for group control

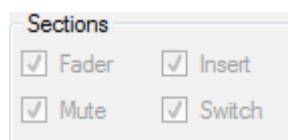
Switch: Selects automation switches for group control\*

*\*NOTE: Groups that contain switches must have a Fader 1 master and at least one Fader 1 member.*

☐ An empty checkbox indicates that the channel section is not selected to be part of the new group.

☒ Clicking in any empty checkbox will select that section for inclusion in the new group. A checkmark will appear in the box, indicating that the selection has been made.

The active channel sections of an existing group cannot be changed. When the Edit Groups window is opened by selecting “Edit Group” from the Groups menu, the “Sections” checkboxes are inactive and dimmed to indicate its status.



The active Sections of the selected Group will be checked in the display.

### 25.7.3 Group Type

One of two “group types” can be selected as the fader control mode of a new group. Only one group type can be selected:

- Normal: The Group Master fader can be moved to any position along its travel and will remain where placed. Group member’s positions will track relative to the Group Master position.
- VCA Style: The Group Master fader will “auto-null” at 0dB. When it is touched and moved, the group members will track relative to the Group Master position. When the Group Master is released, it will return to 0dB, but the group members will not change. The VCA Style Group Type only affects the operation of group faders.

*NOTE: It is not advisable to use a fader that contributes audio to the mix as a VCA style Group Master fader.*

When the Edit Groups window is opened by selecting “New Group” from the Groups menu or by clicking the “New Group” button, the “Group Type” radio buttons are active. The radio buttons are used to select which channel “Group Type” will be selected for a new group.

Fader Group Type

☒ Normal

☐ VCA Style

Normal: Selects Normal group functions

VCA Style: Selects VCA style group functions

- ☐ A disengaged radio button indicates the Group Type is not selected for the new Group.
- ☒ Clicking in a disengaged radio button will select that Group Type for the new Group. The other Group Type will be deselected. The radio button will turn green, indicating that the selection has been made.

#### 25.7.4 Channel or Fader 1 and Fader 2 Selection Grids

The "Channel or Fader 1" and "Fader 2" channel grids allow the selection of Group Masters and group members.

Channel or Fader 1

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
L/R	CTR	LFE	SUR	5.1	STA	STB	STC	G1	G2	G3	G4	G5	G6	GM	

Fader 2

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48

The channel grids have a channel box for Channel or Fader 1 and Fader 2 on channels 1-48, the Stereo and Surround Program masters (L/R, CTR, LFE, SUR, 5.1, STA, STB, STC, GM), and the Control Group Master faders (G1-G6).

##### 25.7.4.1 Selection Grid Status Indication

Indications for master and member faders are displayed as follows:

- 1

 Unselected channel or fader
- 1

 Selected as the Group Master for the current group
- 1

 Selected as a group member in the current group
- 1

 Selected as the Group Master for another group (cannot be changed or selected)
- 1

 Selected as a group member in another group (cannot be changed or selected)

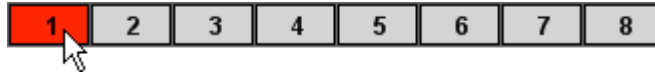
*IMPORTANT NOTE: Once a group master or member is assigned to a group, it cannot be assigned to another group.*

Existing group masters and members can be shown in the Selection Grids by clicking the Section checkboxes in the Edit Group window.

#### 25.7.4.2 Group Master and Member Selection

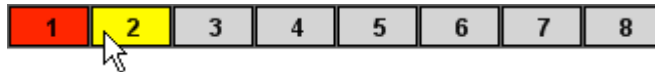
When setting up a new group, a Group Master must be selected before the group members. This should take place after the channel sections have been selected.

To select a Group Master, click the desired channel or fader in the grid:

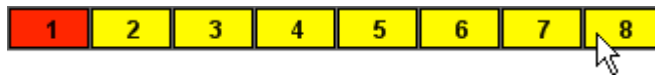


*CAUTION: The fader to be designated as the Group Master should not be set at  $-\infty$ dB (fader all the way down) when the group is set up. Doing so will cause the group members to slam to the top when the Group Master moves upward. A typical starting value would be 0dB or other desired value in the middle of the fader travel.*

Group members can then be selected using one of the following methods:



Click A Single Group Member: To select an individual group member(s)



Shift + Click: To select a range of consecutive group members

- Click on the first group member to select it
- Hold down the Shift key and click on the last group member in the series
- All the channels between the first and last group members will be selected



Ctrl + Click: To select a group of non-consecutive group members

- Hold down the Ctrl key
- Click on the desired group members in any order



Drag + Click (Rubber-banding): To select a region of group members

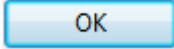
- Click within the first group member to be included
- While holding down the left mouse button, drag the mouse over the region of group members you wish to include in the selection

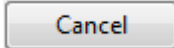
Clicking within the Grid will clear any previous selections, unless Shift + Click or CTRL + Click methods are used. Group members can be added or deleted to previously selections using Shift + Click or CTRL + Click methods. Rubber-banding can be used in combination with Shift + Click and Ctrl + Click methods.

*IMPORTANT NOTE: Once a Group Master or member is assigned to a group, it cannot be assigned to another group.*

*NOTE: Groups that contain switches must have a Fader 1 master and at least one Fader 1 member. Switch groups & switch automation only apply to Fader 1.*

#### 25.7.5 OK and Cancel Buttons

Once all the sections, Group Type, Group Name, and group masters and members have been selected, click the  button to save the new or edited group.

Clicking the  button will close the Edit Group window without saving or changing the group.



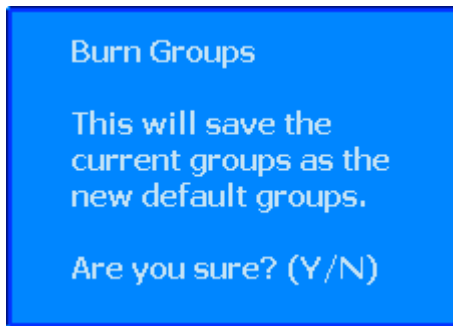
## 25.8 Default Groups

The current groups that were setup using the PC software can be "burned" to the ACM as the Default Groups. The Default Groups will be included in all new mixes created on the ACM.

The Default Groups can be changed or cleared by setting up a new set of groups in the PC software and then burning them to the ACM again.

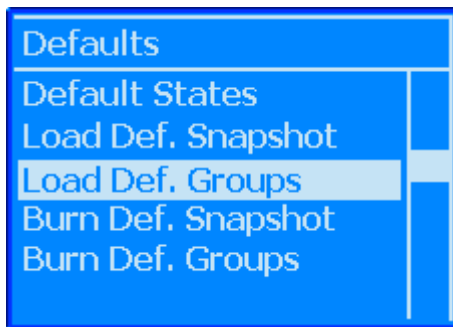


To save the Default Groups, select "Burn Def. Groups" from the Defaults menu and press the "Yes OK" button.

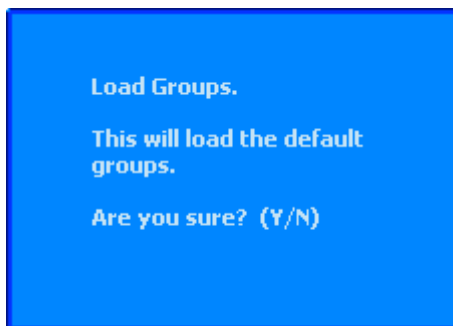


The Burn Groups confirmation window will open.

Press "Yes OK" to burn the current groups to the ACM memory. This operation can be canceled by pressing the "No Cancel" button.



To load the Default Groups, select "Load Def. Groups" from the Defaults menu and press the "Yes OK" button.



The Load Groups confirmation window will open.

Press "Yes OK" to load the Default Groups. This operation can be canceled by pressing the "No Cancel" button.

*NOTE: The Default Groups will be included in the mix that is sent from the ACM to the PC when "New Mix" is selected from the ACM menu.*

## 25.9 Groups Window Control from the ACM Control Panel (Vision Control)

The Groups window can be controlled directly from the console using the ACM Control Panel. Once PC Window Control is engaged for the Groups window, the following functions can be achieved without having to access the PC software with the mouse or touch pad:

- Group Selection: Use the ACM Control Panel arrow buttons to move up and down the Group list and click the "Yes OK" button to select the highlighted group.
- Groups Menu: Once a group is highlighted, the Groups menu can be opened by pressing the "Menu" button. The arrow buttons can be used to select the menu item, which can be opened using the "Yes OK" button. The "Prev," "Next," "Toggle Value," "Yes OK," and "No Cancel" buttons can be used to navigate and perform the selected function.
- Refer to section 26.7.3.1 PC Window Control.

## 25.10 Group Setup Procedures

For all procedures below:

1. Open a Vision Project File.
2. Open the "Groups" window using the "View" menu in the Main window.

### 25.10.1 Enabling Groups Globally

To "Enable" all groups on a global basis, perform the following procedure:

1. Open the Global Functions window using the "View" menu in the Main window.
2. Click the "En: Groups" button in the Global Functions window or engage the "Enable Groups" button on the ACM Control Panel.
3. Click the "En: Faders" and/or "En: Switches" buttons in the Global Functions window or engage the "Enable Faders" and "Enable Switches" buttons on the ACM Control Panel.
4. The buttons will illuminate and the console hardware will respond to the groups setup in software.

To "Disable" all groups on a global basis, perform the following procedure:

1. Open the Global Functions window using the "View" menu in the Main window.
2. Click the "En: Groups" button in the Global Functions window or engage the "Enable Groups" button on the ACM Control Panel to "Disable" or "Suspend" all group functions.
3. The button light will extinguish and the console hardware will not respond to the groups setup in software.

### 25.10.2 Making a New Group

To make a new group, perform the following procedure:

1. Make sure that Groups, Faders, and Switches are "Enabled."
2. Select "New Group" from the Groups menu to open the "Edit Group" window.
3. Enter a "Group Name" for the new group.
4. Select the "Sections" to be included in the group. This must happen before group master and members are selected.
5. Select the "Group Fader Type."
6. If setting up a fader group, make sure the fader that will be the Group Master is set to 0dB or another desired value other than -∞dB.

7. Click on channel or fader to be designated as the Group Master.
8. Click to select the group members.
9. Click the "OK" button to create the new snapshot.
10. The "Edit Group" window will close, the new group will appear in the Group list, and a new mix containing the group will appear in the Mix Tree.

### **25.10.3 Editing an Existing Group**

To edit an existing group, perform the following procedure:

1. Right-click the group to be edited and select "Edit Group" from the menu. The "Edit Group" window will open. The "Sections" and "Group Type" cannot be changed.
2. Make changes to the Group Master and/or members by clicking as needed within the grid.
3. Change the Fader Group Type is desired.
4. The Group Name can also be changed.
5. Click the "OK" button to create the new snapshot.
6. The "Edit Group" window will close, the changes to the group will appear in the Group list, and a new mix containing the edited group will appear in the Mix Tree.

### **25.10.4 Editing a Group Name**

To change the name of a group, perform the following procedure:

1. Right-click on the desired group's name and select "Edit Group Name" from the menu. A text entry field will open in the group name field.
2. Enter a new name or edit the existing one.
3. Click outside the text entry field or press the "Enter" key on the PC keyboard to accept the new name.
4. The selected group will be renamed.

### **25.10.5 Deleting Groups**

To delete one or more groups, perform the following procedure:

1. Highlight the group(s) to be deleted.
2. Right-click the group(s) and select "Delete Group" from the menu.
3. Click "OK" to confirm that you want to delete the group(s).
4. The selected group(s) will be deleted and will be removed from the Group list.
5. A new mix without the deleted group will appear in the Mix Tree.

*NOTE: Once a group is deleted, there is no way to recover it.*

### **25.10.6 Disabling and Enabling One or More Individual Groups**

To "Disable" one or more groups, perform the following procedure:

1. Highlight the group(s) to be disabled.
2. Right-click the group(s) and select "Disable" from the menu.
3. The selected group(s) will be disabled and will be dimmed from the Group list.

To "Enable" one or more groups, perform the following procedure:

1. With a project open, open the Groups window.
2. Highlight the disabled group(s) to be enabled.
3. Right-click the group(s) and select "Enable" from the menu.
4. The selected group(s) will be enabled and will no longer be dimmed from the Group list.

#### **25.10.7 Coalescing Groups**

To "Coalesce and Delete" a group, perform the following procedure:

1. Right-click the group to be "coalesced and deleted" and select "Coalesce & Delete Group" from the menu.
2. The Group Master's moves will be applied to the group members, the Group Master's moves will be deleted, and the group will be deleted. The group will also be removed from the Group list.
3. A new mix with the "Coalesced" moves and without the deleted group will appear in the Mix Tree.

To "Coalesce and Keep" one or more groups, perform the following procedure:

1. Right-click the group to be "coalesced and kept" and select "Coalesce & Keep Group" from the menu.
2. The Group Master's moves will be applied to the group members, the Group Master's moves will be deleted, but the group will remain intact.
3. A new mix with the "Coalesced" moves will appear in the Mix Tree.

To "Coalesce w/ Audio Master" one or more groups, perform the following procedure:

1. Right-click the group to be "coalesced with the audio master" and select "Coalesce w/ Audio Master" from the menu.
2. The Group Master's moves will be applied to the group members, the Group Master's moves will be kept, and the group will be deleted.
3. A new mix with the "Coalesced" and Audio Master moves will appear in the Mix Tree.

## 26.0 Automation System

### 26.1 Overview

The Vision automation system provides a comprehensive suite of fader and channel automation facilities in an intuitive and easy to use package. The system incorporates the following features:

- Full automation of all faders, including Fader 1, Fader 2, Program and Group Masters
- Full-sized 100mm fader in the Fader 2 audio path
- Mute automation for both faders
- Switch automation
- Groups
- DAW Control (fader, mute, solo, and record ready)
- Intuitive hardware interface ("We mix the way you mix!")
- Powerful, but user-friendly software interface
- Time saving automation submodes
- Copy and swap mix data functions
- Clear mix data functions
- Online and offline fader trim functions
- Snapshots of automation controls
- Logical mix file management
- Synchronization with SMPTE timecode (LTC or VITC) or MIDI timecode (MTC)

#### 26.1.1 Automation Controls

The automation system can control the following console controls:

- Faders, Mutes, & Inserts:
  - Fader 1, Mute 1, and Insert 1 on all channels
  - Fader 2, Mute 2, and Insert 2 on all channels
  - All Stereo Program Masters (ST A, ST B, ST C, GM)
  - All Surround Program Masters (L/R, C, LFE, SUR, 5.1 or A/B)
  - All Control Group Masters (G1 - G6)
- Switches:
  - EQ BYP (Equalizer Bypass) on all channels
  - Auxiliary Send On/Off on all channels

For the purpose of assigning automation modes, a channel is further organized in three (3) sections:

- Fader 1 Section: Fader 1, Mute 1, and Insert 1
- Fader 2 Section: Fader 2, Mute 2, and Insert 2
- Switches Section: Aux Send on/off and EQ Bypass

Program and Group Masters are part of the Fader 1 section.

The automation system can synchronize with SMPTE or MIDI timecode and record/playback moves made to these "automation controls."

The static positions of the automation controls can be stored, along with the recall settings, as "snapshots" and recalled as needed.

### 26.2 Automation Concepts

The automation system has two distinct parts, console hardware and Vision software. The hardware and software can function independently of each other or in concert to create a highly capable and symbiotic system. To operate the automation system and make full use of its features, the engineer must first understand some basic concepts and how the system components interact with one another.

#### 26.2.1 Automation Hardware Concepts

The console hardware is designed to operate independently of the Vision PC or in concert with it.

The Automation Control Module (ACM) provides enough volatile memory for one "mix pass" (also called "mix file"). The ACM Control Panel (Vision Control) provides suite of automation controls and a display. The fader modules and 1068L Input modules provide

addition automation controls. Used together, the console hardware components allow the creation and modification of a single automated mix without the need for the PC and Vision software.

*NOTE: A mix kept in the ACM is stored in volatile memory and is not stored on the PC for later retrieval. The mix must be saved to the Mix Tree in an open project for long term storage.*

Only one mix pass can be stored in the ACM at a time.

A mix pass created and kept on the console is stored in volatile memory in the ACM until it is saved to the Mix Tree.

In normal operation, a mix pass is first created on the console hardware and then “saved” to the Vision software for storage and possible editing.

The mix pass in the ACM can be modified at any time using console hardware. When changes are made, it is important to save the altered mix pass to the Mix Tree. An “Auto Save” feature can be activated so whenever changes are made to the ACM mix pass, it is saved to the Mix Tree.

### **26.2.2 Automation Software Concepts**

A Project File must be open in order for the software to accept a mix pass from the ACM.

Once a mix pass generated on the console hardware is saved to the Vision software, it is stored in the Mix Tree.

The Mix Tree is stored in a song, which is a virtual folder within the Vision Project File. On a CD project, each composition would have its own song (and by default its own Mix Tree). On a film or video, each scene or segment might be saved to its own song so each will have its own unique Mix Tree.

The Project File (and therefore song, Mix Tree, and snapshots) is stored to the hard-drive on the Vision PC and is considered to be non-volatile.

The Mix Tree menu provides a suite of tools for editing and working with mix passes and mix data.

Performing additional moves and/or edits to an existing mix pass will add a new mix pass to the Mix Tree without deleting the original. Because of this method, the manipulation of mixes can be performed in a nondestructive manner and numerous levels of “undo” are provided among the mix passes stored in the Mix Tree.

### **26.2.3 Manual Mixing**

When tracking, overdubbing, and/or rough mixing, the program mix is often created without automation. When working in this manner, put all of the channels into Manual mode.

Manual mode disables the automation on each channel, and allows you to experiment with levels and build a basic, unchanging mix to use as a starting point for your automated mix.



The Manual mode button on the ACM Control Panel is a quick way to put the entire console in Manual mode.



Manual mode can also be applied to all channels by clicking the “All” button followed by the “Manual” button in the Channel Control window.

With all channels in Manual, you can mix and experiment as much as you like without recording your changes or interference from the automation system. While not part of the automation system, you may also want to change some of the recall settings as you work.

Once you've found a good starting point, a snapshot can be made to save the positions of the automation controls and recall settings. This snapshot will save fader, mute, switch positions and routing for use at a later time.

This unchanging mix can also be used as a starting point for automation. If you are ready to start a final mix, the automation system may be engaged at this time. Use the arrow keys on the ACM Control Panel to select "New Mix" from the menu and press the "Yes OK" button. The positions of the automation controls (faders, mutes, and automation switches) will be saved to the ACM memory and are referred to as "Initial Positions."

*NOTE: A rough mix should be established before creating a new mix in the ACM.*

#### **26.2.4 New Mix**

Selecting "New Mix" from the ACM Main menu will erase any existing mix data in the ACM, and create a new, empty mix pass. This new mix pass will have all of your current fader, mute and switch positions recorded as "initial positions" at timecode 00:00:00:00. Because you haven't recorded any changes, these positions persist throughout the entire range of timecode, all the way to 23:59:59:xx.

A rough mix must be created on the console in Manual mode before selecting "New Mix" from the ACM menu.

*IMPORTANT NOTE: Do not select "New Mix" from the ACM Main menu with all faders down. Doing so will cause the fully attenuated positions to be recorded as the initial positions in the ACM mix pass. When the system is taken out of Manual mode, the faders will immediately move to the fully attenuated position and your mix will be lost.*

After the rough mix is created (in Manual mode), it is very important that "New Mix" is selected *BEFORE* changing the automation mode from Manual to Read, Update or Write.

*IMPORTANT NOTE: Failure to select "New Mix" from the ACM menu before changing the automation from Manual mode will result in the loss of the rough mix.*

If no changes are written to automation, the initial positions will be used throughout the mix.

If changes are written to automation, they will be played back at the timecode locations at which they were recorded. If playback is started at any earlier timecode location, the initial positions will be reset by the automation system and held until the first recorded move is played back.

*NOTE: The Default Groups will be included in the mix that is sent from the ACM to the PC software when "New Mix" is selected from the ACM menu.*

#### **26.2.5 Mix Passes**

A "mix pass" is simply a file containing all of control changes throughout the entire song. Whenever timecode is played back and changes are made, a new mix pass is created. When you stop playback, changes are processed and the new pass replaces the previous mix pass.

Mix passes are created in the Automation Control Module (ACM) and can be updated using only the console hardware. This allows a fully automated mix to be created without the use of the computer.

The ACM can hold only one mix pass at a time in its onboard volatile memory. The mix pass in the ACM is known as the "current" or "active" mix pass and it is the one that will be played back. Any recorded changes will be added to the data in the active mix pass and a new mix pass will be generated. The resulting mix pass will then become the current mix pass.

To permanently save a mix pass, it must be saved to the Vision PC, where it will appear in a historical list known as the "Mix Tree." Once your mix pass is saved to the Vision PC, it is stored on the computer's hard disk immediately. At this point, a mix pass is also referred to as a "mix file."

A Project File must be open in order to save a mix pass to a Mix Tree.

An old or alternative mix pass in the Mix Tree can be loaded at any time. Once a mix pass is loaded back into the ACM, it becomes the active mix pass.

As an aside, group assignments are also stored in mix passes. This means that when an existing mix pass is loaded from the Mix Tree, all of the groups are exactly as they were when the mix pass was saved. If you return to a newer mix file, the newer groups are restored.

## 26.2.6 Initial Positions

The Vision automation system does not require you to define the start point of a song. This is because of the "Initial Positions" described below.

When you start a new mix, the ACM memory is cleared and the console is scanned for its current positions. These positions are recorded at the beginning of the new mix pass as initial positions. In most applications, a rough mix will be created manually and the control positions of that mix will become the initial positions in a new mix pass.

The initial positions are essentially an "initial mix snapshot" of the positions of all faders and switches in the automation system. These initial positions stored at timecode location 00:00:00:00. This is not the same as the snapshots described in section 23.0 Snapshots.

Initial positions are recorded for the entire duration of timecode, from 00:00:00:00 to 23:59:59:xx. It is on this blank canvas that you will continue your mix. Since the start time of every mix pass is 00:00:00:00, if the convention of starting mixes well after 00:00:00:00 is followed, plenty of pre-roll will be available if needed.

After the initial positions are recorded, the entire console can be set to playback moves in Read mode, roll to any timecode location, and the faders/switches will not move.

Initial positions may be altered at any time, using of the Static submode, described in section 26.5.3 Automation Submodes.

## 26.2.7 End-Of-Pass Processes

When any changes are written, "end-of-pass" processes are performed when timecode playback is stopped. These processes include:

- Processing of all data transitions
- Updating the mix pass in the ACM with the new data
- "Auto Safe" functions (if engaged)
- "Auto Save" functions (if engaged)

Nothing is written to the ACM memory until timecode is stopped.

End-of-pass processes maybe modified using the following functions:

### Kill Mix



**Kill Mix:** Suppresses end-of-pass processes when timecode is stopped. It activates a flag to discard any changes made during the current automation pass.

- "Kill Mix" can be engaged at anytime, by clicking the button on the ACM Control Panel or in the Global Functions window.

### Auto Safe



**Auto Safe:** Sets all channel sections in Write to Update when Timecode is stopped.

- Sections in Manual remain unchanged
- "Auto Safe" can be engaged at anytime, by clicking its button on the ACM Control Panel or in the Global Functions window.



## Bridge Gaps



Bridge Gaps: Allows section positions and modes at the point when Timecode is stopped to be applied up to a later location if Timecode is started at a later location without rewinding.

- "Bridge Gaps" can be engaged at anytime, by clicking its button on the ACM Control Panel or in the Global Functions window.

## Auto Takeover



Auto Takeover: Keeps track of the sections that are in Update or Write at the point where Timecode is stopped and restores those modes when that point in Timecode is reached on a subsequent pass.

- "Auto Takeover" can be engaged at anytime, by clicking its button on the ACM Control Panel or in the Global Functions window.



Auto Save: The ACM mix pass will automatically be "saved" to the Mix Tree if "Auto Save" is engaged before Timecode is stopped.

- "Auto Save" can be engaged at anytime by clicking its button on the Vision Control Panel.
- There is no "Auto Save" button in the Global Functions window.

The behavior of the data transitions or "reverts" between newly recorded moves and previously recorded moves (i.e. Write to Read) is determined by the active mode, submode, Global Function, and Glide Rate.

Watch out when looping! Many engineers will want to loop the transport over a certain section, updating moves until you get it exactly right. Be aware that the ACM requires a small amount of time at the end of each pass to process the moves that have been made. Typically this time is about 1 second, but it can grow with larger mix files. During this time, the ACM will not chase timecode and will not record moves.

When using a DAW with instant looping, be sure to build in enough pre-roll to allow the ACM to catch up. Alternatively, you can set your transport to pause for a bit at the end of each pass.

For more information, refer to section 26.6 Global Functions

### 26.2.8 Timecode and Synchronization

SMPTE timecode (LTC or VITC) or MIDI timecode (MTC) is used to synchronize the Vision automation system with the recorded media.

## En: TC



Timecode must be "Enabled" in order to be used by the Automation system. To enable timecode engage the "Enable TC" button on the ACM Control Panel or click the "En: Timecode" button in the Global Functions window.

The system will accept six (7) SMPTE timecode frame rates:

- 23.976
- 24
- 25
- 29.97
- 29.97 Drop
- 30
- 30 Drop

The timecode frame rate is selected at the time a Project File is created.

In addition to synchronization, the automation system uses timecode in other ways:

- Stopping timecode causes the automation system to perform its end-of-pass processes
- Engaging the "Auto Takeover" function at the proper locations
- Engaging the "Bridge Gaps" function at the proper locations
- Selecting timecode ranges for Offline Trims
- Selecting timecode ranges for Copy and Swap mix data functions
- Selecting timecode ranges for Clear mix data functions

The Timecode Source (LTC, VITC, or MTC) is selected using the Console Settings menu in the ACM.

The SMPTE timecode in both Longitudinal Time Code (LTC) and Vertical Interval Time Code (VITC) formats are received via the line-level XLR input on the back of the ACM.

The MIDI timecode (MTC) is received via a MIDI IN port on the back of the ACM. A MIDI port must be configured for MTC communication.

Please refer to section 28.4 Timecode Setup and 26.7.3.8 Console Settings for details regarding setting-up the console to use timecode.

### 26.2.9 Function Enables

Console hardware components must be "enabled" in order to interface with the automation system.

The software interface with the console hardware is organized in six (6) subsections:

- Faders
- Groups
- Switches
- Timecode
- Leave Write
- Control Surface

Each subsection can be enabled or disabled independently of the others. Each subsection must be enabled for control by the automation system.

A subsection can be disabled at anytime necessary. Disabled controls will not be controlled by the automation system. During a tracking or overdub session, disabling subsections prevents any interaction with the automation system. During an automated mix, it allows the engineer to quickly "suspend" automation control over any disabled subsections so different settings can be explored without interference from automation.

All of the enable buttons are found in the Global Functions window. Enables for Faders, Groups, Switches, Timecode, and Control Surface are also provided in the "Global Funcs" menu in the ACM. Group and Timecode enables also have a button on the ACM Control Panel.

**En: Faders** Y

**En: Faders**

Enable Faders: Enables automation control over faders

- When Faders are enabled:
  - A "Y" will appear next to the "En: Faders" item in the Global Funcs ACM menu
  - The "En: Faders" button in the Global Functions window illuminates in yellow

**En: Groups** Y

**En: Groups**



Enable Groups: Enables Group functions through automation

- When Groups are enabled:
  - A "Y" will appear next to the "En: Groups" item in the Global Funcs ACM menu
  - The "En: Groups" button in the Global Functions window illuminates in yellow
  - The "Enable Groups" button on the ACM Control Panel illuminates in green

## En: Switches Y

### En: Switches

Enable Switches: Enables automation control over automation switches

- When Switches are enabled:
  - A "Y" will appear next to the "En: Switches" item in the Global Funcs ACM menu
  - The "En: Switches" button in the Global Functions window illuminates in yellow

## En: Timecode Y

### En: TC



Enable TC (Timecode): Enables the ACM to chase Timecode

- When Switches are enabled:
  - A "Y" will appear next to the En: Timecode item in the Global Funcs ACM menu
  - The En: TC button in the Global Functions window illuminates in yellow
  - The Enable Timecode button on the ACM Control Panel illuminates in green

## En: Cntrl Surface Y

### En: Cntrl Surface



Enable Control Surface: Enables fader, mute, and solo DAW control from the console via MIDI

- When the Control Surface is enabled:
  - A "Y" will appear next to the En: CTRL Surface item in the Global Funcs ACM menu
  - The En: Cntrl Surface button in the Global Functions window illuminates in yellow
  - The Enable Control Surface button on the ACM Control Panel illuminates in green

### En: Leave Write



Enable Leave Write: Enables the automation system to switch from record to playback (Write to Read) when the position of the control matches the previously recorded position

- Enable Leave Write and put the desired fader(s) in Update or Write
- Start Timecode playback and move the fader away from its recorded position
- While the fader is away from its recorded position, press the grey button on the fader module once
- The mode LEDs will "shimmer" to indicate the fader is in Leave Write
- When the fader is moved to match the previously recorded position or the previously recorded moves catch up to the current position, the fader will automatically switch to Read
- When the fader is released, it will change to Update
- Enable Leave Write can be engaged at any time
- When Leave Write is enabled:
  - The "En: Leave Write" button in the Global Functions window illuminates in yellow
  - The "Enable Leave Write" button on the ACM Control Panel illuminates in yellow when engaged

## 26.3 Automation System Components

The automation system has two distinct parts:

- Console Hardware: Fader and 1068L modules, Fader Control Modules (FCM), Automation Control Module (ACM), and ACM Control Panel
- Vision Software: The Vision software application running on the PC.

During normal operation, the console hardware and Vision software communicate via an ethernet connection. A mix is started and modified using the console hardware and then "Saved" to the Mix Tree in an open project. A mix in the Mix Tree can be further modified using either console hardware or software.

However, the console hardware is capable of automating a mix without the software, but the resultant mix will not be saved to the computer until communication with the software is made.

Many of the controls in the software are "mirrored" in the hardware, and vice versa, thus providing a user interface that will accommodate most styles of working and project work flows.

A Project File must be open in order to use the Vision software during mixing.

### 26.3.1 Automation Hardware Components

The console automation hardware is distributed among six (6) subsystems:

- Automation Control Module (ACM): Interface with Vision PC and console hardware
- ACM Control Panel (Vision Control): Console automation control module interface panel
- Fader Control Module (FCM): 8-channel fader control module
- Fader Module: Fader and mute for the Fader 1 audio path and automation controls for the channel
- 1068L Input Module: Channel Input Module including fader and mute for the Fader 2 audio path and the mute for the Fader 1 audio path

#### 26.3.1.1 Automation Control Module (ACM)

The Automation Control Module (ACM) is the master controller and computer interface for the automation system.

The ACM is responsible for all real time automation features and always holds the last mix pass in its volatile RAM memory. If the computer crashes, it is still possible to continue working and recover the last mix pass from the ACM, as long as power is not lost. In fact, the ACM can function perfectly well without the computer, with the exception of a few inaccessible commands and the ability to save your work to disk.

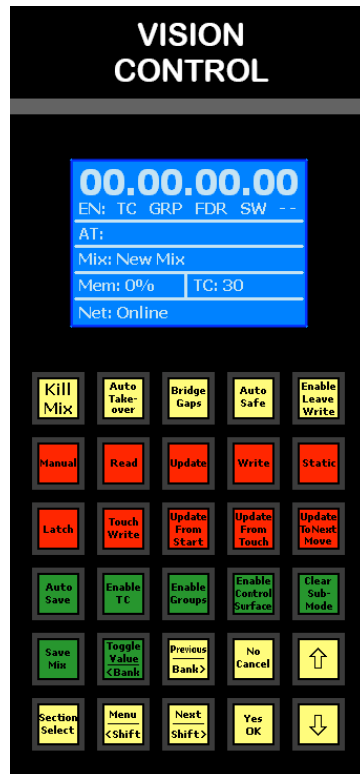
The ACM can hold only one mix pass at a time.

If the ACM fails, all of the automation functions are inaccessible, and your most recent mix pass is lost. However the console remains active for manual control and all of your saved mixes are safe in the Vision PC.

The ACM also provides the SMPTE and MIDI timecode interfaces for automation synchronization and the MIDI interface for DAW control. The ACM is typically mounted under the console or installed in an external rack.

The ACM is programmed using a firmware file that can be updated as needed. The ACM firmware can be updated by selecting "Update ACM Firmware..." from the Setup menu in the Main window. See section 28.0 System Setup, Maintenance, and Updates for detailed information on firmware management.

### 26.3.1.2 ACM Control Panel (Vision Control)



ACM Control Panel (Vision Control): The ACM Control Panel is the hardware interface and display for the Automation Control Module (ACM). It provides a 5 by 6 matrix of switches and a backlit 128x64 LCD display.

The main display shows current timecode, Function Enables, Auto Takeover status, Mix name, percentage of ACM memory used, timecode frame-rate, and connection status. It can also display fader levels, ACM menus, and system messages.

The top row of yellow buttons control global automation functions. These buttons are mirrored by their corresponding buttons in the Global Functions window.

The two rows of red buttons control automation modes and submodes. These buttons are mirrored by their corresponding buttons in the Channel Control window.

The next row of green buttons enable automation functions and DAW Control, as well as a Clear Sub-Mode button. Some of these buttons are mirrored by their corresponding buttons in the

The bottom rows of yellow and green buttons control the saving of the mix in the ACM, the selection of channel sections for automation, and navigation controls. These buttons are unique to the ACM Control Panel and are not mirrored elsewhere.

The ACM Control Panel is located next to the master faders in the Center Section.

ACM Control Panel display is programmed using a firmware file that can be updated as needed. The ACM Control Panel display can be updated by selecting "Update Display Firmware..." from the Setup menu in the Main window. See section 28.0 System Setup, Maintenance, and Updates for detailed information on firmware management.

### 26.3.1.3 Fader Control Modules (FCM)

The Fader Control Module (FCM) is a circuit board that controls up to eight fader modules and eight 1068L Input modules. It is mounted directly beneath the faders. Its job is control of automation functions for faders and 1068 modules and to communicate with the ACM.

FCMs play no role in the recall system.

FCMs are controlled by the Automation Control Module (ACM). If a FCM fails, most parts of the fader and input modules under its control will stop working. However, the audio paths will continue to operate. No mix data is stored in the FCM, so a FCM failure will not cause any loss of data.

FCMs are programmed using a firmware file that can be updated as needed. FCMs can be updated and calibrated by selecting "Manage FCMs..." from the Setup menu in the Main window. The current FCM firmware version can be viewed in the "Manage FCMs" window and on the ACM Control Panel. See section 28.0 System Setup, Maintenance, and Updates for detailed information on FCM management.

### 26.3.1.4 Fader Modules

#### CHANNEL FADERS



The channel Fader Module contains the Fader and mute for the Fader 1 audio path. It also contains the controls and indicator lights for the automation functions for the entire channel strip.

Fader Modules are connected to the ACM via the Fader Control Module (FCM), which is mounted directly below them.

Fader modules contain four (4) sets of controls that are part of the automation system:

- Fader 1
- Fader 1 Mute
- SEL (Select) button & LEDs
- MODE button & LEDs



Fader 1: Primary volume control for the Fader 1 audio path



Fader Cap: Every fader cap is touch-sensitive and can serve as a trigger for various automation functions (such as switching from playback to record in Update mode )



Fader NULL Indicators: Up and down indicators that show the offset between the written automation data and the physical fader position.



Indicates the fader is above the written data...move the fader "down" to match positions



Indicates the fader is below the written data...move the fader "up" to match positions

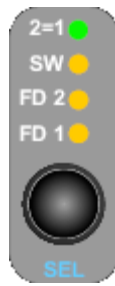


Fader 1 MUTE: On/Off switch for the Fader 1 audio path

- Automated mute switch
- Will control the Fader 1 mute switch on the 1068L module if that MUTE switch is not engaged

MUTE WRITE: Engages Mute Write function when held:

- Pressing and holding will overwrite the recorded mutes on selected faders (must be in UPDATE)
- The selected fader is chosen using the SEL button on the Fader module or the Channel Control window
- Allows writing mute automation independent of the fader



#### SEL (Select): Channel section selector button

- Each press will cycle through the following channel sections:
  - Fader 1 (the yellow "FD 1" LED illuminates when selected)
  - Fader 2 (the yellow "FD 2" LED illuminates when selected)
  - Switches (the yellow "SW" LED illuminates when selected)
  - All sections (all 3 yellow LEDs illuminate when selected)
- Pressing and holding this button will toggle the 2=1 mode on and off
  - Fader 2 will mirror the Fader 1 position when engaged
  - The green "2=1" LED will illuminate when 2=1 is engaged
- The mode of the selected section(s) is displayed on the fader's mode LEDs

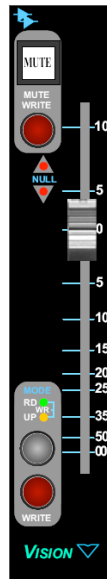
*NOTE: The section select LEDs on the fader are only used for local control of the operation of the buttons on that fader. They also control which section's modes are displayed on the mode LEDs of that fader. In other words, they have nothing at all to do with selections made in the computer software.*



#### MODE: Automation mode selectors:

- Grey Button: Pressing the grey button will put the selected channel sections Manual, Read, or Update modes
  - A single press of the grey button will toggle the selected sections between Read and Update modes
  - Holding down the grey button for two seconds will put the selected sections in Manual mode
  - While in Manual mode, a single press of the grey button will change the selected sections to Read mode.
- Red Button (WRITE): Pressing the red button will immediately put the selected channel sections in Write mode
- LED Indicators:
  - Manual: Neither LED is illuminated
  - Read: The green RD LED is illuminated
  - Update: The yellow UP LED is illuminated
  - Write: Both LEDs (WR) will be illuminated

#### MASTER FADERS



The Stereo and Surround Program Master Faders and Group Masters use Master Fader modules.

Master Fader modules have all the same features as Channel Fader modules, except there is SEL button since there are no channel sections to select.

All Master Faders are in the Fader 1 channel section group.

### 26.3.1.5 1068L Input Modules



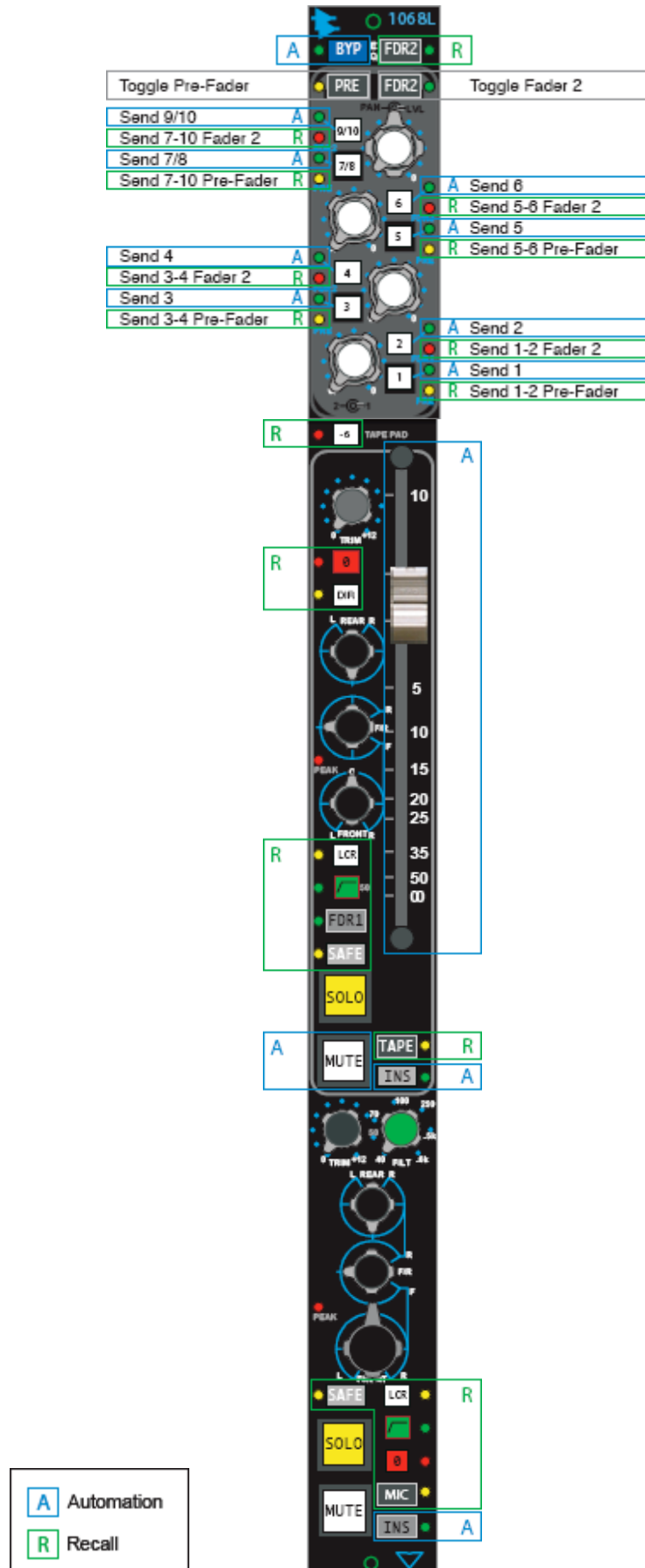
The 1068L Input module contains the fader and MUTE for the Fader 2 audio path. It also contains all of the automated switches for the entire channel strip (Inserts, EQ Bypass, Auxiliary Send On/Off).

The Input modules are connected to their associated Fader Control Modules for automation control.

*NOTE: The Fader 1 mute button on the 1068L module is not part of the automation system, but is activated by the automated mute on the fader module. When engaged, it is not disengaged but the automation system.*



The diagram below indicates which 1068L parameters are controlled by the automation and recall systems:



### 26.3.2 Automation Software Components

The PC Computer runs the Vision software and provides access to all of the software functions and file management associated with the automation system.

PCs are usually very reliable, however all computers are notorious for failures at inopportune moments. Should the PC ever crash, the automation system will keep running like nothing happened and the current mix will be retained in the ACM memory. Of course, you won't be able save your work until the PC is functioning again.

The automation system uses three (3) primary windows:

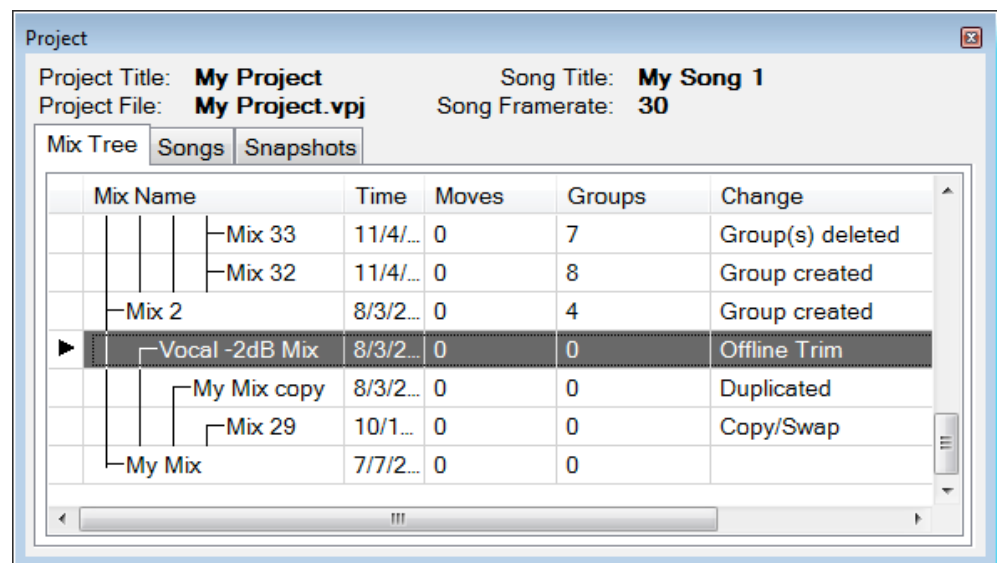
- Project window Mix Tree
- Channel Control window
- Global Functions window

#### 26.3.2.1 Project Window Mix Tree

The Mix Tree in the Project window displays and manages the mix files for the current project. This includes the mix files created on the console Automation Control Module (ACM) and using the Mix Tree menu edit functions.

A Project File must be open in order to make and use the Mix Tree.

Click the Mix Tree tab in the Project window to open the Mix Tree.



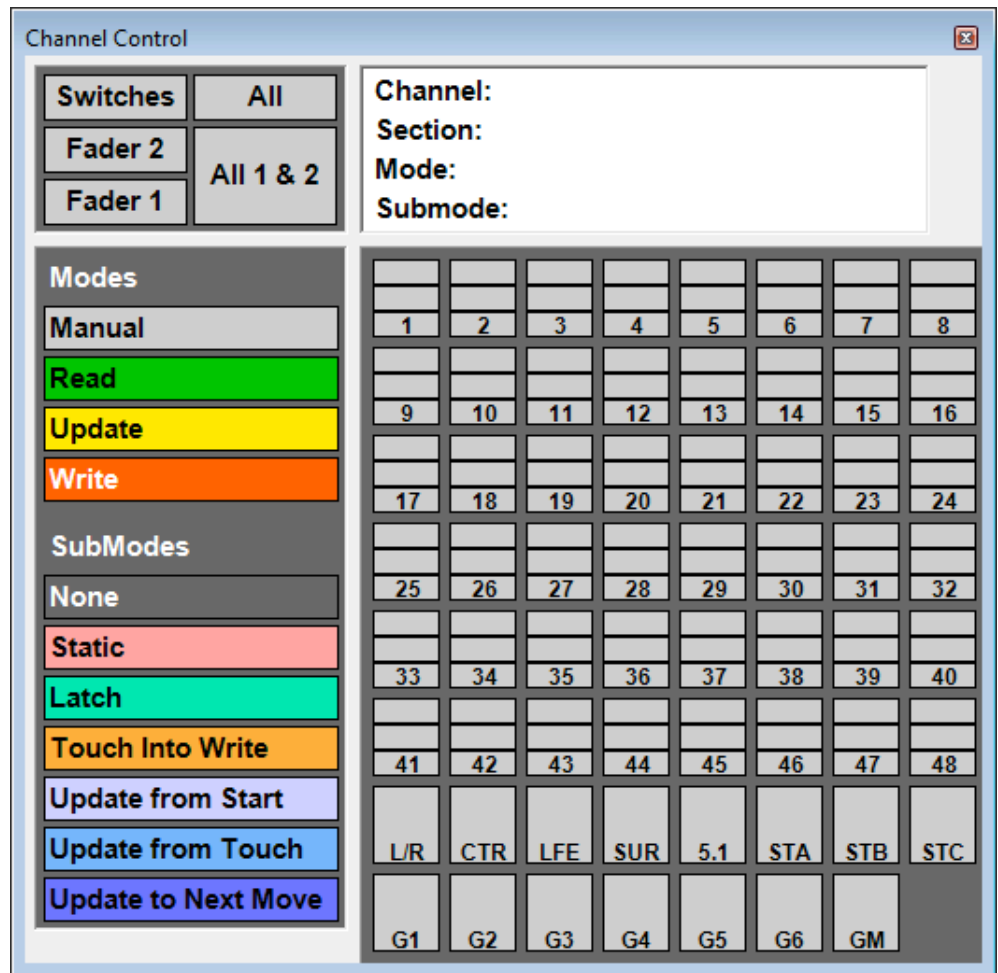
For each mix, the following information is displayed:

- Mix Icons: Icons that indicated the status of the mix file
- Mix Name: Name of the mix file
- Time: The time and date the mix file was created
- Size: The size of the mix file
- Groups: The number of groups contained within the mix
- Change: Information regarding the mix file (duplicate, group added/deleted, off-line trim, etc.)

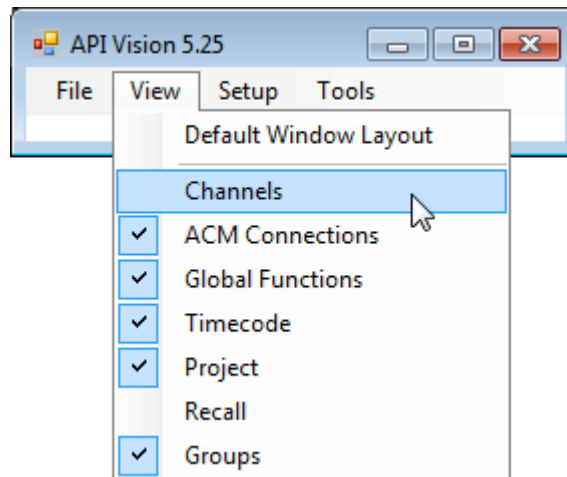
The Mix Tree edit functions will be discussed in detail in section 26.8.3 Mix Tree Edit Functions.

#### 26.3.2.2 Channel Control Window

The Channel Control window is the primary software interface for automation system control. It provides the means to assign automation modes and submodes to channel sections on a global, group, and/or individual basis. It also provides a visual display of the current automation modes and submodes console-wide and detailed individual status information.



Select "Channels" from the View menu in the Main window to open the Channel Control window.



The Channel Control window has five sections:

- Channel Section Grid: Channel section selector grid
- Global Channel Section Selectors: Selectors for global mode assignment
- Channel Section Display: Status display for the selected channel section
- Automation Mode Selectors: Automation mode selectors
- Automation Submode Selectors: Automation submode selectors

The Channel Section Grid provides comprehensive control of the selection of channel sections for automation.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
L/R	CTR	LFE	SUR	5.1	STA	STB	STC
G1	G2	G3	G4	G5	G6	GM	

"Channel Boxes" are provided for up to 144 Input Channels, as well as the Program and Group Masters:

- 1-144: Input Channels 1-144 (1-48 shown...only installed channels are supported)
- L/R (Left/Right): Surround Left & Right Master Fader
- CTR (Center): Surround Center Master Fader
- LFE (Low Frequency Effects): Surround LFE Master Fader
- SUR (Left/Right Surround): Surround Left Surr/Right Surr Master Fader
- 5.1: Surround Group Master Fader
- STA (Stereo A): Stereo A Master Fader
- STB (Stereo B): Stereo B Master Fader
- STC (Stereo C): Stereo C Master Fader
- GM (Grand Master): Stereo Grand Master Fader

The Global Channel Section Selectors are used to globally assign automation modes and submodes to the different channel sections.

<b>Switches</b>	<b>All</b>
<b>Fader 2</b>	<b>All 1 &amp; 2</b>
<b>Fader 1</b>	

The Global Channel Section Selectors allow the following channel sections to be globally selected for automation mode assignment:

- Fader 1: Fader, mute, and insert
- Fader 2: Fader, mute, and insert
- All 1 & 2: Fader 1 and Fader 2
- Switches: EQ Bypass, Aux Send On/Off
- All: All channel sections

When the mouse cursor is placed over a channel section, the Channel Section Display shows the current status of the selected channel section.

<b>Channel:</b>
<b>Section:</b>
<b>Mode:</b>
<b>Submode:</b>

The Channel Section Display shows the following information:

- Channel: Selected channel number
- Section: Selected channel section
- Mode: Current Automation Mode
- Submode: Current Automation submode

The mode and submode buttons are used to select the automation mode for the channel sections selected in the channel section grid.



The automation modes determine the basic automation system function:

- Manual: No automation control
- Read: Playback of recorded moves
- Update: Records fader moves only while it is being touched. Records MUTES and switches the they are engaged
- Write: Records moves from the time the faders are touched or switches are engaged until the mode is changed to Read or Timecode is stopped

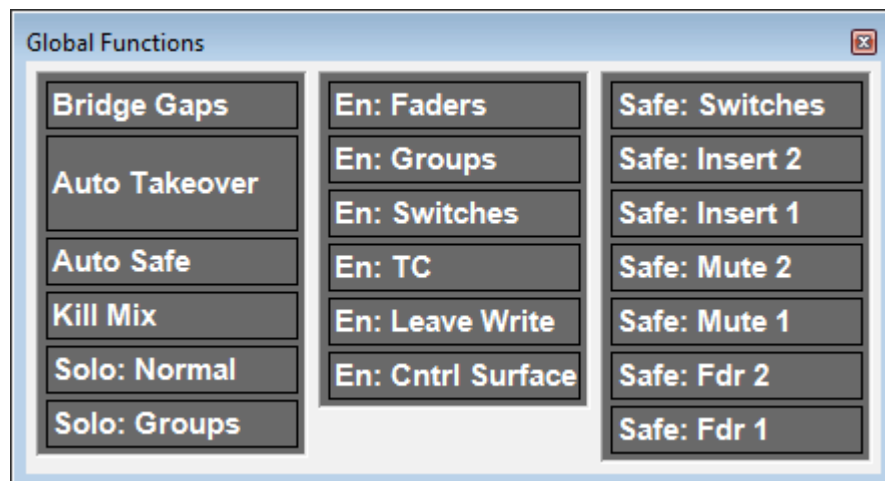
The submodes determine how the automation data is written to a mix pass:

- None: Clears submodes from the selected channel sections
- Latch: Writes the last recorded position to the end of Timecode
- Touch Intro Write: Faders in Update change to Write when touched
- Update from Start: Applies the last value of the control back to the start of Timecode 00:00:00.00
- Update from Touch: Applies the last value of the control back to the point the fader was touched or switch was changed
- Update to Next Move: Applies the last value of the control until the next recorded move for that control

### 26.3.2.3 Global Functions Window

The "Global Functions" window provides control over three different automation areas:

- Global Automation Functions: Non-channel oriented automation functions
- Function Enables: Enable buttons for Faders, Groups, Switches, Timecode, Leave Write, and Control Surface (DAW control)
- Automation Safe Modes: Safe buttons prevent changes to Switches, Insert 2, Insert 1, Mute 2, Mute 1, Fader 2, and Fader 1



The "global automation function" and "enable" buttons are mirrored by buttons on the ACM Control Panel.

The Global Function window will be discussed in detail in section 26.6 Global Functions.

## 26.4 Channels and Sections

In regard to automation, there are two types of channels:

- Input Channels: A 1068L Input module and fader module
- Master Channels: Program and Group Master faders
  - Stereo Program Masters: STA, STB, STC, and Grand Master (GM)
  - Surround Program Masters: L/R, CTR, LFE, SUR, 5.1 or A/B
  - Control Group Masters: G1-G6

### INPUT CHANNELS

When we refer to “Input Channels” in regard to automation, we are referring to the full input channel strip, including faders, mutes, and automation switches. Recall settings and fully analog components, such as mic preamps, compressors, and EQs, have no connection to the automation system and are not discussed in this section.

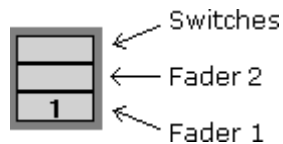
The Vision automation system can support up to 144 Input Channels.

A single Input Channel consists of the following automatable functions:

- Fader 1 (lower)
- Mute 1
- Insert 1
- Fader 2 (upper)
- Mute 2
- Insert 2
- Aux Send ON/OFF 1-6, 7/8 and 9/10
- EQ BYP (EQ Bypass)

Each Input Channel has three channel sections that can be selected independently of each other:

- Switches: Aux Send ON/OFF and EQ Bypass
- Fader 2: Fader 2, Mute 2, and Insert 2
- Fader 1: Fader 1, Mute 1, and Insert 1

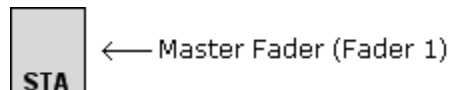


Although each fader is grouped with its MUTE and INSERT switch in a single section, you can still work with faders, mutes, inserts, and switches independently by using the “Section Safe” buttons described in section 26.6 Global Functions and the “Mute Write” button on the fader module.

### MASTER CHANNELS

Stereo and Surround Program Master Faders and Group Master Faders are all part of the Fader 1 global selection group. They are “fader only” and their channel boxes do not have Switch or Fader 2 sections.

The Vision automation system can support up to 16 Master/Group Channels.



*NOTE: While the MUTE switch on the Stereo and Surround Program Masters can be automated, the MUTE switch does not cut the output of the master faders. However, if the master fader is a Group Master, the MUTE switch can be used to control the MUTE switches on the group members.*

The Channel Section Grid provides comprehensive control of the selection of channel sections and master channels for automation.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
L/R	CTR	LFE	SUR	5.1	STA	STB	STC
G1	G2	G3	G4	G5	G6	GM	

"Channel Boxes" are provided for up to 144 input channels and up to 16 Program and Group Masters:

- 1-144: Input channels 1-144 (1-48 shown...only installed channels are supported)
- L/R (Left/Right): Surround Left and Right Master Fader
- CTR (Center): Surround Center Master Fader
- LFE (Low Frequency Effects): Surround LFE Master Fader
- SUR (Left/Right Surround): Surround Left Surr/Right Surr Master Fader
- 5.1: Surround Group Master Fader
- STA (Stereo A): Stereo A Master Fader
- STB (Stereo B): Stereo B Master Fader
- STC (Stereo C): Stereo C Master Fader
- G1-G6 (Group 1-6): Control Group 1-6 Master Faders
- GM (Grand Master): Stereo Grand Master Fader

A channel box is provided for each of up to 144 installed input channels (1068L and fader modules)

1	2	3	4	5	6	7	8

Input channels 1-144  
(1-8 shown)

There are three sets of channel boxes for the Master Faders:

- Surround Program Masters
- Stereo Program Masters
- Group Masters

L/R	CTR	LFE	SUR	5.1

Surround Masters:

- L/R (Left/Right): Left and Right Master Fader
- CTR (Center): Center Master Fader
- LFE: LFE Master Fader
- SUR (Left/Right Surround): Left Surr/Right Surr Master Fader
- 5.1: Surround Control Group Master Fader

STA	STB	STC
	GM	

Stereo Masters:

- STA (Stereo A): Stereo A Master Fader
- STB (Stereo B): Stereo B Master Fader
- STC (Stereo C): Stereo C Master Fader
- GM (Grand Master): Stereo Grand Master Fader

G1	G2	G3	G4	G5	G6

Control Group Masters:

- G1-G6 (Group 1-6): Control Group 1-6 Master Faders

### 26.4.1 Selecting Channel Sections Using Software

Selected channel sections will be highlighted in white to indicate their status.

*NOTE: For greater contrast, the following examples are shown with channel sections in Read mode.*



All three channel sections (Fader 1, Fader 2, and Switches) selected



Switches selected



Fader 2 selected



Fader 1 selected

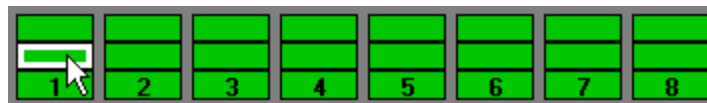


STA (Stereo A) selected

Individual channels and channel sections may be selected in any combination, including the entire channel. After channel sections have been selected in the Channel Section Grid, selecting an automation mode and/or submode will apply that mode to the selected channel sections. By selecting multiple channel sections, any combination of channels can be setup with the same settings simultaneously. This allows the console to be quickly configured for various mixing tasks.

To select channel selections for automation, use one of the following methods:

- Click an individual channel section
- Shift + click to select a range of consecutive channel sections
- Ctrl + click to select a group of non-consecutive channel sections
- Drag-click to select a region of channel sections (rubber-banding)
- Drag-click to select a region of channels (rubber-banding)
- Click a Global Channel Section Selector button



Click A Single Channel Section: To select an individual channel section



Shift + Click: To select a range of consecutive channel sections

- Click on the first channel section to select it
- Hold down the Shift key and click on the last channel section in the series
- The channel sections between the first and last channels of the same type as the original will be selected





Shift-Clicking can be continued in a series using different channel sections as long as the next selection is a higher channel number than the last selected channel.



Ctrl + Click: To select a group of non-consecutive channel sections

- Hold down the Ctrl key
- Click on the desired channel sections in any order



Drag + Click (Rubber-banding): To select a region of channel sections

- Click within the channel section of the first channel to be included
- While holding down the left mouse button, drag the mouse over the region of channels you wish to include in the selection
- The channel sections within the rubber-band region of the same type as the original will be selected



Drag + Click (Rubber-banding): To select a region of channels

- Click outside the upper left-hand corner of the channel box of the first channel to be included
- While holding down the left mouse button, drag the mouse over the region of channels you wish to include in the selection
- The channels within the rubber-band region will be selected

Clicking within the Channel Section Grid will clear any previous selections, unless Shift + Click or CTRL + Click methods are used. One or more channels can be added or deleted to previously selections using Shift + Click or CTRL + Click methods. Rubber-banding can be used in combination with Shift + Click and Ctrl + Click methods.

### 26.4.2 Global Channel Section Selectors

The Global Channel Section Selectors are used to globally assign automation modes and submodes to the different channel sections.



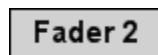
The Global Channel Section Selectors allow the following channel sections to be globally selected for automation mode assignment:

- Fader 1: Fader, mute, and insert
- Fader 2: Fader, mute, and insert
- All 1 & 2: Fader 1 and Fader 2
- Switches: EQ Bypass and Aux Send On/Off
- All: All channel sections

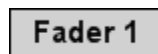
Global Channel Section Selectors function as follows:



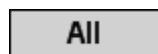
Switches: Selects EQ Bypass and Aux Send On/Off on all channels



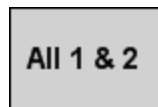
Fader 2: Selects Fader 2 (fader, mute, and insert) on all channels



Fader 1: Selects Fader 1 (fader, mute, and insert) on all channels, as well as all Program and Control Group Masters



All: Selects all channel sections on all channels (Fader 1, Fader 2, Switches, and Program and Control Group Masters)



All 1 & 2: Selects all channel and Master faders (Fader 1, Fader 2, and all Program and Control Group Masters... but not Switches)

The Global Channel Section Selectors toggle on and off when clicked.

If a group of channel sections is selected and the "All" button is clicked, all channel sections and masters will be selected. If the "All" button is clicked a second time, all channel sections and masters, including the original group, will be deselected.

After channel sections have been selected in the Channel Section Grid, selecting an automation mode and/or submode will apply that mode to the selected channel sections. By selecting multiple channel sections, any combination of channels can be setup with the same settings simultaneously. This allows the console to be quickly configured for various mixing tasks.

### 26.4.3 Channel Status Display

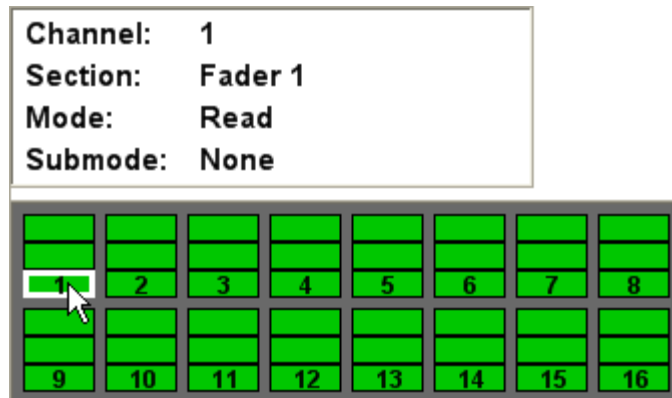
When the mouse cursor is placed over a channel section or master channel box, the Channel Status Display will show the current status of the selected channel section.



The Channel Status Display shows the following information:

- Channel: Selected channel number
- Section: Selected channel section
- Mode: Current Automation Mode
- Submode: Current Automation submode

In the example below, the cursor is over Fader 1 on Channel 1, its automation mode is Read and no submodes are engaged.



#### 26.4.4 Selecting Channel Sections Using Hardware

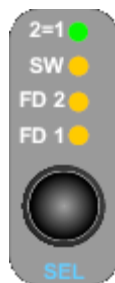
Channel sections and Master faders can be selected via hardware in two ways:

- Globally: Using the "Section Select" button on the ACM Control Panel
- Individually: Using the "SEL" button on individual fader modules



Section Select: Global channel section selector button

- Each press will cycle all channels through:
  - Fader 1
  - Fader 2
  - All (Fader 1, Fader 2, Switches)



SEL (Select): Channel section selector button

- Each press will cycle through the following channel sections:
  - Fader 1 (the yellow "FD 1" LED illuminate when selected)
  - Fader 2 (the yellow "FD 2" LED illuminate when selected)
  - Switches (the yellow "SW" LED illuminate when selected)
  - All sections (all 3 yellow LEDs will be illuminated when selected)
- Pressing and holding this button will toggle the 2=1 mode on and off
  - Fader 2 will mirror the Fader 1 position when engaged
  - The green "2=1" LED will illuminate when 2=1 is engaged
- The mode of the selected section(s) is displayed on the fader's mode LEDs

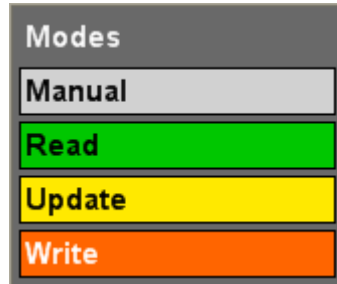
*NOTE: The section select LEDs on the fader are only used for local control of the operation of the buttons on that fader. They also control which section's modes are displayed on the mode LEDs of that fader. In other words, they have nothing at all to do with selections made in the computer software.*

## 26.5 Automation Modes and Submodes

Automation “modes” and “submodes” determine how the automation system records and plays back control moves. The modes dictate basic functionality. Submodes allow the value of a control position to be applied to the mix in a variety of ways.

### 26.5.1 Automation Modes

There are four mutually exclusive automation modes. These modes govern how the how and when moves made to faders and switches are recorded and played back. These modes may be applied to any channel section at any given time. Different channel sections may be in different modes at the same time.

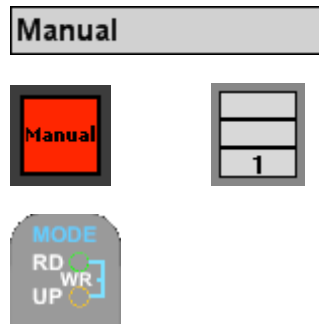


Each automation mode has its own software and hardware buttons:

- Manual: Automation is not engaged
- Read: Recorded moves are played back
- Update: Recorded moves are played back until a change is made. When a change is made, any moves will be recorded, but playback will resume after the change is made
- Write: Current positions and moves will be recorded; existing moves are replaced

The function of each automation mode is described below. For each mode, the buttons in the Channel Control window and ACM Control Panel are shown. The LED indicators on the fader modules are also shown.

#### 26.5.1.1 Manual



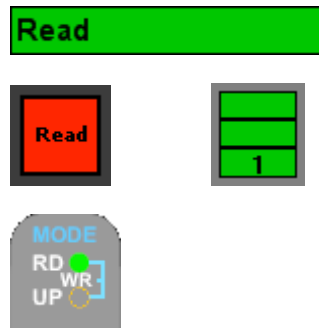
Manual: Channel sections are disconnected from automation

- Sections will not record moves
- Sections will not play back recorded moves
- Manual can be engaged at any time
- When Manual is engaged on at least one channel section:
  - The Manual button on the ACM Control Panel illuminates in red
  - Channel sections are grey in color
  - Neither the Read or Update LED on the fader module will illuminate

Use Manual mode for tracking, manual mixing, or suspending automation control for experimentation during an automated mix.

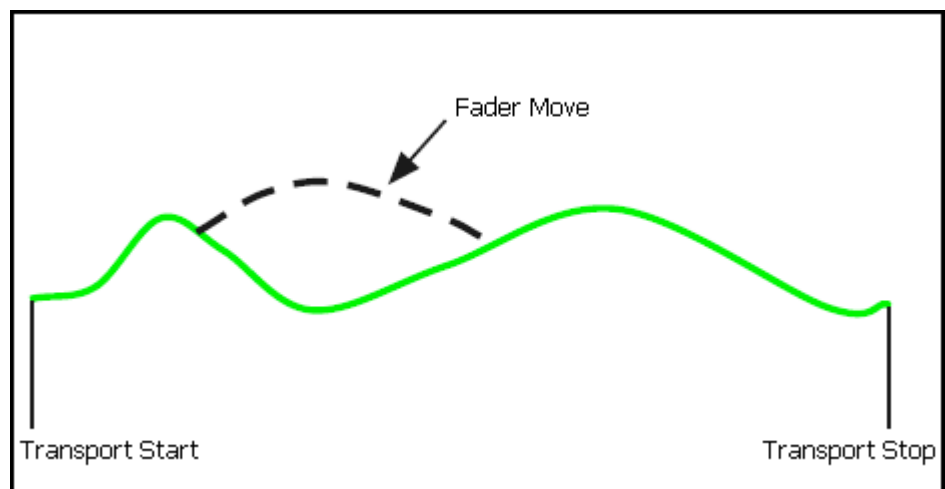
*NOTE: Groups will remain active when Manual mode is selected. Channel sections in Manual will still function as Group Masters or group members if so assigned.*

### 26.5.1.2 Read



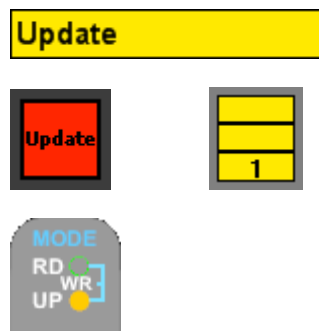
Read: Recorded moves are played back

- When entering Read mode, faders and switches will move to their correct position for the current timecode
- Channel sections without recorded moves will move to their initial positions
- Faders may be moved to audition different levels, but moves will not be recorded.
- Faders will snap back to their recorded positions when moved and then released
- Mutes and switches may be changed, but will not be recorded
- Mutes and switches will continue to playback recorded moves after any changes have been made
- Read can be engaged at any time
- When Read is engaged on at least one channel section:
  - The Read button on the ACM Control Panel illuminates in red
  - Channel sections are green in color
  - The green Read LED on the fader module will illuminate



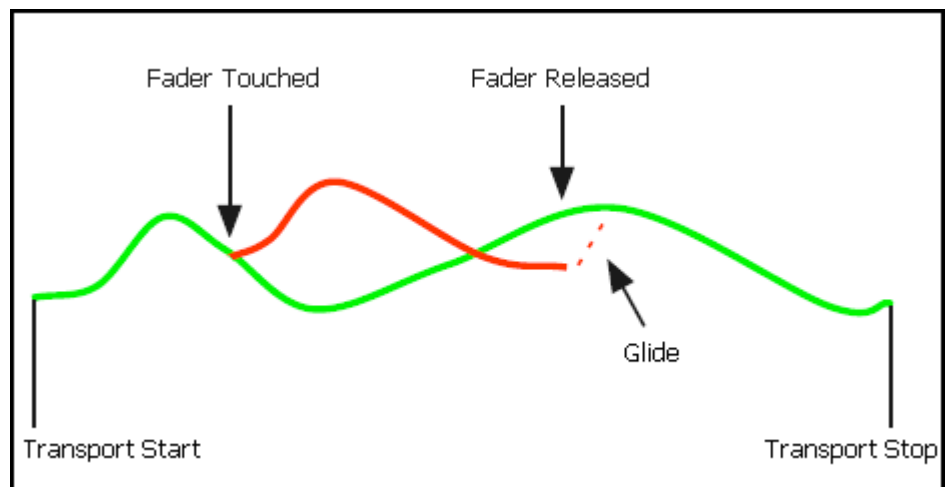
Use Read to play back existing moves while building an automated mix. Read should also be used when printing a final mix.

### 26.5.1.3 Update



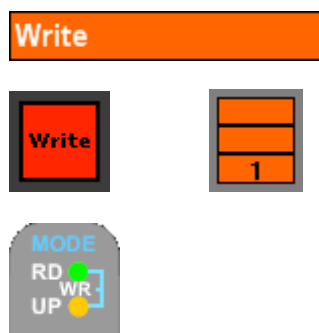
Update: Recorded moves are played back until a change is made. When a change is made, any moves will be recorded, but playback will resume after the change is made.

- Playback is exactly as if in Read until changes are made
- When a fader is touched, it will start recording moves as if in Write and will keep recording as long as it is being touched
- When a touched fader is released, it will glide back to its recorded position and resume playback of previously recorded moves
- Mutes and switches will record any changes and will also playback any previously recorded changes
- Update also functions as a "record ready" state for the Write mode (see the next section)
- Update can be engaged at any time
- When Update is engaged on at least one channel section:
  - The Update button on the ACM Control Panel illuminates in red
  - Channel sections are yellow in color
  - The yellow Update LED on the fader module will illuminate



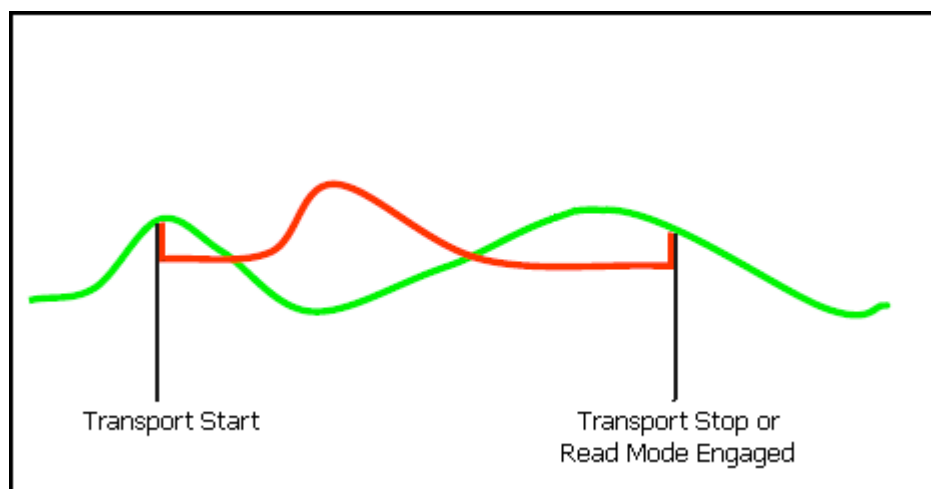
Use Update to record changes over a short period of time or to touch-up existing moves. Update can also be used as a "Record Ready" mode to prepare selected channels sections to enter Write mode.

#### 26.5.1.4 Write



**Write:** Current positions and moves will be recorded over any existing moves:

- Previously recorded moves are not played back
- Existing moves overwritten
- Fader and switch positions are recorded at all times, even when faders are not touched
- Recording will continue until timecode is stopped or the mode/submode is changed
- Write can be engaged at any time
- Write can be engaged from the ACM Control Panel and Channel Control window only if Update is engaged first
- Write can be engaged from Manual or Read without being in Update using the WRITE button on the Fader Module
- When Write is engaged on at least one channel section:
  - The Write button on the ACM Control Panel illuminates in red
  - Channel sections are orange in color
  - Both the green Read LED and yellow Update LEDs on the fader module will illuminate



Anytime a channel section is in Write while timecode is running, existing data is being erased and new data is being recorded. Changing modes from Update to Write allows the operator to “punch-in” to the automation data on the selected channel sections. Changing modes from Write to Read allows the operator to “punch-out” and stop recording new automation data on the selected channel sections.

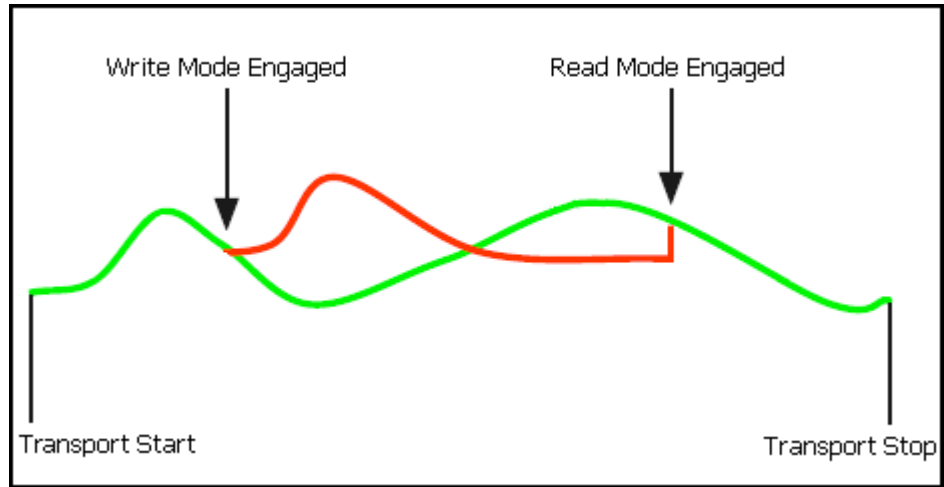
Use Write mode to write initial moves and record new positions over longer periods of time. It also provides an easy way to erase unwanted moves during a certain time window.

Write mode can be very destructive to your mix, so there is a safety interlock. Any channel sections commanded to enter Write mode via the Channel Control window or ACM Control Panel will not do so unless they are already in Update mode. This allows you to “record-enable” a selection of channel sections, start playback, and punch the selected sections into Write mode using the global Write button on the ACM Control Panel or Channel Control window.



It is occasionally useful to go directly from Manual or Read mode directly to Write mode. This is accomplished using the WRITE button on the Fader module, but cannot be done from the Channel Control window or the ACM Control Panel.

Pressing the WRITE button will put the selected channel section directly in Write mode.



## 26.5.2 Mute Write

The "Mute Write" function allows existing mutes to be changed without affecting the fader.



**MUTE WRITE:** Engages Mute Write function when held:

- Enter UPDATE mode and select the desired fader
- If the Fader 1 or Fader 2 sections are selected, only their associated mutes will be overwritten
- Holding down the MUTE WRITE button on the fader with timecode running, will replace all existing mutes for the selected fader
- New mutes can be written and previously recorded mutes will be erased
- Recorded switch moves will not be affected
- Section safes are respected by the Mute Write function, even if the section in question is selected on the fader
- The Mute Write function is only available in UPDATE
- There is no visual indication when Mute Write is engaged
- See the section 26.5.4.3 Fader Module chapter for details on how to select various sections on a channel.

The Mute Write function provides a quick way to erase or change mute positions (on/off) during timecode playback.



### 26.5.3 Automation Submodes

Automation submodes allow you to change how recording and playback is done on a section-by-section basis. Most may be applied to a section in any mode, however, some submodes only work in certain modes. The mode continues to govern when channels record and when they playback, the submode changes the exact nature of recording and playback.

There are seven (7) automation submodes:

- Static: Resets Initial Positions
- Latch: Last positions of controls are recorded to the end of timecode
- Touch Into Write: Faders change from Update to Write when touched
- Update from Start: The last positions of a controls are applied to the start of timecode (00:00:00:00)
- Update from Touch: Last positions of controls are applied between the timecode location when the control was first changed or touched to the point recording stops
- Update to Next Move: Last positions of the controls are recorded until the next recorded move
- Online Fader Trim: Allows on-the-fly offsets to be applied to previously recorded moves



Each of the following automation submodes has its own software and hardware button and cannot be assigned from the fader module:

- None
- Static
- Latch
- Touch Into Write
- Update from Start
- Update from Touch
- Update to Next Move

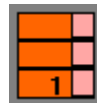
The "Online Fader Trim" submode can only be assigned from the fader module.

Submodes are indicated in channel boxes by a colored box on the right side of the channel section:

No Submodes



Static Submode Engaged

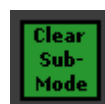


The function of each automation submode is described below.

#### 26.5.3.1 None



None: Clears the automation submodes from the selected channel sections in the Channel Section Selection grid



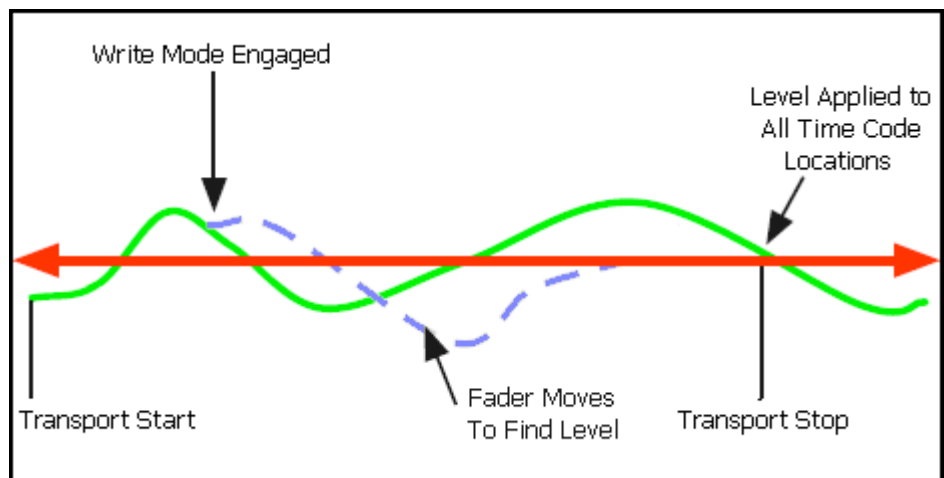
Clear Sub-Mode: Clears the automation submodes for all sections on a global basis

### 26.5.3.2 Static



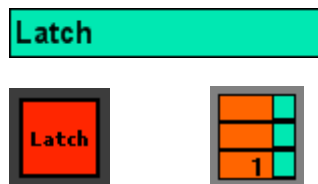
**Static:** Resets Initial Positions

- When Timecode is stopped, the initial positions will be replaced with the last physical positions of the selected channel sections
- All moves for the channel section will be erased throughout the entire range of timecode
- Static can be used in Write mode only
- Static has no effect when used in Manual, Read, or Update modes
- Static can be engaged at any time
- When Static is engaged on at least one channel section:
  - The Static button on the ACM Control Panel illuminates in red
  - Channel sections have a pink submode box



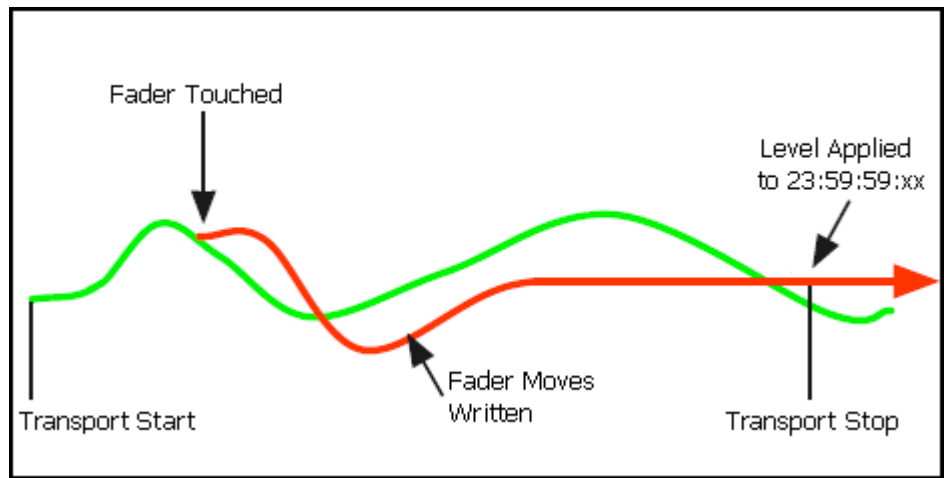
Use Static when it is desirable to clear all recorded moves and start over with new initial positions.

### 26.5.3.3 Latch



**Latch:** The last positions of controls are recorded to the end of timecode:

- The positions of controls at the moment timecode is stopped will be recorded to all remaining timecode locations
- All moves for the channel section will be erased from the moment timecode was stopped to the end of timecode (23:59:59.XX)
- Latch can be used in Update and Write modes only
- Latch has no effect when used in Manual or Read modes
- Latch can be engaged at any time
- After Latch is engaged, Timecode can be stopped at anytime
- When Latch is engaged on at least one channel section:
  - The Latch button on the ACM Control Panel illuminates in red
  - Channel sections have a turquoise submode box



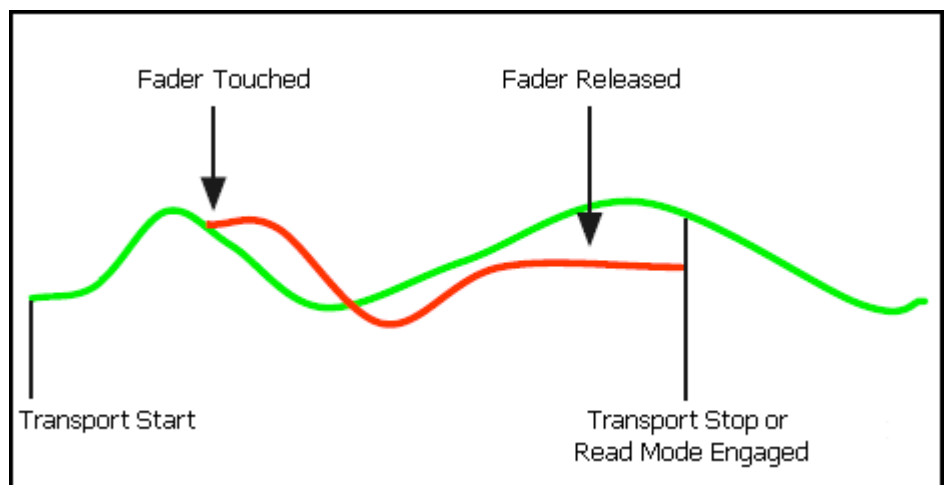
Use Latch to apply a static position of a fader from a certain point all the way to the end. For example, the level of a track was moved to a good level at the beginning of the vamp out of a song. With Latch engaged, release the fader once the desired level is reached. The position of the fader at the moment timecode is stopped will be written over all remaining moves to the end of timecode without having to play the song past the end.

#### 26.5.3.4 Touch Into Write



Touch Into Write (Touch Write): Faders change from Update to Write when touched:

- Playback is exactly as if in Read or Update until a fader is touched
- When a fader is touched, the fader changes from Update to Write
- Recording will continue after the fader is released
- Any moves will be recorded until timecode is stopped or the mode/submode is changed
- Any previously recorded moves will be erased as long recording continues
- Touch Into Write only applies to faders
- Touch Into Write can be used in Update mode only
- Touch Into Write has no effect when used in Manual or Read modes
- When Touch Into Write is engaged on at least one channel section:
  - The "Touch Write" button on the ACM Control Panel illuminates in red
  - Channel sections have a light orange submode box



Use Touch Into Write to playback previously recorded moves up to a certain point and then start recording in Write Mode. For example, if you like the fader moves in the first verse of a song, but want replace the moves in the chorus with new ones, playback the verse and touch the fader at the start of the chorus. The verse moves will be played back and recording in Write mode will start at the beginning of the chorus.

### 26.5.3.5 Update From Start

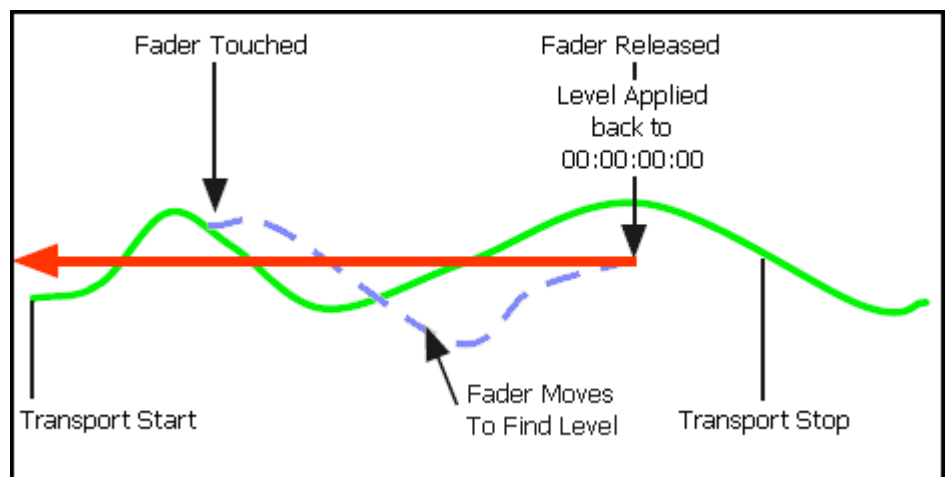
#### Update from Start



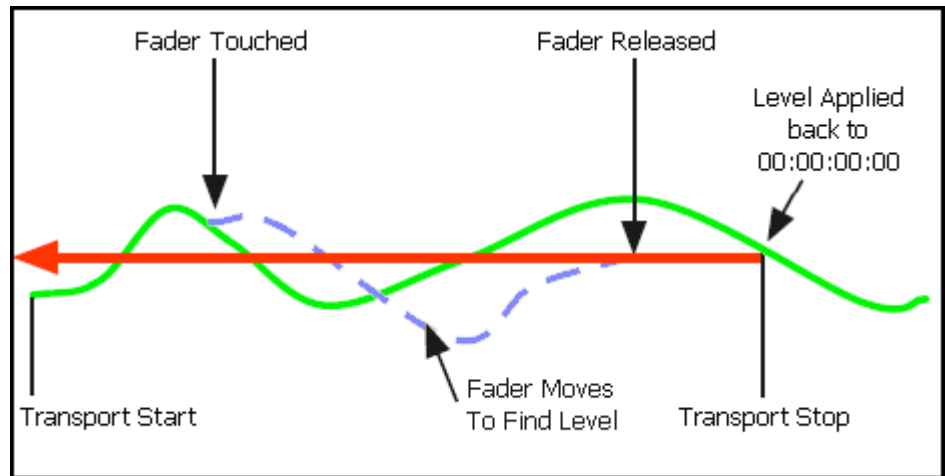
Update From Start: The last positions of a channel section are applied to the start of timecode (00:00:00:00):

- Moves will not be recorded up to the point timecode is stopped...only the last positions are applied
- Recording can be stopped for faders in Update by releasing the fader
- Recording can be stopped in Write mode by stopping timecode or changing the mode/submode
- Update From Start is useful when seeking the level of a track from the start of a recording up to a chosen point. A fader can be moved until the proper level is found and then held until the end of the first section of the recording. The last position will be applied to the start of timecode.
- Update From Start can be used in Update and Write modes only
- Update From Start has no effect when used in Manual or Read modes
- When Update From Start is engaged on at least one channel section:
  - The Update From Start button on the ACM Control Panel illuminates in red
  - Channel sections have a lavender submodule box

#### UPDATE FROM START IN UPDATE

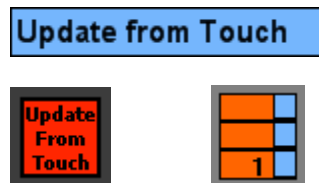


## UPDATE FROM START IN WRITE



Use Update From Start to apply a static position from a certain point back to the very beginning. For example, the level of a track is good for the chorus of a song, but too loud during the intro and first verse. In Update and Update from Start playback the song and move the fader to find the desired level for the intro and first verse. Release the fader just before the chorus starts. The position of the fader when it was released will be applied back to the start of timecode and the level of chorus, as well as subsequent moves, are retained.

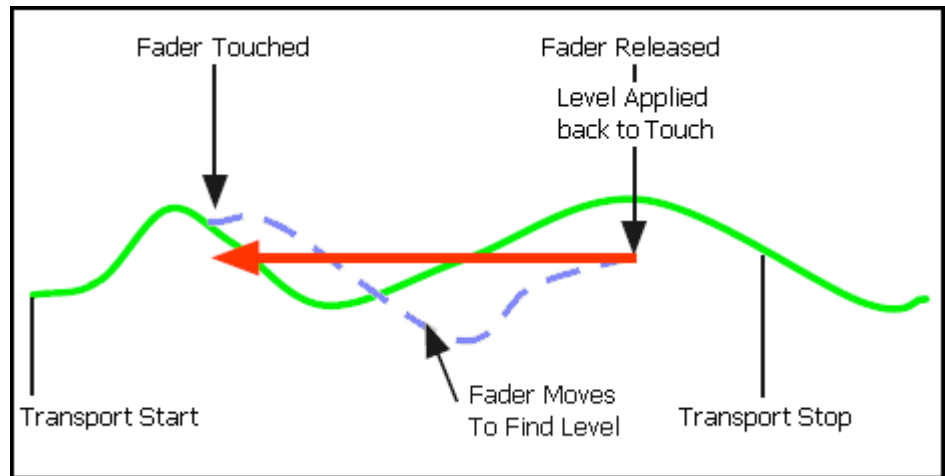
### 26.5.3.6 Update From Touch



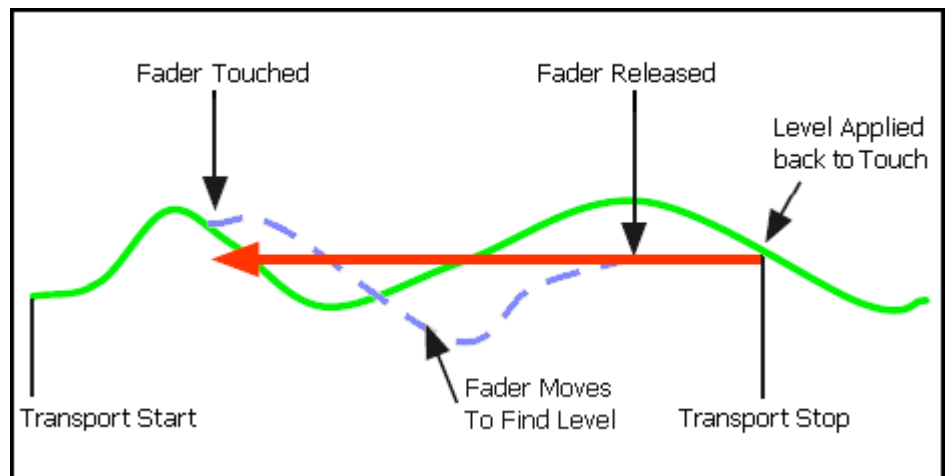
Update From Touch: The last positions of channel sections are applied between the timecode location when the control was first changed or touched to the point recording stops:

- Moves will not be recorded from the point when the change was made to the point timecode is stopped...only the last positions are applied between the two points
- Recording can be stopped for faders in Update by releasing the fader
- Recording can be stopped in Write mode by stopping timecode or changing the mode/submode
- Update From Touch is useful when seeking the level of a track during a certain section of a recording (such as a verse). A fader in Update can be touched at the beginning of a section and moved until the proper level is found and then held until the end of a section. The last position will be applied from the first touch to the end of recording or when the fader is released.
- Update From Touch can be used in Update and Write modes only
- Update From Touch has no effect when used in Manual or Read modes
- When Update from Touch is engaged on at least one channel section:
  - The Update From Touch button on the ACM Control Panel illuminates in red
  - Channel sections have a blue submodule box

#### UPDATE FROM TOUCH IN UPDATE



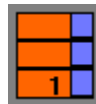
#### UPDATE FROM START IN WRITE



Use Update From Touch to apply a static position between two points, but not before or after. For example, touch a fader at the beginning of a verse in a song. In Update and Update From Touch, move the fader to find the proper level for the track during the verse. Release the fader at the end of the verse and the last position will be applied throughout the entire verse.

### 26.5.3.7 Update to Next Move

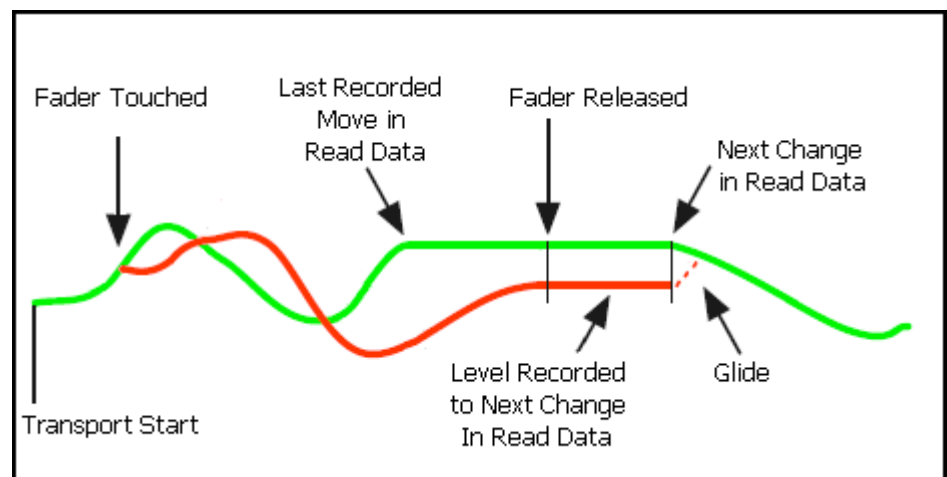
#### Update to Next Move



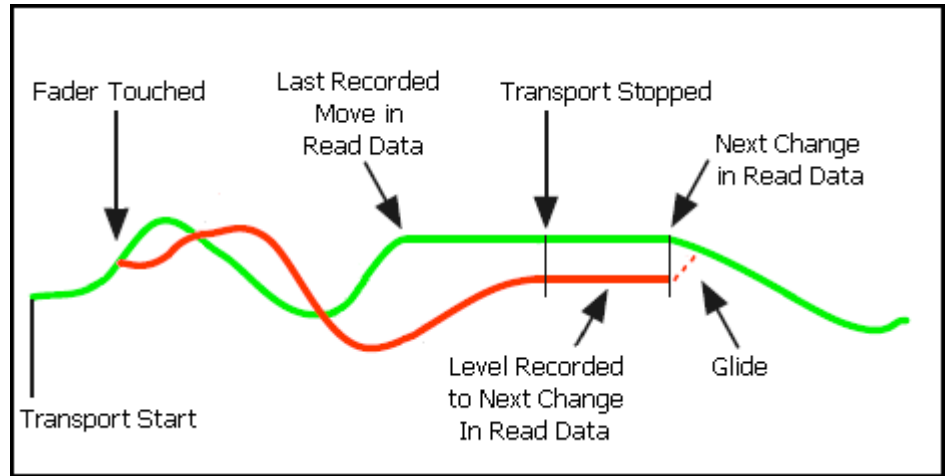
Update to Next Move: The last positions of the channel sections are recorded until the timecode location of the next previously recorded move:

- The last positions are applied between the point when recording stopped and the next recorded move...only the last positions are applied between the two points
- Recording can be stopped for faders in Update by releasing the fader
- Recording can be stopped in Write mode by stopping timecode or changing the mode/submode
- Update to Next Move is useful when you want to apply the last position of a control until the next previously recorded automation move. A fader in Update can be touched at the beginning of a section and recording can then be stopped. The last position will be applied until the next recorded move is reached.
- Update to Next Move can be used in Update and Write modes only
- Update to Next Move has no effect when used in Manual or Read modes
- When Update to Next Move is engaged on at least one channel section:
  - The Update to Next Move button on the ACM Control Panel illuminates in red
  - Channel sections have a dark blue submode box

#### UPDATE to NEXT MOVE IN UPDATE

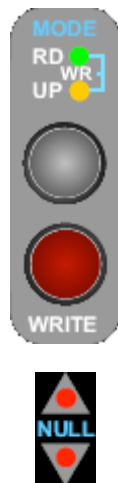


## UPDATE to NEXT MOVE IN WRITE



Use Update to Next Move to apply a static position between a certain point and the next recorded move. For example, you need to work on the chorus of a song, but you have already recorded moves you want to keep at the beginning of the bridge. In Update and Update to Next Move, touch the fader at the needed point in the chorus and make the needed moves. Release the fader before the bridge and the last position will be applied until the move at the beginning of the bridge. When the bridge arrives, the fader will glide to perform the moves recorded at the bridge.

### 26.5.3.8 Online Fader Trim

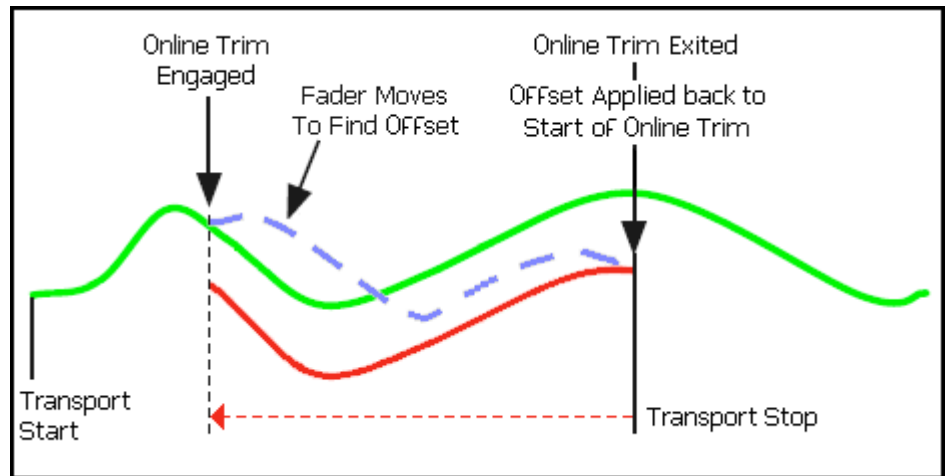


**Online Fader Trim:** Allows on-the-fly offsets to be applied to previously recorded fader moves. The offset, determined by the last fader position, will be applied between the timecode location when Online Fader Trim was entered and the point where timecode stops:

- Online Fader Trim is only available for faders in UPDATE mode
- With UPDATE selected, hold down the WRITE button for 2 seconds and LED Null indicators will shimmer (blink fast) indicating the fader is in Online Fader Trim
- Online Fader Trim can be entered with timecode running or stopped
- Move the fader to find the amount of offset to apply to the previously recorded moves (with timecode running)
- Fader moves will while seeking the offset level not be recorded... only the last fader position is applied from the point Online Fader Trim was entered to the point where timecode saw stopped
- Online Fader Trim is exited by stopping the transport
- Online Fader Trim changes can be canceled by pressing the KILL MIX button, holding down the WRITE button for 2 seconds, or changing the mode (e.g. READ) before timecode is stopped
- Online Fader Trim is useful when an offset of the level of previously written during a certain section of a recording (such as a verse) is desired. A fader can be put in Online Fader Trim at the beginning of a section and moved until the proper level is found and then held until the end of a section. Stop timecode at the end of the section. The last fader position will be applied from when Online Fader Trim was entered to the point where timecode stopped.
- When Online Fader Trim is engaged the fader Null indicator LEDs will shimmer (blink fast)



## ONLINE FADER TRIM



Use Online Fader Trim to apply an offset to previously recorded fader moves between two points, but not before or after. For example, enter Online Fader Trim at the beginning of a verse in a song. Move the fader to find the proper offset of the previously recorded moves during the verse. Stop timecode at the end of the verse and the offset of the last fader position will be applied throughout the entire verse.

To apply an on-the-fly offset of previously recorded fader moves, use the following procedure:

1. Select the Fader 1 or Fader 2 sections on the desired fader.
2. At the desired point the recording, press and hold the WRITE button on the desired for 2 seconds.
3. Move the fader to find the needed offset to the previously recorded fader moves.
4. At the end of the section to be trimmed stop timecode playback.
5. The offset, determined by the last fader position, will be applied between the timecode location when Online Fader Trim was entered and the point where timecode stops.

Fader data can also be trimmed offline. Refer to section 26.8.3.4 Offline Fader Trim for details regarding the offline fader trim function.

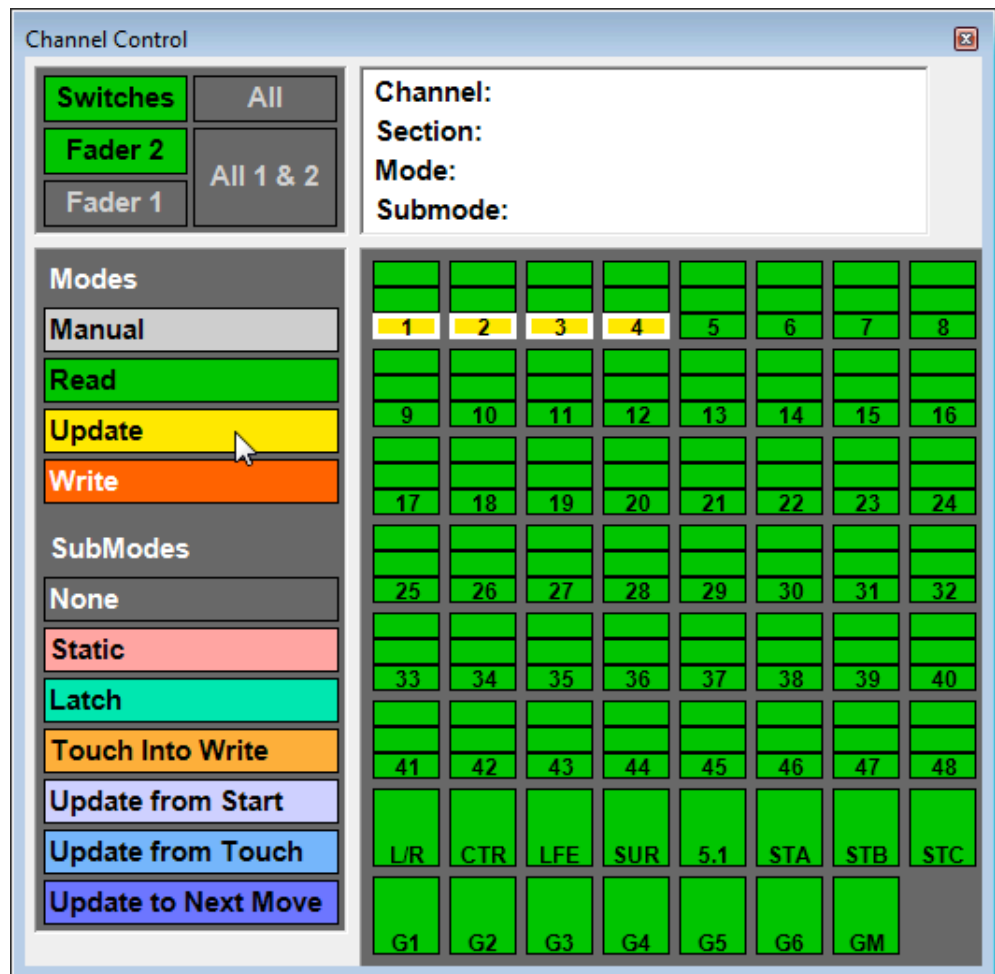
### 26.5.4 Assigning Automation Modes and Submodes

Automation modes and submodes can be assigned to channel sections using software or hardware:

- Channel Control Window: Allows mode and submode assignment on an individual and global basis in any combination
- ACM Control Panel: Allows mode and submode assignment globally, but on a section by section basis (Fader 1, Fader 2, and/or Switches)
- Fader Controls: Allows mode assignment on an individual channel, but on a section by section basis (Fader 1, Fader 2, and/or Switches) (mode only)

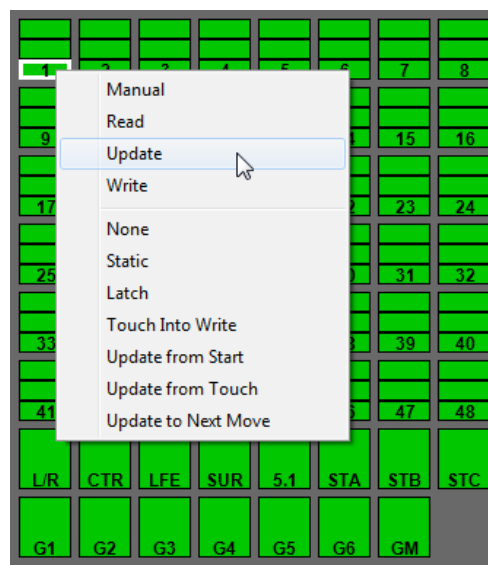
#### 26.5.4.1 Channel Control Window Mode and Submode Assignment

Automation modes and submodes can be assigned to channel sections on a selective basis using the Channel Control window.



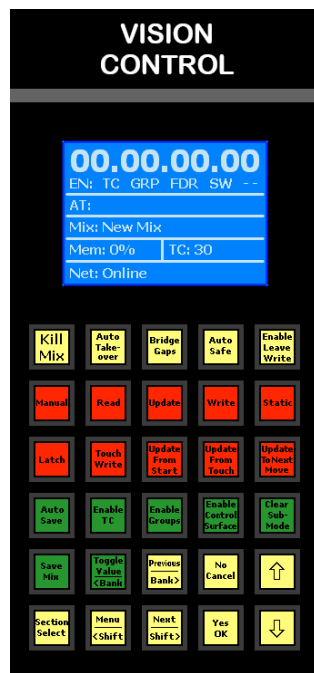
To assign an automation mode or submode to one or more channel sections or Master channels using the Channel Control window, use the following procedure:

- Select the desired channel sections or master channels using the Channel Section Grid or global selectors
- Click the desired mode and/or submode button to select that mode
- The selected channel section(s) will change status to the new mode or submode



Modes and submodes can also be assigned to selected channel sections by right-clicking in the Channel Selection Grid. This will bring up the right-click menu from which a mode and/or submode may be assigned.

#### 26.5.4.2 ACM Control Panel (Vision Control) Mode and Submode Assignment

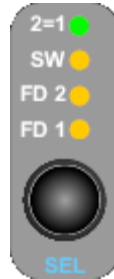


Automation modes and submodes can be assigned to channel sections on a global basis using the ACM Control Panel (Vision Control).



**Section Select:** Cycles the selection of channel sections on a global basis

- Each consecutive press steps through the selection of channel sections
  - Fader 1
  - Fader 2
  - Switches
  - All (Fader 1, Fader 2, and Switches)



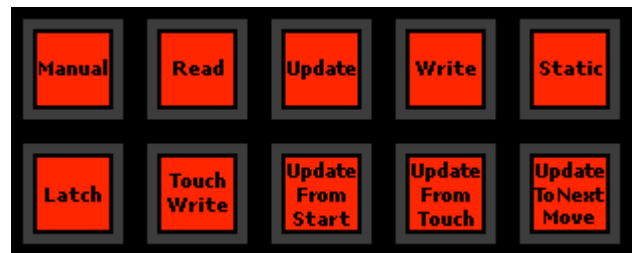
Channel sections can also be selected locally on a channel by channel basis using the SEL button on the fader module.

**SEL (Select):** Selects channel sections on individual channels

- Channels sections will be cycled when the "SEL" button is pressed

*NOTE: Channel section selections made on individual channels are overwritten when the Section Select button is pressed on the ACM Control Panel.*

Once channel sections have been selected, modes and submodes can be globally assigned using the buttons on the ACM Control Panel.

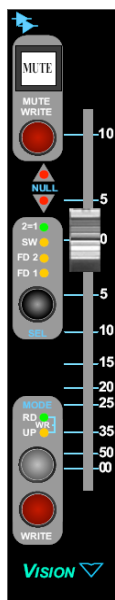


To assign an automation mode or submode to channel sections using the ACM Control Panel, use the following procedure:

1. Select the desired channel section(s) by pressing the "Section Select" button until the desired section(s) have been selected
2. Press the desired automation mode and/or submode button(s)
3. The selected channel section(s) will change status to the new mode or submode

*NOTE: Mode and submode assignments made on the console (ACM Control Panel and fader modules) have nothing to do with the assignments made in the computer software.*

### 26.5.4.3 Fader Module Mode Assignment



Automation modes can be assigned to channel sections on individual channels using the controls on fader module.

Only the Online Trim submode can be assigned from the fader module. Other submodes must be engaged using the ACM control panel or PC software.

Mute Write function can only be engaged from a fader module in UPDATE mode.



**SEL (Select):** Channel section selector button

- Each press will cycle through the following channel sections:
  - Fader 1 (the yellow "FD 1" LED illuminates when selected)
  - Fader 2 (the yellow "FD 2" LED illuminates when selected)
  - Switches (the yellow "SW" LED illuminates when selected)
  - All sections (all 3 yellow LEDs illuminate when selected)
- Pressing and holding this button will toggle the 2=1 mode on and off
  - Fader 2 will mirror the Fader 1 position when engaged
  - The green "2=1" LED will illuminate when 2=1 is engaged
- The mode of the selected section(s) is displayed on the fader's mode LEDs

*NOTE: The section select LEDs on the fader are only used for local control of the operation of the buttons on that fader. They also control which section's modes are displayed on the mode LEDs of that fader. In other words, they have nothing at all to do with selections made in the computer software.*



**MODE:** Automation mode selectors

- Grey Button:** Pressing the grey button will put the selected channel sections Manual, Read, or Update modes
  - A single press of the grey button will toggle the selected sections between Read and Update modes
  - Holding down the grey button for two seconds will put the selected sections in Manual mode
  - While in Manual mode, a single press of the grey button will change the selected sections to Read mode.
- Red Button (WRITE):** Pressing the red button will immediately put the selected channel sections in Write mode
- LED Indicators:**
  - Manual: Neither LED is illuminated
  - Read: The green RD LED is illuminated
  - Update: The yellow UP LED is illuminated
  - Write: Both LEDs (WR) will be illuminated



MUTE WRITE: Engages Mute Write function when held:

- Enter UPDATE mode and select the desired fader
- If the Fader 1 or Fader 2 sections are selected, only their associated mutes will be overwritten
- Holding down the MUTE WRITE button on the fader with timecode running, will replace all existing mutes for the selected fader
- New mutes can be written and previously recorded mutes will be erased
- Recorded switch moves will not be affected
- Section safes are respected by the Mute Write function, even if the section in question is selected on the fader
- The Mute Write function is only available in UPDATE
- There is no visual indication when Mute Write is engaged
- See the section 26.5.4.3 Fader Module chapter for details on how to select various sections on a channel.

To assign an automation mode to channel sections using a fader module, use the following procedure:

1. Select the desired channel section(s) by pressing the "SEL" button until the desired section(s) have been selected
2. Press the "UPDATE" and "WRITE" buttons to assign the desired mode
3. The selected channel section(s) will change status to the new mode

## 26.6 Global Functions

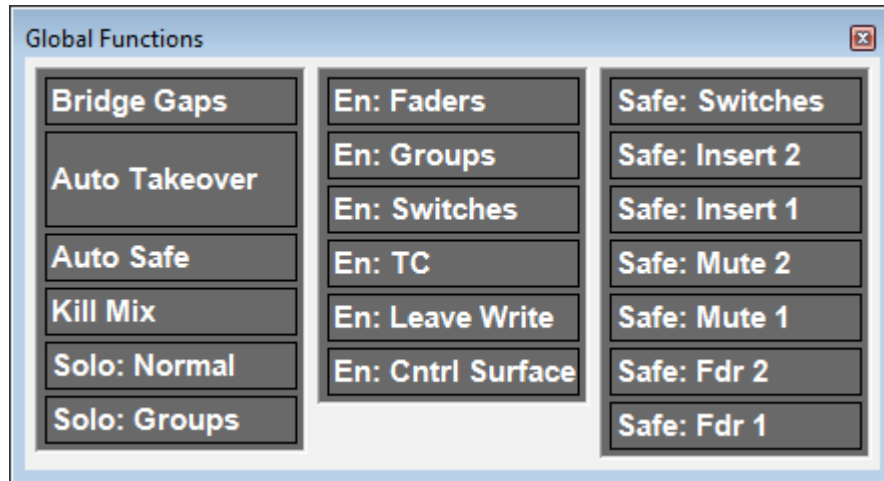
There are several automation functions that apply to the automation system on a global basis. These functions are known as "Global Functions."

The "Global Functions" are grouped into three (3) different categories:

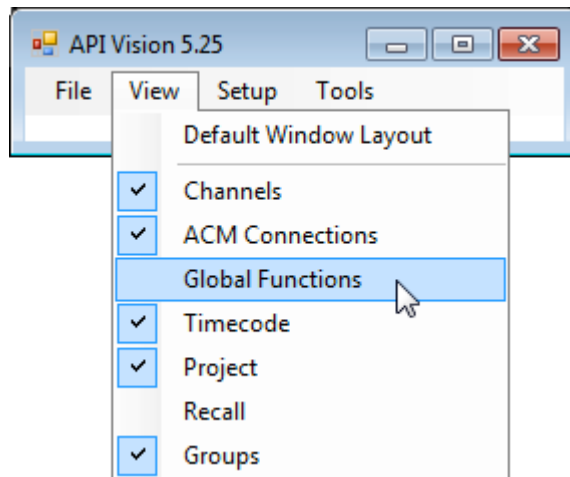
- Global Automation Functions: Automation functions that apply to the overall system and are not channel oriented
- Function Enables: Enables for Faders, Groups, Switches, Timecode, Leave Write, and Control Surface (DAW control)
- Automation Section Safe Modes: Safeties that prevent changes to automation data for Switches, Mute 2, Mute 1, Fader 2 and Fader 1

### 26.6.1 Global Functions Window

The Global Functions window is the primary software interface to the global automation functions, function enables, and section safes.



The Global Functions window can be opened by selecting "Global Functions" from the "View" menu.



## 26.6.2 Global Automation Functions

There are six (6) "global automation functions:"

- Bridge Gaps: Allows section positions and modes at the point when timecode is stopped to be applied up to a later location if timecode is started at a later location without rewinding
- Auto Takeover: Keeps track of the sections that are in Update or Write at the point where timecode is stopped and restores those modes when that point in timecode is reached on a subsequent pass
- Auto Safe: Automatically changes any sections in Write to Update when timecode is stopped
- Kill Mix: Activates a flag to discard any changes made during the current automation pass
- Solo: Normal: Mute switches activate a solo-in-place function console-wide
- Solo: Groups: Mute switches activate a solo-in-place function with established groups

The global automation function buttons in the Global Functions window are mirrored by buttons on the ACM Control Panel (Vision Control) or in the ACM Solo menu.

### 26.6.2.1 Bridge Gaps

#### Bridge Gaps



Bridge Gaps: Allows section positions and modes at the point when timecode is stopped to be applied to a later location if Timecode is started at a later location without rewinding

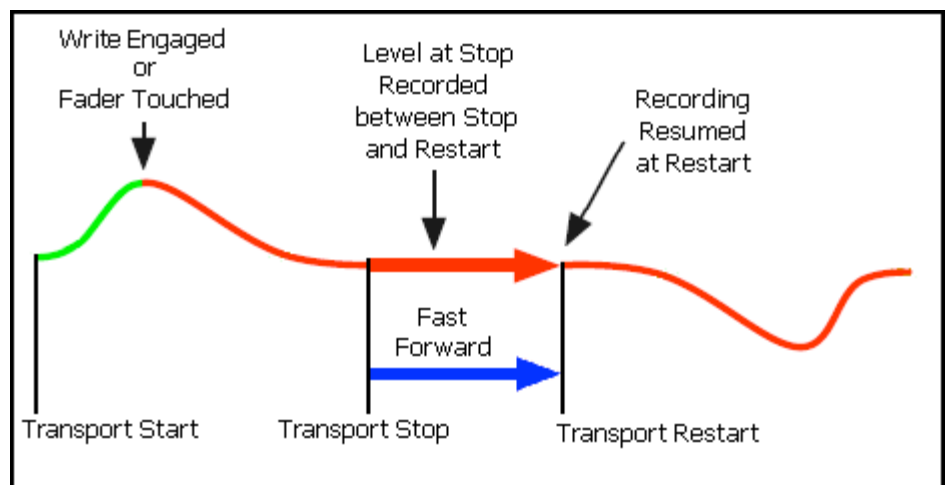
- The Bridge Gaps button in the Global Functions window will illuminate in yellow when engaged
- The Bridge Gaps button on the ACM Control Panel will illuminate in yellow when engaged

After recording moves and playback is stopped, faders and switches will normally "revert" to their previously recorded positions at the location where timecode was stopped. With Bridge Gaps engaged, those "reverts" are flagged as speculative.

If the media is rewind. playback is started before the stopping point, and then played through the stopping point, the "reverts" will playback as they normally would.

If instead you started playback from the stopping point or fast forward by an arbitrary amount and start playback, those speculative reverts will be discarded and all intervening data will be written over, as if timecode had never stopped at all.

The speculative reverts will become permanent if you rewind to an earlier timecode location and start playback.



In other words, the positions of sections in Write or faders touched in Update will be “held” or “remembered” when timecode is stopped. If timecode is restarted at that point or later timecode location, those positions will be applied between the stopping point and later starting point and recording will be resumed at the starting point. The net result is the “gap” between the previous stopping point and later starting point is “bridged” or filled-in with the positions the sections were in at the stopping point.

Bridge Gaps only affects:

- Faders in Write when timecode stops
  - Faders in Update and are being touched when timecode stops
  - Switches in Write when timecode stops
- Bridge Gaps must be engaged before timecode is stopped for this function to be activated

Bridge Gaps can be used to perform complicated edits incrementally, starting and stopping playback without having your faders jump back to their previous positions each time playback is stopped.

Bridge Gaps is also handy for bulk erasing moves over large sections of a song or scene.

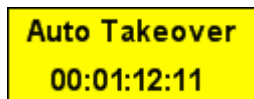
### 26.6.2.2 Auto Takeover



Auto Takeover: Keeps track of the sections that are in Update or Write at the point where timecode is stopped and restores those modes when that point in Timecode is reached on a subsequent pass

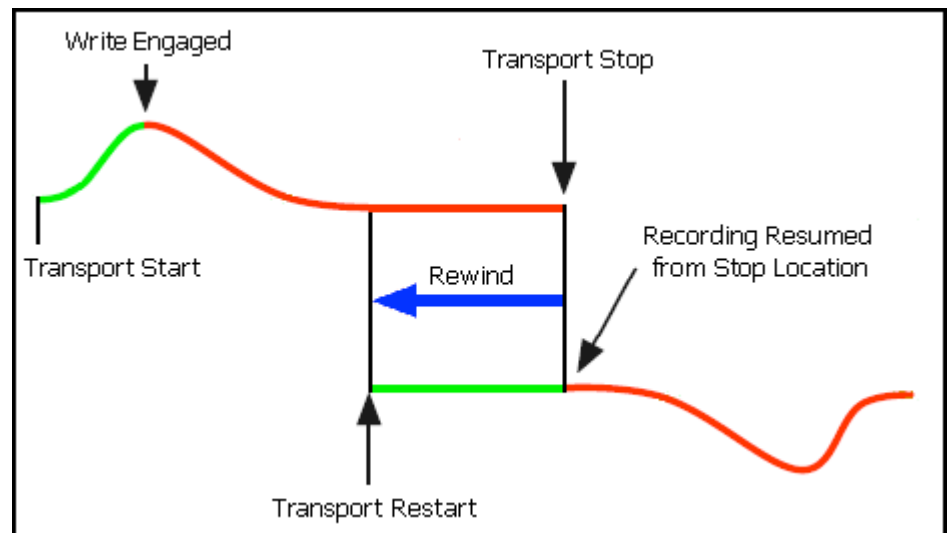
- The Auto Takeover button in the Global Functions window will illuminate in yellow when engaged
- The Auto Takeover button on the ACM Control Panel will illuminate in yellow when engaged

When engaged, Auto Takeover will automatically set any sections in Write or Update to Read when timecode is stopped. If the media is rewound and then played up to the point where timecode was stopped, Auto Takeover will restore all the sections that were previously in Write or Update to their former modes at that point.



As a reminder, the timecode location where the previous modes will be restored is displayed in the Auto Takeover button in the Global Functions window.

Auto Takeover can be activated or deactivated at any time. When deactivated, the memorized activation timecode and saved modes will be discarded.





Auto Takeover is useful when you want to review the moves recorded through a section of a mix and then automatically resume mixing in the same modes at the point where the timecode was stopped.

#### 26.6.2.3 Auto Safe

##### Auto Safe



Auto Safe: Automatically sets any sections in Write to Update when timecode is stopped

- The Auto Safe button in the Global Functions window will illuminate in yellow when engaged
- The Auto Safe button on the ACM Control Panel will illuminate in yellow when engaged

Designed as a safety feature, Auto Safe automatically resets all sections in Write to Update whenever timecode is stopped. It helps prevent accidental erasure of moves from forgetting to take sections out of Write after moves have been recorded and restarting timecode playback.

#### 26.6.2.4 Kill Mix

##### Kill Mix



Kill Mix: Activates a flag to discard any changes made during the current automation pass. This suppresses end-of-pass processes when timecode is stopped.

- The Kill Mix button in the Global Functions window will illuminate in yellow when engaged
- The Kill Mix button on the ACM Control Panel will illuminate in yellow when engaged

Kill Mix functions as an instant “undo.” Kill Mix activates a flag to discard any changes made during the current automation pass.

Kill Mix only works if engaged while timecode is still running, otherwise as soon as timecode stops, any changes made during the pass will be committed to a new mix pass.

If Kill Mix is engaged and you change your mind before you stop the tape, press the Kill Mix button again to disengage the function.

If unwanted changes are recorded and Kill Mix was not engaged before timecode was stopped, the last saved mix pass can be reloaded to the ACM from the Mix Tree.

#### 26.6.2.5 Solo: Normal and Solo: Groups

In addition to the normal solo functions provided by the console, two alternate solo functions are provided by the automation system:

- Solo: Normal: Mute switches activate a solo-in-place function console-wide
- Solo: Groups: Mute switches activate a solo-in-place function within established groups

Since the Program and Group faders do not have SOLO switches, Solo: Normal and Solo: Groups can be used to activate a solo-in-place function from these faders.

Solo: Normal and Solo: Groups can be activated via the ACM Solo menu or the Global Functions window in the PC software.

##### Solo: Normal

Solo: Normal: Replaces the function of the MUTE buttons with an additive solo-in-place function console wide

- When Solo: Normal is engaged:
  - The Solo: Normal button in the Global Functions window will illuminate in yellow
  - “SN” will appear in the ACM Control Panel main display

When Solo: Normal is active, MUTE buttons become SOLO buttons. When a MUTE button is pressed, that channel will unmute if it was muted, and all other channels will mute. When another mute button, is pressed that channel will also unmute and the first channel will remain unmuted. The solo function is additive, not exclusive.

Changes to mutes made with Solo: Normal engaged are not recorded to automation.

### **Solo: Groups**

Solo: Groups: Replaces the function of the MUTE buttons with an additive solo-in-place function within a current group

- When Solo: Groups is engaged:
  - The Solo: Groups button in the Global Functions window will illuminate in yellow
  - "SG" will appear in the ACM Control Panel main display

Solo: Groups functions just like Solo: Normal (see above), except that the muting is restricted to whatever group that contains the MUTE that was pressed.

Pressing a MUTE that is not in a group will solo within the ungrouped channels.

Solo: Groups only looks at mute groups, not fader, insert or switch groups.

Changes to mutes made with Solo: Groups engaged are not recorded to automation.

## **26.6.3 Function Enables**

Console hardware components must be "enabled" in order to interface with the automation system.

The software interface with the console hardware is organized in six (6) subsections:

- En: Faders: Engages automation control of faders
- En: Groups: Engages group functions through the automation system
- En: Switches: Engages automation control of Switches
- En: Timecode: Enables timecode to be read and chased
- En: Leave Write: Engages the Leave Write data matching function
- En: Cntrl Surface: Engages control of a DAW via the console control surface

Each subsection can be enabled or disabled independently of the others. Each subsection must be enabled for control by the automation system.

A subsection can be disabled at anytime necessary. Disabled controls will not be controlled by the automation system. During a tracking or overdub session, disabling subsections prevents any interaction with the automation system. During an automated mix, it allows the engineer to quickly "suspend" automation control over any disabled subsections so different settings can be explored without interference from automation.

All of the enable buttons are found in the Global Functions window. Enables for Faders, Groups, Switches, Timecode, and Control Surface are also provided in the "Global Funcs" menu in the ACM. Groups and Timecode enables also have a button on the ACM Control Panel.

### **26.6.3.1 Enable Faders**

**En: Faders** Y

Enable Faders: Enables automation control over faders

**En: Faders**

- When Faders are enabled:
  - A "Y" will appear next to the "En: Faders" item in the Global Funcs ACM menu
  - The "En: Faders" button in the Global Functions window illuminates in yellow

### 26.6.3.2 Enable Groups

En: Groups Y

En: Groups



Enable Groups: Enables Group functions through automation

- When Groups are enabled:
  - A "Y" will appear next to the "En: Groups" item in the Global Funcs ACM menu
  - The "En: Groups" button in the Global Functions window illuminates in yellow
  - The "Enable Groups" button on the ACM Control Panel illuminates in green

### 26.6.3.3 Enable Switches

En: Switches Y

En: Switches

Enable Switches: Enables automation control over automation switches

- When Switches are enabled:
  - A "Y" will appear next to the "En: Switches" item in the Global Funcs ACM menu
  - The "En: Switches" button in the Global Functions window illuminates in yellow

### 26.6.3.4 Enable Timecode

En: Timecode Y

En: TC



Enable TC (Timecode): Enables the ACM to chase Timecode

- When Switches are enabled:
  - A "Y" will appear next to the "En: Timecode" item in the Global Funcs ACM menu
  - The "En: TC" button in the Global Functions window illuminates in yellow
  - The "Enable TC" button on the ACM Control Panel illuminates in green

### 26.6.3.5 Enable Control Surface

En: Cntrl Surface Y

En: Cntrl Surface



Enable CTRL Surface (Control Surface): Enables fader, mute, and solo DAW control from the console via MIDI

- When the Control Surface is enabled:
  - A "Y" will appear next to the "En: CTRL Surface" item in the Global Funcs ACM menu
  - The "En: Cntrl Surface" button in the Global Functions window illuminates in yellow
  - The "Enable Control Surface" button on the ACM Control Panel illuminates in green

### 26.6.3.6 Enable Leave Write

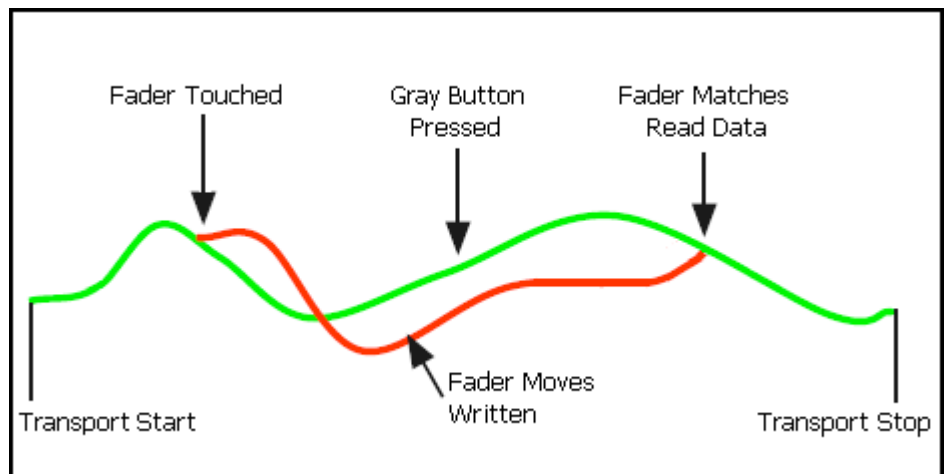
**En: Leave Write**

**Enable  
Leave  
Write**



**Enable Leave Write:** Enables the automation system to switch from record to playback (Write to Read) when the position of the control matches the previously recorded position

- Enable Leave Write and put the desired fader(s) in Update or Write
- Start timecode playback and move the fader away from its recorded position
- While the fader is away from its recorded position, press the grey button on the fader module once
- The mode LEDs will "shimmer" (blink fast) to indicate the fader is in Leave Write
- When the fader is moved to match the previously recorded position or the previously recorded moves catch up to the current position, the fader will automatically switch to Read
- The up & down Null LEDs will indicate which the fader needs to be moved to match level with the previously recorded moves
- When the fader is released, it will change to Update
- Enable Leave Write can be engaged at any time
- When Leave Write is enabled:
  - The "En: Leave Write" button in the Global Functions window illuminates in yellow
  - The "Enable Leave Write" button on the ACM Control Panel illuminates in yellow when engaged



**Fader NULL Indicators:** Up and down indicators that show the offset between the written automation data and the physical fader position.



Indicates the fader is above the written data...move the fader "down" to match positions



Indicates the fader is below the written data...move the fader "up" to match positions

## 26.6.4 Automation Section Safe Modes

After automation moves have been recorded channel sections can be put in a "safe" mode on a global basis. Changes cannot be made to the existing automation data for sections in safe mode.

Safe can be applied to seven (7) sections on a global basis:

- Safe: Switches: Protects automated switches from changes
- Safe: Insert 2: Protects Fader 2 Insert automation from changes
- Safe: Insert 1: Protects Fader 1 Insert automation from changes
- Safe: Mute 2: Protects Fader 2 Mute automation from changes
- Safe: Mute 1: Protects Fader 1 Mute automation from changes
- Safe: Fdr 2: Protects Fader 2 automation from changes
- Safe: Fdr 1: Protects Fader 1 automation from changes

Section safe modes can only be engaged from the Global Functions window.

### 26.6.4.1 Safe Switches

**Safe: SW**

Safe: SW: Engages "Safe" mode for automation switches console-wide

- When Switches are in "Safe" the "Safe: SW" button in the Global Functions window illuminates in yellow

### 26.6.4.2 Safe Insert 2

**Safe: Insert 2**

Safe: Insert 2: Engages "Safe" mode for Fader 2 Inserts console-wide

- When the Fader 2 Inserts are in "Safe" the "Safe: Insert 2" button in the Global Functions window illuminates in yellow

### 26.6.4.3 Safe Insert 1

**Safe: Insert 1**

Safe: Insert 1: Engages "Safe" mode for Fader 1 Inserts console-wide

- When the Fader 1 Inserts are in "Safe" the "Safe: Insert 1" button in the Global Functions window illuminates in yellow

### 26.6.4.4 Safe Mute 2

**Safe: Mute 2**

Safe: mute 2: Engages "Safe" mode for the Fader 2 mutes console-wide

- When Switches are in "Safe" the "Safe: mute 2" button in the Global Functions window illuminates in yellow

### 26.6.4.5 Safe Mute 1

**Safe: Mute 1**

Safe: mute 1: Engages "Safe" mode for the Fader 1 mutes console-wide

- When Switches are in "Safe" the "Safe: mute 1" button in the Global Functions window illuminates in yellow

### 26.6.4.6 Safe Fader 2

**Safe: Fdr 2**

Safe: Fdr 2: Engages "Safe" mode for Fader 2 console-wide

- When Switches are in "Safe" the "Safe: Fdr 2" button in the Global Functions window illuminates in yellow

#### 26.6.4.7 Safe Fader 1

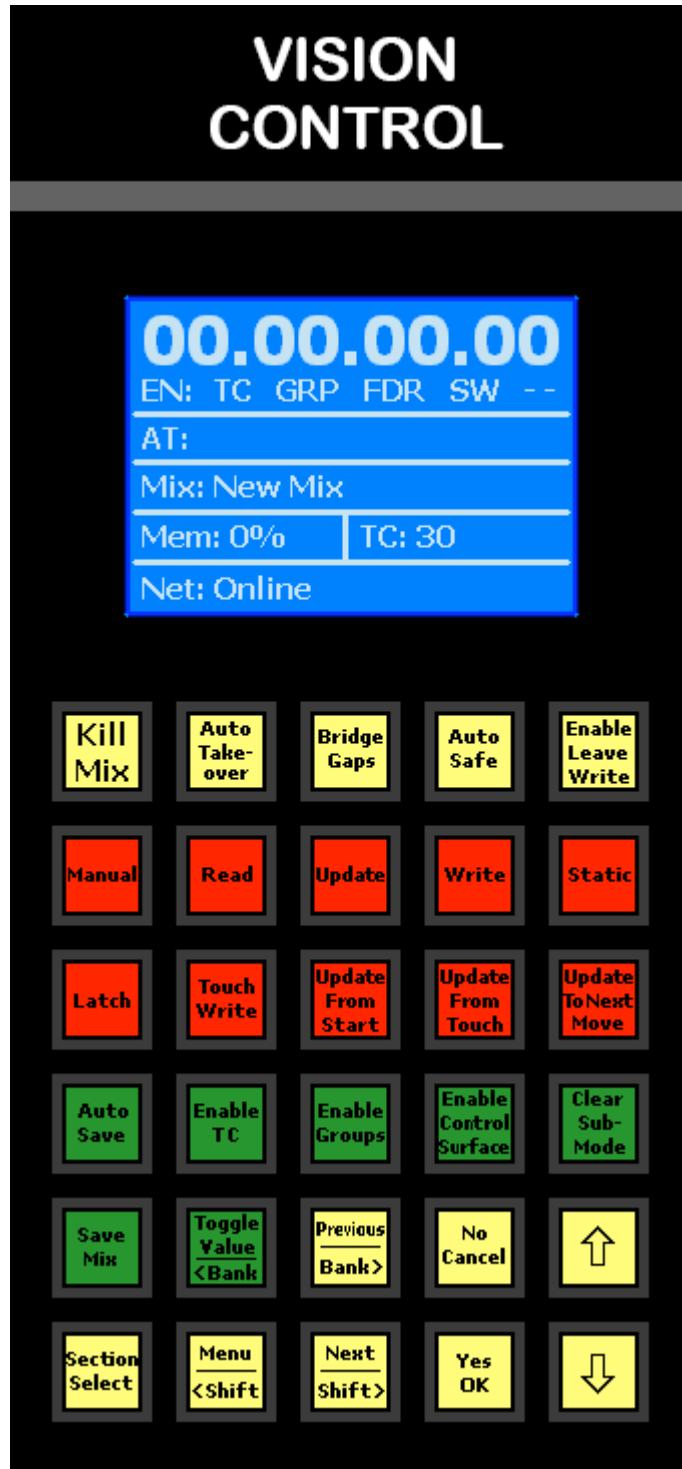
**Safe: Fdr 1**

Safe: Fdr 1: Engages "Safe" mode for Fader 1 console-wide

- When Switches are in "Safe" the "Safe: Fdr 1" button in the Global Functions window illuminates in yellow

## 26.7 ACM Control Panel (Vision Control)

The ACM Control Panel (Vision Control) is the user interface for the Automation Control Module (ACM). As such it provides all essential automation controls, a menu of software controls, and display of timecode and automation information.



ACM Control Panel (Vision Control):  
The ACM Control Panel is the central hardware user interface for software control and automation.

The ACM Control Panel allows operation of most global software and automation features without the need to access the Vision PC. Used with the software, it provides a flexible means of accessing ACM menus and automation functions.

Creating automated mixes starts with the ACM Control Panel by selecting "New Mix" from the ACM menu.

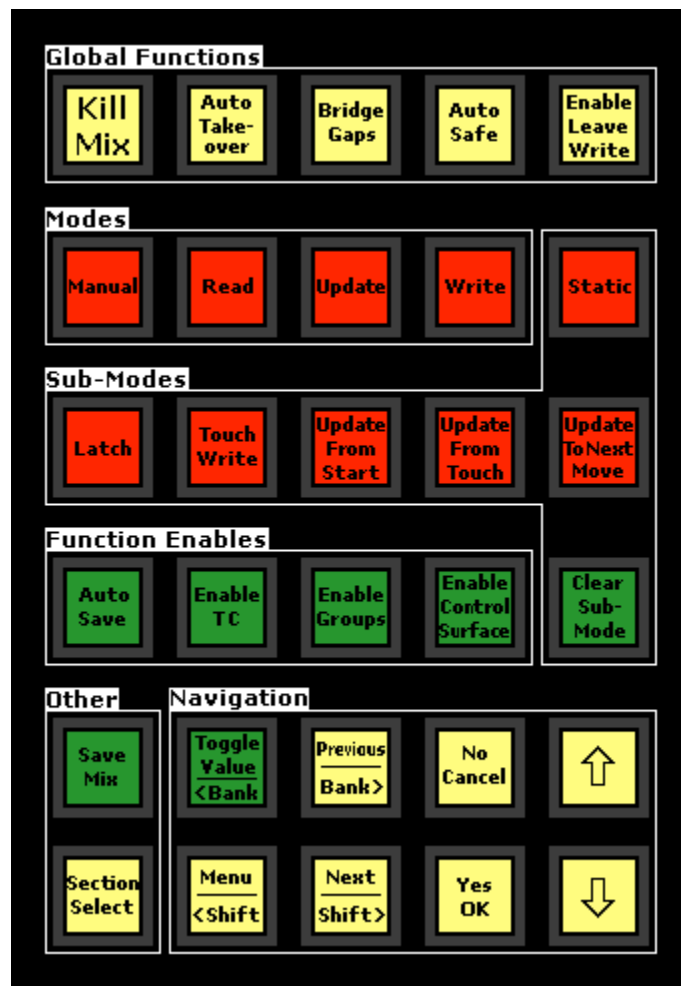
The ACM menu also allows PC window control, system parameters to be set, Groups to be burnt to ACM memory, recall settings to be cleared, and firmware versions to be viewed.

The ACM Control Panel has a backlit 128X64 LCD display. The main display shows the current timecode, fader levels, system status, ACM menus, and system messages.

The ACM Control Panel has 5 X 6 matrix of 30 buttons used for automation control.

The ACM Control Panel is located next to the master faders in the Center Section.

### 26.7.1 ACM Control Panel Buttons



As mentioned above, the ACM Control Panel has 30 buttons used for automation control. These buttons are organized in six (6) groups:

- Global Functions
- Automation Modes
- Automation Submodes
- Function Enables
- Navigation
- Other (Save Mix and Section Select)

#### 26.7.1.1 Global Functions Buttons



These buttons mirror the same controls in the Global Functions window.

Global Functions buttons illuminate in yellow when the function is engaged.

For complete details regarding Global Functions, please refer to section 26.6 Global Functions.

#### 26.7.1.2 Automation Mode Buttons

These buttons assign automation modes to the selected channel sections on a global (console wide) basis.



Automation modes can also be assigned individually on the channel fader module and selectively (one or more sections) from the Channel Control window.

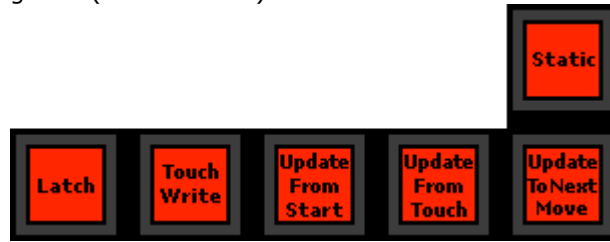
The ACM Control Panel mode buttons illuminate in red when the mode is assigned to one or more channels sections. If more than one mode button is illuminated, at least one channel section is assigned to the illuminated modes.



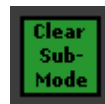
For complete details regarding automation modes, please refer to section 26.5.1 Automation Modes.

### 26.7.1.3 Automation Submode Buttons

These buttons assign automation submodes to the selected channel sections on a global (console wide) basis.



The ACM Control Panel Mode buttons illuminate in red when the mode is assigned to one or more channels sections. If more than one mode button is illuminated, at least one channel section is assigned to the illuminated.



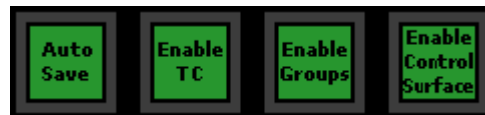
Clear Sub-Mode: Clears submode assignments on a global basis

- Submodes can also be cleared by selecting channels in the Channel Control window and clicking **None**
- Illuminates in green when pressed

For complete details regarding automation submodes, please refer to section 26.5.3 Automation Submodes.

### 26.7.1.4 Function Enable Buttons

These buttons enable various hardware components to interface with the automation system.



The ACM Control Panel Automation Enable buttons illuminate in green when the Enable is engaged.

All ACM Control Panel Enable buttons except "Auto Save" are mirrored in the Global Functions window.



Auto Save: Sends the mix pass in the ACM to the Mix Tree every time a change is recorded

- A project must be open for a Mix Tree to be available
- Illuminates in green when engaged

For complete details regarding automation enables, please refer to section 26.2.9 Function Enables.

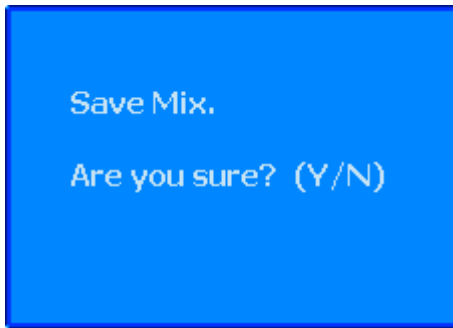
### 26.7.1.5 Save Mix and Section Select Buttons

The two buttons in the "other" category are used to save the mix in the ACM to the PC for storage and allows selection of channel sections for mode assignment.



Save Mix: Sends the mix pass in the ACM to the Mix Tree

- A project must be open for a Mix Tree to be available
- Illuminates in green when pressed



When "Save Mix" is pressed, a confirmation window will appear in the ACM Control Panel display.

Press "Yes OK" to send the mix from the ACM to the PC.

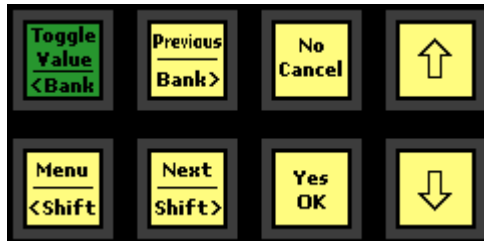
This operation can be canceled by pressing the "No Cancel" button.



Section Select: Selects channel sections on a global basis

- Cycles through the following sections:
  - Fader 1 and mute
  - Fader 2 and mute
  - Switches
  - All
- Illuminates in yellow when pressed

#### 26.7.1.6 Navigation Control Buttons

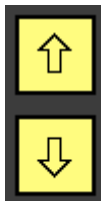


The primary function of the ACM Control Panel navigation buttons is to provide the user interface to the Automation Control Module (ACM). The ACM menus and settings can be accessed using these buttons.

The ACM Control Panel navigation buttons also provide channel "bank" and "shift" controls when using the Vision control surface to control DAW sessions larger than 32 channels.

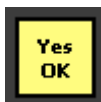
Additionally, the ACM Control Panel navigation buttons can also be used to control certain windows in the Vision PC software. For example, the "Yes" or "No" buttons can be used to answer a confirmation prompt when deleting a mix pass.

The section below describes the function of the ACM Control Panel navigation buttons in regard to using the ACM menus. Refer to Section 26.7.3.1 PC Window Control and 27.1 Control Surface Functions for details.



Up and Down Arrows: Opens and navigates the ACM menu

- The first press of either button will open the ACM main menu
- Items in the ACM main menu can be selected but using the Arrow buttons to move the cursor up and down
- Once the cursor has been located, the menu item can be selected by pressing the "Yes OK" button
- Both buttons illuminate in yellow when pressed



Yes OK: Affirmative command button

- Opens the selected ACM menu item
- Confirms the selected action (Y)
- Illuminates in yellow when pressed



No Cancel: Negative command button

- Closes ACM menus
- Cancels the selected action (N)
- Illuminates in yellow when pressed



Toggle Value / Bank Down: Not used for ACM menu navigation.

- "Toggle Value" is used to select values within a PC window when Window Control is enabled
- "< Bank" (bank down) is used to shift Control Surface control eight channels lower when Control Surface is enabled with large DAW sessions
- Illuminates in green when pressed



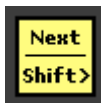
Previous / Bank Up: Not used for ACM menu navigation.

- "Previous" is used to navigate within a PC window when Window Control is enabled
- "Bank >" (bank up) is used to shift Control Surface control eight channels higher when Control Surface is enabled with large DAW sessions
- Illuminates in yellow when pressed



Menu / Shift Down: Not used for ACM menu navigation.

- "Menu" is used to open the menu within a PC window when Window Control is enabled.
- "< Shift" (shift down) is used to shift Control Surface control one channel lower when Control Surface is enabled with large DAW sessions
- Illuminates in yellow when pressed



Next / Shift Up: Not used for ACM menu navigation.

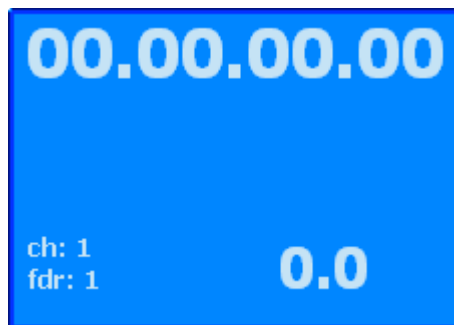
- "Next" is used to navigate within a PC window when Window Control is enabled.
- "Shift >" (shift up) is used to shift Control Surface control one channel higher when Control Surface is enabled with large DAW sessions.
- Illuminates in yellow when pressed

## 26.7.2 ACM Control Panel Display

The ACM Control Panel display is a high-quality 128 x 64 LCD display that provides information from the ACM and access to the ACM menus.

ACM Control Panel display is programmed using a firmware file that can be updated as needed. The ACM Control Panel display can be updated by selecting "Update Display Firmware..." from the Setup menu in the Main window. See section 28.0 System Setup, Maintenance, and Updates for detailed information on firmware management.

In normal operation, the ACM Control Panel Display will show one of two screens:



This screen is shown during most operations. It provides a Timecode display and fader value:

When a fader is touched the channel and fader are displayed as follows:

- ch: Channel number
- fdr: Fader (Fader 1 or Fader 2)

The touched fader level is displayed in decibels (dB) in the bottom right of the display

*NOTE: The level of a touched fader can be turned on or off using the "Show Touch Level" (Y/N) parameter in the ACM Console Settings Menu. Refer to section 26.7.2.7 Console Settings for details.*



This screen is shown after a "New Mix" has been created. It provides the following information:

- Current Timecode location
- EN: Enabled functions
- AT: Auto Takeover timecode location
- Mix: Mix name
- Mem: Percentage of ACM memory used
- TC: Timecode frame-rate
- Net: connection status

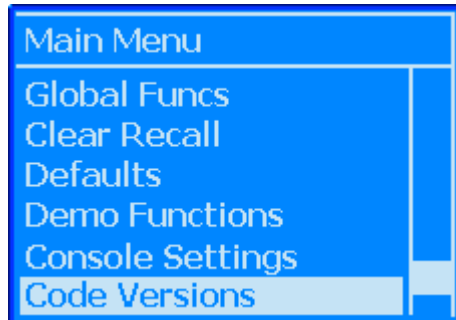
The enabled functions are displayed below the timecode readout. If the function is enabled its abbreviation will be shown. If a function is not enabled "- -" will be displayed. The abbreviations for enabled functions are as follows:

- TC: Timecode
- GRP: Groups
- FDR: Faders
- SW: Switches
- LW: Leave Write
- SN or SG: Solo: Normal or Solo: Groups

The display contrast can be adjusted using the Console Settings ACM menu. Refer to 26.7.3.8 Console Settings or 28.10 ACM Control Panel Display Setup.

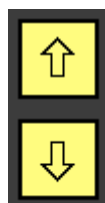
### ACM Main Menu

The ACM Main menu provides access to the setup and control functions supported by the Automation Control Module (ACM).



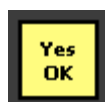
The ACM functions are organized in the following sub-menus:

- Window: ACM Control Panel control of PC software windows
- New Mix: Creates a new mix pass in the ACM
- Solo: Enables for the "Solo: Normal" and "Solo: Groups" solo modes
- Global Funcs (Functions): Enables for Faders, Groups, Switches, Timecode, and Control Surface
- Clear Recall: Clears all recall settings on a global basis
- Defaults: Sets the ACM to its default settings and burned snapshot and group utility
- Demo Functions: Selects one of three moving fader demonstrations
- Console Settings: Freewheel frames, ACM display contrast, Timecode source, and possible future functions
- Code Versions: Displays ACM and FCM firmware versions, temperature, and serial number



To open the ACM Main menu press either the "Up" or "Down" arrow button.

Once the menu opens, use these buttons to highlight the desired sub-menu.



Once the desired function has been highlighted, press the "Yes OK" button to open that sub-menu.

### 26.7.2.1 PC Window Control

The navigation buttons on the ACM Control Panel can be used to control certain windows within the Vision PC software. This allows easy control of commonly used software functions directly from the console.

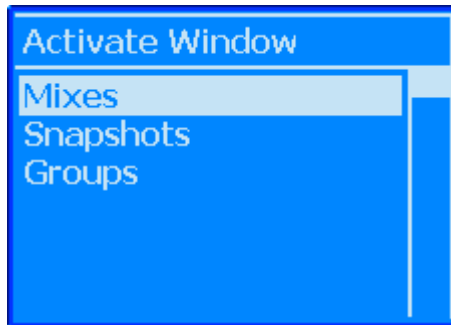
Three (3) windows can be controlled by the ACM Control Panel:

- Mix Tree
- Snapshots
- Groups

Use the "Window" submenu to setup PC window control.

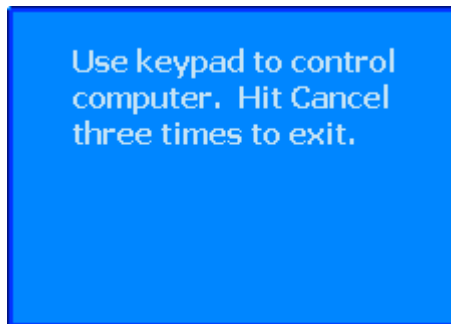


To set up PC window control, select "Window" from the ACM Main menu and press the "Yes OK" button.



The Activate Window menu will open.

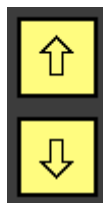
Use the up and down arrow buttons to highlight the software window to be controlled.



Press the "Yes Ok" button and control of the selected window from the ACM Control Panel will be activated.

To exit PC window control, press the "No Cancel" button three times in a row.

The navigation buttons on the ACM Control Panel provide PC window control, as well as bank & shift functions when Control Surface is enabled for DAW control. When window control is enabled, the navigation buttons on the ACM Control Panel function as follows PC control:



Up and Down Arrows: Equivalent to the "up" and "down" arrow keys on the PC keyboard

- Use to navigate within the active window
- Both buttons illuminate in yellow when pressed



Yes OK: Equivalent to the "Enter" key on the PC keyboard or clicking "Yes," "OK," "Save" and other action buttons

- Use to accept or confirm the actions selected in the window
- Illuminates in yellow when pressed



**No Cancel:** Equivalent to clicking “No” or “Cancel” buttons

- Use to cancel the current operation
- Use to close some submenus
- Illuminates in yellow when pressed



**Toggle Value / Bank Down:** Equivalent to clicking the left mouse or touchpad button

- Use to click a checkbox ☐ or radio button ☐ in a PC window
- The Bank Down (< Bank) function is used when Control Surface is enabled
- Illuminates in green when pressed



**Menu / Shift Down:** Equivalent to clicking the right mouse or touchpad button

- Use to open the right-click menu in the active window
- The Shift Down (< Shift) function is used when Control Surface is enabled
- Illuminates in yellow when pressed



**Previous / Bank Up:** Equivalent to the “Tab” key on the PC keyboard

- Moves to the next item to the right
- Use to select items within the active window
- The Bank Up (Bank >) function is used when Control Surface is enabled
- Illuminates in yellow when pressed



**Next / Shift Up:** Equivalent to the “Shift+Tab” keys on the PC keyboard

- Moves to the next item to the left
- Use to navigate within the active window
- The Shift Up (Shift >) function is used when Control Surface is enabled
- Illuminates in yellow when pressed

#### 26.7.2.2 New Mix

Once a rough mix has been setup on the console, the first step in automating the mix is to create a new mix in the ACM.

The ACM can hold only one mix at a time. Creating a new mix will erase the existing mix, so make sure any needed mixes are saved to the Mix Tree before using this function.

Use the “New Mix” submenu to create a new mix in the ACM.



To create a new mix, select “New Mix” from the ACM Main menu and press the “Yes OK” button.

New Mix w/ Current Positions

Are you sure? (Y/N)

The New Mix confirmation window will open.

Press "Yes OK" to create the new mix in the ACM. This operation can be canceled by pressing the "No Cancel" button.

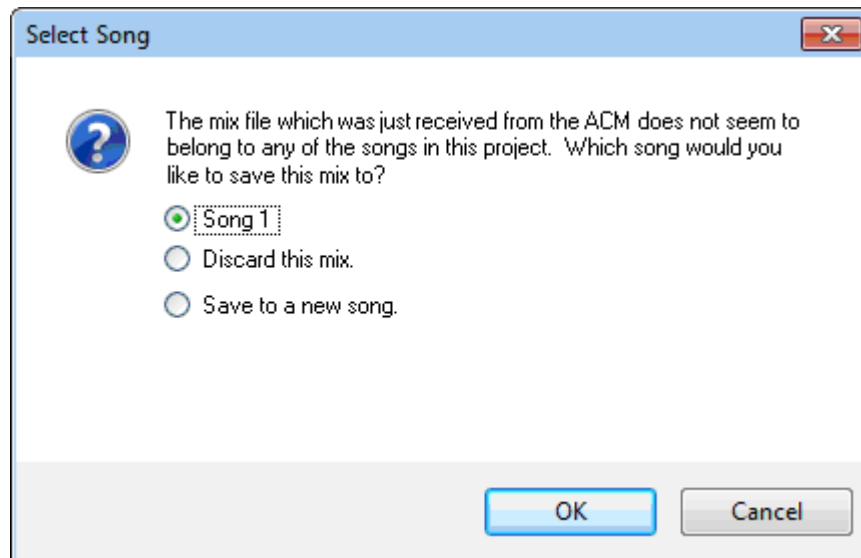
New Mix w/ Current Positions

Current mix unsaved

Are you sure? (Y/N)

If the current mix in the ACM has not been saved to the Mix Tree, a warning will appear in the confirmation window.

If a project is already open and the mix pass in the ACM does not match the mixes in the Mix Tree, you will be prompted to choose how to deal with the mix sent to the PC.



There are three (3) options to choose from:

- Save to an existing song
- Discard the mix
- Save the mix to a new song

Select the desired option and click the

### 26.7.2.3 Solo: Normal and Solo: Groups

In addition to the normal solo functions provided by the console, two alternate solo functions are provided by the automation system:

- Solo: Normal: Mute switches activate a solo-in-place function console-wide
- Solo: Groups: Mute switches activate a solo-in-place function within established groups

Since the Program and Group Master faders do not have SOLO switches, Solo: Normal and Solo: Groups can be used to activate a solo-in-place function from these faders.

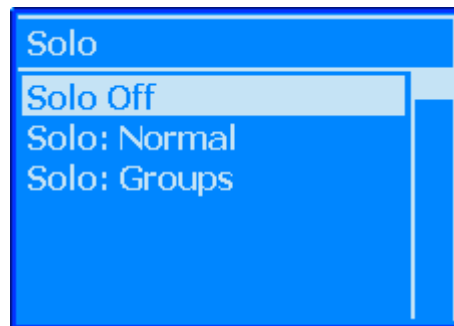
Solo: Normal and Solo: Groups can be activated via the ACM Solo menu or the Global Functions window in the PC software.

## SOLO



To activate Solo: Normal or Solo: Group, select "Solo" from the ACM Main menu and press the "Yes OK" button.

## SOLO OFF

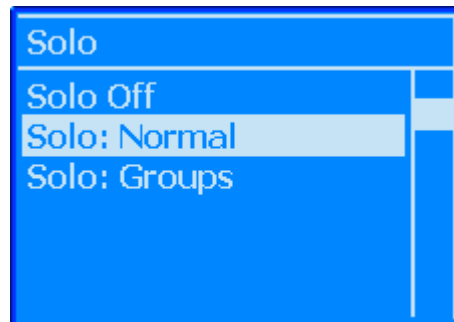


The Solo menu will open.

Use the up and down arrow buttons to select "Solo Off."

Press the "Yes Ok" button and the regular console solo functions will be active.

## SOLO: NORMAL



### Solo: Normal

Solo: Normal: Replaces the function of the MUTE buttons with an additive solo-in-place function console wide

- When Solo: Normal is engaged:
  - "SN" will appear ACM CONTROL PANEL main display
  - The Solo: Normal button in the Global Functions window will illuminate in yellow

When Solo: Normal is active, MUTE buttons become SOLO buttons. When a MUTE button is pressed, that channel will unmute if it was muted, and all other channels will mute. When another mute button, is pressed that channel will also unmute and the first channel will remain unmuted. The solo function is additive, not exclusive.

Changes to mutes made with Solo: Normal engaged are not recorded to automation.



## SOLO: GROUPS



### Solo: Groups

Solo: Groups: Replaces the function of the MUTE buttons with an additive solo-in-place function within a current group

- When Solo: Groups is engaged:
  - "SG" will appear in the ACM CONTROL PANEL main display
  - The Solo: Groups button in the Global Functions window will illuminate in yellow

Solo: Groups functions just like Solo: Normal (see above), except that the muting is restricted to whatever group that contains the MUTE that was pressed.

Pressing a MUTE that is not in a group will solo within the ungrouped channels.

Solo: Groups only looks at mute groups, not fader, insert or switch groups.

Changes to mutes made with Solo: Groups engaged are not recorded to automation.

### 26.7.2.4 Function Enables (Global Funcs)

The automation Function Enables can be controlled from the ACM menu, as well as from the Global Functions window in the PC software.

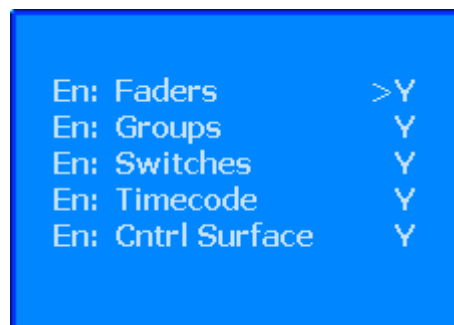
The Function Enables are as follows:

- Faders
- Groups
- Switches
- Timecode
- Control Surface

Use the "Global Funcs" submenu to set Function Enables.



To set Function Enables, select "Global Funcs" from the ACM Main menu and press the "Yes OK" button.



The Function Enable window will open.

Use the up and down arrow buttons to move the cursor to the desired set of controls.

Press the "Yes OK" button to enable (Y) and disable (N) the selected function.

Press the "No Cancel" button to return to the Main menu.

Refer to section 26.6 Global Functions for details regarding system enables.

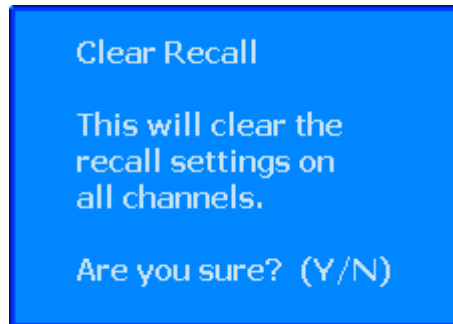
#### 26.7.2.5 Clear Recall

Recall settings can be cleared on a global basis from the ACM.

Use the "Clear Recall" submenu to clear the recall settings console-wide.



To clear Recall Settings, select "Clear Recall" from the ACM Main menu and press the "Yes OK" button.



The Clear Recall confirmation window will open.

Press "Yes OK" to clear recall settings on a global basis. This operation can be canceled by pressing the "No Cancel" button.

#### 26.7.2.6 Defaults

The Defaults submenu allows a set of known conditions to be set and quickly recalled directly from the Automation Control Module (ACM) without the need for the Vision PC. These known conditions can be used as common session starting points and function essentially as "presets."

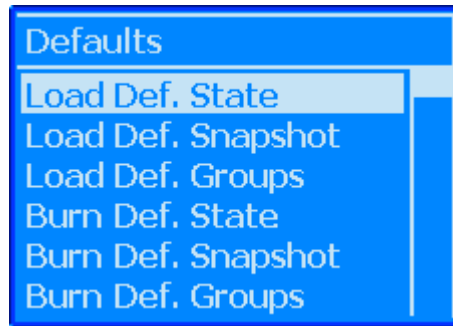
The Defaults are as follows:

- Default State: Preset ACM settings
- Default Groups: A default set of configured groups
- Default Snapshot: A default set of fader and switch positions and routing

To create or update a Default State, Default Groups, or a Default Snapshot, "settings" must be unlocked if "ACM Menu Settings" has been selected as a protected item. Refer to section 19.2.2.3.1 Unlock Settings Tab and 28.2 Password Protection for details.



To reset the console to a default condition, select "Defaults" from the ACM Main menu and press the "Yes OK" button.



The Defaults window will open.

Use the up and down arrow buttons to move the cursor to the desired Default function.

Press the "Yes OK" button to start the selected function.

## ACM DEFAULT FUNCTIONS STATE

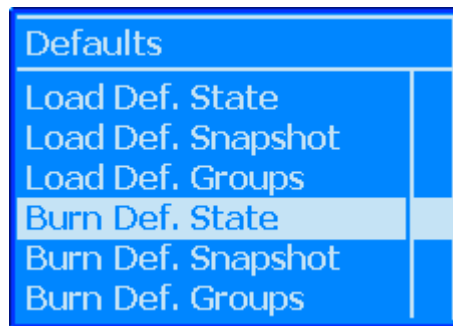
To quickly reset the ACM functions to a known condition at the beginning of a mix, a Default State can be set.

In the Default State, the following parameters can be set:

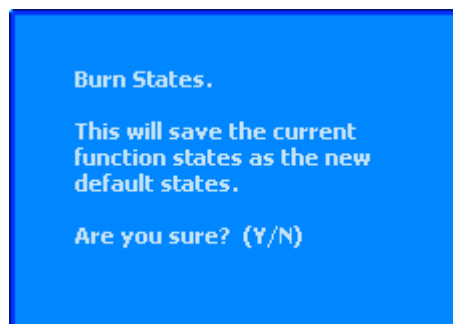
- Auto Safe
- Auto Save
- Faders enable
- Groups enable
- Switches enable
- Timecode enable

The mix in the ACM is unaffected when the Default State is set.

To update burn default ACM function states, "settings" must be unlocked if "ACM Menu Settings" has been selected as a protected item. Refer to section 19.2.2.3.1 Unlock Settings Tab and 28.2 Password Protection for details.

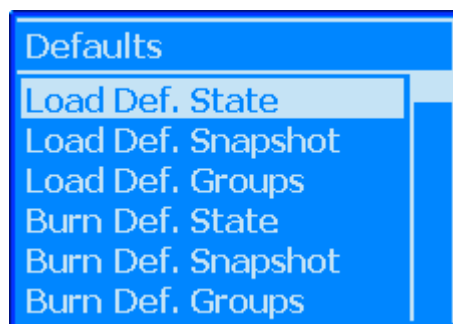


To save the ACM Default Functions States, configure the automation system as desired and select "Burn Def. State" from the Defaults menu and press the "Yes OK" button.



The Burn States confirmation window will open.

Press the "Yes OK" button to burn the current ACM function states as the Default State. This operation can be canceled by pressing the "No Cancel" button.



To set the Default State, select "Load Def. State" from the Defaults menu and press the "Yes OK" button.

Set Default Function States?

Are you sure? (Y/N)

The Set Default Function States confirmation window will open.

Press the "Yes OK" button to set ACM functions to the Default State. This operation can be canceled by pressing the "No Cancel" button.

#### DEFAULT SNAPSHOT

The current fader positions, switch states, and routing that were setup using the console hardware or PC software can be "burned" to the ACM as the Default Snapshot.

The Default Snapshot can be created or changed by setting new fader and switch positions and/or routing and then burning them to the ACM again.

##### Defaults

Load Def. State	
Load Def. Snapshot	
Load Def. Groups	
Burn Def. State	
Burn Def. Snapshot	
Burn Def. Groups	

To save the Default Snapshot, select "Burn Def. Snapshot" from the Defaults menu and press the "Yes OK" button.

##### Burn Snapshot.

This will save the current fader and switch positions as the new default snapshot.

Are you sure? (Y/N)

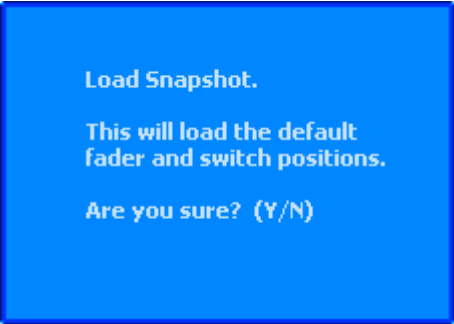
The Burn Snapshot confirmation window will open.

Press the "Yes OK" button to set the current fader and switch positions and routing as the Default snapshot. This operation can be canceled by pressing the "No Cancel" button.

##### Defaults

Load Def. State	
Load Def. Snapshot	
Load Def. Groups	
Burn Def. State	
Burn Def. Snapshot	
Burn Def. Groups	

To load the Default Snapshot, select "Load Def. snapshot" from the Defaults menu and press the "Yes OK" button.



The Load Snapshot confirmation window will open.

Press the "Yes OK" button to load the Default snapshot. This operation can be canceled by pressing the "No Cancel" button.

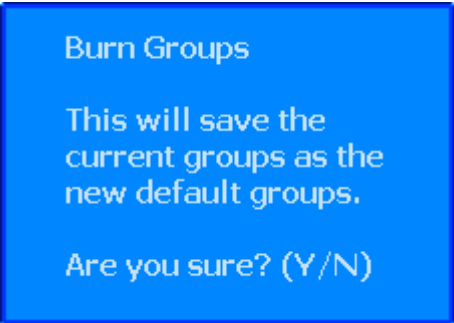
DEFAULT GROUPS

The current groups that were setup using the PC software can be "burned" to the ACM as the Default Groups. The Default Groups will be included in all new mixes created on the ACM.

The Default Groups can be created, changed, or cleared by setting up a new set of groups in the PC software and then burning them to the ACM again.

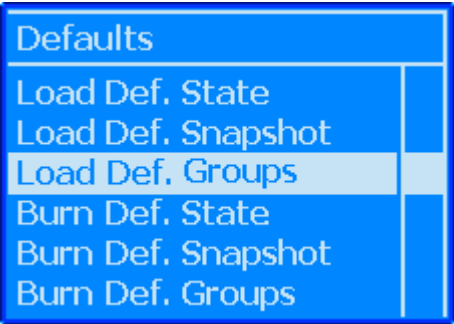


To save the Default Groups, select "Burn Def. Groups" from the Defaults menu and press the "Yes OK" button.

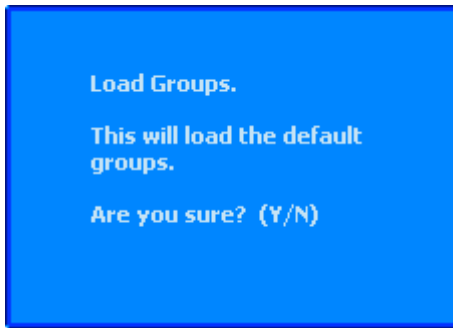


The Burn Groups confirmation window will open.

Press the "Yes OK" button to burn the current groups to the ACM memory. This operation can be canceled by pressing the "No Cancel" button.



To load the Default Groups, select "Load Def. Groups" from the Defaults menu and press the "Yes OK" button.



The Load Groups confirmation window will open.

Press the "Yes OK" button to load the Default Groups. This operation can be canceled by pressing the "No Cancel" button.

#### 26.7.2.7 Demo Functions

There are three (3) "Demo Functions" for the automation system. In each of these functions the faders will perform a different pattern of pre-programmed motion.

The Demo Functions are as follows:

- Wave
- Up/Down
- Follow Me

Each Demo Function will time-out after 100 fader cycles.



To select a Demo Function, select "Demo Functions" from the ACM Main menu and press the "Yes OK" button.



The Demo window will open.

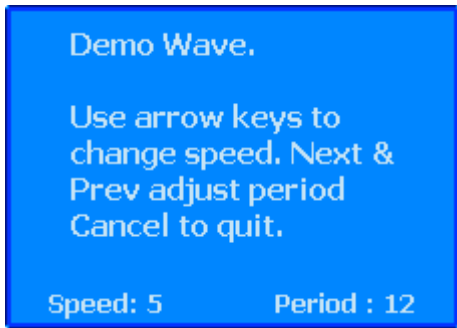
Use the up and down arrow buttons to move the cursor to the desired Demo Function.

Press the "Yes OK" button to start the selected demo.

WAVE



Wave: The faders will move up and down in a sine wave pattern.



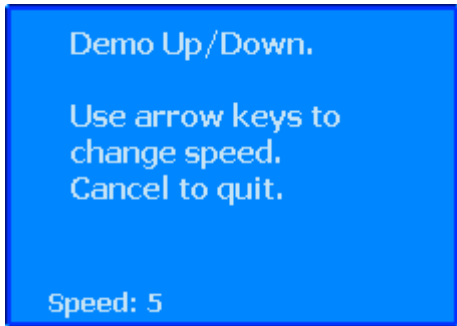
Speed and period can be adjusted as indicated.

Press the "No Cancel" button to return to the Demo menu.

UP/DOWN



Up/Down: All of the faders will move up and down in unison with each other.



Speed can be adjusted as indicated.

Press the "No Cancel" button to return to the Demo menu.

FOLLOW ME



Follow Me: The faders will move up or down in unison when any fader is moved.



Press the "No Cancel" button to return to the Demo menu.

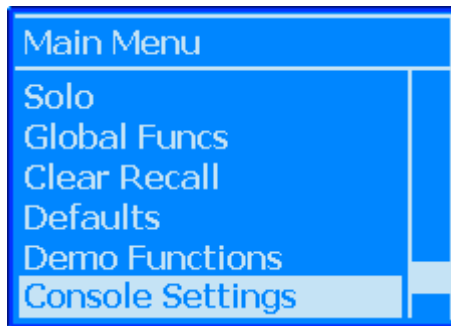
### 26.7.2.8 Console Settings

The Console Settings submenu contains three (3) system parameters:

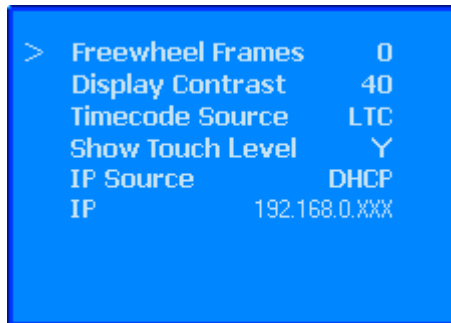
- Freewheel Frms (Frames): The number of freewheel frames allowed when chasing
- Display Contrast: Sets the contrast of the LCD display in the ACM Control Panel
- Timecode Source: Selects SMPTE timecode LTC (Longitudinal Time Code), VITC (Vertical Interval Time Code) or MTC (MIDI Time Code)
- Show Touch Level: Enables the position (level) of the fader to be shown in the ACM display (Y/N)
- IP Source: Source of the internet protocol for communication between the ACM and the PC (Fixed or DHCP)
- IP (address): Console internet protocol address

To set Freewheel Frames, Display Contrast, a Timecode Source, "settings" must be unlocked if "ACM Menu Settings" has been selected as a protected item. Refer to section 19.2.2.3.1 Unlock Settings Tab and 28.2 Password Protection for details.

Use the "Console Settings" submenu to set system parameters.



To set system parameters, select "Console Settings" from the ACM Main menu and press the "Yes OK" button.



The Console Settings window will open.

Use the up and down arrow buttons to move the arrow to select the desired parameter.

Press the "Yes OK" button to select the desired parameter.

#### FREEWHEEL FRAMES

The number of Freewheel Frames allowed when chasing timecode can be set using the "Freewheel Frms" submenu. This can improve synchronization accuracy, depending on the source of the timecode from the recorded media.



To set Freewheel Frames, select "Freewheel Frames" from the Console Settings menu and press the "Yes OK" button.

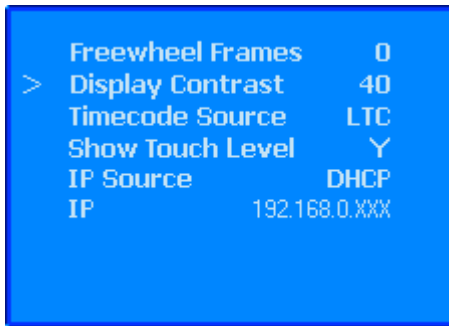
Use the up and down arrow buttons to set the parameter value between 0 and 90.

Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.



## DISPLAY CONTRAST

The contrast of the ACM Control Panel display can be set using the "Display Contrast" submenu.



To set the ACM CONTROL PANEL display contrast, select "Display Contrast" from the Console Settings menu and press the "Yes OK" button.

Use the up and down arrow buttons to set the parameter value as desired.

Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

## TIMECODE SOURCE

The source and type of timecode to be used is selected using the "Timecode Source" submenu.

Three (3) Timecode Sources can be selected:

- LTC: SMPTE Longitudinal timecode
- MTC: MIDI timecode
- ---- (VITC): SMPTE Vertical Interval timecode

Timecode frame rate is selected at the time a new project is created.

A MIDI port must be configured to use MTC. Refer to section 28.4 Timecode Setup



To set the Timecode Source, select "Timecode Source" from the Console Settings menu and press the "Yes OK" button.

Use the up and down arrow buttons to select the desired source.

Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

## SHOW TOUCH LEVEL

The decibel level in the ACM display for a touched fader can be turned on and off using the "Show Touch Level" parameter in the Console Settings ACM submenu.



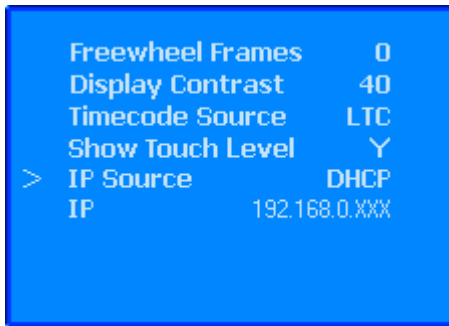
To activate the touched fader level display in the ACM, select "Show Touch Level" from the Console Settings menu and press the "Yes OK" button.

Use the up and down arrow buttons to select "Y" for yes or "N" for no.

Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

## IP SOURCE and IP ADDRESS

The IP (internet protocol) for the ACM can be set to a fixed IP address or DHCP (Dynamic Host Configuration Protocol).

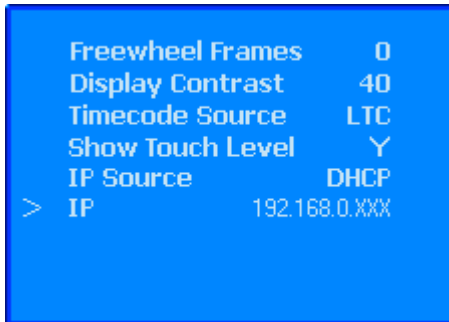


To select an IP Source for the ACM, select "IP Source" from the Console Settings menu and press the "Yes OK" button.

Use the up and down arrow buttons to select "DHCP" or "Fixed."

Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

If DHCP is selected, the ACM will automatically receive its IP address from the connected PC. If "Fixed" is selected, the IP address can be entered manually in the IP selection in the Console Setting submenu.



To enter a fixed IP address for the ACM, select "IP" from the Console Settings menu and press the "Yes OK" button.

The first number of the IP address will reverse field to indicate a new value can be entered. Use the up/down arrow buttons to enter the needed IP number. Press "Yes OK" to accept the value and move to the next number. Repeat for all four IP address numbers.

Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

### 26.7.2.9 Code Versions

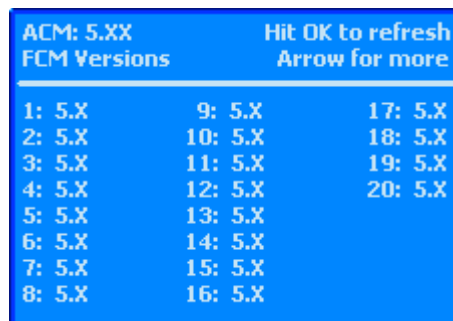
The Code Versions submenu will display the following information:

- ACM firmware version
- FCM firmware version
- Ambient temperature
- Console serial number
- Console Type (Vision or Legacy Plus)

Use the "Code Versions" submenu to view the information listed above.



To view the firmware versions, temperature, and Serial Number, select "Code Versions" from the ACM Main menu and press the "Yes OK" button.



The Code Versions window will open.

ACM: 5.XX	Hit OK to refresh
FCM Versions	Arrow for more
Ambient Temp: 28c	
Serial #: XX XX XX 000000	
Console Type: Vision	

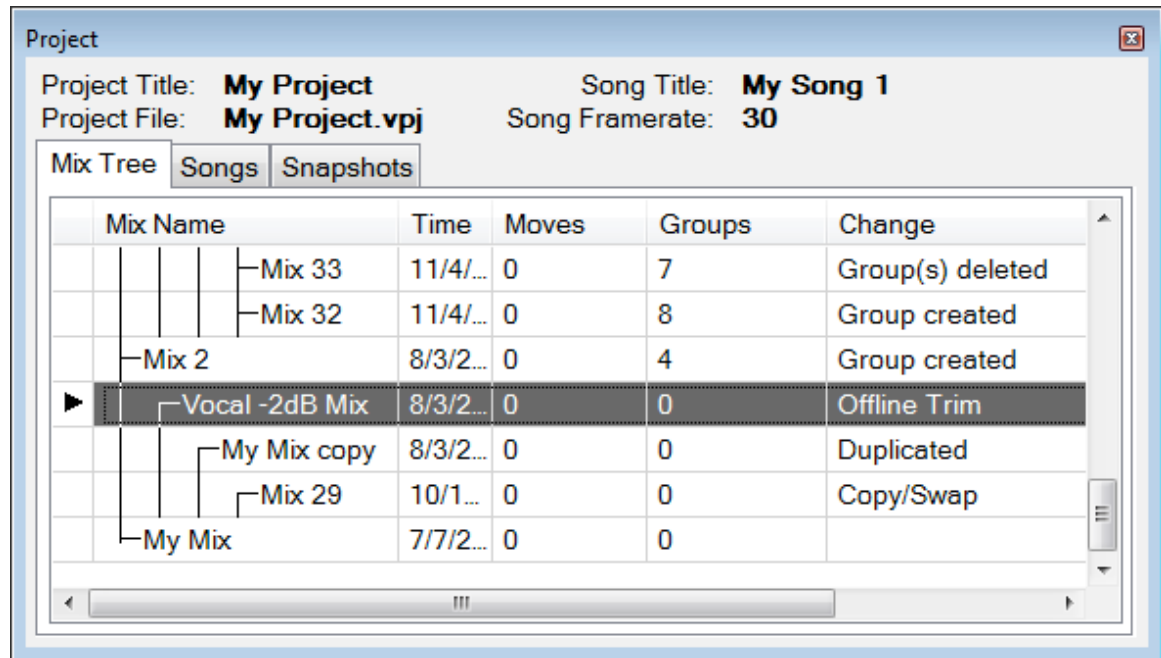
Use the up and down arrow buttons to open the second page.

Press the "No Cancel" button to return to the Main menu.

## 26.8 Mix Tree

Once a mix has been created in the Automation Control Module (ACM), it can be saved to the Mix Tree in the Project window.

Click the Mix Tree tab in the Project window to display the Mix Tree.



A Project File must be open in order to save a mix to the Mix Tree. As soon as a mix is saved to the Mix Tree it is immediately saved to the PC hard-drive.

The Mix Tree displays and manages the mix files for the current project. This includes the mixes created in the ACM, as well as mixes created using the Mix Tree edit functions.

Once a mix is in the Mix Tree, it can be named, edited, copied, and deleted.

### 26.8.1 Mix Tree Display

For each mix, the following information is displayed:

- Mix Arrow: Indicates which mix was the last sent to the ACM (active mix)
- Mix Name: Name of the mix
- Time: The time and date the mix was created
- Moves: The number of data points within the mix
- Groups: The number of groups contained within the mix
- Change: Information regarding the differences between a mix and the mix it was derived from (duplicate, group added/deleted, off-line trim, etc.)

Mix Name	Time	Moves	Groups	Change
Mix 33	11/4/...	0	7	Group(s) deleted
Mix 32	11/4/...	0	8	Group created
Mix 2	8/3/2...	0	4	Group created
Vocal -2dB Mix	8/3/2...	0	0	Offline Trim
My Mix copy	8/3/2...	0	0	Duplicated
Mix 29	10/1...	0	0	Copy/Swap
My Mix	7/7/2...	0	0	



Change
Group created
Group created
Offline Trim
Duplicated
Copy/Swap
Copy/Swap

The "Change" column displays the differences between a mix and the mix it was derived from.

## 26.8.2 Mix Selection

Double-clicking a mix in the Mix Tree will send it to the ACM and it will become the active mix.

► The active mix is indicated by an arrow in the in Mix Tree icons.

To use the Mix Tree menu, one or more mixes must be selected or "highlighted."

A single mix can be highlighted by clicking somewhere within its row in the Mix Tree.

Mix Name	Time	Moves	Groups	Change
Mix 33	11/4/2...	0	7	Group(s) deleted
Mix 32	11/4/2...	0	8	Group created
Mix 2	8/3/20...	0	4	Group created
Vocal -2dB Mix	8/3/20...	0	0	Offline Trim
My Mix Copy	8/3/20...	0	0	Duplicated
Mix 29	10/10/...	0	0	Copy/Swap
My Mix	7/7/20...	0	0	

Multiple consecutive mixes can be highlighted using the Shift+Click method.

Mix Name	Time	Moves	Groups	Change
Mix 33	11/4/2...	0	7	Group(s) deleted
Mix 32	11/4/2...	0	8	Group created
Mix 2	8/3/20...	0	4	Group created
Vocal -2dB Mix	8/3/20...	0	0	Offline Trim
My Mix Copy	8/3/20...	0	0	Duplicated
Mix 29	10/10/...	0	0	Copy/Swap
My Mix	7/7/20...	0	0	

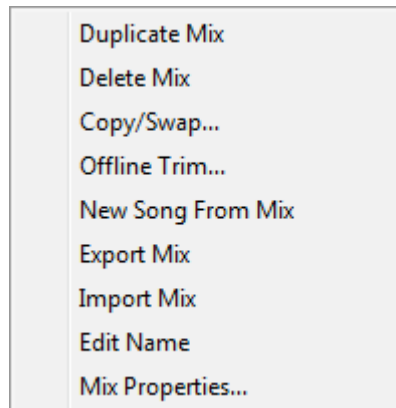
Multiple non-consecutive mixes can be highlighted using the Ctrl+Click method.

Mix Name	Time	Moves	Groups	Change
Mix 33	11/4/2...	0	7	Group(s) deleted
Mix 32	11/4/2...	0	8	Group created
Mix 2	8/3/20...	0	4	Group created
Vocal -2dB Mix	8/3/20...	0	0	Offline Trim
My Mix Copy	8/3/20...	0	0	Duplicated
Mix 29	10/10/...	0	0	Copy/Swap
My Mix	7/7/20...	0	0	

Once the desired mix or mixes are selected, right-click to open the Mix Tree menu.

### 26.8.3 Mix Tree Edit Functions

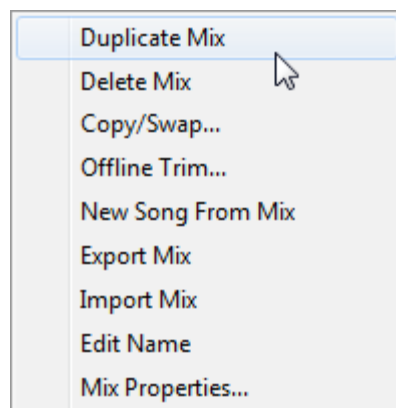
Right-clicking in the Mix Tree will open the Mix Tree menu.



The Mix Tree menu contains ten (10) selections whose functions that facilitate management of mixes and mix editing functions:

- Duplicate Mix: Creates and saves a copy of the highlighted mix
- Delete Mix: Deletes the highlighted mix(es)
- Copy/Swap...: Facilitates copying and swapping of mix data from one channel to another
- Off-line Trim: Facilitates the trimming fader levels offline
- New Song From Mix: Creates a new song (and Mix Tree) using the highlighted mix
- Export Mix: Saves the highlighted mix as a separate file
- Import Mix: Loads an exported mix file into the current Mix Tree
- Edit Name: Name editor for the highlighted mix
- Mix Properties...: Contains the Glide Rate control for the mix and facilitates color coding and relabeling of the highlighted mix(es)

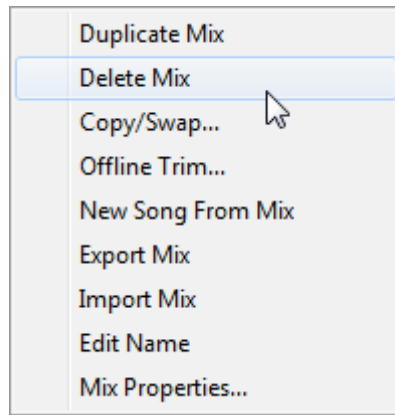
#### 26.8.3.1 Duplicate Mix



To make a copy of a single mix, highlight the desired mix and select "Duplicate Mix" from the Mix Tree menu. A copy of the highlighted mix will be created and labeled with the next available mix number.

*Note: "Duplicate Mix" is only available when a single mix is highlighted.*

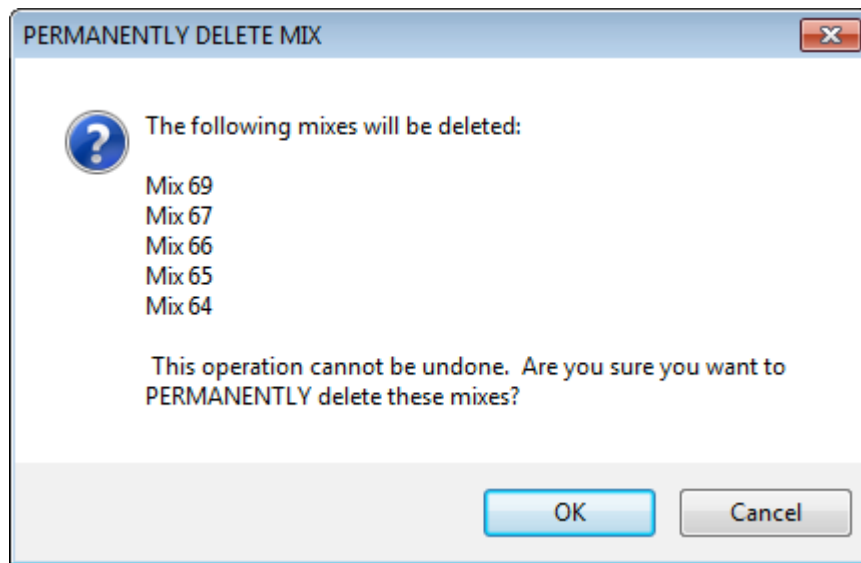
### 26.8.3.2 Delete Mix



To delete one or more mixes, highlight the desired mix(es) and select "Delete Mix" from the Mix Tree menu.

A prompt will appear asking you to confirm that you want to permanently delete the highlighted mixes.

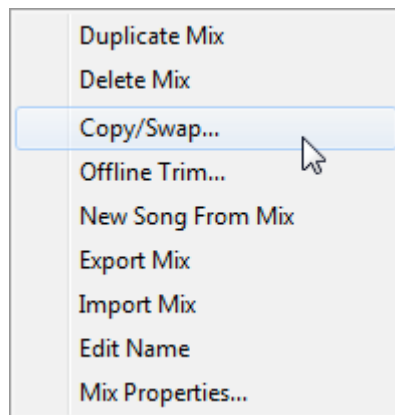
*NOTE: Deleting a mix from the Mix Tree will not delete the mix in the ACM.*



Click "OK" to delete the highlighted mixes or "Cancel" to cancel.

*NOTE: Deleting mixes is permanent and cannot be undone!*

### 26.8.3.3 Copy/Swap Mix Data



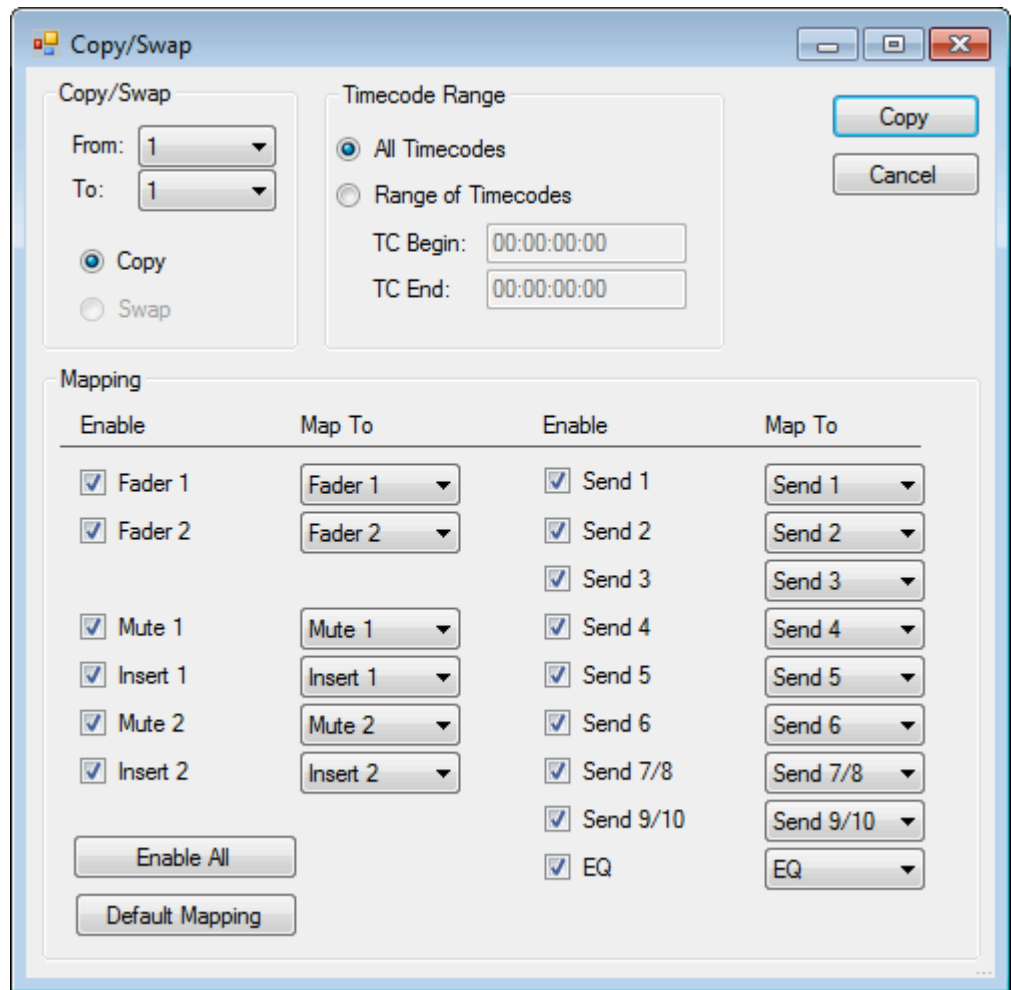
"Copy/Swap..." allows the fader and/or switch data for the highlighted mix to be copied or swapped between channels and channel sections.

The copy or swap function can apply to all Timecode addresses (00:00:00:00 to 23:59:59:XX) or only to a user defined range of Timecode locations.

A new mix with the copied or swapped data will be created in the Mix Tree as a result of using this function.

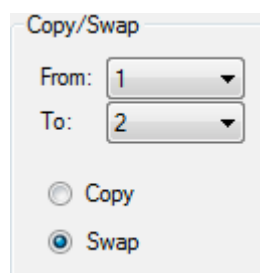
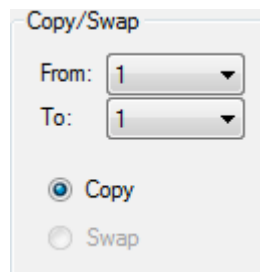
To copy or swap mix data, highlight the desired mix and select "Copy/Swap..." from the Mix Tree menu. The Copy/Swap window will open.





The Copy/Swap window has four (4) sections:

- Copy/Swap: Selects channels and the copy or swap function
- Timecode Range: Selects a timecode region where data will be copied or swapped
- Mapping: Allows automation data to be mapped to other controls
- Copy and Cancel Buttons: Applies or cancels the selected copy or swap function



The Copy/Swap section sets the Copy or Swap function, as well as the origin and destination channels. The Copy/Swap section contains the following controls:

- From: The channel from which the data to be copied or swapped originates
  - Enter the channel number to copy or swap from
- To: The channel to which the data will be copied or swapped with
  - Enter the channel number to copy swap to
- Copy: Activates the Copy function...allows data to be copied from one channel to another or from one channel section to another
- Swap: Activates the Swap function...allows data to be swapped between two channels

*NOTE: "Swap" is only available when the "From" and "To" entry fields are set to different channels.*

Timecode Range

☒ All Timecodes

☐ Range of Timecodes

TC Begin:

TC End:

Timecode Range

☐ All Timecodes

☒ Range of Timecodes

TC Begin:

TC End:

The Timecode Range section sets either all timecode addresses to be selected or a range of addresses with user-defined beginning and ending points. The Timecode Range section contains the following controls:

- All Timecodes: Selects the entire range of timecode locations (00:00:00:00 to 23:59:59:XX )
- Range of Timecodes: Selects a range of timecode locations (TC Begin to TC End)
- TC Begin: The starting timecode location
  - Enter the beginning timecode
- TC End: The ending timecode location
  - Enter the ending timecode

*NOTE: The "TC Begin" and "TC End" entry fields are only available when "Range of Timecodes" is selected.*

The "Mapping" section allows data from one fader to be applied to the other fader or the data from one switch to one or more of the other switch(es).

Mapping

Enable	Map To	Enable	Map To
<input checked="" type="checkbox"/> Fader 1	Fader 1 ▼	<input checked="" type="checkbox"/> Send 1	Send 1 ▼
<input checked="" type="checkbox"/> Fader 2	Fader 2 ▼	<input checked="" type="checkbox"/> Send 2	Send 2 ▼
		<input checked="" type="checkbox"/> Send 3	Send 3 ▼
<input checked="" type="checkbox"/> Mute 1	Mute 1 ▼	<input checked="" type="checkbox"/> Send 4	Send 4 ▼
<input checked="" type="checkbox"/> Insert 1	Insert 1 ▼	<input checked="" type="checkbox"/> Send 5	Send 5 ▼
<input checked="" type="checkbox"/> Mute 2	Mute 2 ▼	<input checked="" type="checkbox"/> Send 6	Send 6 ▼
<input checked="" type="checkbox"/> Insert 2	Insert 2 ▼	<input checked="" type="checkbox"/> Send 7/8	Send 7/8 ▼
		<input checked="" type="checkbox"/> Send 9/10	Send 9/10 ▼
		<input checked="" type="checkbox"/> EQ	EQ ▼

Enable All

Default Mapping

The Default Mapping has all controls mapped to themselves.

Mapping

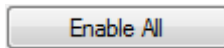
Enable	Map To
<input checked="" type="checkbox"/> Fader 1	Fader 1 ▼
<input checked="" type="checkbox"/> Fader 2	Fader 2 ▼
<input checked="" type="checkbox"/> Mute 1	Mute 1 ▼
<input checked="" type="checkbox"/> Insert 1	Insert 1 ▼
<input checked="" type="checkbox"/> Mute 2	Mute 2 ▼
<input checked="" type="checkbox"/> Insert 2	Insert 2 ▼

The "Mapping" section has an "Enable" checkbox and "Map To" pull-down menu for each of the automated controls (Fader 1 and 2 and automation switches).

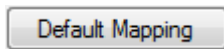
The "Enable" checkbox ☒ enables the data from that control to be copied or swapped. If the checkbox is not checked ☐, the data from that control will not be applied when the copy or swap function is executed.

The "Map To" pull down menus allows the data from the enabled controls to be applied to other controls.

The two (2) Mapping buttons function as follows:

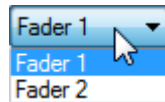


Enable All: Enables the checkboxes for all controls



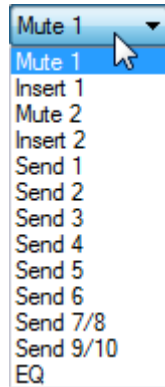
Default Mapping: Sets the control mapping to the default setting (all controls mapped to themselves)

The "Map To" pull-down menus allows control data to be copied or swapped with other controls as follows:



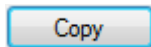
Fader data can only be applied to the other fader.

- Fader 1
- Fader 2

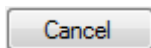


Mute and switch data can only be applied to any of the other mutes or switches:

- Mute 1
- Insert 1
- Mute 2
- Insert 2
- Send 1
- Send 2
- Send 3
- Send 4
- Send 5
- Send 7/8
- Send 9/10
- EQ (EQ Bypass)



Copy: Executes the selected copy or swap function and generates a new mix in the Mix Tree with the resulting changes to the data

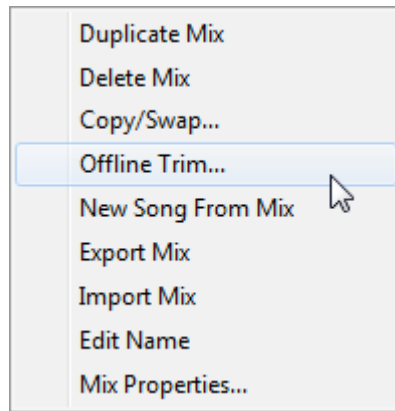


Cancel: Cancels the selected copy or swap operation

To copy or swap data from one channel to another and/or from one channel section to another, use the following procedure:

1. Highlight the desired mix and select "Copy/Swap..." from the Mix Tree menu.
2. Select the channel to copy "from" or swap.
3. Select a channel to copy "to" or swap.
4. Select either "Copy" or "Swap."
5. Select the timecode region to which the copy or swap data will be applied.
6. Select the control "Mapping."
7. Click the "Copy" button to create new mix with the selected copied or swapped data.

#### 26.8.3.4 Offline Fader Trim

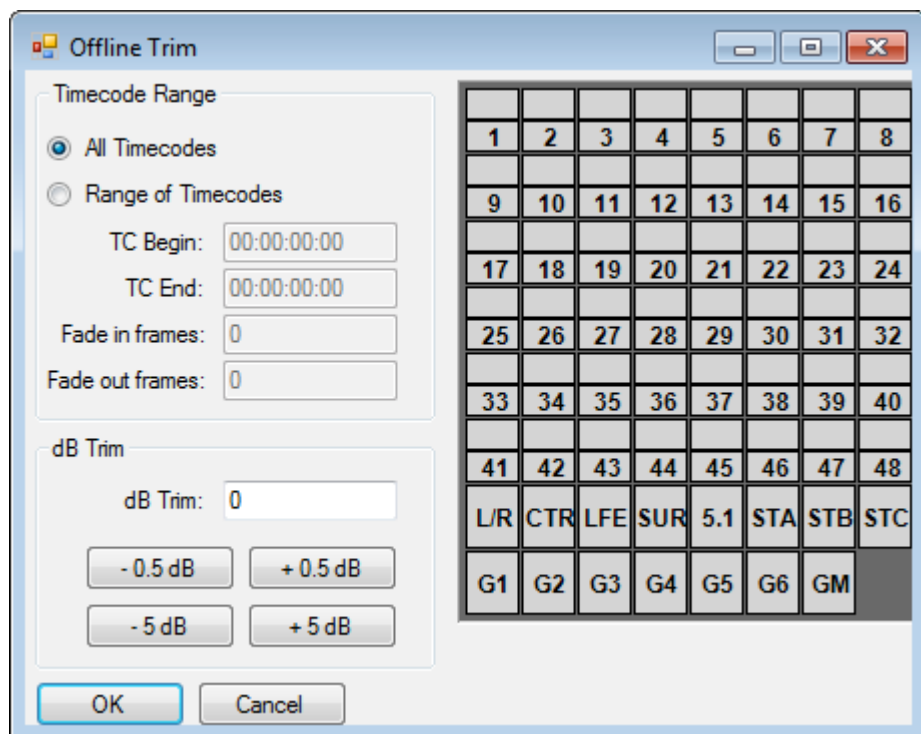


"Offline Trim..." allows the fader levels for the highlighted mix to be "trimmed" offline by a user defined amount.

The trimmed levels can apply to all Timecode addresses (00:00:00:00 to 23:59:59:XX) or only to a user defined range of timecode locations.

A new mix with the trimmed levels will be created in the Mix Tree as a result of using this function.

To trim the fader levels in a mix, highlight the desired mix and select "Offline Trim..." from the Mix Tree menu. The Offline Trim window will open.



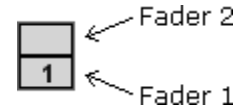
The Offline Trim window has four (4) sections:

- Timecode Range: Selects a timecode region where data will be trimmed
- dB Trim: Selects the amount of the fader trim in decibels
- Channel Grid:
- OK and Cancel Buttons: Applies or cancels the selected trim function

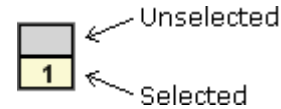
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
L/R	CTR	LFE	SUR	5.1	STA	STB	STC
G1	G2	G3	G4	G5	G6	GM	

The Offline Trim channel grid allows the selection of the faders to be trimmed.

Each channel box has two parts, Fader 1 and Fader 2:



The selected faders will be highlighted in yellow to indicate their status.



Faders may be selected individually or in any combination. Multiple faders can be trimmed simultaneously.

To select faders to be trimmed, use one of the following methods:

- Click an individual fader
- Shift + click to select a range of consecutive faders
- Ctrl + click to select a group of non-consecutive faders
- Drag-click to select a region of faders (rubber-banding)

Click A Single Fader: To select an individual fader

1	2	3	4	5	6	7	8

Shift + Click: To select a range of consecutive faders

- Click on the first fader to select it
- Hold down the Shift key and click on the last fader in the series
- The faders between the first and last fader will be selected

1	2	3	4	5	6	7	8

Shift-Clicking can be continued in a series using different faders as long as the next selection is a higher channel number than the last selected fader.

1	2	3	4	5	6	7	8

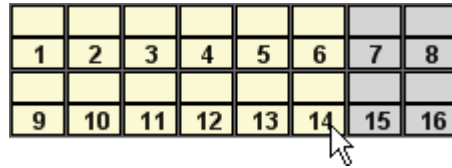
Ctrl + Click: To select a group of non-consecutive faders

- Hold down the Ctrl key
- Click on the desired faders in any order

1	2	3	4	5	6	7	8

Drag + Click (Rubber-banding): To select a region of faders

- Click within the fader of the first channel to be included
- While holding down the left mouse button, drag the mouse over the region of faders you wish to include in the selection
- The faders within the rubber-band region will be selected



Clicking within the grid will clear any previous selections, unless Shift + Click or CTRL + Click methods are used. One or more faders can be added or deleted to previously selections using Shift + Click or CTRL + Click methods. Rubber-banding can be used in combination with Shift + Click and Ctrl + Click methods.

Timecode Range

☒ All Timecodes

☐ Range of Timecodes

TC Begin: 00:00:00:00

TC End: 00:00:00:00

Fade in frames: 0

Fade out frames: 0

Timecode Range

☐ All Timecodes

☒ Range of Timecodes

TC Begin: 00:00:00:00

TC End: 00:00:00:00

Fade in frames: 0

Fade out frames: 0

The Timecode Range section sets either all timecode addresses to be selected or a range of addresses with user-defined beginning and ending points. Fade in and fade out times can be set when Range of Timecodes is selected. The Timecode Range section contains the following controls:

- All Timecodes: Selects the entire range of timecode locations (00:00:00:00 to 23:59:59:XX )
- Range of Timecodes: Selects a range of timecode locations (TC Begin to TC End)
- TC Begin: The starting timecode location
  - Enter the beginning timecode
- TC End: The last timecode location to which
  - Enter the ending timecode
- Fade in Frames: The number of frames it takes to transition from the previously recorded level to the Trim level
  - Enter the fade in frames
- Fade out Frames: The number of frames it takes to transition from the Trim level back to the previously recorded level
  - Enter the fade out frames

*NOTE: The "TC Begin," "TC End," "Fade in Frames," and "Fade out Frames" entry fields are only available when "Range of Timecodes" is selected.*

dB Trim

dB Trim: 0

-0.5 dB +0.5 dB

-5 dB +5 dB

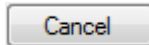
The dB Trim section sets the amount of fader trim. A user-defined level may be entered directly in the dB Trim entry field or by using the four increment/decrement buttons. The dB Trim section contains the following controls:

- dB Trim: Entry field for the user-defined trim level
- -0.5 dB: Decrement 0.5 decibel
- +0.5 dB: Increment 0.5 decibel
- -5 dB: Decrement 5 decibels
- +5 dB: Increment 5 decibels

The trim increment/decrement buttons are additive and may be pressed repeatedly to increase or decrease the Trim value by the selected amount.



**OK:** Executes the selected level trim and generates a new mix in the Mix Tree with the resulting changes to the data



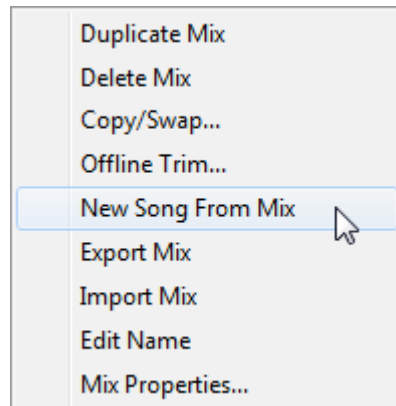
**Cancel:** Cancels the selected Offline Trim operation

To trim fader levels on one or more channels, use the following procedure:

1. Highlight the desired mix and select "Offline Trim..." from the Mix Tree menu.
2. Select the "Timecode Range" to which the fader trim will be applied.
3. Select the fader(s) to be trimmed.
4. Select the desired trim level.
5. Click the "OK" button to create new mix with the trimmed fader levels.

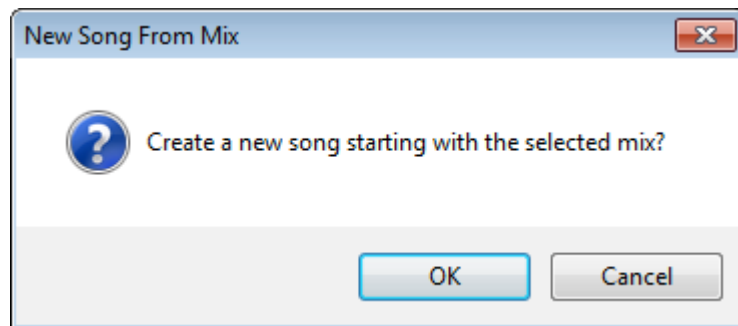
Fader data can also be trimmed online (with timecode running). Refer to section 26.5.3.8 Online Fader Trim for details regarding the offline trim function.

#### 26.8.3.5 New Song From Mix



A new Song can be created from a mix in the Mix Tree belonging to a different Song. The new song will have a new Mix Tree with a copy of the highlighted mix.

To create a new Song (and Mix Tree) using the highlighted mix, select "New Song From Mix" from the Mix Tree menu. The New Song From Mix prompt will appear.



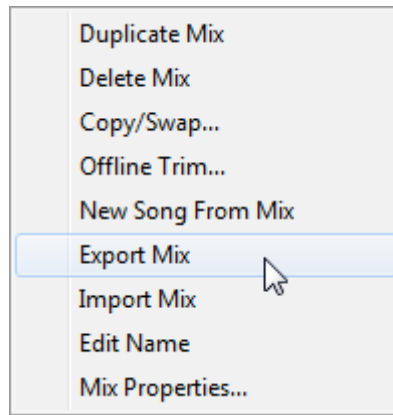
Click "OK" to create a new Song will be created.

Click "Cancel" to cancel this operation.

To create a new song from a mix, use the following procedure:

1. Highlight the desired mix and select "New Song From Mix" from the Mix Tree menu.
2. Click the "OK" button to create new song and Mix Tree with a copy of the highlighted mix.

### 26.8.3.6 Export Mix

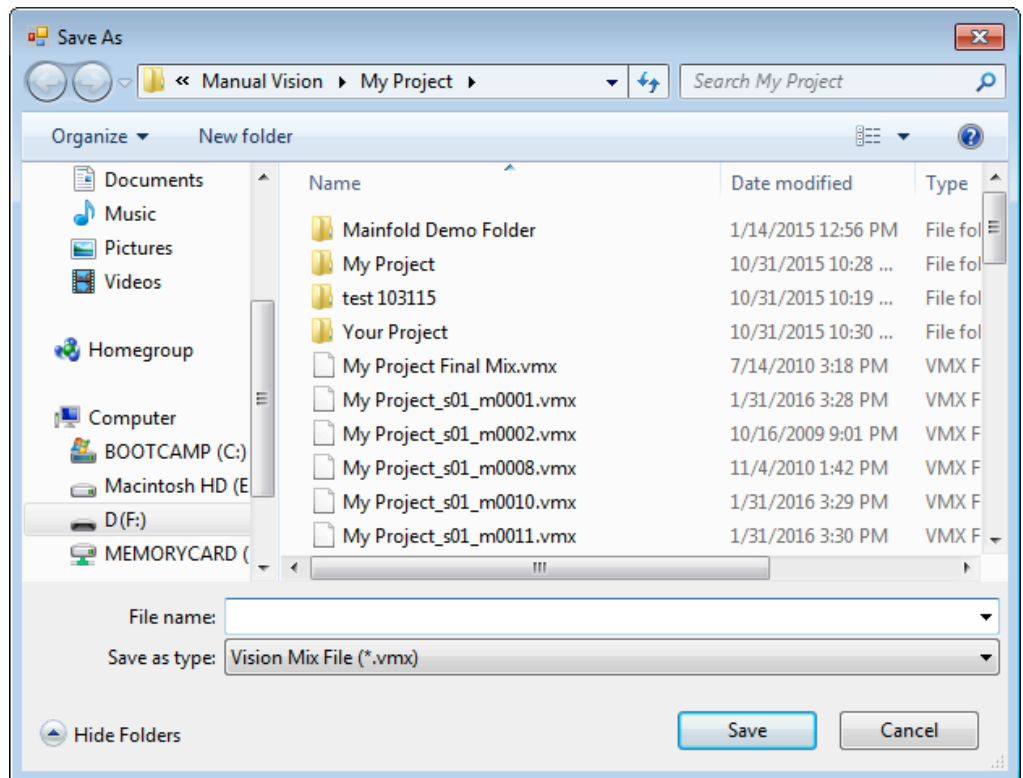


A mix can be exported and saved as a separate file and can be later imported for use in other Songs or Projects.

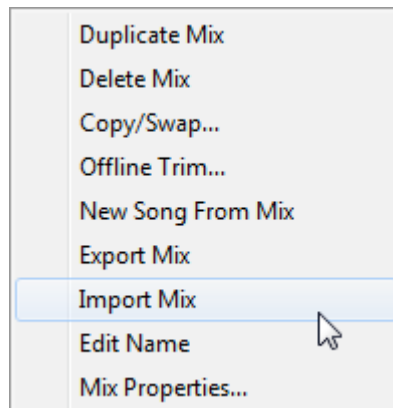
To export the highlighted mix, select "Export Mix" from the Mix Tree menu. A "Save As" window will open.

A file name can be entered and the exported mix will be saved in this location. A different location can be selected using normal navigation techniques.

The mix will be saved as a file with a .vmx



### 26.8.3.7 Import Mix



An exported mix file can be imported for use in existing songs or projects.

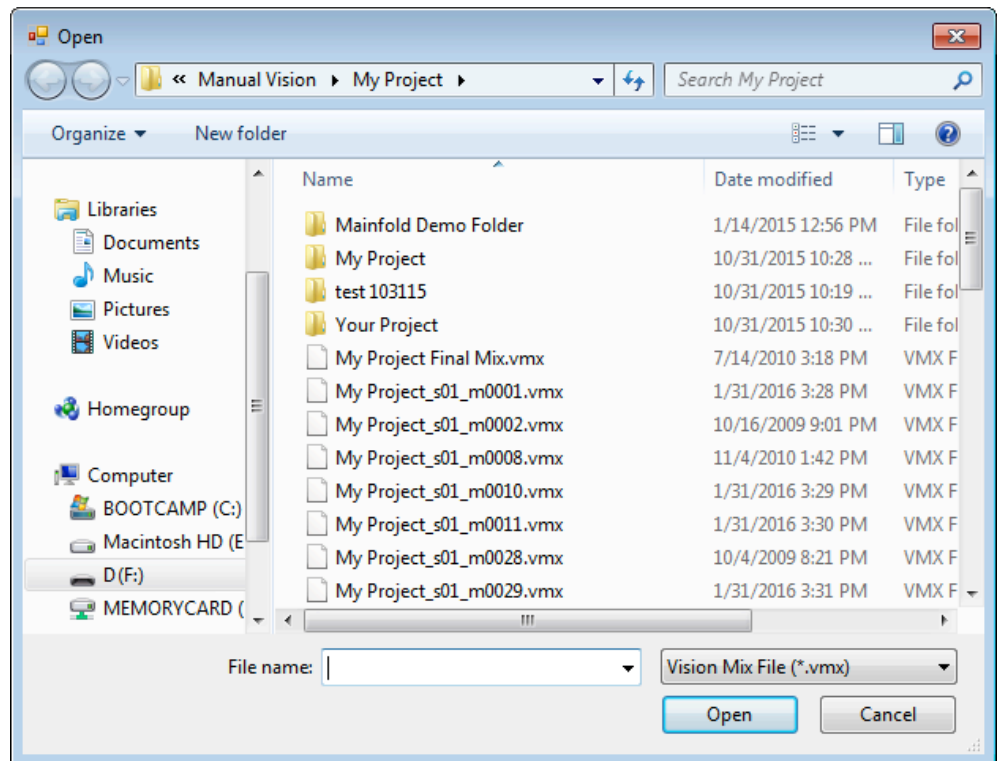
To import a mix into the current Mix Tree, select "Import Mix" from the Mix Tree menu. A "Open" window will open.

Select the mix to import using normal navigation techniques and click "Open."

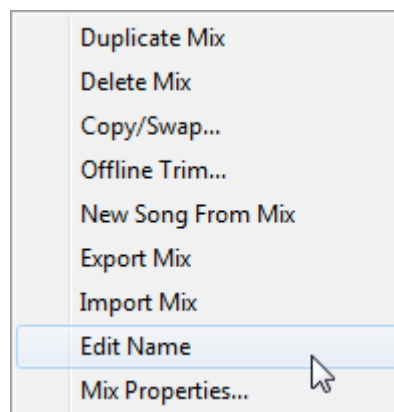
The selected mix will be added to the current Mix Tree within in the current song.

Only mixes with a .vmx suffix can be imported.





### 26.8.3.8 Edit Mix Name

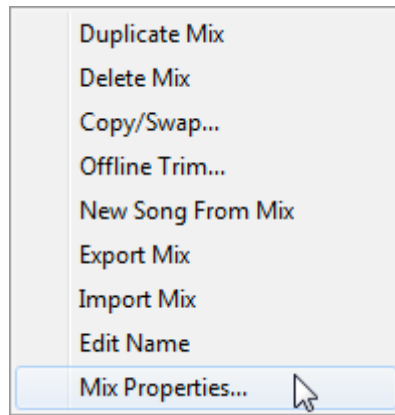


To change the name of a mix, highlight the desired mix and select "Edit Name" from the Mix Tree menu.

The Mix Name will turn into a text-entry box with the current name highlighted. Edit the existing name or enter a new one and then click on the name. The new Mix Name will be displayed.

Mix Name	Time	Moves	Groups	Change
Mix 32	11/4/2010...	0	8	Group created
Mix 2	8/3/2009 2...	0	4	Group created
Vocal -2dB Mix	8/3/2009 3...	0	0	Offline Trim
My Mix Copy	8/3/2009 3...	0	0	Duplicated
Mix 29	10/10/200...	0	0	Copy/Swap
Mix 44	1/31/2016...	0	0	Duplicated
My Mix	7/7/2009 1...	0	0	

### 26.8.3.9 Mix Properties

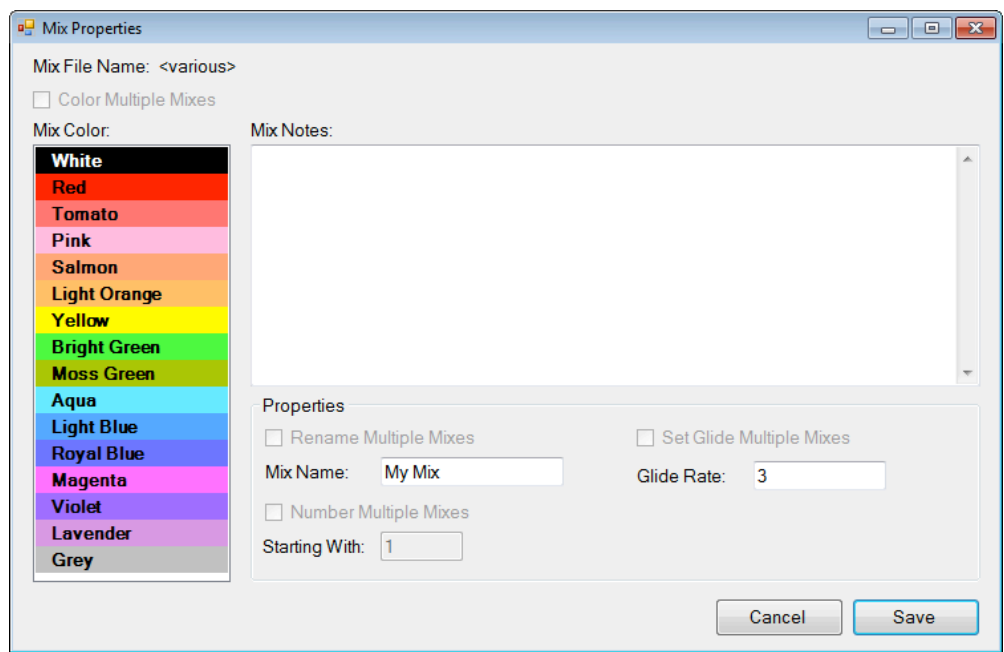


"Mix Properties..." allows the following Mix Properties to be applied to the highlighted mixes:

- Mix Name
- Glide Rate
- Color

To change the properties for one or more mixes, highlight the desired mix(es) and select "Mix Properties..." from the Mix Tree menu. The Mix Properties window will open.

The Mix Properties window functions differently when a single mix is highlighted than it does when two or more mixes are highlighted.



When a single mix is highlighted, the Mix Properties window will open with the following functions active:

- Mix Name
- Glide Rate
- Mix Color

The Mix Name can be changed by entering a new name or editing the existing one.



Glide Rate can be set by entering a whole-number value (refer to section 26.8.3.11 for Glide Rate details.)

The mix can be assigned a color by clicking on a color.

Click "Save" to apply the Mix Properties.

Clicking "Cancel" will cancel any changes.

Mix Properties

Mix File Name: <various>

☐ Color Multiple Mixes

Mix Color:

- White
- Red
- Tomato
- Pink
- Salmon
- Light Orange
- Yellow
- Bright Green
- Moss Green
- Aqua
- Light Blue
- Royal Blue
- Magenta
- Violet
- Lavender
- Grey

Mix Notes:

Properties

☐ Rename Multiple Mixes      ☐ Set Glide Multiple Mixes

Mix Name:       Glide Rate:

☐ Number Multiple Mixes

Starting With:

Cancel Save

If multiple mixes are highlighted, they can all be set to have the following identical Mix Properties: Name, Glide Rate, and Color.

When two or more mixes are highlighted, the Mix Properties window will open with all functions inactive.

To activate a function, click the checkbox ☒ next to its label:

- ☐ Color Multiple Mixes
- ☐ Rename Multiple Mixes
- ☐ Set Glide Multiple Mixes

☒ Color Multiple Mixes

Mix Color:

- White
- Red
- Tomato
- Pink
- Salmon
- Light Orange
- Yellow
- Bright Green
- Moss Green
- Aqua
- Light Blue
- Royal Blue
- Magenta
- Violet
- Lavender
- Grey

If "Color Multiple Mixes" is checked, all highlighted mixes will receive the color selected when the "Save" button is clicked.

This function is only active when the "Color Multiple Mixes" checkbox is checked and multiple mixes have been highlighted.

Enter the desired Mix Properties and click "Save" to apply these properties to the highlighted mixes.

Clicking "Cancel" will cancel any changes.

**Properties**

☒ **Rename Multiple Mixes**

Mix Name:

☒ **Number Multiple Mixes**

Starting With:

When multiple mixes are being renamed with the same name, an ascending number will be added automatically.

If "Number Multiple Mixes" is checked, a starting number for the first highlighted mix may be entered in the "Starting With:" entry field. The remaining highlighted mixes will receive consecutive numbers.

This function is only active when the "Rename Multiple Mixes" checkbox is checked and multiple mixes have been highlighted.

### 26.8.3.10 Glide Return

The "Glide Return" function is always active.

The "Glide Rate" is the speed at which a fader will return to its recorded position after one of the following events occurs:

- A fader in Read is moved away from its recorded position and is released
- A fader in Update is released

Glide Return does not apply when:

- A fader in Write is changed to Read
- Any end-of-pass process when the physical position of the fader does not match the recorded position when timecode is stopped

In these cases, the faders will "snap" to match the Read mix data without Glide Return.

The Glide Rate is set in the Mix Properties window. It is expressed in fifths of a decibel per second and must be set to a positive integer between 1 and 10,000. For example, a setting of "5" will result in a Glide Rate of 1dB per second and a setting of "500" will yield a Glide Rate of 100dB per second. *The lower the number, the slower the rate of return.* This provides a resolution of 10,000 possible values, so the Glide Rate can be set to precisely match the timing demands of the mix.

The fader movement in Glide Return is carried out a constant, decibel-relative rate. The speed of the fader movement will be scaled to accommodate the audio taper depending on its physical position.

While only one Glide Rate can be used at a time, multiple Glide Rates can be used within a mix as needed. After moves have been recorded using one Glide Rate, the rate can be changed and the subsequent moves will use the new rate.

**IMPORTANT NOTE:** *Changes to the Glide Rate do not apply to previously recorded fader moves.*

☐ **Set Glide Multiple Mixes**

Glide Rate:

The Glide Rate entry field will not be active when the Mix Properties window is opened if two or more mixes are highlighted.

To set the Glide Rate on a single mix, use the following procedure:

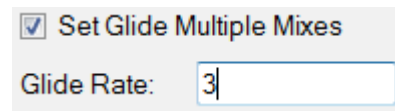
1. Highlight the desired mix and open the Mix Properties window.
2. Enter the desired Glide Rate and click "Save."
3. The entered Glide Rate will be applied to the highlighted mix.

4. Double-click the mix to send it back to the ACM to use the new rate.

Once the Glide Rate has been set in a mix, subsequent mixes derived from that mix will use that same rate. When starting a new mix, it may be helpful to set the

Glide Rate for the first mix sent to the PC after the New Mix has been created in the ACM, and then resend it back to the ACM for as the active mix. Using this method, all mixes derived from this mix will then have the same initial Glide Rate.

The same Glide Rate can be set for multiple mixes as needed:

A screenshot of a software interface. It features a checkbox labeled "Set Glide Multiple Mixes" which is checked. Below this checkbox is a text label "Glide Rate:" followed by a text input field containing the number "3".

The Glide Rate entry field will only be active when the Mix Properties window is opened if two or more mixes are highlighted and "Set Glide Multiple Mixes" is selected

To set the same Glide Rate on multiple mixes, use the following procedure:

1. Highlight the desired mixes and open the Mix Properties window.
2. Click in the "Set Glide Multiple Mixes" checkbox and enter the desired Glide Rate.
3. Click "Save" and the entered Glide Rate will be applied to all of the highlighted mixes.

## 26.9 Mix Tree Control from the ACM Control Panel (Vision Control)

The Mix Tree can be controlled directly from the console using the ACM Control Panel. Once PC Window Control is engaged for the Mix Tree, the following functions can be achieved without having to access the PC software with the mouse or touch pad:

- Mix Selection: Use the ACM Control Panel arrow buttons to move up and down the Mix Tree list and click the "Yes Ok" button to make the highlighted mix the active mix.
- Mix Tree Menu: Once a mix is highlighted, the Mix Tree menu can be opened by pressing the "Menu" button. The arrow buttons can be used to select the menu item, which can be opened using the "Yes OK" button. The "Prev," "Next," "Toggle Value," "Yes OK," and "No Cancel" buttons can then be used to navigate and perform the selected function.

Refer to section 26.7.3.1 PC Window Control.

## 26.10 Automation Procedures

For all procedures below:

1. Open a Vision Project File.
2. Open the "Project" window using the "View" menu in the Main window.
3. Create and name a new song if needed using the "Songs" tab in the Project window.
4. Make sure the Mix Tree is displayed.
5. Setup the needed routing and other recall settings.


### 26.10.1 Creating a New Mix in Automation

To create a new mix using automation, perform the following procedure:

1. Select "Default State" from the Automation Control Module (ACM) Main menu. Confirm this operation when prompted. This will put all channel sections in Manual mode and prepare other ACM functions for automation.
2. Create a rough mix on the console. This mix will become the initial positions for your new mix.
3. Select "New Mix" from the ACM Main menu. Confirm this operation when prompted. This will clear the current mix in the ACM and create a new mix that contains the Initial Positions of your rough mix.
4. Once the new mix has been created, the mode can be changed to Read at any time and the system will playback the Initial Positions of your rough mix. Status of the system can be changed using the console hardware or PC software.
5. To record moves to faders and switches, select the channel sections to be changed and select either Update or Write to record your moves at the proper time. Section selection and automation modes can be changed at any time, even while timecode is running.
6. It might be helpful to engage "Auto Safe," so all sections in Write will change to Update after moves have been recorded and timecode is stopped. "Auto Safe" acts as a safety device to help prevent recorded moves from being overwritten accidentally.
7. After a few moves have been recorded, save the mix from the ACM to the Mix Tree by pressing the "Save Mix" button on the ACM Control Panel. It might be helpful to engaged "Auto Save," so the mix in the ACM is saved to the Mix Tree every time new moves are recorded.
8. After the first ACM mix is saved to the Mix Tree, it might be helpful to open the Mix Properties from the Mix Tree menu to make sure the Glide Rate is set as needed. It can also be helpful to name and color code this first mix.
9. To fine tune the mix, use a combination of mode and submodes as needed. Using the Mix Tree edit functions might also help fine tune the mix.
10. As all the moves for a set of controls have been completed, it might be helpful to set the "Safe" mode for that set of controls to help prevent accidental changes.
11. If "Auto Save" is not being used, be sure to press "Save Mix" once the mix is finished and ready to print.

### **26.10.2 Making a Mix Active**

As mixing continues, the Mix Tree will grow with time. To make an existing mix the active mix and send it to the ACM, perform the following procedure:

1. Double-click the desired mix in the Mix Tree.
2. The highlighted mix will be sent to the ACM and the Mix Tree arrow icon  will indicate that this is the active mix.

### **26.10.3 Exporting an Individual Mix File**

To export a mix to a separate file, use the following procedure:

1. Highlight the desired mix and select "Export Mix" from the Mix Tree menu.
2. Select the location to save the mix file.
3. Enter a File Name for the mix
4. Click the "Save" button to create a separate file from the highlighted mix.

### **26.10.4 Importing an Individual Mix File**

To import a mix file to the current Mix Tree, use the following procedure:

1. Select "Import Mix" from the Mix Tree menu.
2. Select the mix file mix file to be imported using normal navigation techniques. Only mix files with the .vmx suffix can be imported.
3. Click the "Open" button to import the selected mix.

### **26.10.5 Loading Existing Mix Trees**

Mix Trees are stored in songs. To load an existing Mix Tree, perform the following procedure:

1. Open the "Songs" tab in the Project window.
2. Double-click the desired song in the Song list.
3. The highlighted song will load and its Mix Tree will be sent to the Mix Tree tab and become active.
4. The last used mix in the Mix Tree will be sent to the ACM and will become the active mix.

# 27.0 DAW Control

A Digital Audio Workstation (DAW) can be controlled from the Vision console controls using the Human User Interface (HUI) protocol over MIDI. The following DAW controls can be operated from the console hardware:

- Fader
- Mute
- Solo
- Record Ready

Similarly, the DAW can control the Vision, allowing moves made in the DAW (and automation) to control the Vision faders and mutes.

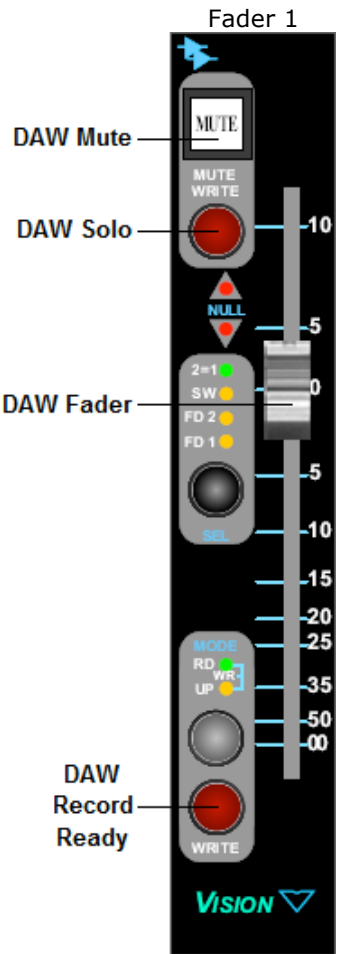
A maximum of thirty-two (32) channels can have DAW control simultaneously. There are four (4) sets of MIDI in and out ports that can map the data between the console Fader Control Modules and the eight (8) MIDI ports on the console's rear panel (on a 25-pin D-sub connector). Each set of ports can control eight (8) DAW channels.

The Control Surface & MIDI Setup window is also used to select a MIDI port for MIDI timecode (MTC) for synchronization of the automation system over MIDI.

## 27.1 Control Surface Functions

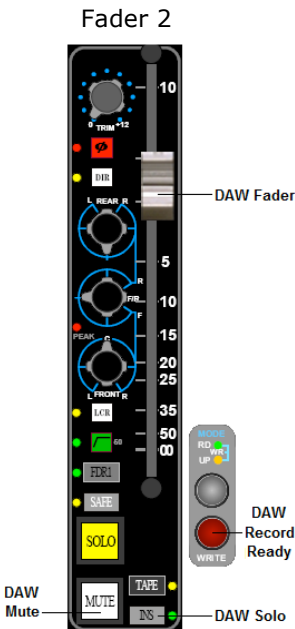
The DAW can be controlled from the Fader 1 and/or Fader 2 controls, depending on the mapping of the Fader Control Modules (FCMs) to the MIDI ports.

Vision faders and mutes are mapped directly to the associated DAW controls, but due to internal console logic and audio routing "solo" and "record ready" functions must be operated from alternate controls. For solos, this is the case since the Vision solo system uses a logic system that is separate from the automation system. Therefore it is necessary to "borrow" a switch to solo a DAW track. Since there is no "record ready" switch or button on the Vision, another switch is "borrowed" to provide this function.



When Fader 1 console controls are mapped to the DAW, the following console controls operate DAW functions as indicated below when Control Surface is enabled:

<u>FADER 1</u>	=	<u>DAW</u>
Fader	=	Fader
MUTE	=	Mute
MUTE WRITE	=	Solo
WRITE	=	Record Ready



When Fader 2 console controls are mapped to the DAW, the following console controls operate DAW functions as indicated below when Control Surface is enabled:

<u>FADER 2</u>	=	<u>DAW</u>
Fader	=	Fader
MUTE	=	Mute
FADER 2 INSERT	=	Solo
WRITE*	=	Record Ready

*\*NOTE: The Fader 2 automation section must be the selected in order for Record Ready to be selected when Fader 2 is assigned to DAW control.*



Engaging Solo: Normal or Solo: Groups in the Global Functions window will replace the function of the MUTE buttons with an additive solo-in-place function console wide. Refer to section 26.8.2 Global Automation Functions for detailed information regarding these alternate solo modes.

When controlling DAW sessions with greater than 32 channels, “bank” and “shift” functions are provided to allow access to all DAW channels. The navigation buttons on the ACM Control Panel provide bank & shift functions when Control Surface is enabled for DAW control, as well as PC window control. After the Control Surface has been setup, configured, and enabled, the navigation buttons on the ACM Control Panel function as follows for DAW control when the ACM is on its main screen:



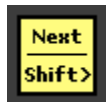
- Toggle Value / < Bank (Bank Down):** Shifts DAW control eight channels lower
- “Toggle Value” is used to select values within a PC window when Window Control is enabled
  - Illuminates in green when pressed



- Previous / Bank > (Bank Up):** Shifts DAW control eight channels higher
- “Previous” is used to navigate within a PC window when Window Control is enabled
  - Illuminates in yellow when pressed



- Menu / < Shift (Shift Down):** Shifts DAW control one channel lower
- “Menu” is used to open a PC window menu when Window Control is enabled
  - Illuminates in yellow when pressed

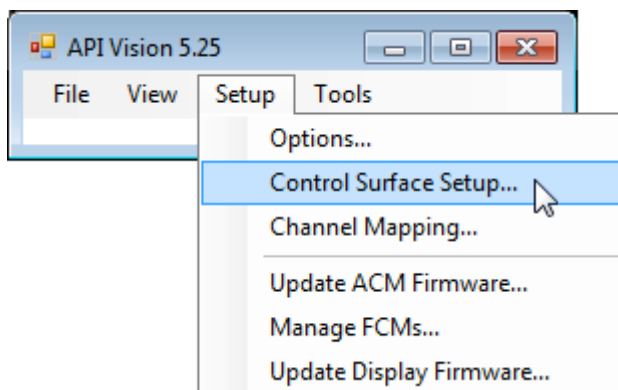


- Next / Shift > (Shift Up):** Shifts DAW control one channel higher
- “Next” is used to navigate within a PC window when Window Control is enabled.
  - Illuminates in yellow when pressed

*NOTE: Bank and Shift functions are only available when a DAW session of great than 32 channels is being controls, the ACM display is set to its main window, and Control Surface is enabled.*

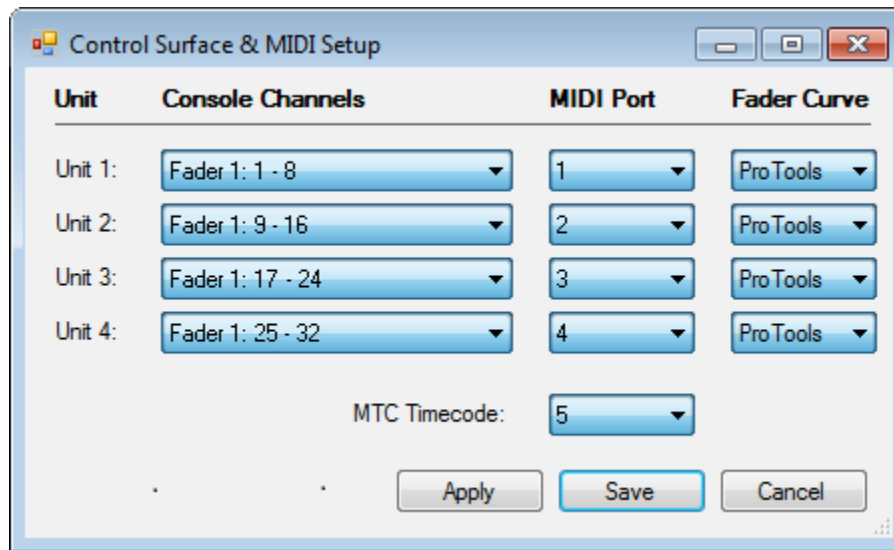
## 27.2 Control Surface Setup

To setup MIDI and create a console to DAW map, “settings” must be unlocked if “DAW Config.” has been selected as a protected item. Refer to section 19.2.2.3.1 Unlock Settings Tab and 28.2 Password Protection for details.



With “settings” unlocked, select the Control Surface Setup... submenu from the “Setup” menu in the Main window.

The Control Surface & MIDI Setup window will open.

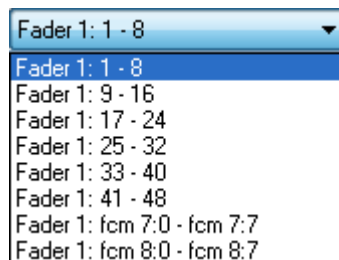


The Control Surface & MIDI Setup window has five sections:

- Unit 1-4: Each unit handles data conversion between the selected FCM and the selected MIDI Port
- Console Channels: Pull-down menu used to select an 8-channel FCM to be mapped to a MIDI Port
- MIDI Port: Pull-down menu used to select the MIDI Port the selected FCM is mapped to.
- MTC Timecode: Pull-down menu used to select a MIDI Port for MIDI timecode (MTC)
- Fader Curve: Pull-down menu used to select either a Pro Tools or Linear fader curve
- Control Buttons: Used to Apply, Save, or cancel the selected mapping

The Control Surface & MIDI Setup window defines the mapping of the console FCMs to the MIDI ports on the Automation Control Module (ACM) for DAW control.

### Console Channels Assignment



Click the "Console Channels" pull-down menu to assign a control unit to an eight-channel Fader Control Module (FCM).

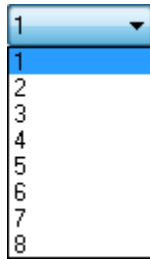
A maximum of 20 FCMs are supported in software, however only four can be mapped to MIDI Ports at one time. The display of the pull-down menu items is determined by Channel Mapping window and the number of FCMs physically installed in the console. The display to the left is for a 48 frame console with six (6) FCM's installed.

FCMs for Master channels are not typically used for DAW control.

The "Console Channels" pull-down menu list for a 48 channel frame with six FCM's installed will be populated as follows:

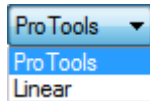
- Fader 1: 1-8
- Fader 1: 9-16
- Fader 1: 17-24
- Fader 1: 25-32
- Fader 1: 33-40
- Fader 1: 41-48
- Fader 1: fcm 7:0 – fcm 7:7
- Fader 1: fcm 8:0 – fcm 8:7
- Fader 1: fcm 9:0 – fcm 9:7
- Fader 1: fcm 10:0 – fcm 10:7
- Fader 2: 1-8
- Fader 2: 9-16
- Fader 2: 17-24
- Fader 2: 25-32
- Fader 2: 33-40
- Fader 2: 41-48
- Fader 2: fcm 7:0 – fcm 7:7
- Fader 2: fcm 8:0 – fcm 8:7
- Fader 2: fcm 9:0 – fcm 9:7
- Fader 2: fcm 10:0 – fcm 10:7

## MIDI Port Assignment

A pull-down menu for MIDI Port Assignment. The top bar shows '1' with a downward arrow. The list below contains numbers 1 through 8, with '1' highlighted in blue.

Click the "MIDI Port" pull-down menu to assign each control unit to one of the eight (8) MIDI Ports.

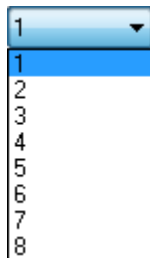
## Fader Curve

A pull-down menu for Fader Curve. The top bar shows 'Pro Tools' with a downward arrow. The list below contains 'Pro Tools' and 'Linear', with 'Pro Tools' highlighted in blue.

Click the "Fader Curve" pull-down menu to select either "Pro Tools" or "Linear" as the fader control curve for each control unit.


- Pro Tools: The console faders will match the on-screen fader movements in Avid Pro Tools™ DAW software
- Linear: The faders will respond to data in a linear manner. This mode is compatible with some DAW software platforms.

## MIDI Timecode (MTC) Port Assignment

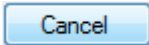
A pull-down menu for MIDI Timecode (MTC) Port Assignment. The top bar shows '1' with a downward arrow. The list below contains numbers 1 through 8, with '1' highlighted in blue.

The Vision automation system can be synchronized with MIDI Timecode or SMPTE Timecode. For MTC synchronization MIDI Port must be selected via the Control Surface & MIDI Setup window

Click the "MTC Timecode" pull-down menu to select the one of the eight (8) MIDI Ports where MIDI Timecode (MTC) will be received.

Once all the Console Channels, MIDI Ports, Fader Curves, and the MTC timecode Port have been selected click  to apply the setup and leave the window open.

Click  to save the selected setup and close the window.

Click  to cancel the operation without changing the setup and close the window.

### 27.3 Control Surface Enable

Once the Control Service setup has been completed, the console must be enabled to control the connected DAW. DAW control can be enabled in three places:

- En: Cntrl Surface Y/N toggle in the Global Funcs submenu in the ACM menu
- En: Cntrl Surface button in the Global Functions window
- Enable CTRL Surface button on the ACM Control Panel

En: Cntrl Surface Y

En: Cntrl Surface



Enable CTRL Surface (Control Surface): Enables fader, mute, and solo DAW control from the console via MIDI

- When the Control Surface is enabled:
  - A "Y" will appear next to the En: CTRL Surface item in the Global Funcs ACM menu
  - The En: Cntrl Surface button in the Global Functions window illuminates in yellow
  - The Enable Control Surface button on the ACM Control Panel illuminates in green

### 27.4 DAW Control Surface Applications

The DAW control function can be applied in a variety of ways. A few examples are listed below, but the system is not limited to these applications.

1. Fader 1 and/or Fader 2 could be assigned to control the DAW to provide a tactile control while "mixing-in-the-box."
2. Fader 2 can be assigned to DAW control and Fader 1 can return the same DAW track to the console. This provides an easy means of accessing both the DAW and console controls from the same channel strip.

### 27.5 DAW Control Surface Procedures

For all procedures below:

1. Open a Vision Project File.
2. Open the "Project" window using the "View" menu in the Main window.
3. Create and name a new song if needed using the "Songs" tab in the Project window.
4. Setup the needed routing and other recall settings.
5. Connect the MIDI ports on the back of the ACM to the MIDI interface for the DAW.
6. Set the needed parameters in the DAW to allow control via MIDI.

#### 27.5.1 Using the console control surface to control a DAW

To establish DAW control from the console hardware, perform the following procedure:

1. Unlock Settings if needed.
2. Open the "Control Surface Setup..." menu from the "Setup" menu in the Main window. This will open the Control Surface & MIDI Setup window.
3. Assign a FCM (8 faders/mutes) to the control unit using the "Console Channels" pull-down menu.
4. Assign the control unit to a MIDI Port using the "MIDI Port" pull-down menu.
5. Click the "Save" button to save the current setup.
6. Engage the "En: Control Surface" to establish DAW control.
7. Enable HUI control in the DAW.

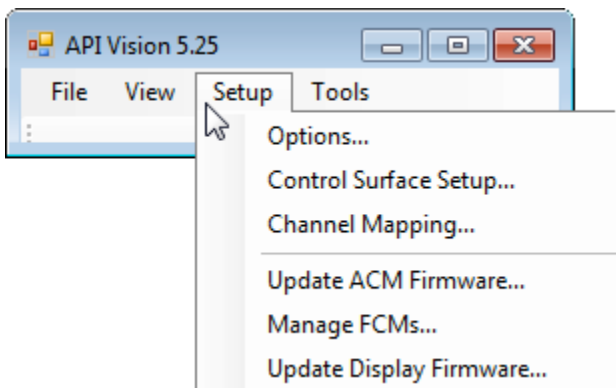
8. Use the mapped console controls to operate DAW functions as needed.
9. Use Bank & Shift up & down buttons to access all channels within DAW sessions with more than 32 channels (ACM must display the main window).

## 28.0 System Setup, Maintenance, and Updates

To prepare the Vision console for operation, several “setups” should be performed when the console is initially setup or upgraded:

- Software Setup: Configuration of file storage and Recall Setting labels
- Password Protection: A set of administrative settings can be password protected
- Software Updates: Verify the software installed in the PC is the most current stable version. Download and install any stable updates as needed
- Firmware Updates: Verify the installed software for the Automation Control Module (ACM), Fader Control Modules (FCMs), and ACM Control Panel display is the most current stable version. Download and install any stable updates as needed
- Channel Mapping: Setup Channel Mapping to establish the linking of the PC software and the installed console hardware
- Timecode Setup: Select the SMPTE timecode (LTC or VITC) or MIDI timecode (MTC) source for automation synchronization and configure a MIDI port for MTC. Adjust Freewheel Frames as needed
- Fader Calibration: Perform a fader calibration routine (should be performed periodically)
- Default Snapshot: Set up the Default Snapshot in the ACM
- Default Groups: Set up the Default Snapshot in the ACM
- Default File Storage Directories: Set up the default storage locations for new Project Folders/Files and firmware
- Control Surface Setup: Set up the mapping and MIDI ports for DAW control
- ACM Control Panel Display: Set the ACM Control Panel display contrast

The “Setup” menu in the Main window contains a suite of utilities for the set up, maintenance, and updating of the console.

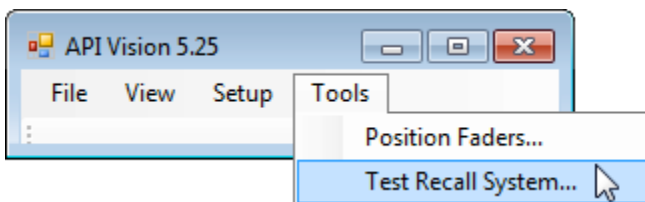


The Setup menu has six sub-menus:

- Options...
- Control Surface Setup...
- Channel Mapping...
- Update ACM Firmware...
- Manage FCMs...
- Update Display Firmware...

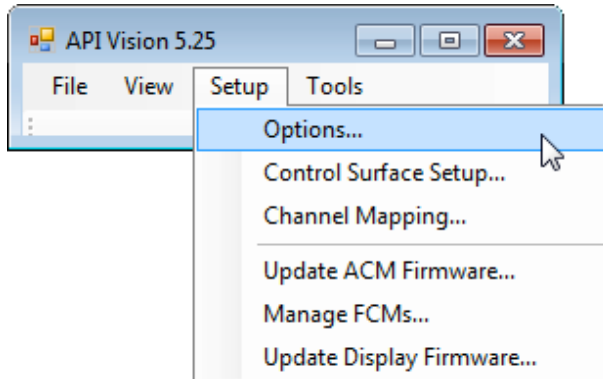
Several of the submenus in the Setup Menu can be locked and password protected using The Unlock Settings Tab from the Options... submenu. To access to protected menu items settings must be unlocked. Refer to section 28.2 Password Protection for details on unlocking settings.

In addition, the “Tools” menu provides access to a utility for testing the Recall System.



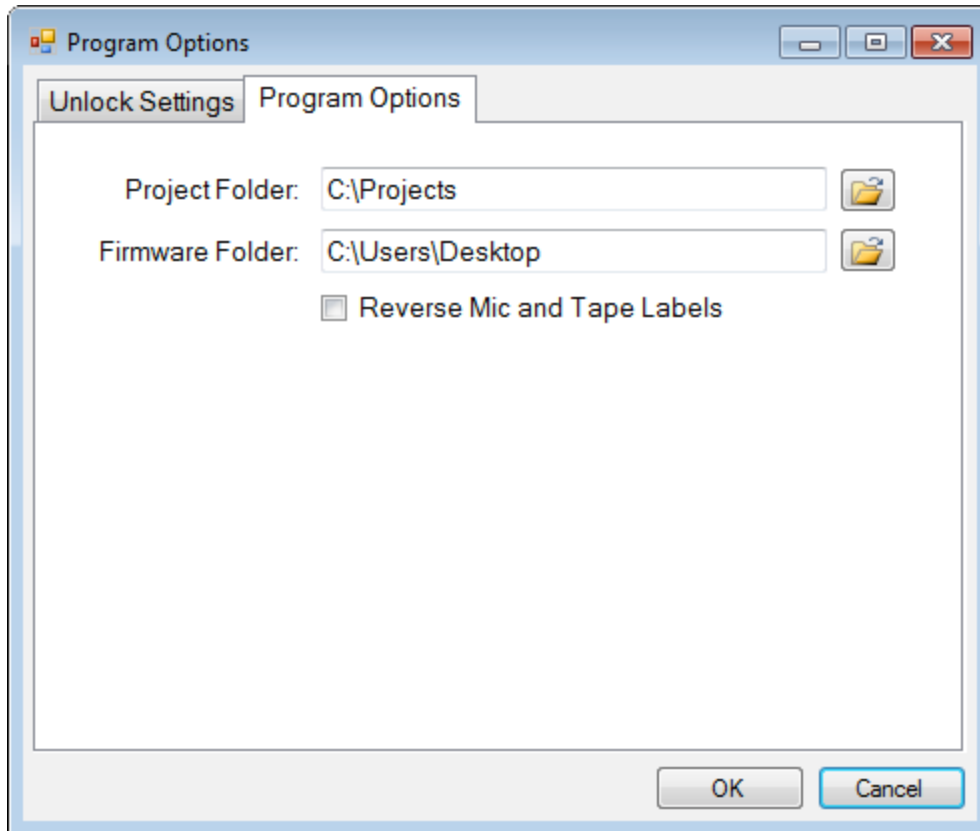
## 28.1 Software Configuration

The Program Options tab contains navigation menus that allow selection of default storage locations for the project and firmware folders on the Vision PC. It also contains a parameter to reverse the "Mic" and "Tape" labels on the Recall Settings window to match console configuration.



Select "Options..." from the Setup menu to open the "Program Options" window.

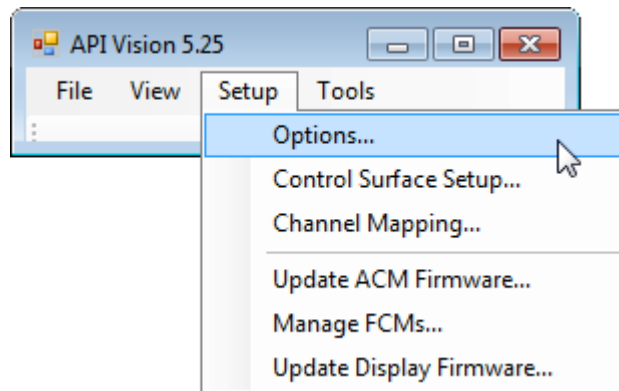
Open the Program Options tab. (*Settings must be unlocked to access this tab.*)



### 28.1.1 Default Project and Firmware Folders

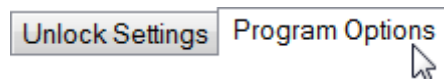
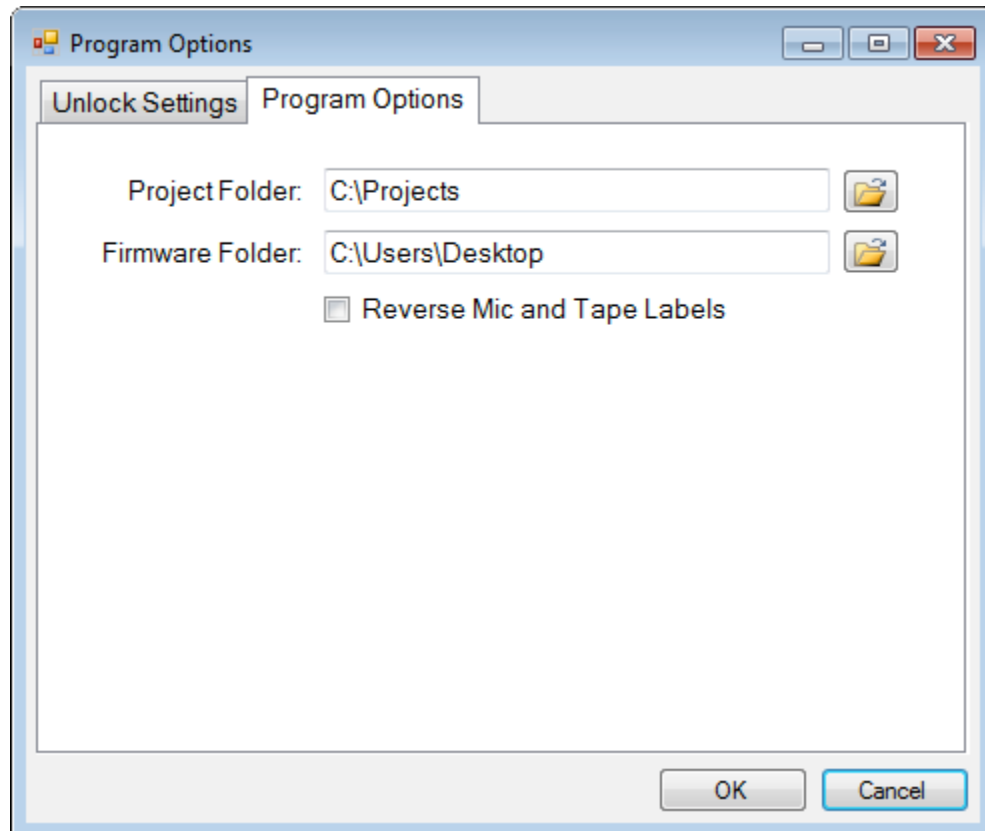
A default storage location can be set for new Project Files/Folder and the Firmware used in the Automation Control Module (ACM), Fader Control Modules (FCM), and ACM Control Panel display.

The "Program Options" window determines where Project and Firmware folders are stored on the Vision PC.




To specify default folders for new Project Folders and Files and downloaded firmware, select "Options..." in the "Setup" menu.

The Program Options window will open.

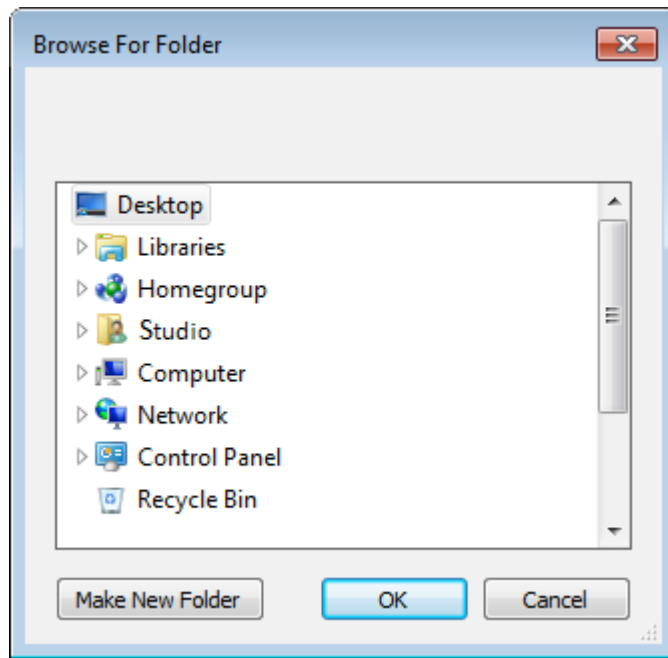


Click the "Program Options" tab if needed.

The current locations for new Project Folders: and Firmware Folders: will be displayed in the window.

To change the location for either folder, click the  icon to open the "Browser For Folder" window.





Using the directory controls in the "Browse For Folder" window, select a location for the default location for new Project Folders and Files or the Firmware Folder.

A new folder can be created in any chosen location by clicking the "Make New Folder" button.

The folders are typically located on the C: Drive of the Vision PC computer, in either the Documents folder or in a dedicated folder for Vision projects. However, any location can be selected as needed.


Back-ups of project and firmware folders may be saved to CD, jump-drive, or other removable media.

The folders are typically located on the C: drive of the Vision PC computer, in either the Documents folder or in a dedicated folder for Vision projects. Any location can be selected as desired.

Back-ups of project and firmware folders may be saved to CD, DVD, jump-drive, or other removable media.


#### **28.1.1.1 Set A Default Location For New Project Folders and Files**

To set a default folder for new Project Folders and Files, perform the following procedure:

1. Open the "Setup" menu in the Main window and select the "Options..." submenu. The Program Option window will open and the current location will be displayed.
2. Click the  icon to open a navigation browser.
3. Navigate to the desired location for new projects, making new folders as needed.
4. Click the "OK" button once the new default location is selected.

#### **28.1.1.2 Set A Default Location For ACM, FCM, and ACM Control Panel Display Firmware**

To set a default folder for ACM, FCM, and ACM Control Panel display firmware, perform the following procedure:

1. Open the "Setup" menu in the Main window and select the "Options..." submenu. The Program Option window will open and the current location will be displayed.
1. Click the  button to open a navigation browser.
2. Navigate to the desired location for downloaded firmware, making new folders as needed.
3. Click the "OK" button once the new default location is selected.

### 28.1.2 Recall Settings Mic/Tape Label Setup

Vision consoles are ordered, it must be determined which fader path receives the output of the "Mic" preamp and which fader path receives the "Tape" return (return from the DAW or Multitrack recorder) by default. In the standard configuration Fader 1 path receives the "Tape" return and the Fader 2 path receives the output from the "Mic" preamp if neither input switches have been engaged. However, customers can order the console with default inputs to the fader path inputs reversed. To accommodate this configuration, the Program Options tab contains a check-box that reverses the assignment of the "Mic" and "Tape" labels in the Recall Settings window.

#### ☒ Reverse Mic and Tape Labels

If "Reverse Mic and Tape Labels" is selected, the "Tape" label will appear for the Fader 1 input switch and the "Mic" label will appear for the Fader 2 input switch in the Recall Settings window.

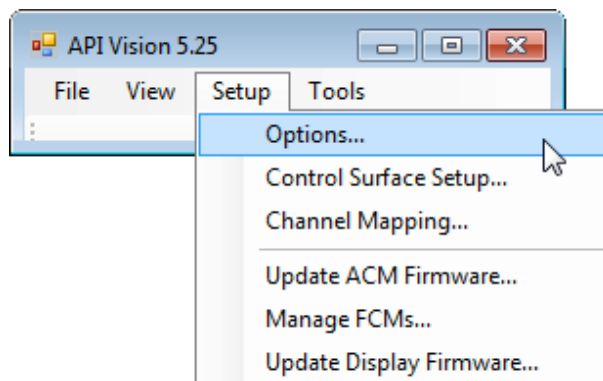
#### ☐ Reverse Mic and Tape Labels

If "Reverse Mic and Tape Labels" is not selected, the "Mic" label will appear for the Fader 1 input switch and the "Tape" label will appear for the Fader 2 input switch in the Recall Settings window. This is the default condition.

This feature accommodates either preference depending on how the console was configured when it was ordered.

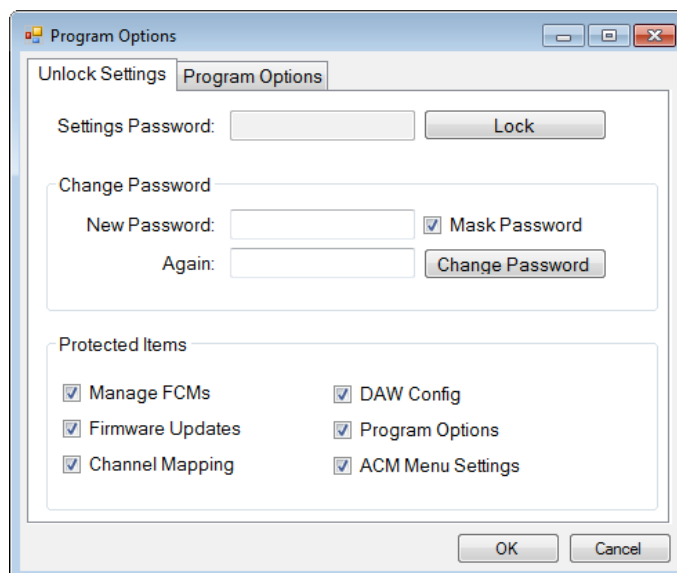
## 28.2 Password Protection

Password protection can be applied to the following administrative menus and settings within the Vision software:



Select "Options..." from the Setup menu to open the "Program Options" window.

The Unlock Settings tab provides the means to apply password protection.



To select items for protection, select the checkboxes ☒ for the desired items, set a password, and click "Lock."

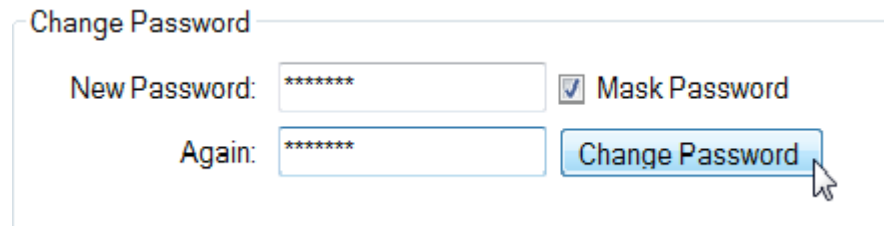
To set a password, enter the same password in the "New Password" and "Again" entry fields.

If "Mask Password" is selected, the characters entered in the "New Password" and "Again" entry fields will be displayed as asterisks.

☒ **Mask Password**

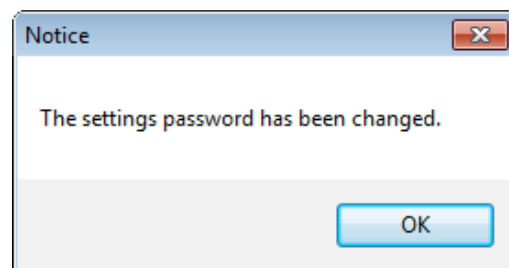
If "Mask Password" is not selected, the characters entered in the "New Password" and "Again" entry fields will be displayed normally.

To change to the entered password, click the "Change Password Button."



A dialog box titled "Change Password" with a light blue border. It contains two text input fields: "New Password:" and "Again:", both containing seven asterisks. To the right of the "New Password:" field is a checkbox labeled "Mask Password" which is checked. To the right of the "Again:" field is a blue button labeled "Change Password". A mouse cursor is pointing at the "Change Password" button.

A dialog box indicating the password has been changed will appear. Click "OK" to acknowledge the change of password.



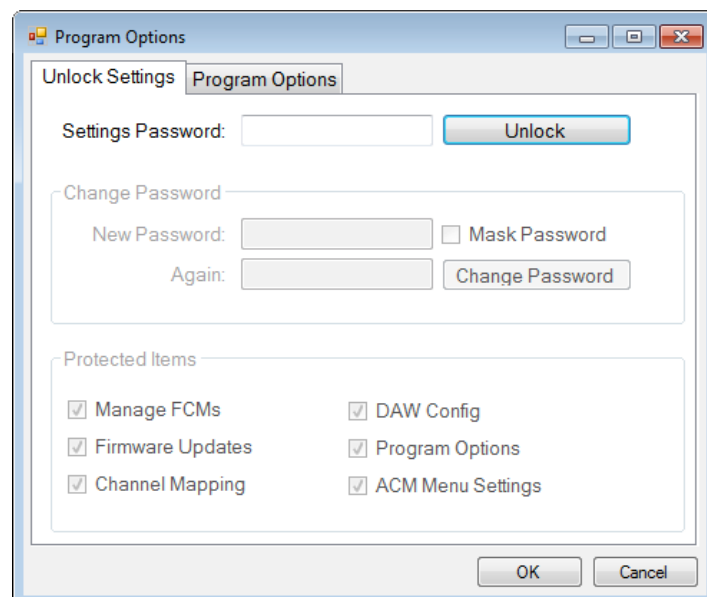
A small dialog box titled "Notice" with a blue header bar and a red close button. The text inside says "The settings password has been changed." At the bottom is a blue button labeled "OK".

Once the desired "Protected Items" have been selected and password has been set, click "Lock" to activate protection.



The text "Settings Password:" is followed by a greyed-out text input field. To the right of the field is a blue button labeled "Lock". A mouse cursor is pointing at the "Lock" button.

When the settings are locked, the protected areas of the Unlock Settings tab will be "greyed-out" to indicate they are not accessible and the menus for the selected protected items will be inaccessible in the Setup menu.



A dialog box titled "Program Options" with a blue header bar and standard window controls. It has two tabs: "Unlock Settings" and "Program Options". The "Program Options" tab is selected. It contains a "Settings Password:" field (greyed out) and an "Unlock" button. Below this is a "Change Password" section with "New Password:" and "Again:" fields (greyed out), a "Mask Password" checkbox (unchecked), and a "Change Password" button (greyed out). At the bottom is a "Protected Items" section with a list of items, each with a checked checkbox: "Manage FCMs", "Firmware Updates", "Channel Mapping", "DAW Config", "Program Options", and "ACM Menu Settings". At the very bottom are "OK" and "Cancel" buttons.

To unlock settings, enter the password in the "Settings Password" entry field and click the "Unlock" button. If the proper password is entered, access to protected setting will be restored.

Settings Password:

*NOTE: If a password has been set, the Vision software will open in "locked" mode even if it was unlocked when the software was exited.*

### 28.2.1 Set Password Protection

To set password protection of selected areas of the system, perform the following procedure:

1. Unlock Settings if needed.
2. Open the "Setup" menu in the Main window and select the "Options..." submenu. The Program Options window will open.
3. Click the "Unlock Settings" tab if needed.
4. Select the items to be protected by checking the needed checkboxes.
5. Enter and re-enter a password.
6. Click the "Change Password" button to accept the password.
7. Click "Lock" to lock the selected settings.
8. Click "OK" to exit the window.

### 28.2.2 Unlock Password Protected Settings

To unlock protected areas of the system, perform the following procedure:

1. Unlock Settings if needed.
2. Open the "Setup" menu in the Main window and select the "Options..." submenu. The Program Options window will open.
3. Click the "Unlock Settings" tab if needed.
4. Enter the password and click "Unlock" to unlock the selected settings.
5. Click "OK" to exit the window.

## 28.3 Software and Firmware Updates

Consoles are shipped from API with the most current PC software and firmware installed. As updates are released, they become available from the API Service Department. The Service Department can be reached at [service@apiaudio.com](mailto:service@apiaudio.com).

When downloading updates, it is recommended that all of the files are stored in the default folder for firmware. The default folder is determined in the Program Options window, which can be accessed by selecting "Options..." in the "Setup" menu.

In addition to the Vision PC software, there are three (3) firmware programs that are needed for console operations:

- ACM Firmware: The program for the Automation Control Module (ACM)
- FCM Firmware: The program for the Fader Control Modules (FCMs)
- ACM Control Panel Display Firmware: The program for the ACM Control Panel display

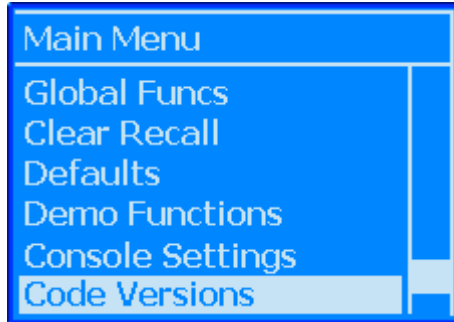
The ACM and FCM firmware files are both in the ".elf" format. .elf stands for "Executable and Linkable Format." The ACM Control Panel display firmware is in the ".upf" format. .upf stands for "User Formatted PROM."

*NOTE: The sections below assume the software and firmware have been downloaded and unzipped.*

The current firmware versions can be viewed using the Code Versions submenu of the ACM Main menu. The following information will be displayed:

- ACM firmware version
- FCM firmware version
- Ambient temperature
- Serial number
- Console type

Use the "Code Versions" submenu to view the information listed above.



To view the firmware versions, temperature, and Serial Number, select "Code Versions" from the ACM Main menu and press the "Yes OK" button.

ACM: 5.XX		Hit OK to refresh
FCM Versions		Arrow for more
1: 5.X	9: 5.X	17: 5.X
2: 5.X	10: 5.X	18: 5.X
3: 5.X	11: 5.X	19: 5.X
4: 5.X	12: 5.X	20: 5.X
5: 5.X	13: 5.X	
6: 5.X	14: 5.X	
7: 5.X	15: 5.X	
8: 5.X	16: 5.X	

The Code Versions window will open.

Press the "No Cancel" button to return to the Main menu.

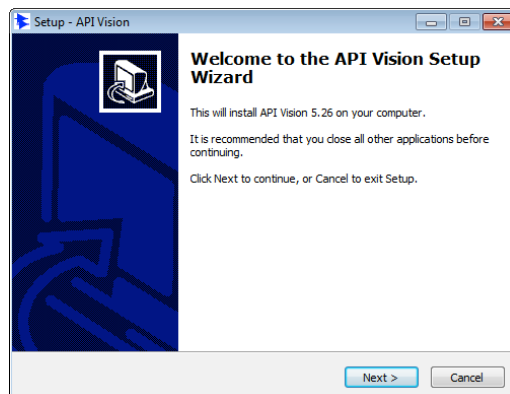
### 28.3.1 Updating PC Software

The installation of the Vision PC software is automated with an installation wizard.

To update the Vision software on the PC computer, open the downloaded .zip file.



Double-click the "setup.exe" icon.



The Vision installation Wizard will start.

Follow the prompts in the Wizard to complete the installation of the new Vision PC software.

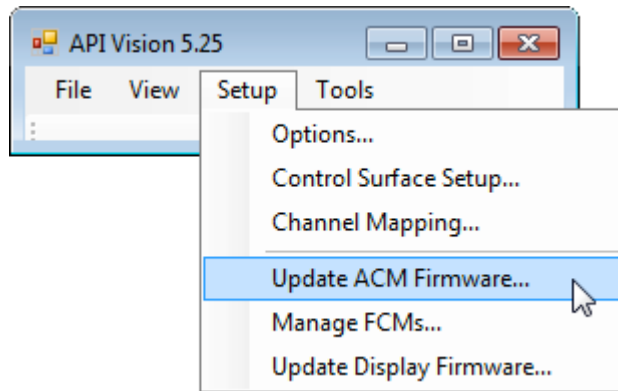
### 28.3.1.1 Install or Update the Vision PC Software

To install or update the Vision PC software, perform the following procedure:

1. Download the latest PC software .zip file from the software support website.
2. Open the "pcvision\_05\_XX.zip" file and double-click the "setup.exe" icon. The API Vision Setup Wizard will start will open.
3. Follow the instructions and prompts provided by the Wizard to complete the installation.

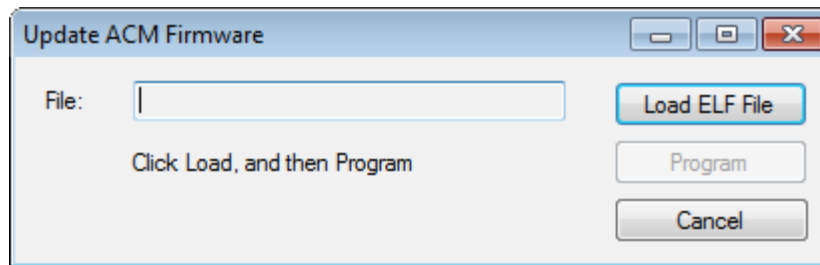
### 28.3.2 Updating ACM Firmware

To update ACM Firmware, "settings" must be unlocked if "Firmware Settings" has been selected as a protected item. Refer to section 19.2.2.3.1 Unlock Settings Tab and 28.2 Password Protection for details.



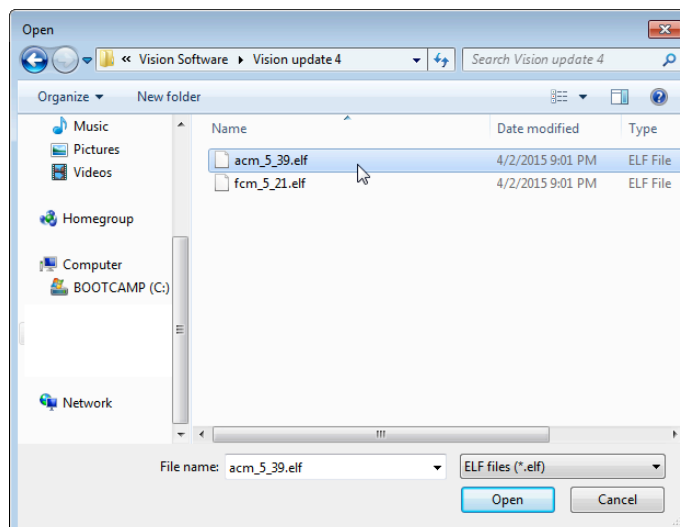
To update the firmware in the Automation Control Module (ACM), select "Update ACM Firmware..." from the Setup menu.

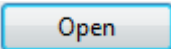
The Update ACM Firmware window will open.

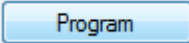


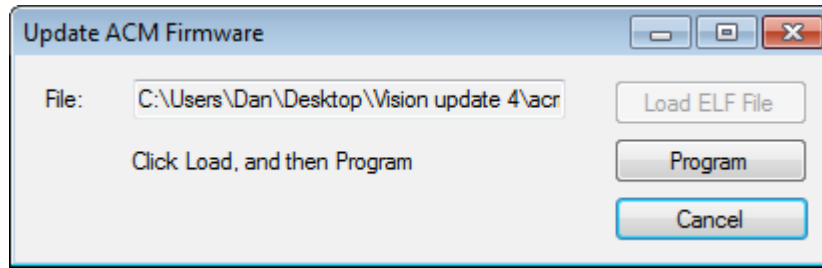
The Update ACM Firmware window provides the means to update the firmware for the Automation Control Module (ACM).

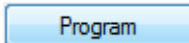
Click **Load ELF File** to open a navigation window that will allow selection of the proper file. The window will open the default folder for firmware that is determined in the Program Options window.

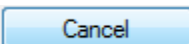


Select the proper file and click .

The Update ACM Firmware window will display the name of the chosen file and  will become active.



Click  to “program” the firmware chips in the ACM. Follow any prompts that appear in the ACM Control Panel display.

Click  to cancel the operation.

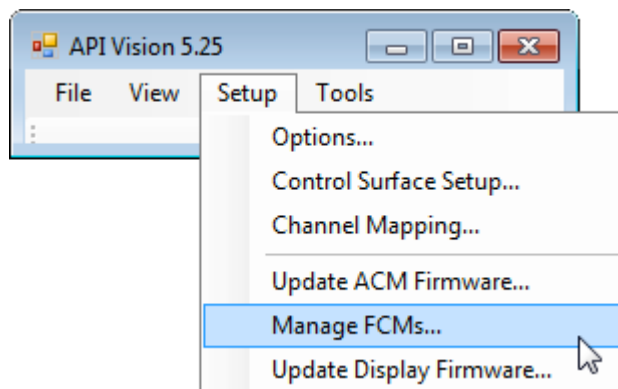
#### 28.3.2.1 Program ACM Firmware

To program ACM Firmware, perform the following procedure:

1. Unlock Settings if needed.
2. Download the latest FCM firmware file from the software support website. Save the file in the default folder for firmware (determined in the Program Options window)
3. Open the “Setup” menu in the Main window and select the “Update ACM Firmware...” submenu. The Update ACM Firmware window will open.
4. Click the “Load ELF File” button, navigate as needed, and select the new file.
5. Click the “Program” button to program the selected FCMs. Follow any prompts.

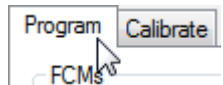
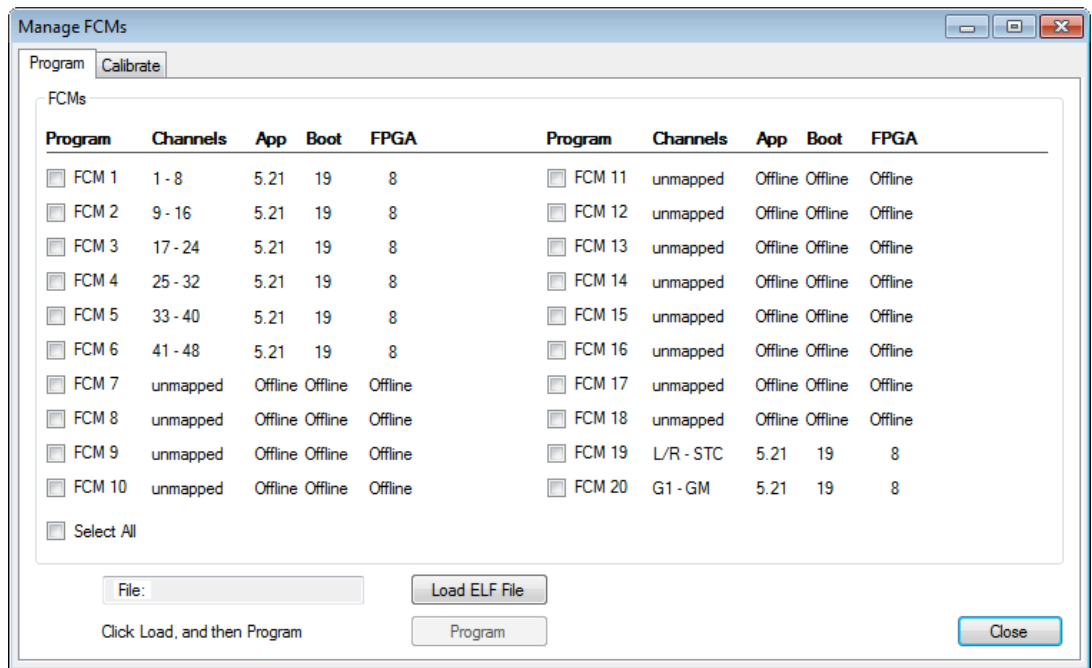
#### 28.3.3 Updating FCM Firmware

To update FCM Firmware, “settings” must be unlocked if “Firmware Settings” or “Manage FCMs” have been selected as a protected item. Refer to section 19.2.2.3.1 Unlock Settings Tab and 28.2 Password Protection for details.



To update the firmware in the Fader Control Modules (FCM), select “Manage FCMs...” from the Setup menu.

The Manage FCMs window will open.



Make sure the "Program" tab is selected.

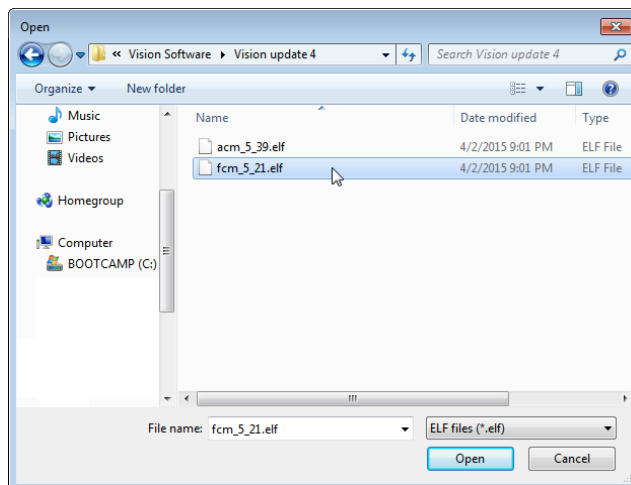
The Manage FCMs window displays the current firmware versions installed in the FCMs and provides the means to load and program firmware updates.

FCMs				
Program	Channels	App	Boot	FPGA
<input type="checkbox"/> FCM 1	1 - 8	5.21	19	8

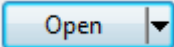
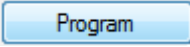
The Manage FCMs window contains the following:

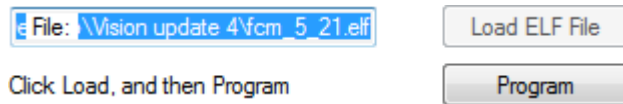
- Program: FCM number and selection checkbox
- Channels: The channel numbers supported by the FCM
- App (Application): The version number of the firmware application (.elf file) installed in the FCM
- Boot Version: The version number of the boot firmware installed in the FCM
- FPGA (Field Programmable Gate Array): The version the firmware CPU installed in the FCM

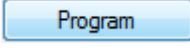
Click **Load ELF File** to open a navigation window that will allow selection of the proper file. The window will open the default folder for firmware that is determined in the Program Options window.

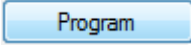


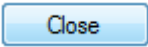


Select the proper file and click . The Manage FCMs window will display the name of the chosen file and  will become active.



Clicking an unchecked Program checkbox ☐ will enable the loaded .elf file to program the firmware chips for that FCM when  is clicked. If the checkbox is not checked ☒, that FCM will not be programmed. Clicking a checked checkbox will disable programming.

Click  to “program” the firmware chips on the selected FCMs. Follow any prompts that appear in the ACM Control Panel display.

Once the firmware has been programmed, click  to close the Manage FCMs window.

Click  to cancel the operation.

*NOTE: Fader calibration should be performed after updating the FCM firmware. See section 28.6 Fader Calibration for details.*

#### 28.3.3.1 Program FCM Firmware

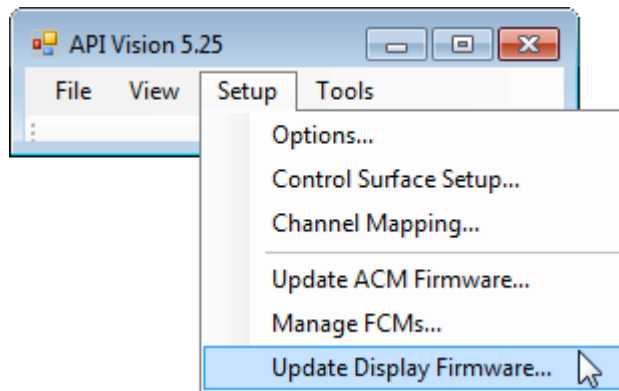
To program FCM Firmware, perform the following procedure:

1. Unlock Settings if needed.
2. Download the latest FCM firmware file from the software support website. Save the file in the default folder for firmware (determined in the Program Options window),
3. Open the “Setup” menu in the Main window and select the “Manage FCMs...” submenu. The Manage FCMs window will open.
4. Click the “Load ELF File” button, navigate as needed, and select the new file.
5. Click in the checkboxes for the FCMs to be programmed.
6. Click the “Program” button to program the selected FCMs. Follow any prompts.
7. Close the Manage FCMs window when the programming is finished.
8. Perform fader calibration. See section 28.6 Fader Calibration for details.

#### 28.3.4 Updating ACM Control Panel Display Firmware

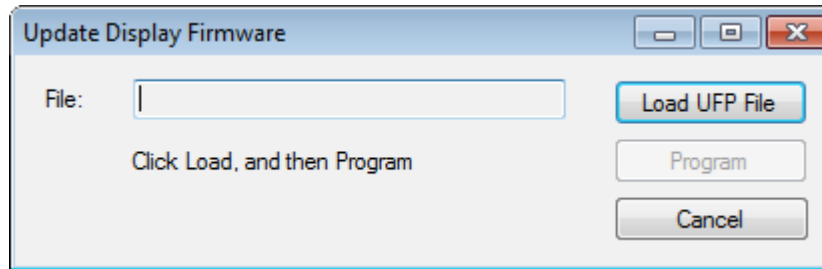
*IMPORTANT NOTE: The ACM firmware should be updated BEFORE updating the ACM Control Panel display firmware!*

To update ACM Display Firmware, “settings” must be unlocked if “Firmware Settings” has been selected as a protected item. Refer to section 19.2.2.3.1 Unlock Settings Tab and 28.2 Password Protection for details.



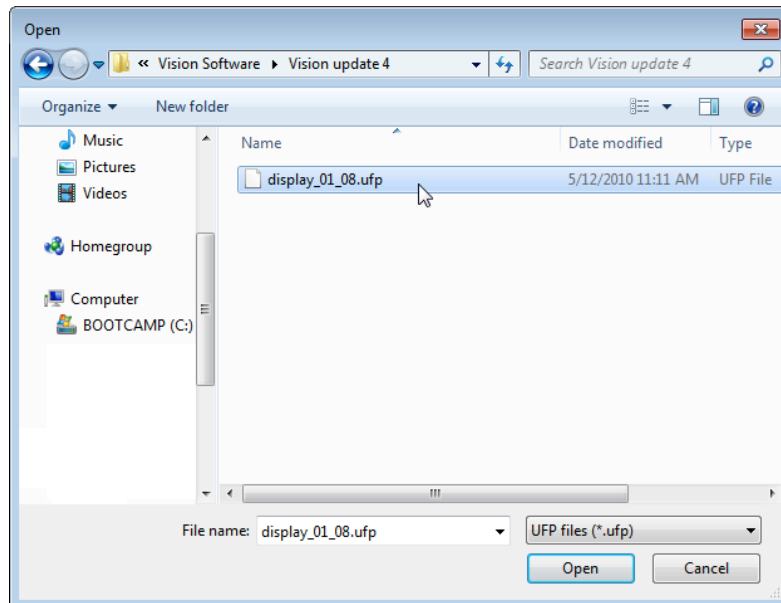
To update the firmware in the ACM Control Panel display, select "Update Display Firmware..." from the Setup menu.

The Update Display Firmware window will open.

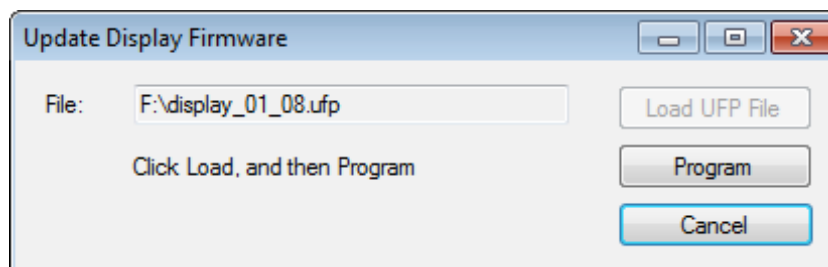


The Update Display Firmware window provides the means to update the firmware for the ACM Control Panel display.

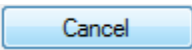
Click **Load UFP File** to open a navigation window that will allow selection of the proper file. The window will open the default folder for firmware that is determined in the Program Options window.



Select the proper file and click **Open**. The Update Display Firmware window will display the name of the chosen file and **Program** will become active.



Click  to "program" the firmware chips in the ACM Control Panel display. Follow any prompts that appear in the ACM Control Panel display.

Click  to cancel the operation.

#### **28.3.4.1 Program ACM Control Panel Display Firmware**

To program ACM Firmware, perform the following procedure:

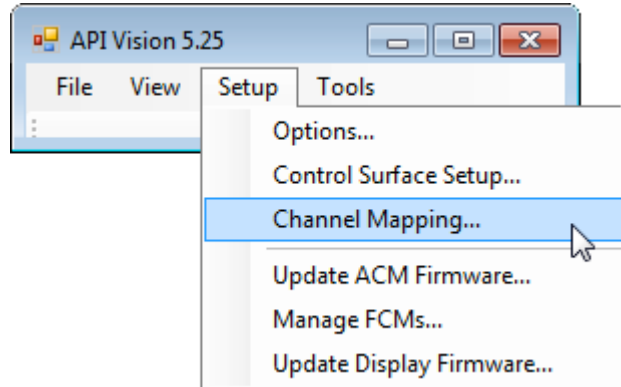
1. Unlock Settings if needed.
2. Download the latest FCM firmware file from the software support website. Save the file in the default folder for firmware (determined in the Program Options window).
3. Open the "Setup" menu in the Main window and select the "Update ACM Firmware..." submenu. The Update ACM Firmware window will open.
4. Click the "Load UFP File" button, navigate as needed, and select the new file.
5. Click the "Program" button to program the selected FCMs. Follow any prompts.

## 28.4 Channel Mapping

A "Channel Map" is used to define the linkage between the installed console hardware with the PC software. The Channel Map also sets the 0dB point for Master Faders.

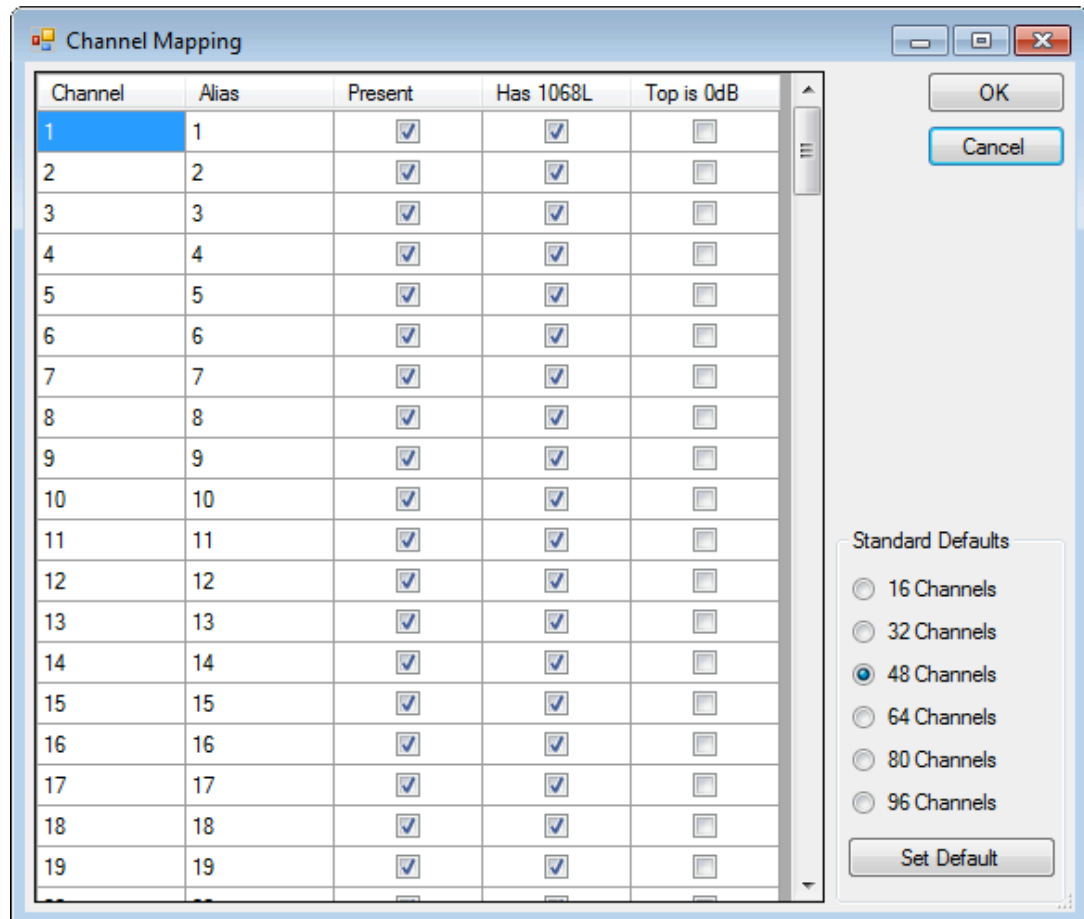
The Channel Map also determines the size of the channel grids used in other software windows (Channel Control, Recall Settings, Group Edit, Snapshot Take/Apply, and similar windows).

To create or update a Channel Map, "settings" must be unlocked if "Channel Mapping" has been selected as a protected item. Refer to section 19.2.2.3.1 Unlock Settings Tab and 28.2 Password Protection for details.



To make changes to the Channel Map, select "Channel Mapping..." from the "Setup" menu in the Main window.

The Channel Mapping window will open.



The Channel Mapping window has three (3) sections:

- Channel Map: Makes the connections between fader and 1068L modules and the PC software and sets the 0dB point for Master Faders
- Standard Defaults: Sets standard connections based upon frame size
- OK and Cancel Buttons: Accepts or cancels changes made to the Channel Map

Channel	Alias	Present	Has 1068L	Top is 0dB
1	1	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

The Channel Map section has five (5) columns for each channel:

- Channel: The channel strip location in the frame
- Alias: The labels used in the software displays for the associated channel
- Present: Check if a fader module is loaded in the associated channel slot
- Has 1068L: Check if a 1068L module is loaded in the associated channel slot
- Top Is 0dB: Sets level display for Master Faders to be 0dB when the fader is at the top of its travel.

Each checkbox ☒ enables the connection between that module and the PC software or sets the level for Master Faders. If the checkbox is not checked, ☐ the connection or setting is not made. Clicking a checked checkbox will disable that connection.

Alias

1

An "Alias" can be relabeled by double-clicking its name and entering a new one.

Standard Defaults

☐ 16 Channels

☐ 32 Channels

☒ 48 Channels

☐ 64 Channels

☐ 80 Channels

☐ 96 Channels

Set Default

A set of "Standard Default" channel maps are provided for typical console configurations:

- 16 Channels: Map for sixteen (16) channels
- 32 Channels: Map for thirty-two (32) channels
- 48 Channels: Map for forty-eight (48) channels
- 64 Channels: Map for sixty-four (64) channels
- 80 Channels: Map for eighty (80) channels
- 96 Channels: Map for ninety-six (96) channels

For all Standard Defaults, the "Present" and "Has 1068L" check boxes will be checked for corresponding number of channels. For all Master Channels, "Present" and "Top is 0dB" will be checked.

Set Default

Set Default: Applies the selected default channel map

When a console is initially setup, the default Channel Map for the frame size is selected and applied. The Channel Map is then modified as necessary to match the exact hardware installed in the frame.

The Channel Map can be further modified if hardware is added, removed, or other changes are made. Modifying the Channel Map can also be a useful troubleshooting tool.

### 28.4.1 Setting Up or Changing the Channel Map

To setup or make changes to the Channel Map, perform the following procedure:

1. Unlock Settings if needed.
2. Open the "Setup" menu in the Main window and select the "Channel Mapping..." submenu.
3. Click the radio button for the Standard Default that matches the size of the console frame.
4. Click the "Set Default" button to apply the default settings.
5. Scroll the Channel Map window and make the modifications necessary to match the exact hardware installed in the console.
6. The labeling of channels can be changed if needed by changing the "Alias" field on the desired channels.
7. Click the "OK" button once the map is set as needed.

## 28.5 Timecode Setup

SMPTE Longitudinal timecode (LTC or VITC) or MIDI timecode (MTC) is used to synchronize the Vision automation system with the recorded media.

There are three (3) parameters involved with timecode setup:

- Timecode Source: Type and source of timecode
- Freewheel Frames: 0-90 Frames
- MTC Port: Configure a MIDI port for MIDI timecode

Timecode frame rate is selected at the time a new project is created.

### 28.5.1 SMPTE Timecode

SMPTE timecode can be used to synchronize the console automation system with a DAW, tape machine, or other device that generates SMPTE timecode. Both longitudinal and vertical interval SMPTE timecode can be used.

The Timecode Source (LTC, VITC, or MTC) is selected using the Console Settings menu in the ACM.

The SMPTE timecode in both Longitudinal Time Code (LTC) and Vertical Interval Time Code (VITC) formats are received via the line-level XLR input on the back of the ACM.

The MIDI timecode (MTC) is received via a MIDI IN port (DB-25) on the back of the ACM. A MIDI port must be configured for MTC communication.

Frame rates are expressed in Frames Per Second (FPS).

The system will accept six (7) SMPTE timecode frame rates:

- 23.976
- 24
- 25
- 29.97
- 29.97 Drop
- 30
- 30 Drop

The timecode frame rate is selected at the time a Project File is created.

### 28.5.2 Timecode Source

Three (3) Timecode Sources can be selected:

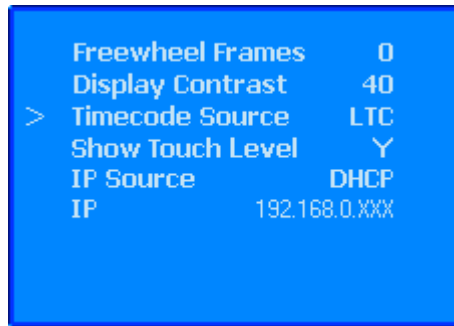
- LTC: SMPTE Longitudinal timecode
- MTC: MIDI timecode
- ---- (VITC): SMPTE Vertical Interval timecode

The source and type of timecode to be used is selected using the "Timecode Source" submenu of the Console Settings menu in the ACM.

To select a Timecode Source, "settings" must be unlocked if "ACM Menu Settings" has been selected as a protected item. Refer to section 19.2.2.3.1 Unlock Settings Tab and 28.2 Password Protection for details.



To set the Timecode Source, select "Console Settings" from the ACM Main menu and press the "Yes OK" button. The Console Settings submenu will open.



Use the up and down arrow buttons to select "Timecode Source" from the Console Settings menu and press the "Yes OK" button.

Use the up and down arrow buttons to select the desired source.

Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

### 28.5.2.1 Selecting the Timecode Source

To select the Timecode Source, use the following procedure:

1. Unlock Settings if needed.
2. Select "Console Settings" from the ACM Main menu and press the "Yes OK" button. The Console Settings submenu will open.
3. Use the up and down arrow buttons to select "Timecode Source" and press the "Yes OK" button.
4. Use the up and down arrow buttons to select the desired source.
5. Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

### 28.5.3 Freewheel Frames

The number of Freewheel Frames allowed when chasing timecode can be set using the "Freewheel Frms" submenu of the Console Settings menu in the ACM. This can improve synchronization accuracy, depending on the source of the timecode from the recorded media.

To select the number of Freewheel Frames, "settings" must be unlocked if "ACM Menu Settings" has been selected as a protected item. Refer to section 19.2.2.3.1 Unlock Settings Tab and 28.2 Password Protection for details.



To set the Freewheel Frames, select "Console Settings" from the ACM Main menu and press the "Yes OK" button. The Console Settings submenu will open.



Select "Freewheel Frms" from the Console Settings menu and press the "Yes OK" button.

Use the up and down arrow buttons to set the parameter value between 0 and 90.

Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

### 28.5.3.1 Setting Freewheel Frames

To set the timecode Freewheel Frames, use the following procedure:

1. Unlock Settings if needed.
2. Select "Console Settings" from the ACM Main menu and press the "Yes OK" button. The Console Settings submenu will open.
3. Use the up and down arrow buttons to select "Freewheel Frms" and press the "Yes OK" button.
4. Use the up and down arrow buttons to set the parameter value between 0 and 90.
5. Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

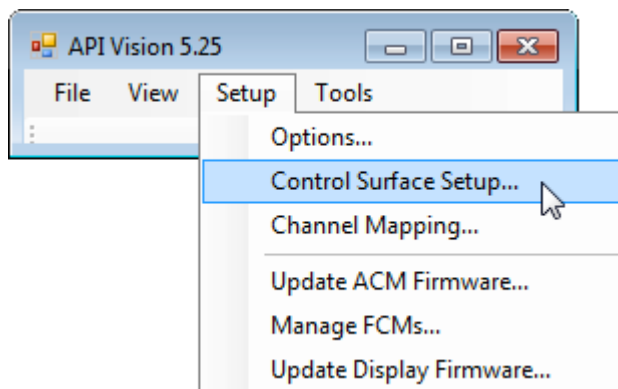
### 28.5.4 MIDI Timecode (MTC) Port Assignment

MIDI timecode (MTC) can be used to synchronize the console automation system with a DAW, MIDI sequencer, or other device that generates MTC.

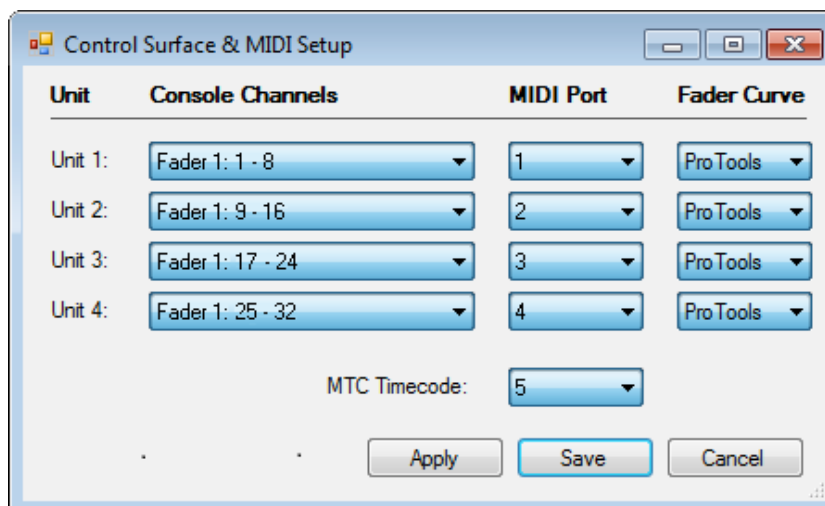
The MIDI timecode (MTC) is received via a MIDI IN port (DB-25) on the back of the ACM. A MIDI port must be configured for MTC communication.

The "Control Surface and MIDI Setup" window is used to select a MIDI Port for MTC communication

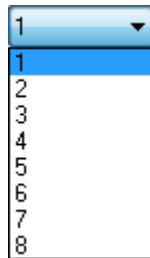
To select a MIDI Port for MTC, select "Control Surface Setup..." from the "Setup" menu in the Main window.




The Control Surface and MIDI Setup window will open.



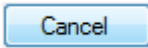




Click the "MTC Timecode" pull-down menu to select the one of the eight (8) MIDI Ports where MIDI Timecode (MTC) will be received.

Once the MTC Timecode Port has been selected, click  to apply the selected setup and leave the window open.

Click  to save the selected setup and close the window.

Click  to cancel the operation without changing the setup and close the window.

#### 28.5.4.1 Selecting a MIDI Port for MTC

To configure a MIDI port for MTC, use the following procedure:

1. Unlock Settings if needed.
2. Select ""Control Surface Setup..." from the "Setup" menu in the Main window. The Control Surface and MIDI Setup window will open.
3. Select the desired MIDI Port to MTC communication from the MIDI Port pull-down menu.
4. Click "Save" to save the selected MIDI port and close the window.

#### 28.5.5 Enable Timecode

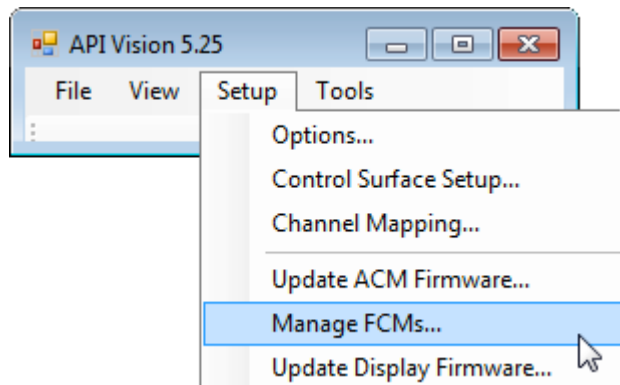
**En: TC**



Timecode must be "Enabled" in order to be used by the Automation system. To Enable Timecode engage the "Enable TC" button on the ACM CONTROL PANEL or click the "En: Timecode" button in the Global Functions window.

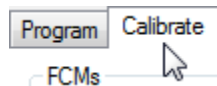
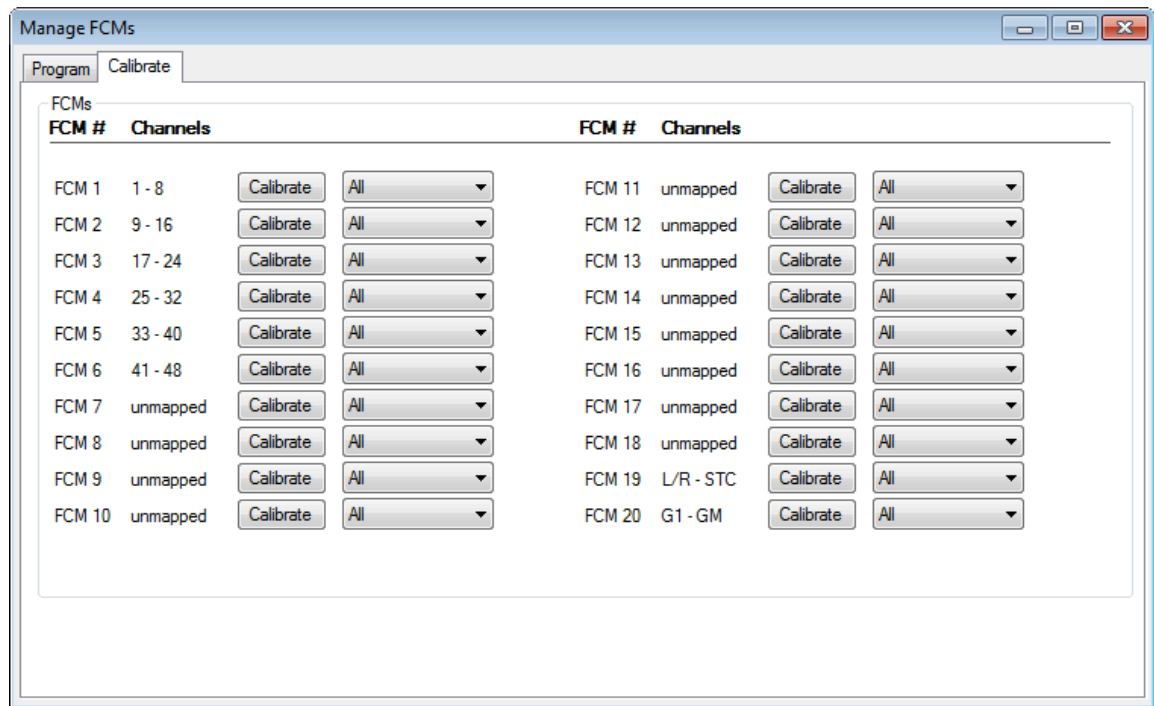
### 28.6 Fader Calibration

The Vision software provides a fader calibration routine that aligns the physical fader positions with the related positions in the software. It is recommended to perform this routine periodically to assure the continued accuracy of the automation system. It should also be performed after FCM firmware updates are installed or hardware changes have been made.



To perform the fader calibration routine, select "Manage FCMs..." from the Setup menu.

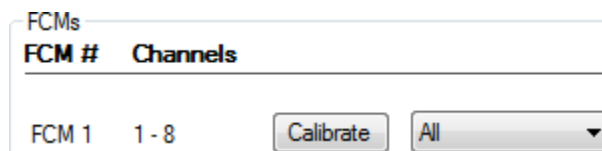
The Manage FCMs window will open.



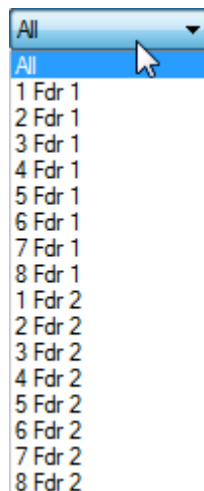
Click the Calibrate tab to access the calibration utility.

The Calibrate tab has the following sections:

- **FCM #:** The number of the Fader Control Module (FCM)
- **Channels:** The set of eight (8) channels that is supported by the FCM
- **Calibrate:** Initiates the calibration routine for the selected fader(s)
- **Fader Selection Pull-down Menu:** Allows the selection of faders for calibration



Up to twenty (2) FCMs can be supported, each supporting Fader 1 and Fader 2 on up to eight (8) channels or eight (8) Master Faders.



Each FCM supports both faders (Fader 1 and Fader 2) on each channel.

The pull-down menu allows the selection of all of the faders supported by the FCM (All) or just a single fader within that grouping.

Once the faders are selected, click **Calibrate**. The selected fader(s) will move up and down and then each fader within each set of eight will move to the bottom of its travel and start a rapid back and forth motion, slowly working its way back up to the top. Then the next selected faders will repeat this action until all selected faders are calibrated.

This routine will take several minutes and cannot be canceled or interrupted. After the routine is finished, normal operation will resume.

To close the Calibration tab and Manage FCMs window, click the  icon.

### 28.6.1 Calibrate Faders

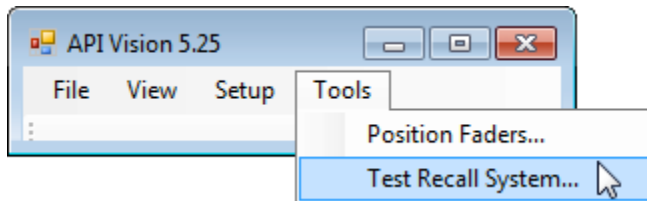
To calibrate faders, perform the following procedure:

1. Unlock Settings if needed
2. Open the "Setup" menu in the Main window and select the "Manage FCMs..." submenu. The Manage FCMs window will open.
3. Click the "Calibrate" tab to open the fader calibration utility.
4. Select the fader or faders to calibrate.
5. Click the "Calibrate" button once the desired faders are selected. The calibration routine will begin.
6. Close the Calibrate tab and Manage FCMs window when finished.

## 28.7 Test Recall System

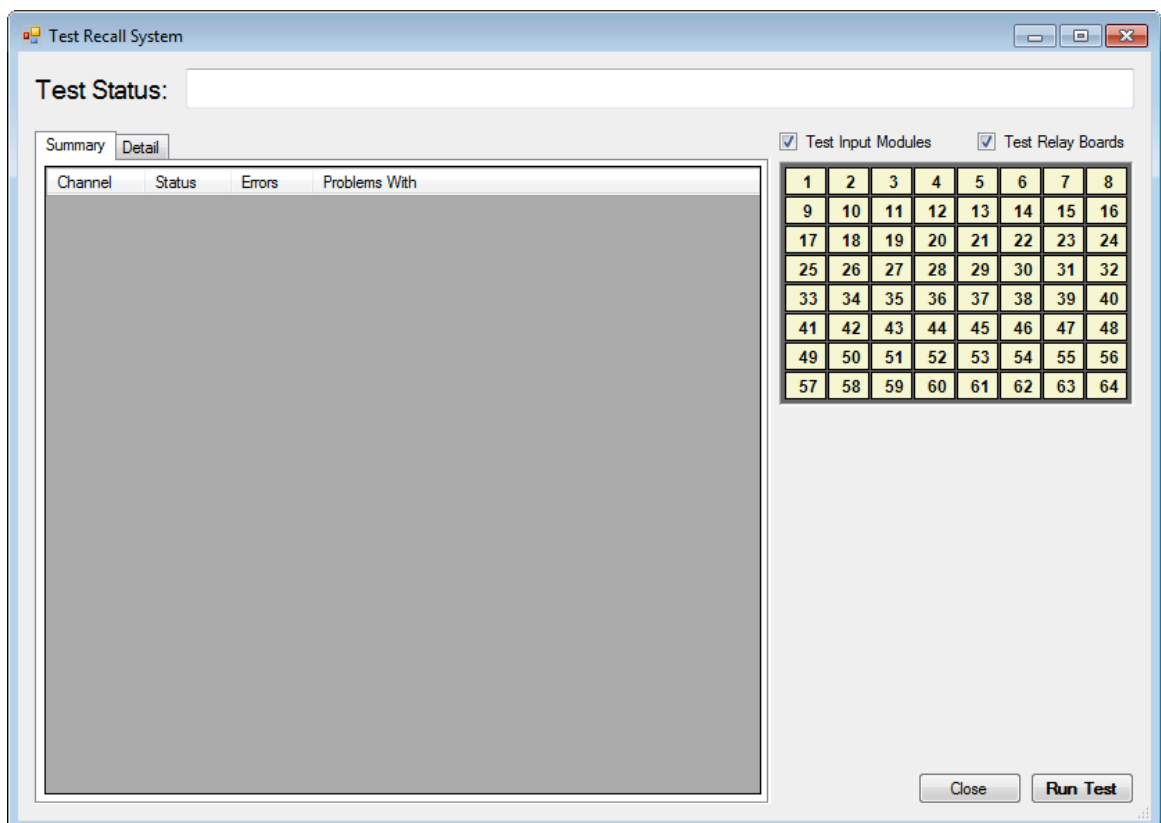
For ease of troubleshooting, the Vision software provides a routine that tests the components of the Recall System. This system can test the recall portions of the 1068L Input Modules and/or the Recall System Relay Boards.

It is recommended to perform this routine periodically to assure the continued accuracy of the Recall System. It should also be performed after ACM and FCM firmware updates are installed or hardware changes have been made.



To test the Recall System, select "Test Recall System..." from the Tools menu.

The Test Recall System window will open.



### 28.7.1 Recall Section Selection

The recall sections of the channel input modules and/or the Recall System Relay Boards can be selected for testing.

☒ **Test Input Modules** Enables testing of the Recall System Relay Boards

☒ **Test Relay Boards** Enables testing of the Recall System Relay Boards

When the Test Recall System window opens, "Test Input Modules" and "Test Relay Boards" will be selected by default. ☒ **Test Input Modules** ☒ **Test Relay Boards** In this configuration, testing of the complete Recall System for one or more channels can be accomplished. Clicking the check box ☐ will disable testing for that part of the system.

### 28.7.2 Channel Selection

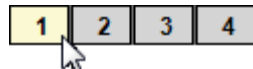
1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
25	26	27	28	29	30	31	32
33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48
49	50	51	52	53	54	55	56
57	58	59	60	61	62	63	64

Use the channel selection grid to select one or more channels for test. The grid facilitates selection as noted below. All the selected channels will be tested.

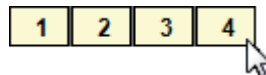
 Unselected channels are grey in color.

 Selected channels are yellow in color.

Channel selections may be made using the following methods:

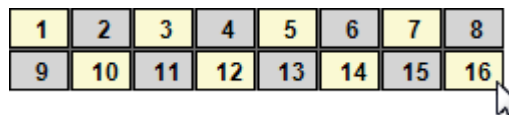


Click A Single Channel: To select an individual channel



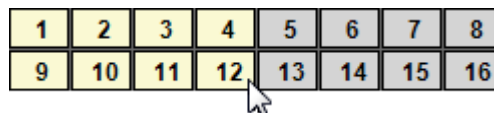
Shift + Click: To select a range of consecutive channels

- Click on the first channel to select it
- Hold down the Shift key and click on the last channel in the series
- All the channels between the first and last channels will be selected



Ctrl + Click: To select a group of non-consecutive channels

- Hold down the Ctrl key
- Click on the desired channels in any order




Drag + Click (Rubber-banding): To select a region of channels

- Click within the channel box of the first channel to be included
- While holding down the left mouse button, drag the mouse over the region of channels you wish to include in the selection

Clicking within the Channel Grid will clear any previous selections, unless Shift + Click or CTRL + Click methods are used. Channels or Channel can be added or deleted to previously selections using Shift + Click or CTRL + Click methods. Rubber-banding can be used in combination with Shift + Click and Ctrl + Click methods.

### 28.7.3 Run Test

After the test sections and channels have been selected, click the  button. The progress of the test will be displayed in the "Test Status" display.

Test Status: Testing Channel 1

If ☒ **Test Input Modules** is checked, the Input Module recall switches and their associated LEDs will actuate rapidly in a pattern while that channel is being tested.

If ☒ **Test Relay Boards** is checked, output busses and the associated LEDs in the will actuate rapidly in a pattern while that channel is being tested. This is shown in the Channel Output Display.

### 28.7.4 Test Results

After a test has finished running the "Test Status" display will indicate the test is complete.

Test Status: Test Complete

A summary of the test results will be displayed in the "Summary" tab of the Test Recall System window.

Summary Detail			
Channel	Status	Errors	Problems With
1	OK	0	

The "Summary" tab displays information in the following columns:

- Channel: Console channel number
- Status: Current condition of the channel
- Errors: The number of errors found during the test
- Problems With: General indication of problems found

If any problems are found, detailed information about the problem is provided in the "Detail" tab of the Test Recall System window.

Summary Detail					
Channel	Register	Written	Read	Stuck Off	Stuck On
1	Channel OK				

The "Detail" tab displays information in the following columns:

- Channel: Console channel number
- Register:
- Written:
- Read:
- Stuck Off:
- Stuck On:

### 28.7.5 Recall System Test Procedure

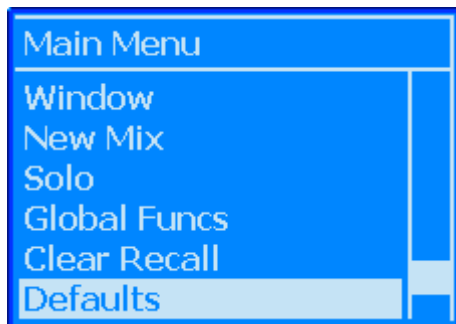
To test the Recall System, perform the following procedure:

1. Select Test Recall System from the Tools menu to open the Test Recall System window.
2. Deselect recall sections if desired.
3. Select channels to be tested.
4. Click the "Run Test" button to initiate the test routine. The results will be displayed in the "Summary" and "Detail" tabs in the Test Recall System window.

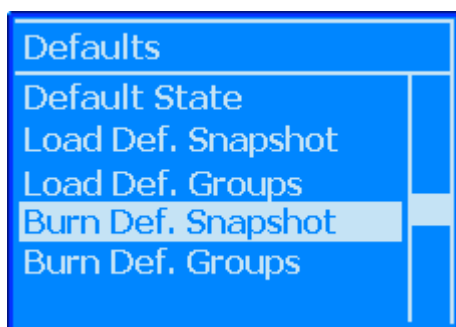
## 28.8 Default Snapshot

A snapshot of the current fader positions, switch states, and routing that were setup using the console hardware or PC software can be “burned” to the ACM as the Default Snapshot.

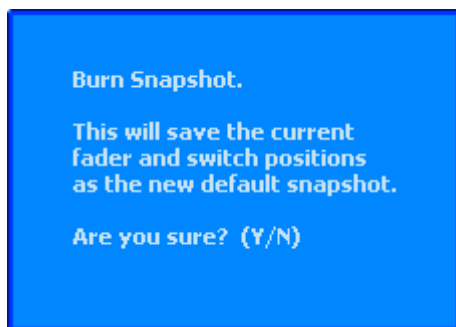
The Default Snapshot can be created or changed by setting new fader and switch positions and/or routing and then burning them to the ACM again.



To burn or load the Default snapshot, select “Defaults” from the ACM Main menu and press the “Yes OK” button. The Defaults submenu will open.



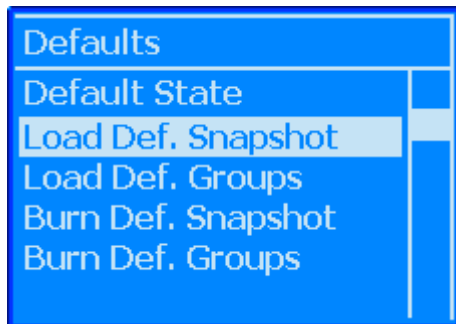
Select “Burn Def. snapshot” from the Defaults menu and press the “Yes OK” button.



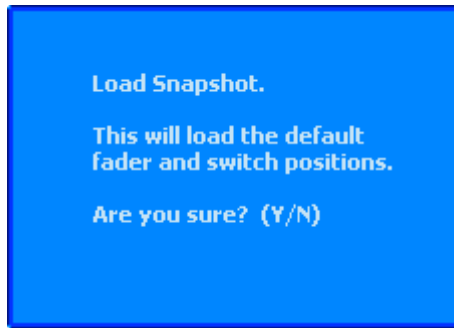
The Burn snapshot confirmation window will open.

Press “Yes OK” to set the current fader and switch positions and routing as the Default snapshot. This operation can be canceled by pressing the “No Cancel” button.

After a Default Snapshot has been burned, it may be loaded directly from the ACM.



To load the Default snapshot, select “Load Def. snapshot” from the Defaults menu and press the “Yes OK” button.



The Load snapshot confirmation window will open.

Press "Yes OK" to load the Default snapshot. This operation can be canceled by pressing the "No Cancel" button.

### 28.8.1 Burning the Default Snapshot

To burn the Default Snapshot, perform the following procedure:

1. Set the console faders, switches, and routing to the desired default positions.
2. Select "Defaults" from the ACM Main menu and press the "Yes OK" button. The Defaults submenu will open.
3. Use the up and down arrow buttons to select "Burn Def. Snapshot" and press the "Yes OK" button.
4. Press the "Yes OK" button to burn the snapshot to the ACM. Press the "No Cancel" button to cancel the operation.

### 28.8.2 Loading the Default Snapshot

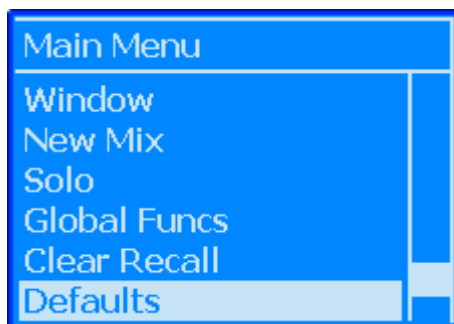
To load the Default Snapshot, perform the following procedure:

1. Select "Defaults" from the ACM Main menu and press the "Yes OK" button. The Defaults submenu will open.
2. Use the up and down arrow buttons to select "Load Def. Snapshot" and press the "Yes OK" button.
3. Press the "Yes OK" button to apply the Default Snapshot to the console. Press the "No Cancel" button to cancel the operation.

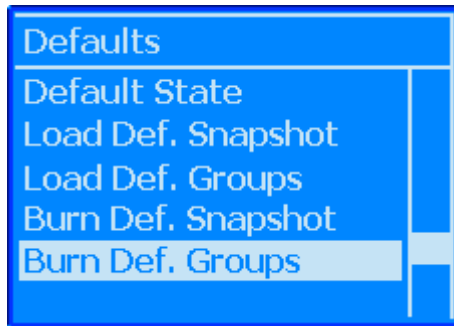
## 28.9 Default Groups

The current groups that were setup using the PC software can be "burned" to the ACM as the Default Groups. The Default Groups will be included in all new mixes created on the ACM.

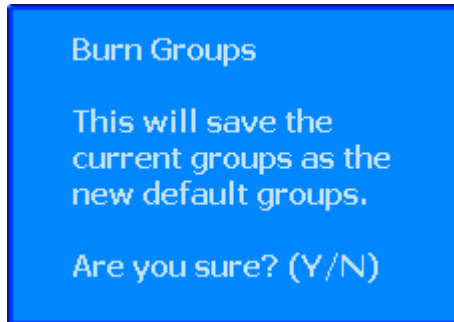
The Default Groups can be created, changed, or cleared by setting up a new set of groups in the PC software and then burning them to the ACM again.



To burn the Default Groups, select "Defaults" from the ACM Main menu and press the "Yes OK" button. The Defaults submenu will open.



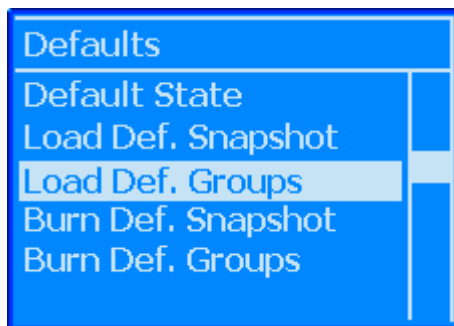
Select "Burn Def. Groups" from the Defaults menu and press the "Yes OK" button.



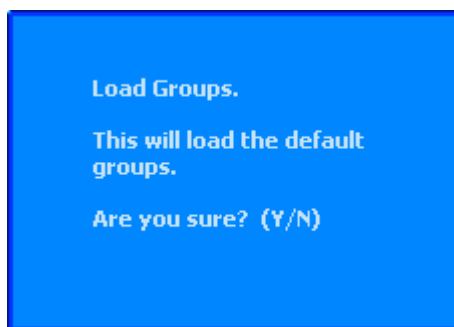
The Burn Groups confirmation window will open.

Press "Yes OK" to burn the current groups to the ACM memory. This operation can be canceled by pressing the "No Cancel" button.

After Default Groups have been burned, they may be loaded directly from the ACM.



To load the Default Groups, select "Load Def. Groups" from the Defaults menu and press the "Yes OK" button.



The Load Groups confirmation window will open.

Press "Yes OK" to load the Default Groups. This operation can be canceled by pressing the "No Cancel" button.

### 28.9.1 Burning the Default Groups

To burn the Default Groups, perform the following procedure:

1. Setup groups for the desired for the Default Groups.
2. Select "Defaults" from the ACM Main menu and press the "Yes OK" button. The Defaults submenu will open.
3. Use the up and down arrow buttons to select "Burn Def. Groups" and press the "Yes OK" button.
4. Press the "Yes OK" button to burn the current groups to the ACM. Press the "No Cancel" button to cancel the operation.



### 28.9.2 Loading the Default Groups

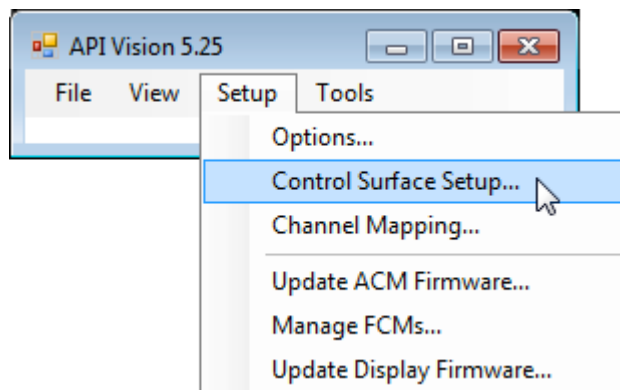
To load the Default Groups, perform the following procedure:

1. Select "Defaults" from the ACM Main menu and press the "Yes OK" button. The Defaults submenu will open.
2. Use the up and down arrow buttons to select "Load Def. Groups" and press the "Yes OK" button.
3. Press the "Yes OK" button to apply the Default Groups to the console. Press the "No Cancel" button to cancel the operation.

### 28.10 Control Surface Setup

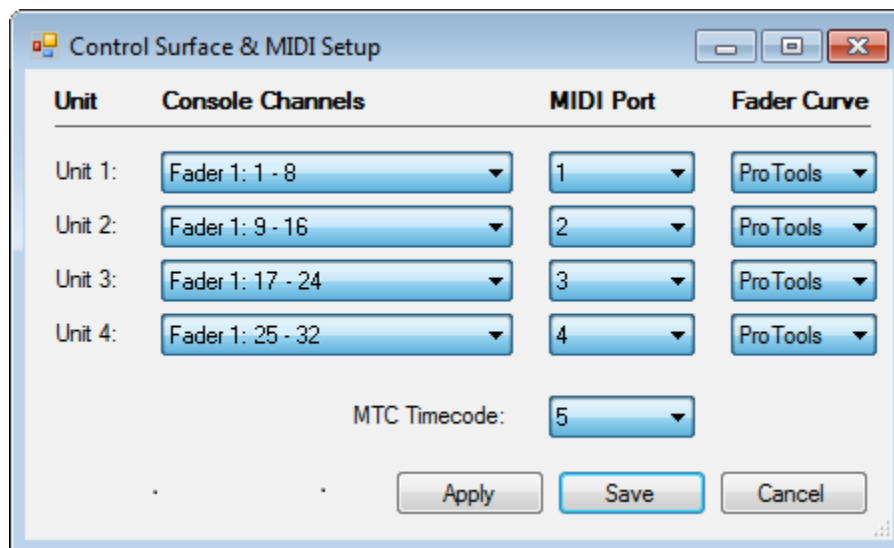
The "Control Surface and MIDI Setup" window is used to map up to four (4) Fader Control Modules (FCMs) (32 channels) to MIDI Ports for DAW control.

To setup MIDI and create a console to DAW map, "settings" must be unlocked if "DAW Config." has been selected as a protected item. Refer to section 19.2.2.3.1 Unlock Settings Tab and 28.2 Password Protection for details.



With "settings" unlocked, select the Control Surface Setup... submenu from the "Setup" menu in the Main window.

The Control Surface & MIDI Setup window will open.

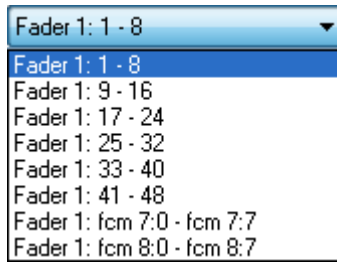


The Control Surface & MIDI Setup window has five sections:

- Unit 1-4: Each unit handles data conversion between the selected FCM and the selected MIDI Port
- Console Channels: Pull-down menu used to select an 8-channel FCM to be mapped to a MIDI Port
- MIDI Port: Pull-down menu used to select the MIDI Port the selected FCM is mapped to.
- MTC Timecode: Pull-down menu used to select a MIDI Port for MIDI Time Code (MTC)
- Fader Curve: Pull-down menu used to select either a Pro Tools or Linear fader curve
- Control Buttons: Used to Apply, Save, or cancel the selected mapping

The Control Surface & MIDI Setup window defines the mapping of the console FCMs to the MIDI ports on the Automation Control Module (ACM) for DAW control.

### Console Channels Assignment



Click the "Console Channels" pull-down menu to assign a control unit to an eight-channel Fader Control Module (FCM).

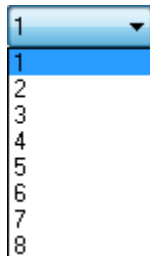
A maximum of 20 FCMs are supported in software, however only four can be mapped to MIDI Ports at one time. The display of the pull-down menu items is determined by Channel Mapping window and the number of FCMs physically installed in the console. The display to the left is for a 48 frame console with six (6) FCMs installed.

FCMs for master channels are not typically used for DAW control.

The "Console Channels" pull-down menu list for a 48 channel frame with six FCMs installed will be populated as follows:

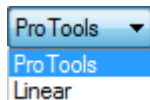
- Fader 1: 1-8
- Fader 1: 9-16
- Fader 1: 17-24
- Fader 1: 25-32
- Fader 1: 33-40
- Fader 1: 41-48
- Fader 1: fcm 7:0 – fcm 7:7
- Fader 1: fcm 8:0 – fcm 8:7
- Fader 1: fcm 9:0 – fcm 9:7
- Fader 1: fcm 10:0 – fcm 10:7
- Fader 2: 1-8
- Fader 2: 9-16
- Fader 2: 17-24
- Fader 2: 25-32
- Fader 2: 33-40
- Fader 2: 41-48
- Fader 2: fcm 7:0 – fcm 7:7
- Fader 2: fcm 8:0 – fcm 8:7
- Fader 2: fcm 9:0 – fcm 9:7
- Fader 2: fcm 10:0 – fcm 10:7

### MIDI Port Assignment



Click the "MIDI Port" pull-down menu to assign each control unit to one of the eight (8) MIDI Ports.

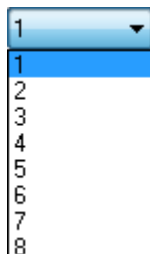
### Fader Curve



Click the "Fader Curve" pull-down menu to select either "Pro Tools" or "Linear" as the fader control curve for each control unit.

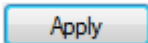
- Pro Tools: The console faders will match the on-screen fader movements in Avid Pro Tools™ DAW software
- Linear: The faders will respond to data in a linear manner. This mode is compatible with some DAW software platforms.

### MIDI Timecode (MTC) Port Assignment

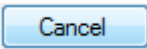


The Vision automation system can be synchronized with MIDI timecode or SMPTE timecode. For MTC synchronization MIDI Port must be selected via the Control Surface & MIDI Setup window

Click the "MTC Timecode" pull-down menu to select the one of the eight (8) MIDI Ports where MIDI timecode (MTC) will be received.

Once all the Console Channels, MIDI Ports, Fader Curves, and the MTC timecode Port have been selected click  to apply the selected setup and leave the window open.

Click  to save the selected setup and close the window.

Click  to cancel the operation without changing the setup and close the window.

Click the  button to enable Control Surface control of the attached DAW.

*NOTE: The DAW to be controlled must be properly configured for HUI control and connected to the MIDI ports on the ACM.*

### 28.10.1 DAW Control Setup Procedure

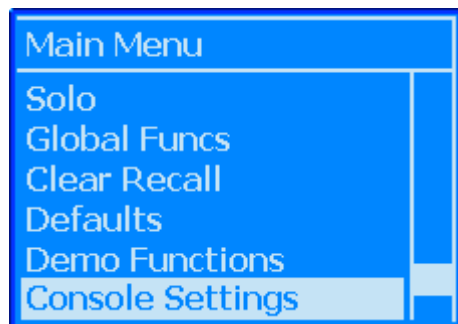
To establish DAW control from the console hardware, perform the following procedure:

1. Connect the MIDI ports on the back of the ACM to the MIDI interface for the DAW
2. Set the needed parameters in the DAW to allow control via MIDI
3. Unlock Settings if needed.
4. Open the "Control Surface Setup..." menu from the "Setup" menu in the Main window. This will open the Control Surface & MIDI Setup window.
5. Assign a FCM (8 faders/mutes) to the control unit using the "Console Channels" pull-down menu.
6. Assign the control unit to a MIDI Port using the "MIDI Port" pull-down menu.
7. Click the "Save" button to save the current setup.
8. Engage the "En: Control Surface" to establish DAW control

Please refer to section 27.0 DAW Control for details regarding control surface setup and operation.

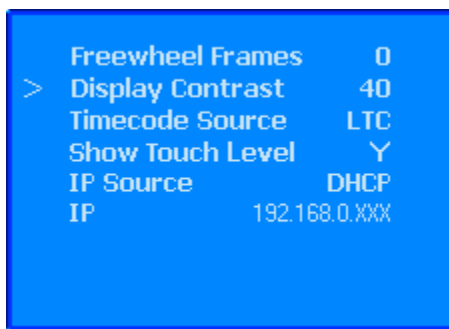
### 28.11 ACM Display Setup

The ACM Console Settings menu allows adjustment of contrast of the ACM Control Panel display and the display of the of the touched fader level to be turned on or off.



To set ACM Control Panel display settings, select "Console Settings" from the ACM Main menu and press the "Yes OK" button. The Console Settings menu will open.

### 28.11.1 Adjust ACM Display Contrast



Select "Display Contrast" from the Console Settings menu and press the "Yes OK" button.

Use the up and down arrow buttons to set the contrast value as desired.

Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

#### 28.11.1.1 Setting ACM Control Panel Display Contrast

To set the ACM Control Panel Display Contrast, use the following procedure:

1. Select "Console Settings" from the ACM Main menu and press the "Yes OK" button. The Console Settings submenu will open.
2. Use the up and down arrow buttons to select "Display Contrast" and press the "Yes OK" button.
3. Use the up and down arrow buttons to set the contrast as needed.
4. Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

### 28.11.2 ACM Touch Level Display

The decibel level in the ACM display for a touched fader can be turned on and off using the "Show Touch Level" parameter in the Console Settings ACM submenu.



To activate the touched fader level display in the ACM, select "Show Touch Level" from the Console Settings menu and press the "Yes OK" button.

Use the up and down arrow buttons to select "Y" for yes or "N" for no.

Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

#### 28.11.2.1 Set Touch Level Display

To turn on or off the touched fader level display in the ACM, use the following procedure:

1. Select "Console Settings" from the ACM Main menu and press the "Yes OK" button. The Console Settings submenu will open.
2. Use the up and down arrow buttons to select "Show Touch Level" and press the "Yes OK" button.
3. Use the up and down arrow buttons to select "Y" for yes or "N" for no.

Press the "Yes OK" button to accept the set value. Press the "No Cancel" button to cancel the operation.

## 28.12 Program VU Meter Calibration

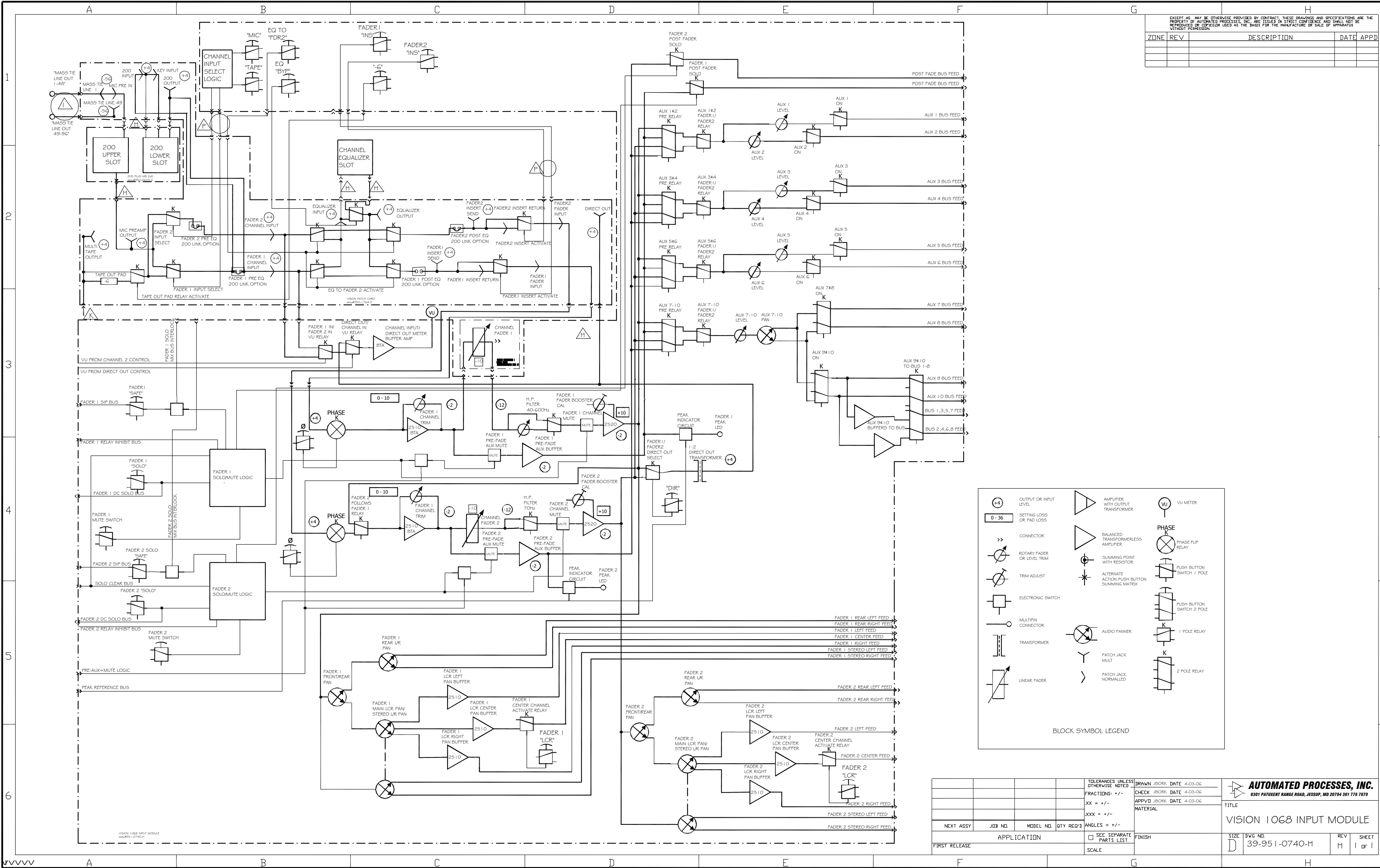
The Master VU meters can be calibrated using the following factory procedures:

1. Measure +4dBu at the 5.1 booster outputs, select 5.1 pgm monitor and trim the meters for "0" with "VU Cal" trim pots.
2. Switch to meter +10 setting on center section, measure +14dBu at the 5.1 booster outputs and adjust "+10 trim" for "0" on the meters.
3. Set 5.1 booster outputs for +4dBu and select peak meter mode, adjust "Peak Adjust" pots for -7dB on the meters.
4. The Peak Adjust controls and the VU cal controls interact. If you make big swings in adjustment, you will have to go back and forth between "VU Cal" and "Peak Adjust" calibration procedures and zero in on it.
5. Calibrating the LtRt meters are similar, but feed LtRt external input, adjust the mixer and reference the LtRt output patch points when calibrating the meters

## **Appendix**

- i. Vision Block Diagram**
- ii. 200 Slot Choices**
- iii. Dimensions**
- iv. Module Information Sheets**
  - a. 205L Discrete Direct Input
  - b. 212L Discrete Microphone Preamp
  - c. 215L Discrete High-pass/Low-pass Sweep Filter
  - d. 225L Discrete Channel Compressor
  - e. 235L Discrete Channel Noise Gate
  - f. 525 Re-Issue Discrete Compressor
  - g. 527 Compressor/Limiter
  - i. 550A Discrete 3-Band Equalizer
  - h. 550L Discrete 4-Band Equalizer
  - j. 560L Discrete 10-Band Graphic Equalizer
- v. Console/Module Setup Sheets**
  - a. 205L Direct Input
  - b. 212L Microphone Preamp
  - c. 215L Sweep Filter
  - d. 225L Channel Compressor
  - e. 235L Channel Noise Gate
  - f. 525 Re-Issue Compressor
  - g. 527 Compressor/Limiter
  - h. 550L 4-Band Equalizer
  - i. 560L 10-Band Graphic Equalizer
  - j. 1068L Input Module
  - k. Channel Fader
  - l. Group/Master Fader
  - m. Bus Trim
  - n. 227 Aux Sends
  - o. E1068L Echo Return
  - p. Master Section
- vi. Automation Quick Reference**

i. Vision Block Diagram



EXCEPT AS MAY BE OTHERWISE PROVIDED BY CONTRACT, THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF AUTOMATED PROCESSES, INC. AND ARE ISSUED IN STRICT CONFIDENCE AND SHALL NOT BE REPRODUCED OR COPIED OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.			
ZONE	REV	DESCRIPTION	DATE APPD

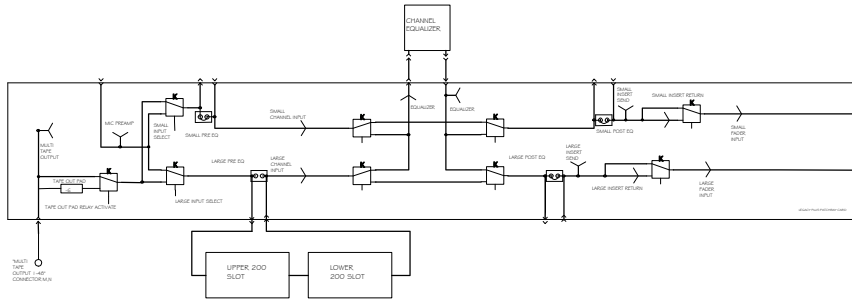
$\oplus 4$	OUTPUT OR INPUT LEVEL		AMPLIFIER WITH OUTPUT TRANSFORMER		VU METER
0 - 36	SETTING LOSS OR PAD LOSS		BALANCED TRANSFORMERLESS AMPLIFIER		PHASE FLIP RELAY
$\gg$	CONNECTOR		SUMMING POINT WITH RESISTOR		PUSH BUTTON SWITCH 1 POLE
	ROTARY SWITCH OR LEVEL TRIM		ALTERNATE ACTION PUSH BUTTON SUMMING MATRIX		PUSH BUTTON SWITCH 2 POLE
	ELECTRONIC SWITCH				1 POLE RELAY
	MULTIPIN CONNECTOR				2 POLE RELAY
	TRANSFORMER				
	LINEAR FADER				

BLOCK SYMBOL LEGEND

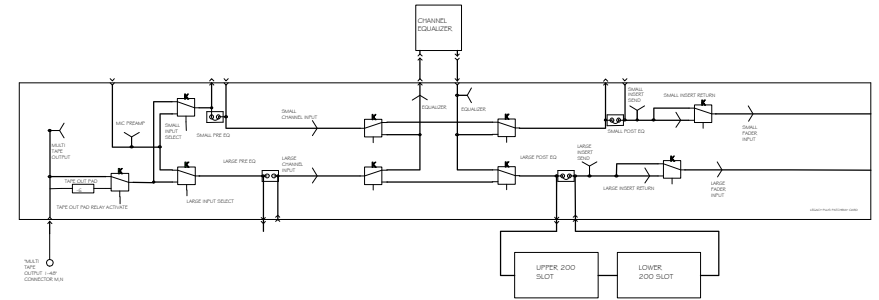
TOLERANCES UNLESS OTHERWISE NOTED				DRAWN J.BORK DATE 4-03-06	<b>AUTOMATED PROCESSES, INC.</b> 8301 PATUXENT RANGE ROAD, JESSUP, MD 20794 301 776 7879
FRACTIONS: +/-				CHECK J.BORK DATE 4-03-06	
XX = +/-				APPVD J.BORK DATE 4-03-06	
XXX = +/-				MATERIAL	
NEXT ASSY	JOB NO.	MODEL NO.	QTY REQ'D	ANGLES = +/-	TITLE VISION 1068 INPUT MODULE
APPLICATION				SCALE	
FIRST RELEASE				FINISH	
SIZE D	DWG NO. 39-951-0740-H	REV H	SHEET 1 OF 1		

## ii. 200 Slot Choices

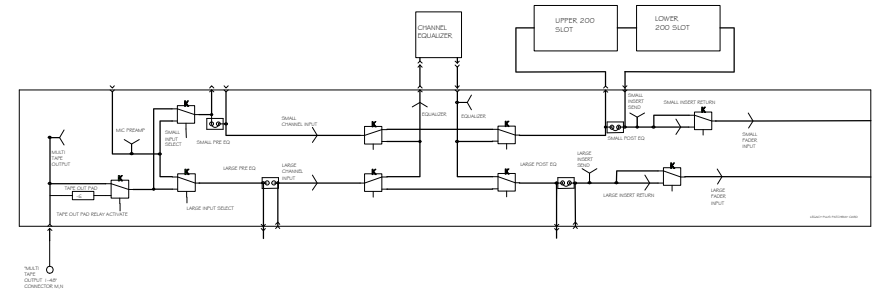
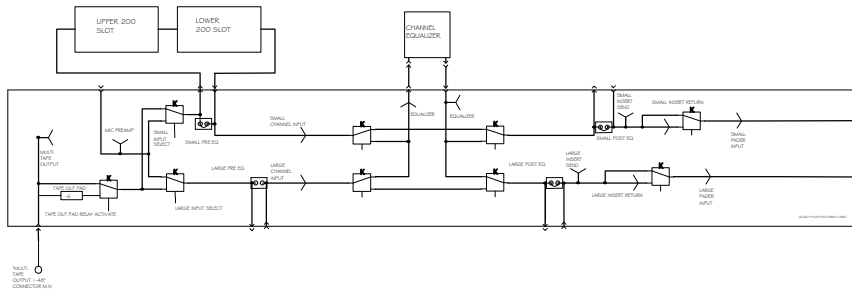
The signal path for the Vision Console 200 series module slots is programmed via jumpers on the Input module patchcards. The signal path for each dual channel strip can be set so that both 200 slots usually reside in either the fader one or the fader 2 signal path, as shown below:



OR...



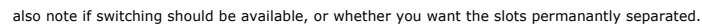
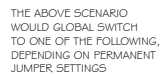
OR...





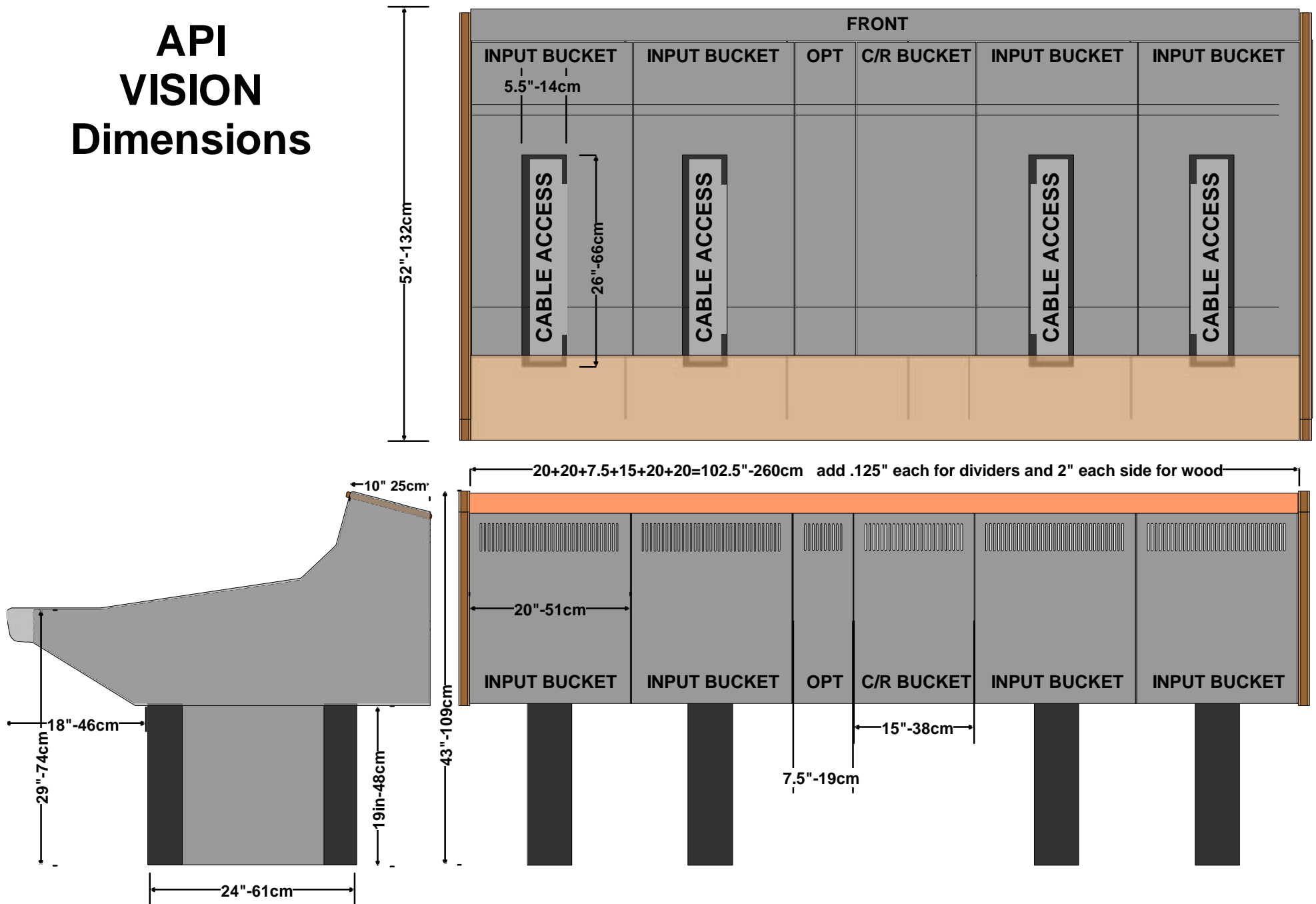
For instance, you can choose to program the cards to have the 2 slot set located Pre-EQ in the fader One signal path AND program the Upper slot to move via switch to one of 3 positions:

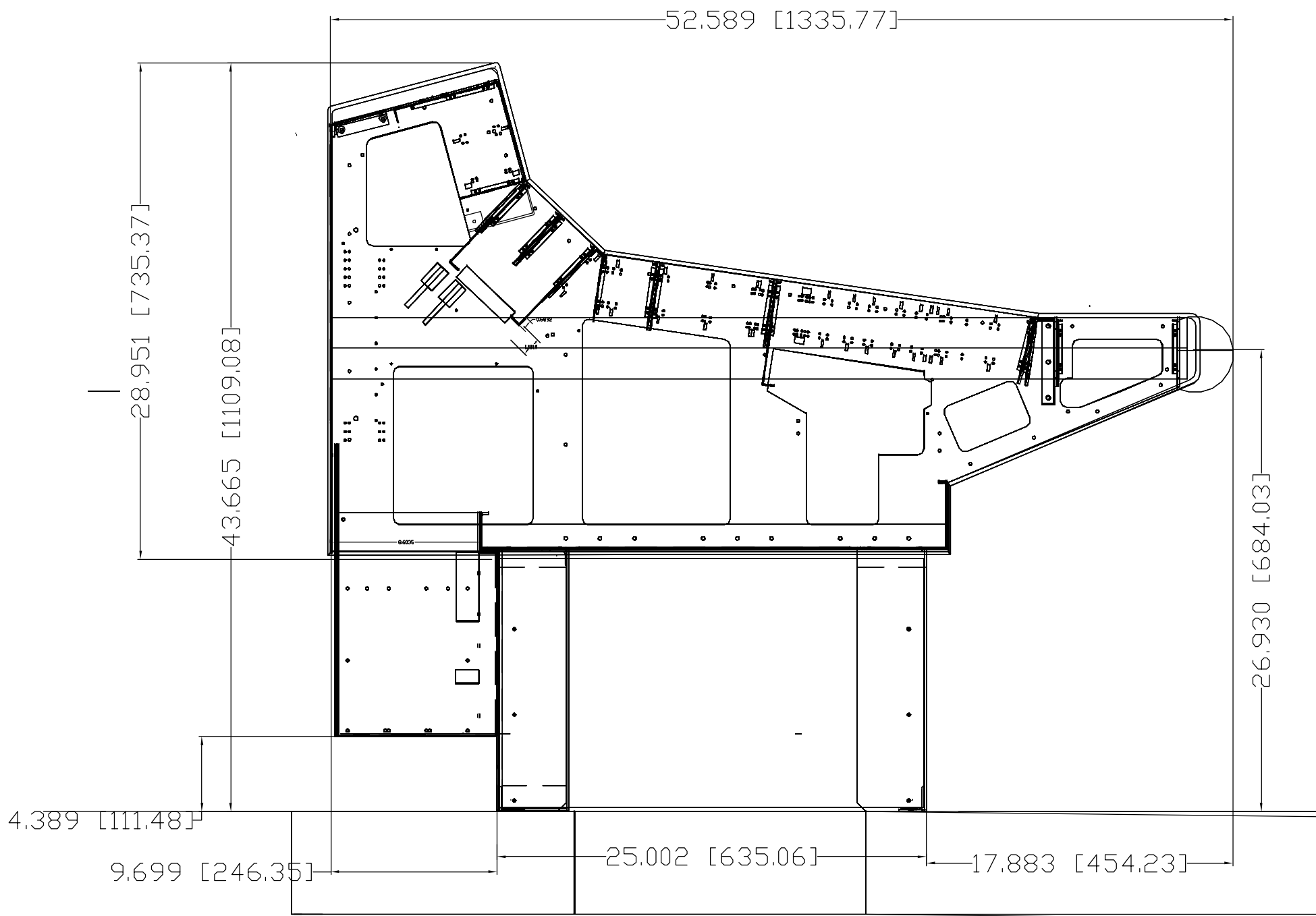
- KIND OF STRANGE LOGICALLY,

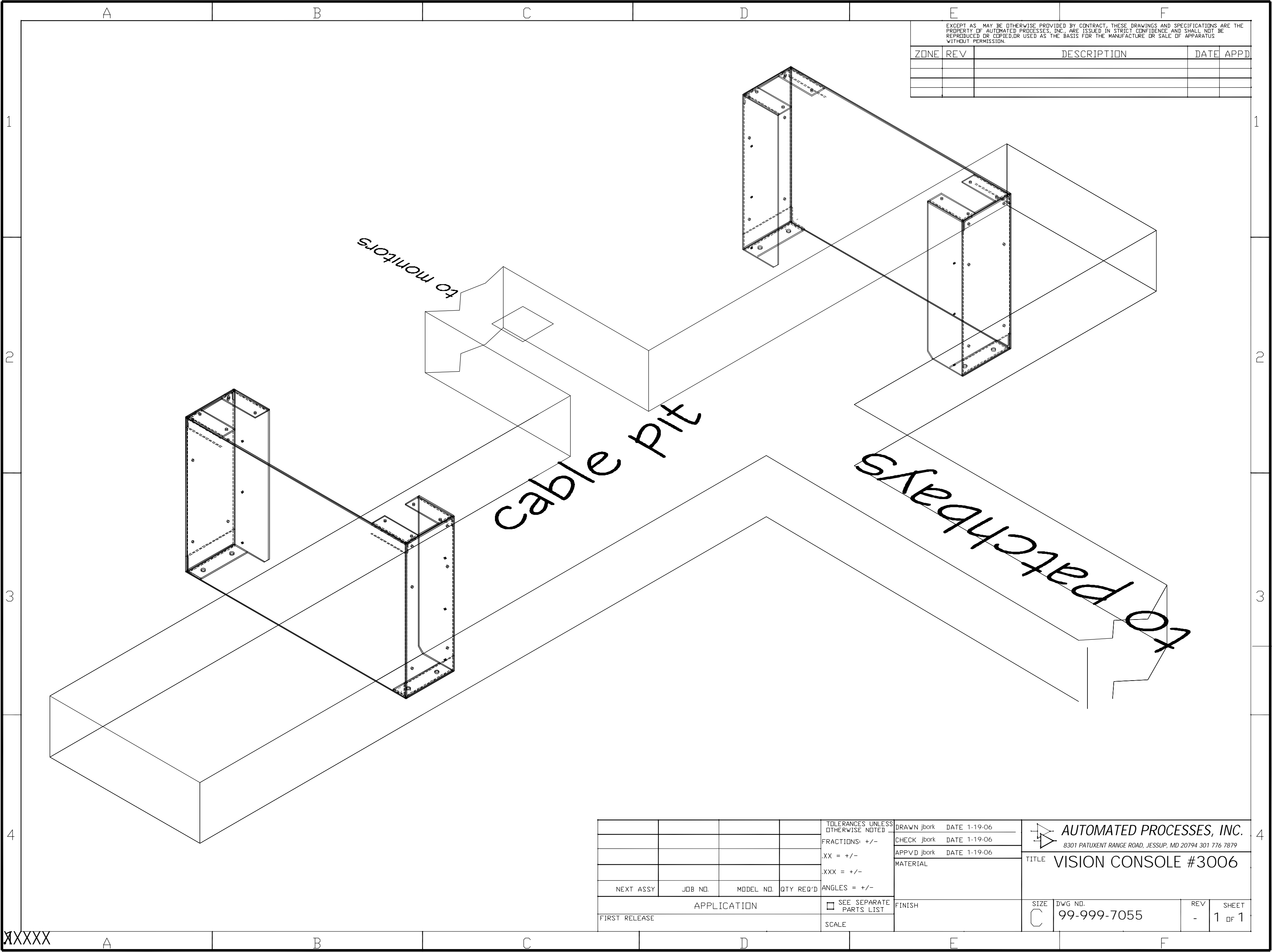


Shown is a 64 channel console. Delete 20" + .125" for a 48 channel version  
Add 20" + .125" for an 80 channel version

# API VISION Dimensions






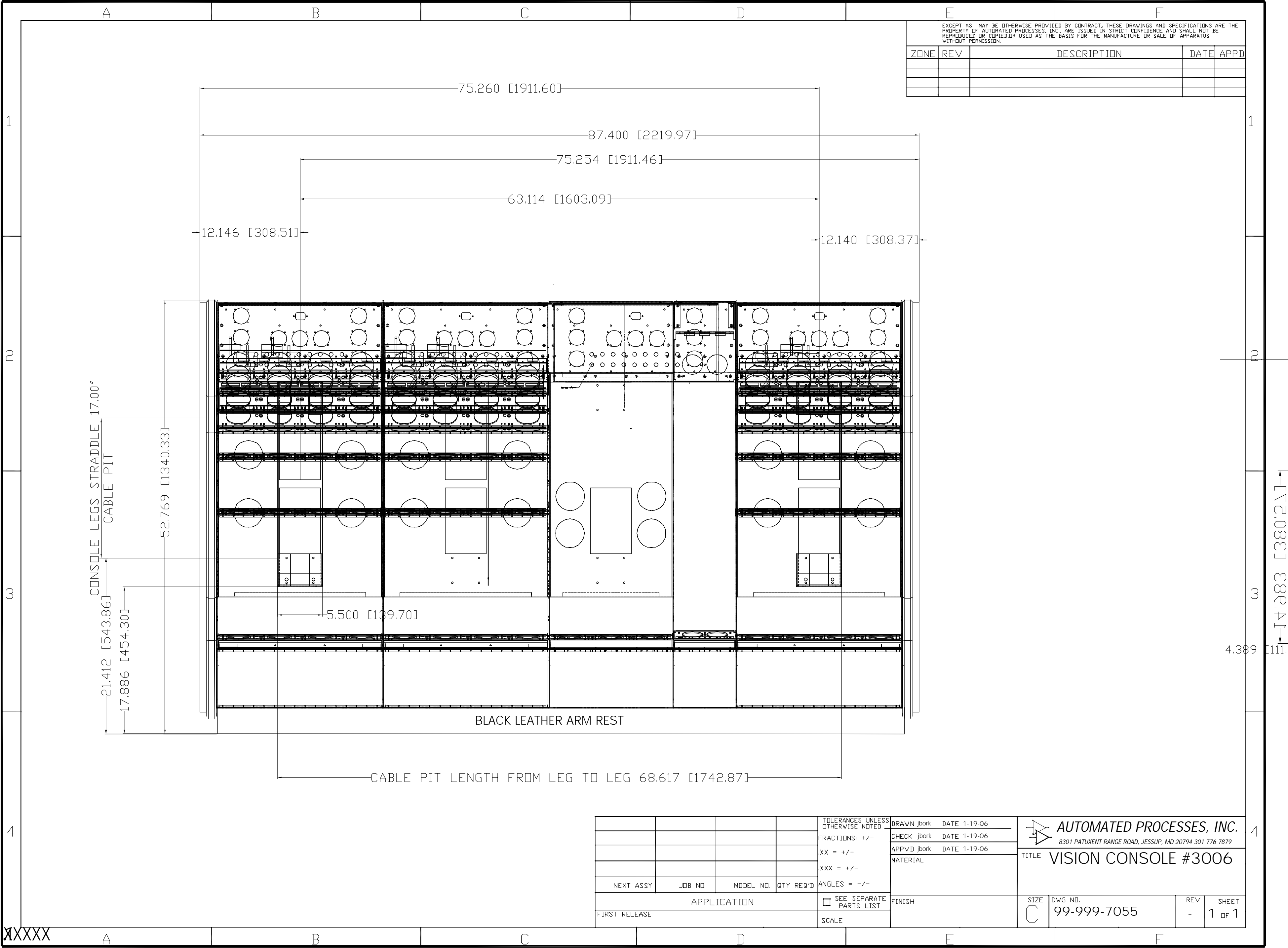


EXCEPT AS MAY BE OTHERWISE PROVIDED BY CONTRACT, THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF AUTOMATED PROCESSES, INC., ARE ISSUED IN STRICT CONFIDENCE AND SHALL NOT BE REPRODUCED OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.


ZONE	REV	DESCRIPTION	DATE	APPD

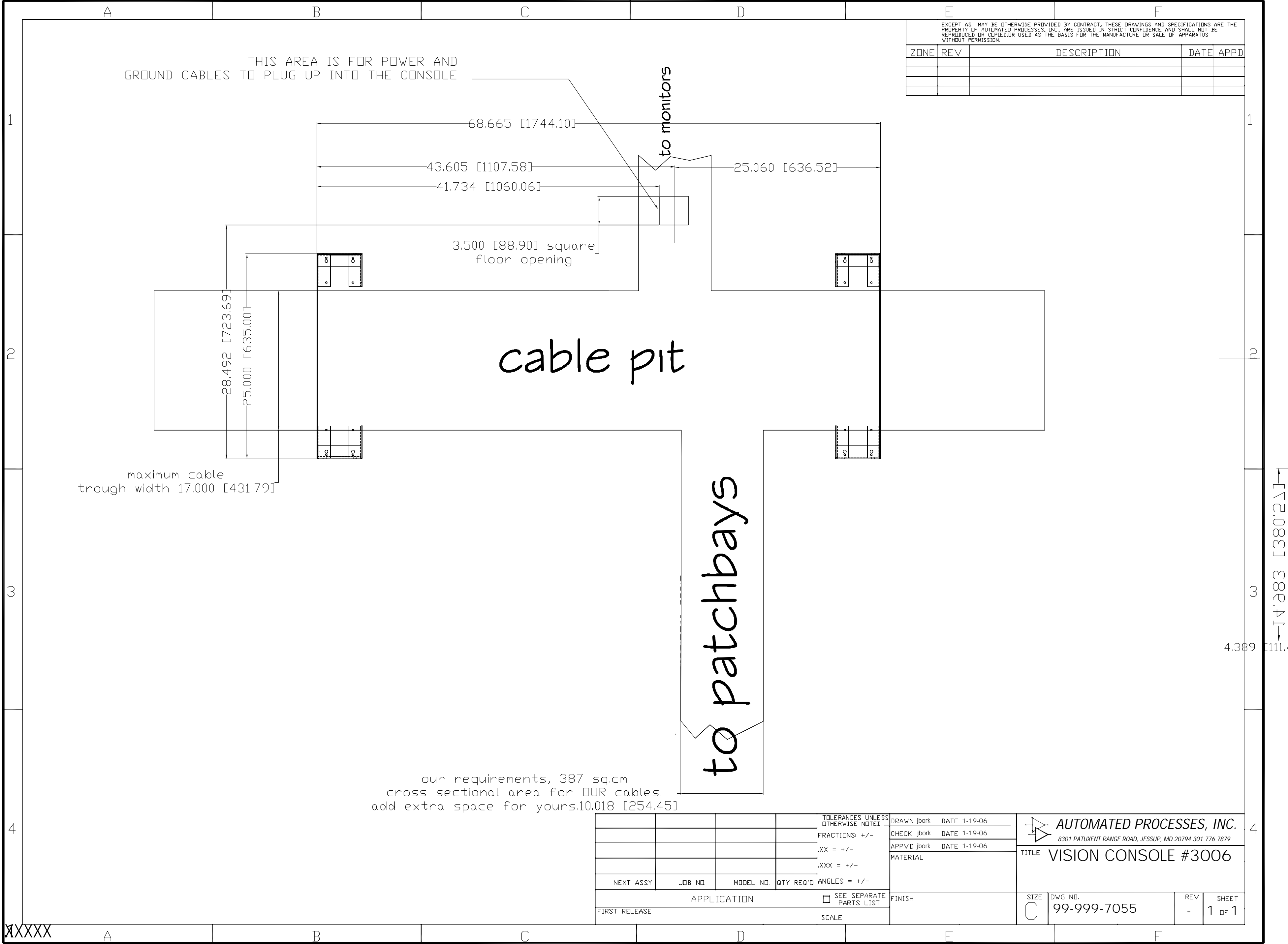
				TOLERANCES UNLESS OTHERWISE NOTED	DRAWN jbork	DATE 1-19-06	<div>AUTOMATED PROCESSES, INC. 8301 PATUXENT RANGE ROAD, JESSUP, MD 20794 301 776 7879</div> <div>TITLE VISION CONSOLE #3006</div>			
				FRACTIONS: +/-	CHECK jbork	DATE 1-19-06				
				.XX = +/-	APP'VD jbork	DATE 1-19-06				
				.XXX = +/-	MATERIAL					
NEXT ASSY	JOB NO.	MODEL NO.	QTY REQ'D	ANGLES = +/-	FINISH		SIZE	DWG NO.	REV	SHEET
APPLICATION				<input type="checkbox"/> SEE SEPARATE PARTS LIST			C	99-999-7055	-	1 OF 1
FIRST RELEASE				SCALE						

XXXXX




EXCEPT AS MAY BE OTHERWISE PROVIDED BY CONTRACT, THESE DRAWINGS AND SPECIFICATIONS ARE THE PROPERTY OF AUTOMATED PROCESSES, INC., ARE ISSUED IN STRICT CONFIDENCE AND SHALL NOT BE REPRODUCED OR COPIED, OR USED AS THE BASIS FOR THE MANUFACTURE OR SALE OF APPARATUS WITHOUT PERMISSION.				
ZONE	REV	DESCRIPTION	DATE	APPD

				TOLERANCES UNLESS OTHERWISE NOTED	DRAWN jbork DATE 1-19-06	<div> <b>AUTOMATED PROCESSES, INC.</b> 8301 PATUXENT RANGE ROAD, JESSUP, MD 20794 301 776 7879</div> <div>TITLE <b>VISION CONSOLE #3006</b></div>							
				FRACTIONS: +/-	CHECK jbork DATE 1-19-06								
				.XX = +/-	APPVD jbork DATE 1-19-06								
				.XXX = +/-	MATERIAL								
				ANGLES = +/-									
NEXT ASSY	JOB NO.	MODEL NO.	QTY REQ'D										
APPLICATION				<input type="checkbox"/> SEE SEPARATE PARTS LIST	FINISH	SIZE	DWG NO.	REV	SHEET				
FIRST RELEASE				SCALE		C	99-999-7055	-	1 OF 1				



ZONE	REV	DESCRIPTION	DATE	APPD

				TOLERANCES UNLESS OTHERWISE NOTED	DRAWN jbork	DATE 1-19-06	<div> <b>AUTOMATED PROCESSES, INC.</b> 8301 PATUXENT RANGE ROAD, JESSUP, MD 20794 301 776 7879</div> <div>TITLE <b>VISION CONSOLE #3006</b></div>			
				FRACTIONS: +/-	CHECK jbork	DATE 1-19-06				
				.XX = +/-	APP'VD jbork	DATE 1-19-06				
				.XXX = +/-	MATERIAL					
NEXT ASSY	JOB NO.	MODEL NO.	QTY REQ'D	ANGLES = +/-						
APPLICATION				<input type="checkbox"/> SEE SEPARATE PARTS LIST	FINISH		SIZE	DWG NO.	REV	SHEET
FIRST RELEASE				SCALE			<div>C</div>	99-999-7055	-	1 OF 1

#### iv. Module Information Sheets

##### a. 205L Discrete Direct Input



##### Features

- Wide range GAIN control
- Hi-Z input, like a Tube Amp
- Thin < > Fat TONE Control reduces low end mud
- BRIGHT Switch boosts the presence
- 20 dB PAD lowers the input level
- 100 K LOAD switch changes the tone of instruments
- 5 Segment LED Meter shows Output Level
- Transformer Coupled Output to +28 dBm
- All Discrete Design

The new API 205L Instrument Direct is specifically designed to accept a guitar or bass direct into it, without any loading on the pickups. With the use of the unique TONE control, the low end "mud" can be reduced. Turning on the BRIGHT switch adds clarity, like the bright switch on any amp. The combination of these two functions may eliminate the need for any EQ on the instrument when recording, keeping the signal pure.

The input is designed specifically to load a pickup the same way that a tube guitar amp would, retaining all of the tone, and minimizing the loading effect on the pickup. This minimal path eliminates the need to use a standard direct box, which more times than not, only converts the signal to a balanced mic level output, which still requires a mic input, equalizer, and fader to get the signal to a recordable level.

The 205L is capable of boosting any instrument to a hefty line level without additional amplifiers. With the 100 K LOAD switch, the tone of the pickup can be altered slightly, which tends to darken the high frequency content. The BRIGHT switch adds a treble boost in the same manner that most instrument amplifiers do, clarifying the instrument and adding presence to it without the need for outboard equalization. When inserting an instrument with an internal preamp or a line level instrument such as a sampler or a keyboard, the 205L has a 20 dB PAD switch to drop the level without loading, retaining the full range of the 205L and its features.

When used with other 200L series modules, a complete input strip can be built from input through dynamics, equalization, and final output. With the addition of the 201L Fader Module, the output level of the 205L can be adjusted so it is compatible with the input of any guitar amp. The artist can then be in the control room while the instrument amp is isolated in the studio.

The 205L Direct makes use of the 2510 and 2520 op-amps and therefore exhibits the reliability, long life, and uniformity characteristic of API products.

## b. 212L Discrete Microphone Preamp



### Features

- Wide range GAIN control
- 20 dB Pad
- 48v Phantom Power Switch
- RE 115 K Mic input Transformer
- LED VU Meter
- Uses API 2520 Op-Amp
- Transformer Coupled Inputs & Outputs to +28 dBu
- All Discrete Circuit

The tone of the 212L mic preamp finds its roots in the classic API 2488 series all discrete recording consoles, best known for the famed "LA" sound. This same mic preamp design is packaged into a compact module with features like a continuously adjustable Gain control and a unique 5 segment LED VU meter on each panel.

An audio chain is only as strong as its weakest link. Often, emphasis is placed on obtaining the highest quality microphones, while neglecting the integrity of the mic preamp. The API 212L microphone pre-amplifier is an integral part of the famous Legacy Series Console and is now available for the L200 Rack System. This modular unit incorporates the same circuit as the legendary API 512b, thus preserving its sonic qualities. This mic-pre articulates high frequencies with great detail, while delivering the big sounding, warm bottom end that API is famous for. Whether it's a live performance or the private setting of a studio session, the 212L will capture every nuance of the moment.

The 212L mic-pre all discrete circuitry features the API 2520 op-amp, the RE 115 K input and the AP-2623 output transformer. A -20 dB pad is provided, allowing the level feeding the mic transformer to be reduced by 20 dB, while keeping the proper load on both the mic and transformer. 48V Phantom power can be locally switched on or off via the front panel switch. An LED VU meter provides a true VU indication of the mic pre output level. The low noise floor, together with a clip point over +28 dBm, makes this preamp suitable for the most extreme applications requiring the highest quality audio.

The 212L Microphone Preamplifier makes use of the 2520 op-amp and therefore exhibits the reliability, long life and uniformity which are characteristic of API products.

## c. 215L Discrete High-pass/Low-pass Sweep Filter



### Features

- Wide range 6 dB per octave LOPASS control
- Wide range 12 dB per octave HIPASS control
- Balanced input stage
- Passive filter design for smooth tone
- Unity gain throughout
- Hard Wire BYPASS switch
- Transformer Coupled Output to +28 dBu
- All Discrete Design

The API 215L is a unique passive, sweepable filter, designed specifically to contour the sound in such a way that it sounds natural and seems as if it *"always sounded that way"*. Its extreme flexibility, repeatable settings and superb sound make it ideal for all studio, live sound and broadcast applications.



The 215L design is a passive low pass filter with a slope of only 6 dB per octave, and a passive dual high pass filter with a slope of 12 dB per octave. The filters are isolated from each other with the same discrete transistor buffer used in the famous 550 series equalizers. This minimizes interaction between the filters, as well as providing a low impedance source for the filter following the buffer.

The input section is a balanced circuit using the API 2510 all discrete op-amp, minimizing the loading effect on any device plugged into it. The output stage is a transformer balanced output, driven by the all discrete API 2520 op-amp.

The filters are both continuously adjustable, with a range from 20 Hz to 20 kHz in two bands. The low pass filter has a range from 500 Hz to 20 kHz, and the high pass filter has a range from 20 Hz to 600 Hz. This covers a broad range of frequencies throughout the entire audio spectrum.

Because of the subtle nature of the 215L filter, it finds a home with uses like rolling off the low end of a hi-hat, where a natural sound is desired, not the usual "phase-shifter" sound of a 18 to 24 dB per octave filter found on most consoles. It can also be used to thin out room mics, without a complete loss of low end, again, resulting from steep filter circuits.

The 215L can be used in the Legacy Series Consoles or in the L200 Rack. The 215L Filter makes use of the 2520 and 2510 op-amps and therefore exhibits the reliability, long life and uniformity which are characteristic of API products.

#### d. 225L Discrete Channel Compressor



##### Features:

- Threshold control from -20 to +10 dBu
- Variable compression ratio from 0 to infinity
- Adjustable release time from 50ms to 3 sec
- "Old" or "New" sound
- HARD or SOFT compression knee
- Always at unity gain, regardless of settings
- LED Gain Reduction meter
- API 2510 and API 2520 op-amps
- Transformer output to +28 dBu

The API 225L Compressor is ideal for all studio, live sound and broadcast applications. Regardless of the threshold or ratio settings, the output level always remains at unity. This unique feature allows real-time adjustments without changing the output level. Both "feed forward" (new) and "feed back" (old) gain reduction methods are selectable on the front panel. There also is a SOFT or HARD selector for either an "over easy" compression resulting in a very natural, uncompressed sound or a typical sharp knee type that has a much more severe limiting effect. The 225L is designed for individual channel use or two units can be combined for Stereo applications via a rear access pin. The 225L also has a side chain input for the detector amplifier.

#### e. 235L Discrete Channel Noise Gate



##### Features

- Threshold control from -45 to +25 dBu
- Variable Fine Adjustable Depth to -80 dB
- Adjustable Release/Hold Time, 60ms to 3 sec
- 2:1 Expander or Noise Gate Selection
- Release or Hold Switch for Release control knob
- Always at Unity Gain, Regardless of settings
- LED Gain Reduction Meter
- Uses the API 2510 and API 2520 Op-Amps
- Transformer Output, to +28 dBu

The API 235L Noise Gate/Expander is a new product design, as API has not offered a gate module since 1974. The 235L is a great sounding gate/expander with the ability to reduce noise in any type of program. The 235L can open unusually fast, without losing any part of the sound. Its extreme flexibility, repeatable settings, and superb sound make it ideal for all studio, live sound, and broadcast applications.

The API 235L Noise Gate/Expander is one of the fastest noise gates manufactured today. When an engineer is faced with program material with a high level of background noise, the 235L can either Gate the signal at a preset Threshold, or with the use of the Expander function, can reduce the background noise to an almost undetectable level. This can be achieved without the typical loss of the program material caused by slow triggering of the signal, or "pinging" caused by false triggering.

With a wide range of adjustment, the 235L can operate from -45 to +25 dBu, fitting into any audio situation regardless of program level. Once the Threshold level is set, the Attack time can be selected to react faster than 100 micro seconds or slightly slower than 25 milliseconds to reduce false triggering. Although the Depth control has a full range of -80 dB, the scale is expanded in the first half of rotation so 0 to 9 dB is available for fine tuning of subtle, undetectable gating. The second half of rotation is from 10 to 80 dB for more drastic noise reduction.

The Expander function is a 1:2 ratio, allowing the signal to "sneak up" to the full signal level without any loss of "under threshold" nuances of vocals and percussion. Setting the threshold in the Gate function to the desired level, then switching to the Expander mode is the perfect setup.

For special gating functions such as the famed "gated snare reverb", the Release function can be switched to Hold, and the Release control becomes the Hold time. In both functions, the unselected one has a set time of 100 ms.

When used with the other 200L series modules, a complete input strip can be built from input through dynamics, equalization, and final output.

The 235L makes use of the 2510 and 2520 op-amps and therefore exhibits the reliability, long life, and uniformity which are characteristic of API products.

## f. 525 Discrete Compressor, Re-Issue



### Features

- Exact reissue of API's original 525 from the early 70's
- Peak detecting "feedback" compressor/limiter
- Variable Threshold and Output levels
- Unique "Ceiling" control combines key functions
- Analog VU meter for monitoring gain reduction
- 4 Switchable release modes
- De-Ess function
- Traditional API fully discrete circuit design
- Active Balanced Input/Output
- Hardwire bypass

Originally released in the 70's, the API 525 is a "feedback" type compressor. An input (threshold) control and output (make-up gain) control are provided, along with an additional "Ceiling" fine-tune function which can increase gain reduction (lower threshold) while simultaneously raising output level to match, so the user can alter dynamics "on the fly" without level changes.

A compression/limit switch sets ratio at either 2:1 or 20:1. Attack time is as fast as 15u/s. Four auto release modes are offered via two switches, 0.1s, 0.5s, 1.5s, & 2.0s.

A De-Ess function inserts an inverse vocal energy curve filter in the detector for effective sibilance/pop reduction. The 525 design has been taken from the original blue prints and spec control drawings from the API archives.

Release times vary with frequency, with high frequency / full bandwidth content released faster than lower frequencies for natural envelope tracking. Attack time is fixed, chosen to catch the fastest peaks, without "pumping". Equally useful as a tracking, mixdown or program compressor/limiter, the 525 utilizes "vintage" dynamics control and an easy to use multi-function control set. The 525 has a hard-wire bypass switch, a balanced input, and a pinout that is the same as all the other 500 series modules. Two or more 525s can be linked for multi-channel compression.

The API 525 Compressor makes use of the 2510 and 2520 op-amps and exhibits the reliability, long life, and uniformity which are characteristic of all API products.

## g. 527 Compressor/Limiter



### Features

- Audio circuit uses the 2510 and 2520 Discrete Op Amps with transformer output
- Continuously variable detented Threshold control
- Continuously variable detented Attack and Release controls
- Continuously variable detented Ratio control
- Output Fader level control
- 10 segment VU/Gain Reduction meter with selector switch
- Overload LED
- "Link" switch for multiple unit interdependent compression linking
- "New"/"Old" switch for feed-forward or feed-back compression
- "Hard"/"Soft" compression curve knee switch
- Patented "Thrust" switch for frequency dependent side chain control
- "IN" switch with hard relay bypass when in the "Out" position

The API 527 takes its place alongside the family of API VCA based compressors, the 225L and the 2500 Stereo Bus Compressor. Anyone familiar with those units will immediately be at home with the 527.

Features common to the line like "feed forward" (NEW) and "feed back" (OLD) gain reduction methods selectable on the front panel, provide a choice of "that old way", or "the new way" of compression, for the highest level of flexibility in signal gain control.

The "old way" or Feed-Back method is what most of the classic compressors used for the gain control circuit. The "new way" gain reduction is more typical of the newer VCA type compressors that rely on RMS detectors for the gain control voltage.

There is a "SOFT"/"HARD" switch for an "over-easy" type compression resulting in a very natural, uncompressed sound or a typical sharp knee type that lends itself to a much more severe limiting effect.

The Threshold control sets the initial operating parameter. The 527 can be operated with signal input levels from +10 dBu to -20 dBu.

The 527 features an Output fader control that ranges from minus infinity to +10dB, and output capability is +28 dBu through our 2520 discrete amplifier and a large API output transformer. The output level remains fairly constant regardless of the threshold or ratio control, much like the "more/less" Ceiling control on the API 525 compressor. This allows for live adjustments without any noticeable gain changes in the program level.

The patented **THRUST®** function can be switched in and out via the front panel as well, applying a high pass filter before the RMS detector circuit that preserves that punchy bottom end.

Attack and Release are fully adjustable on the 527. Release time can be adjusted by rotating the inner concentric RELEASE knob. Release time constants: .3 sec to 3 sec. Attack time is adjusted on the outer concentric ATTACK knob, which ranges from 1 millisecond to 25 milliseconds.

The 527 is designed for individual channel use or, through the use of the LINK switch, two units can be combined for Stereo applications via a motherboard bus connection.

The 527 Compressor/Limiter makes use of the 2510 and 2520 Discrete Op-amps and exhibits the reliability, long life, and signature sound which are characteristic of API products.

## h. 550A Discrete 3-Band Equalizer



### Features

- 3 bands of classic API equalization
- Each band offers 7 API selected frequency centers
- Reciprocal and repeatable filtering
- Maximum 12 dB of boost/cut per band
- EQ Band 1 and 3 offer shelf/peak switching
- "Proportional Q" narrows filter Q at extremes
- Traditional API fully discrete circuit design
- High headroom +30 dB clip level

Few equalizers enjoy the respect and admiration of the coveted API 550A. Designed by the now-legendary Saul Walker in the late '60s, the discrete 550A was first used as a modular OEM equalizer. As the industry rapidly embraced the sonic quality of the 550A, it quickly found its way into many custom console designs by Frank DeMedio and other leading engineers. Many of these consoles are still in use today.

Forty years later, the 550A remains the standard against which other EQs are measured, and it has played a major role in the recording industry for decades. Still copied but never duplicated, the 550A became API's standard channel module EQ when the company began manufacturing consoles in 1971. With virtually all existing units spoken for, popular demand for this EQ resulted in API finally resuming production in 2004.

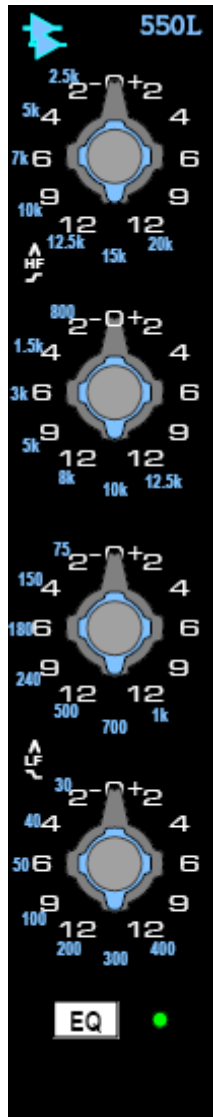
The 550A provides reciprocal equalization at 21 points in 7 steps of boost to a maximum of 12dB of gain at each point. The fifteen equalization points are divided into three overlapping ranges. The high and low frequency ranges are individually selectable as either peaking or shelving, and a band-pass filter may be inserted independently of all other selected equalization settings. Frequency ranges and boost/cut are selected by three dual-concentric switches, and a pushbutton "in" switch allows the EQ to be silently introduced to the signal path. A small toggle switch is used to insert the band-pass filter into the 550A.

The combination of Walker's incomparable 2520 op amp and his "Proportional Q" circuitry gives the 550A user an uncomplicated way to generate acoustically superior equalization.

With the long-awaited reissue of this unit, an EQ that has had such a part in the history of recording is continuing to make history in today's music.

*NOTE: The 550A Equalizer is the same as the standard 550A except it is configured to work in the console 500L Slot. The information above is from the 550L Information Page.*

## i. 550L Discrete 4-Band Equalizer



### Features

- 4 bands of our famous sounding equalization
- Each band offers 7 API selected frequency centers
- Reciprocal and repeatable filtering
- 12 dB of boost/cut per band
- The High and Low EQ Bands offer shelf/peak switching
- "Proportional Q" narrows filter Q at extremes
- Traditional API fully discrete circuit design
- High headroom +30 dB clip level
- Re-issue of 1967 API 550 EQ with an extra band

The API 550 EQ played a major part in the history of music recording in the USA during the 60's and 70's. Originally conceived for use in API's consoles, this latest 550 "L" version is a continuation of the original 1967 550 through the 550A with one additional filter band and several new frequencies. Incorporating API's exclusive circuitry and proprietary components (such as the legendary API 2520 op-amp), the 550L artfully blends the past with the present. So many hit records still depend on the unique 550 sound, that the 550L will be an invaluable tool you will turn to again and again. The API 550L—unlike any other you will ever use.

Many EQ's today offer a huge assortment of complex features, but the API 550L provides exactly the right number of controls to the professional engineer. Deceptively simple at first glance, the 550L's four EQ bands are overlapped significantly to aid in dual roles as problem solver and sweetening device. Each band offers 7 switchable filter frequencies spanning 4 to 5 octaves, selected through experience by a "who's who" list of the industry's most proficient engineers. This re-issue design has been taken from the original blue prints and spec control drawings from the API archives.

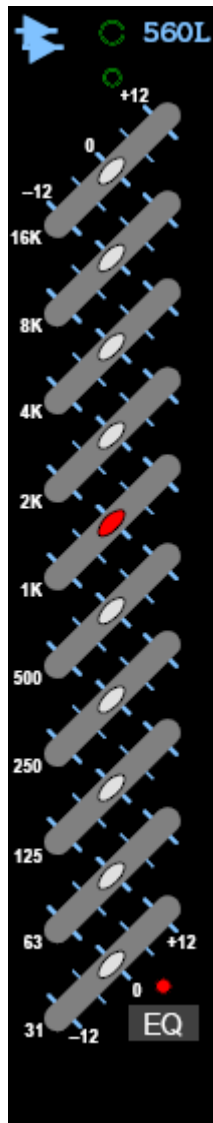
Making use of "API Proportional-Q", a design introduced by API in the 60's, the 550L intuitively widens the filter bandwidth at minimal settings and narrows it at higher settings—without the need for additional bandwidth controls. This feature minimizes the "phase-shift" sound found in many equalizers. The reciprocal nature of the 550L enables the user to "undo" what has been done previously.

The benefits of the API 550L are most obvious to those who work with EQ on a continuous basis. The 550L's ability to affect or reverse tonal modifications is perhaps the most important feature. If major tonal restructuring is required, the extraordinary headroom made possible with API's 2520 op-amp offers predictable and gentle "analog" performance under duress. With a surprisingly wide range of tonal variations, you can do no better than the API 550L.

*NOTE: The 550L Equalizer is the same as the standard 550B except it is configured to work in the console 500L Slot. The information above is from the 550B Information Page.*



## j. 560L Discrete 10-Band Graphic Equalizer



### Features

- 10 bands of API proprietary equalization
- Familiar graphics operation on one octave centers
- 12 dB of boost/cut per band
- "Proportional Q" narrows filter Q at extremes
- Additional resolution within the  $\pm 4$  region
- Center detent for reliable reset
- Traditional API fully discrete circuit design
- Silent bypass button
- Re-issue of the 1969 API 560 EQ

Originally conceived for use in API Consoles of the 60's and 70's, the API 560L re-issue is a unique device designed to accomplish tasks that no other EQ can do. It delivers that "one-of-a-kind" API sound, precision easy set filtering, and high headroom in a very small package. Extremely fast to set and reset using accurate zero detents, the curve shaping potential of the 560L is unmatched. At home both in field recording and the studio environment, this "new-old" version is a re-issue of the original 560 with improved resolution in the critical area of  $\pm 4$  dB. Incorporating API's exclusive circuitry and proprietary components (such as the legendary 2520 op-amp), the re-issue of the 560 artfully blends the past with present—layout with function.

The API 560L was created to fit all applications for the professional engineer. For most of the 70's and 80's, every remote recording console that API manufactured used this versatile graphic EQ. It is also ideal for studio and live sound applications, where a professional result is required. This re-issue design has been taken from the original blue prints and spec control drawings from the API archives.

The large number of available EQ bands make the 560L an ideal companion to parametric EQ, as well as ideal for signal sweetening. Not lacking in features, the 560L makes use of API's unique "Proportional Q" design introduced by API in the 60's, intuitively widening the filter bandwidth at lower boost/cut levels and narrowing it at higher settings. In addition, boost and cut characteristics are identical, so previous actions can be undone.

The extraordinary headroom made possible with API's proprietary 2520 op-amp offers predictable and wonderful "analog" performance under duress. The 560 will be a valuable asset to your performance critical applications.

The 560 Graphic Equalizer makes use of the 2510 and 2520 op-amps and therefore exhibits the reliability, long life, and uniformity which are characteristic of API products.

*NOTE: The 560L Equalizer is the same as the standard 560B except it is configured to work in the console 500L. The information above is from the 560B Information Page.*

ARTIST:

ENGINEER:

DATE:

NOTES:

DRAWN BY:

STUDIO:

[illegible][illegible]







**DATE:**

**STUDIO:**[illegible][illegible]



STUDIO:

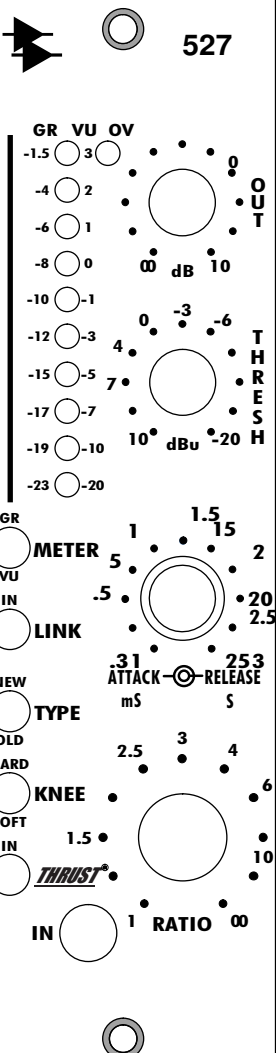
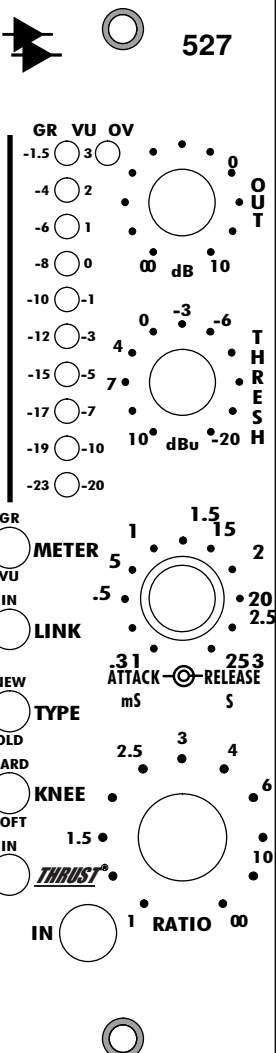
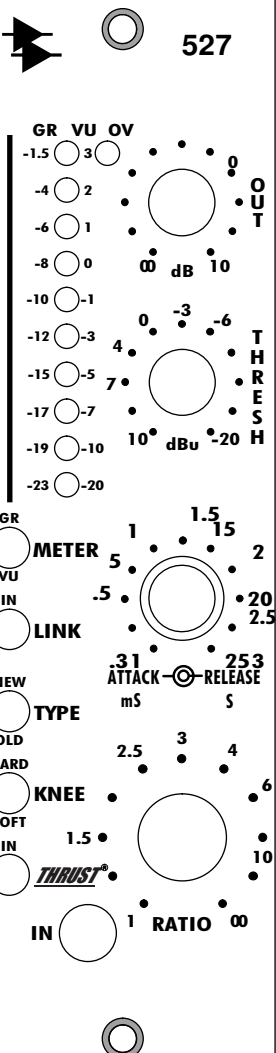
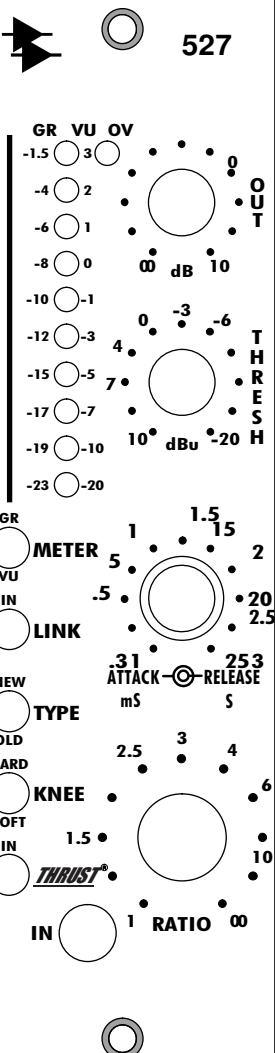
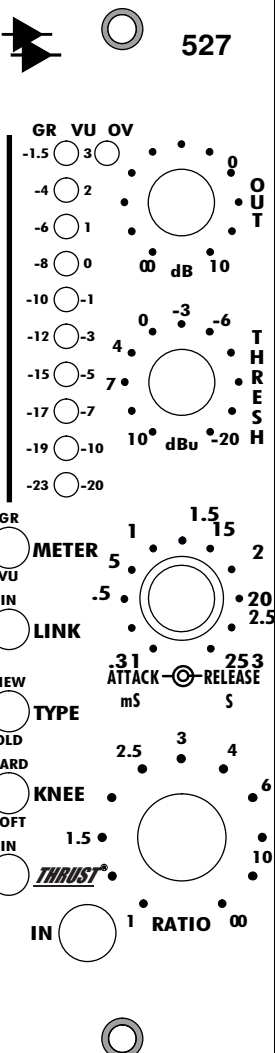
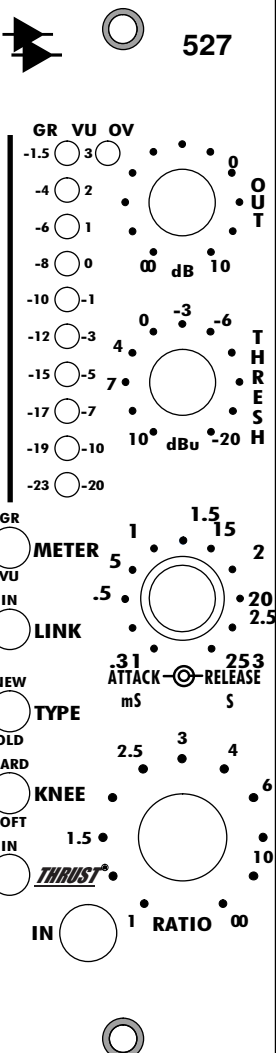
A diagram showing eight identical rectangular boxes arranged horizontally. Each box contains the text 'CHAN#'.

[illegible]

# 527 Module Set Up Sheet

**ARTIST:**  
**ENGINEER:**  
**DATE:**

**NOTES:**  
**DRAWN BY:**  
**STUDIO:**

TITLE	TITLE	TITLE	TITLE	TITLE	TITLE
 <p>527</p> <p>GR VU OV</p> <p>-1.5 3 0</p> <p>-4 2</p> <p>-6 1</p> <p>-8 0 00 dB 10</p> <p>-10 -1</p> <p>-12 -3 4</p> <p>-15 -5 7</p> <p>-17 -7</p> <p>-19 -10 10<sup>0</sup> dBu -20 H</p> <p>-23 -20</p> <p>OUT</p> <p>THRES</p> <p>METER</p> <p>LINK</p> <p>NEW TYPE</p> <p>ATTACK RELEASE</p> <p>OLD HARD</p> <p>KNEE</p> <p>SOFT</p> <p>THRUST</p> <p>IN</p> <p>RATIO</p>	 <p>527</p> <p>GR VU OV</p> <p>-1.5 3 0</p> <p>-4 2</p> <p>-6 1</p> <p>-8 0 00 dB 10</p> <p>-10 -1</p> <p>-12 -3 4</p> <p>-15 -5 7</p> <p>-17 -7</p> <p>-19 -10 10<sup>0</sup> dBu -20 H</p> <p>-23 -20</p> <p>OUT</p> <p>THRES</p> <p>METER</p> <p>LINK</p> <p>NEW TYPE</p> <p>ATTACK RELEASE</p> <p>OLD HARD</p> <p>KNEE</p> <p>SOFT</p> <p>THRUST</p> <p>IN</p> <p>RATIO</p>	 <p>527</p> <p>GR VU OV</p> <p>-1.5 3 0</p> <p>-4 2</p> <p>-6 1</p> <p>-8 0 00 dB 10</p> <p>-10 -1</p> <p>-12 -3 4</p> <p>-15 -5 7</p> <p>-17 -7</p> <p>-19 -10 10<sup>0</sup> dBu -20 H</p> <p>-23 -20</p> <p>OUT</p> <p>THRES</p> <p>METER</p> <p>LINK</p> <p>NEW TYPE</p> <p>ATTACK RELEASE</p> <p>OLD HARD</p> <p>KNEE</p> <p>SOFT</p> <p>THRUST</p> <p>IN</p> <p>RATIO</p>	 <p>527</p> <p>GR VU OV</p> <p>-1.5 3 0</p> <p>-4 2</p> <p>-6 1</p> <p>-8 0 00 dB 10</p> <p>-10 -1</p> <p>-12 -3 4</p> <p>-15 -5 7</p> <p>-17 -7</p> <p>-19 -10 10<sup>0</sup> dBu -20 H</p> <p>-23 -20</p> <p>OUT</p> <p>THRES</p> <p>METER</p> <p>LINK</p> <p>NEW TYPE</p> <p>ATTACK RELEASE</p> <p>OLD HARD</p> <p>KNEE</p> <p>SOFT</p> <p>THRUST</p> <p>IN</p> <p>RATIO</p>	 <p>527</p> <p>GR VU OV</p> <p>-1.5 3 0</p> <p>-4 2</p> <p>-6 1</p> <p>-8 0 00 dB 10</p> <p>-10 -1</p> <p>-12 -3 4</p> <p>-15 -5 7</p> <p>-17 -7</p> <p>-19 -10 10<sup>0</sup> dBu -20 H</p> <p>-23 -20</p> <p>OUT</p> <p>THRES</p> <p>METER</p> <p>LINK</p> <p>NEW TYPE</p> <p>ATTACK RELEASE</p> <p>OLD HARD</p> <p>KNEE</p> <p>SOFT</p> <p>THRUST</p> <p>IN</p> <p>RATIO</p>	 <p>527</p> <p>GR VU OV</p> <p>-1.5 3 0</p> <p>-4 2</p> <p>-6 1</p> <p>-8 0 00 dB 10</p> <p>-10 -1</p> <p>-12 -3 4</p> <p>-15 -5 7</p> <p>-17 -7</p> <p>-19 -10 10<sup>0</sup> dBu -20 H</p> <p>-23 -20</p> <p>OUT</p> <p>THRES</p> <p>METER</p> <p>LINK</p> <p>NEW TYPE</p> <p>ATTACK RELEASE</p> <p>OLD HARD</p> <p>KNEE</p> <p>SOFT</p> <p>THRUST</p> <p>IN</p> <p>RATIO</p>

ARTIST:

ENGINEER:

DATE:

NOTES:

DRAWN BY:

STUDIO:

CHAN#

CHAN#

CHAN#

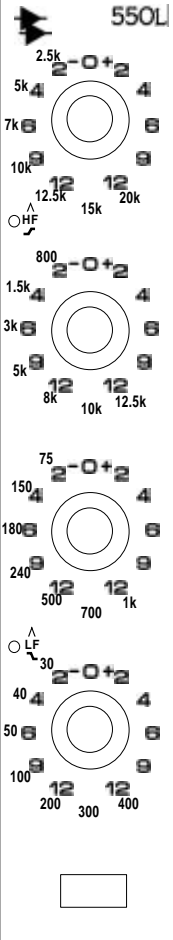
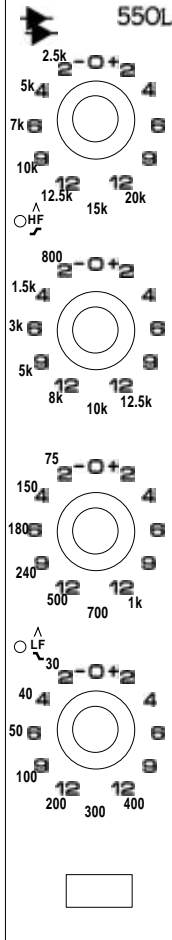
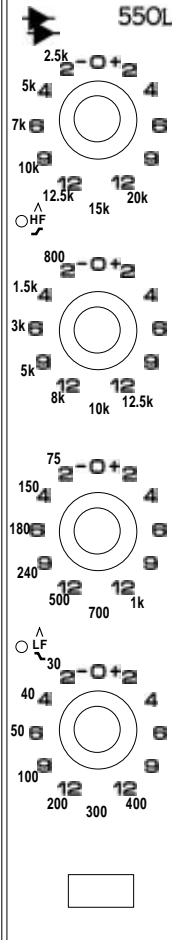
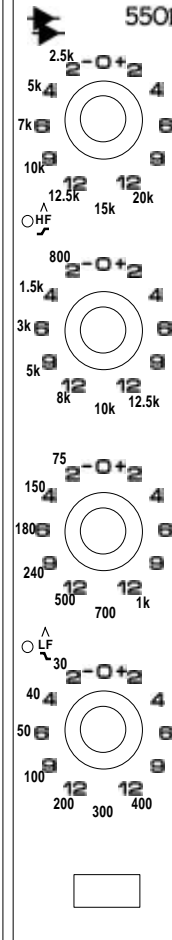
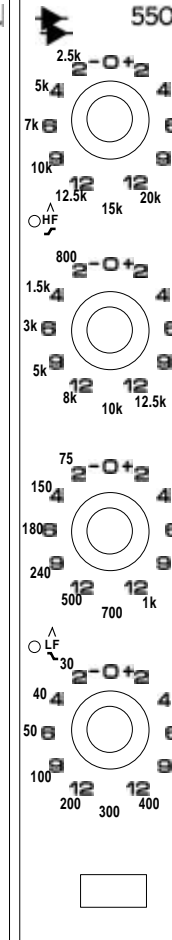
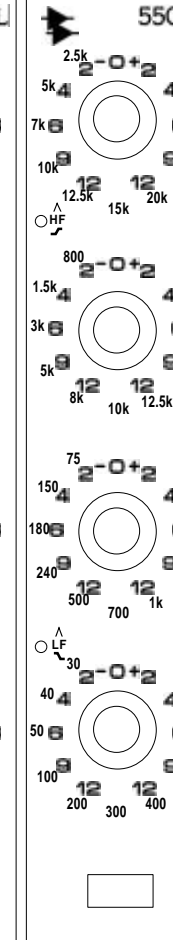
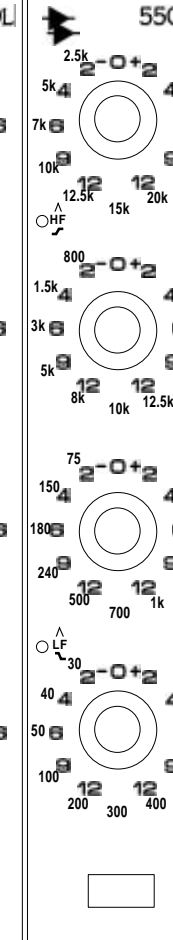
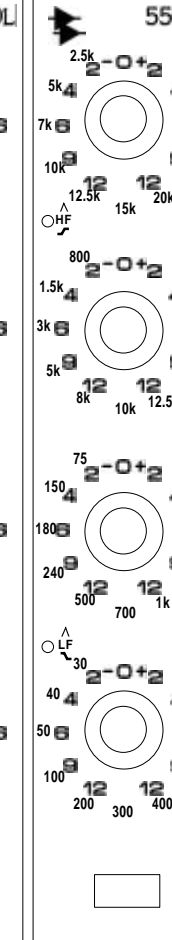
CHAN#

CHAN#

CHAN#

CHAN#

CHAN#

							
--	--	--	--	--	---	--	--

TITLE

TITLE

TITLE

TITLE

TITLE

TITLE

TITLE

TITLE

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES

NOTES





**ARTIST:**  
**ENGINEER:**  
**DATE:**

**NOTES:**  
**DRAWN BY:**  
**STUDIO:**

<b>CHAN#</b>
--------------

<b>TITLE</b>
--------------

<b>CHAN#</b>
--------------

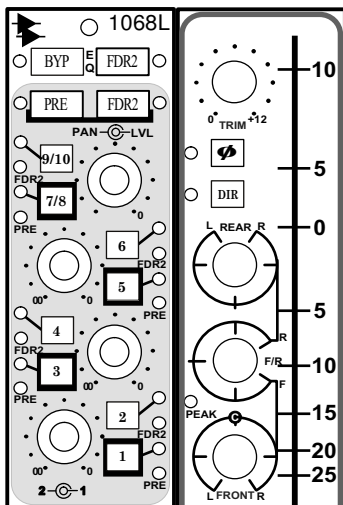
<b>TITLE</b>
--------------

<b>CHAN#</b>
--------------

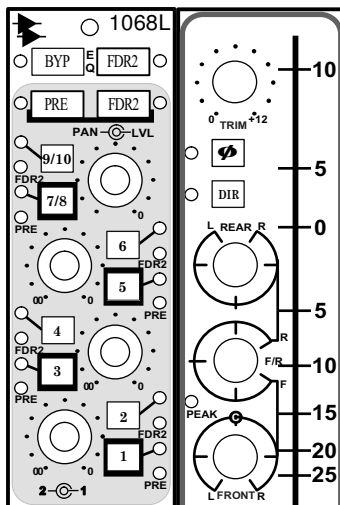
<b>TITLE</b>
--------------

<b>CHAN#</b>
--------------

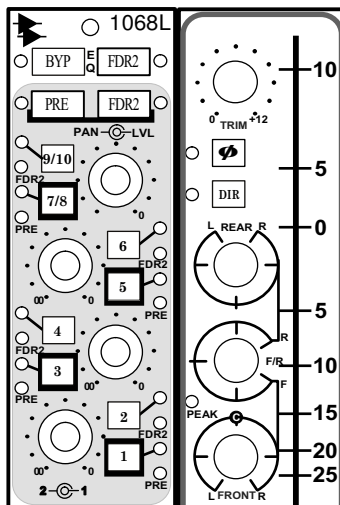
<b>TITLE</b>
--------------



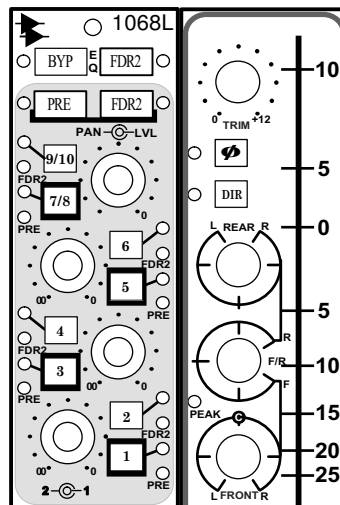
**NOTES**



**NOTES**



**NOTES**



**NOTES**

# Channel Fader Set Up Sheet

**ARTIST:**

**NOTES:**

## ENGINEER:

**DRAWN BY:**

**DATE:****STUDIO:**[illegible]

# Master Fader Set Up Sheet

**ARTIST:**

## ENGINEER:

**DATE:**

**NOTES:**

**DRAWN BY:**

**STUDIO:**[illegible][illegible]


## NOTES

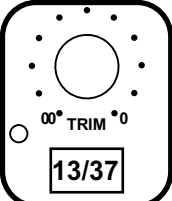
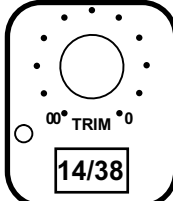
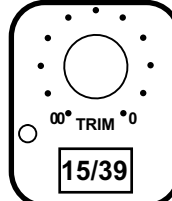
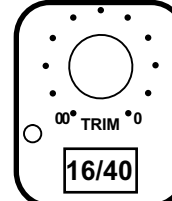
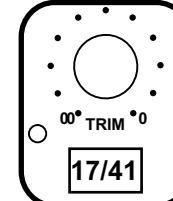
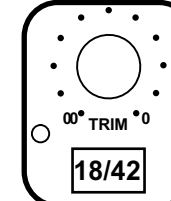
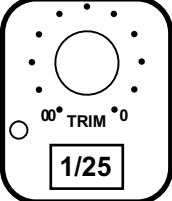
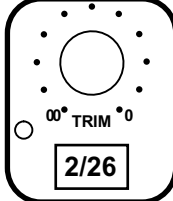
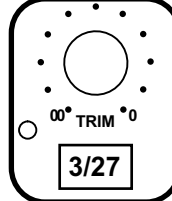
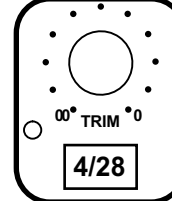
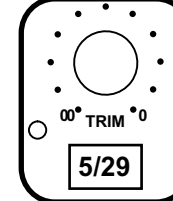
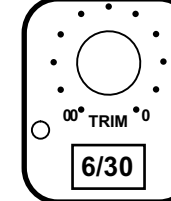
# Bus Trim Set Up Sheet

**ARTIST:**  
**ENGINEER:**  
**DATE:**

**NOTES:**  
**DRAWN BY:**  
**STUDIO:**

<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>
--------------	--------------	--------------	--------------	--------------	--------------

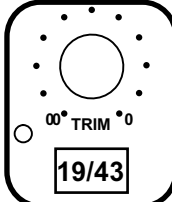
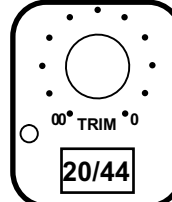
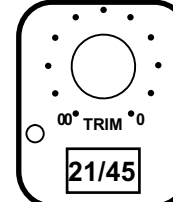
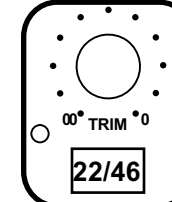
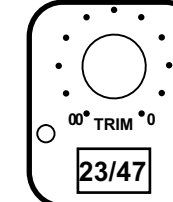
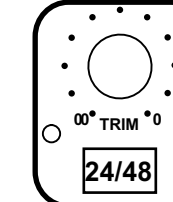
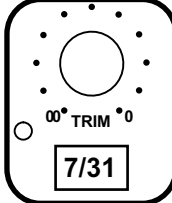
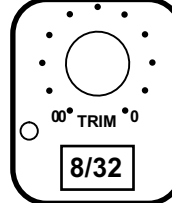
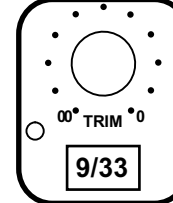
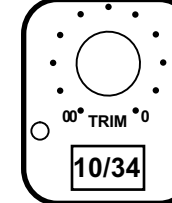
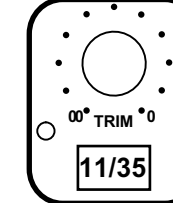
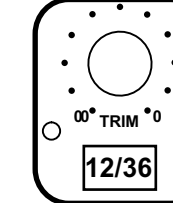



					
					

<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>
--------------	--------------	--------------	--------------	--------------	--------------



<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>
--------------	--------------	--------------	--------------	--------------	--------------



<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>	<b>TITLE</b>
--------------	--------------	--------------	--------------	--------------	--------------

**NOTES**

# Cue Send Set Up Sheet

**ARTIST:**

**ENGINEER:**

**DATE:**

**NOTES:**

**DRAWN BY:**

**STUDIO:**

**TITLE**

**TITLE**

**TITLE**

**TITLE**

**TITLE**

**TITLE**

227L

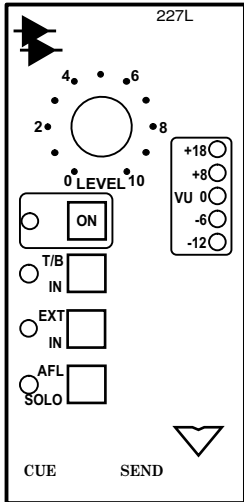


Diagram of a 227L channel strip. It features a gain knob with markings at 2, 4, 6, and 8. A level meter with a needle and markings at 0, 10, and 18. A VU meter with markings at 0, +8, -6, and -12. A row of four buttons: ON, T/B IN, EXT IN, and AFL SOLO. A cue send section with a triangle symbol and labels CUE and SEND.

227L

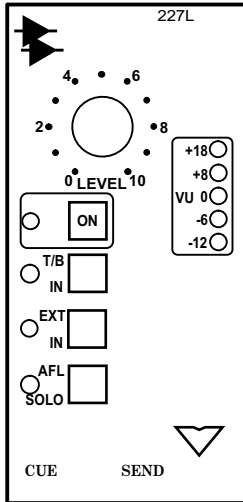


Diagram of a 227L channel strip. It features a gain knob with markings at 2, 4, 6, and 8. A level meter with a needle and markings at 0, 10, and 18. A VU meter with markings at 0, +8, -6, and -12. A row of four buttons: ON, T/B IN, EXT IN, and AFL SOLO. A cue send section with a triangle symbol and labels CUE and SEND.

227L

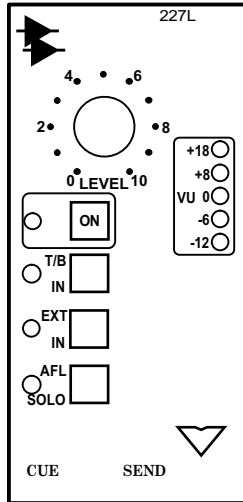


Diagram of a 227L channel strip. It features a gain knob with markings at 2, 4, 6, and 8. A level meter with a needle and markings at 0, 10, and 18. A VU meter with markings at 0, +8, -6, and -12. A row of four buttons: ON, T/B IN, EXT IN, and AFL SOLO. A cue send section with a triangle symbol and labels CUE and SEND.

227L

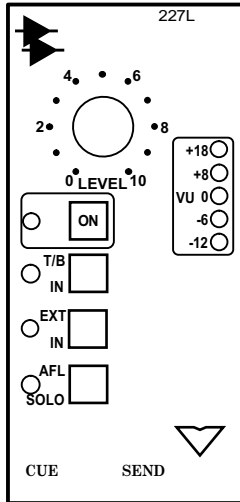


Diagram of a 227L channel strip. It features a gain knob with markings at 2, 4, 6, and 8. A level meter with a needle and markings at 0, 10, and 18. A VU meter with markings at 0, +8, -6, and -12. A row of four buttons: ON, T/B IN, EXT IN, and AFL SOLO. A cue send section with a triangle symbol and labels CUE and SEND.

227L

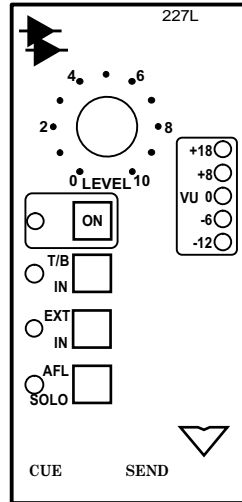


Diagram of a 227L channel strip. It features a gain knob with markings at 2, 4, 6, and 8. A level meter with a needle and markings at 0, 10, and 18. A VU meter with markings at 0, +8, -6, and -12. A row of four buttons: ON, T/B IN, EXT IN, and AFL SOLO. A cue send section with a triangle symbol and labels CUE and SEND.

227L

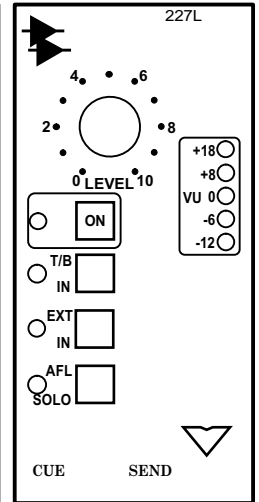


Diagram of a 227L channel strip. It features a gain knob with markings at 2, 4, 6, and 8. A level meter with a needle and markings at 0, 10, and 18. A VU meter with markings at 0, +8, -6, and -12. A row of four buttons: ON, T/B IN, EXT IN, and AFL SOLO. A cue send section with a triangle symbol and labels CUE and SEND.

**TITLE**

**TITLE**

**TITLE**

**TITLE**

227L

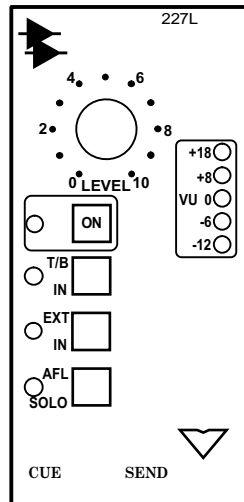


Diagram of a 227L channel strip. It features a gain knob with markings at 2, 4, 6, and 8. A level meter with a needle and markings at 0, 10, and 18. A VU meter with markings at 0, +8, -6, and -12. A row of four buttons: ON, T/B IN, EXT IN, and AFL SOLO. A cue send section with a triangle symbol and labels CUE and SEND.

227L

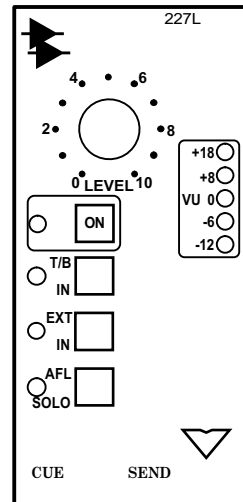


Diagram of a 227L channel strip. It features a gain knob with markings at 2, 4, 6, and 8. A level meter with a needle and markings at 0, 10, and 18. A VU meter with markings at 0, +8, -6, and -12. A row of four buttons: ON, T/B IN, EXT IN, and AFL SOLO. A cue send section with a triangle symbol and labels CUE and SEND.

227L

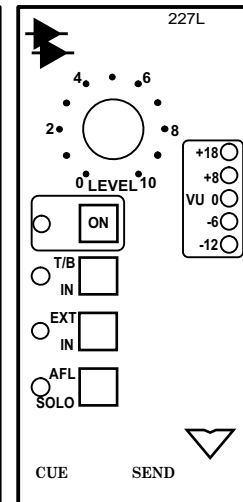


Diagram of a 227L channel strip. It features a gain knob with markings at 2, 4, 6, and 8. A level meter with a needle and markings at 0, 10, and 18. A VU meter with markings at 0, +8, -6, and -12. A row of four buttons: ON, T/B IN, EXT IN, and AFL SOLO. A cue send section with a triangle symbol and labels CUE and SEND.

227L

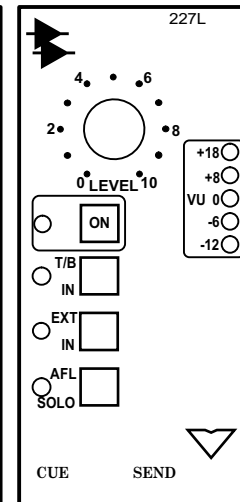


Diagram of a 227L channel strip. It features a gain knob with markings at 2, 4, 6, and 8. A level meter with a needle and markings at 0, 10, and 18. A VU meter with markings at 0, +8, -6, and -12. A row of four buttons: ON, T/B IN, EXT IN, and AFL SOLO. A cue send section with a triangle symbol and labels CUE and SEND.

227M

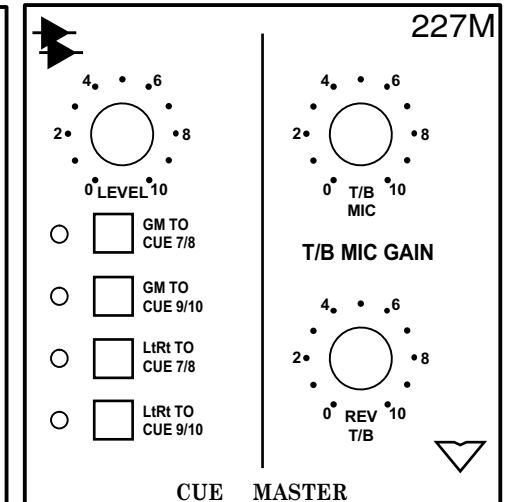


Diagram of a 227M master section. It features a gain knob with markings at 2, 4, 6, and 8. A level meter with a needle and markings at 0, 10, and 18. A VU meter with markings at 0, +8, -6, and -12. A row of four buttons: ON, T/B IN, EXT IN, and AFL SOLO. A cue send section with a triangle symbol and labels CUE and MASTER.

**NOTES**

# E1068L Set Up Sheet

**ARTIST:**

**ENGINEER:**

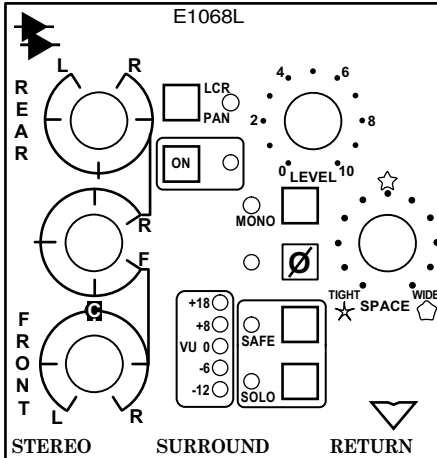
**DATE:**

**NOTES:**

**DRAWN BY:**

**STUDIO:**

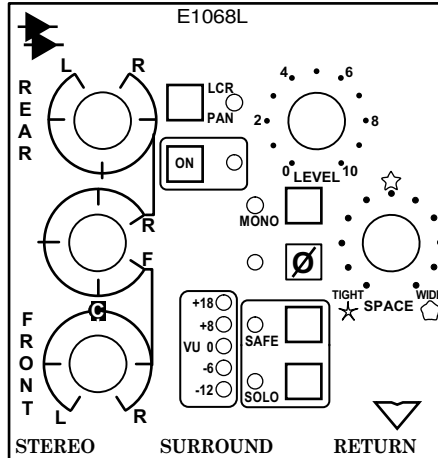
**CHAN#**



**TITLE**

**NOTES**

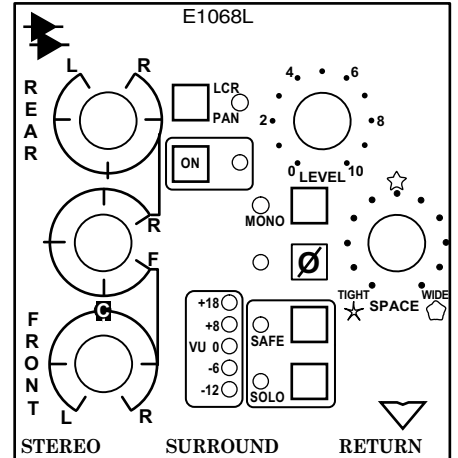
**CHAN#**



**TITLE**

**NOTES**

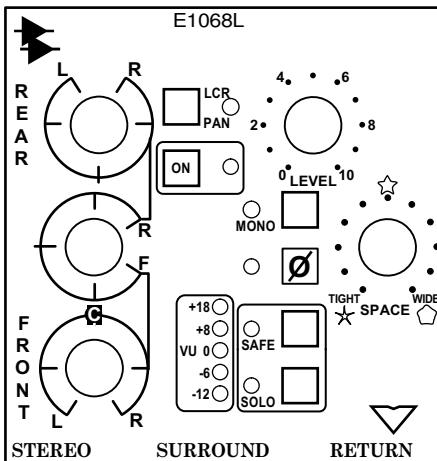
**CHAN#**



**TITLE**

**NOTES**

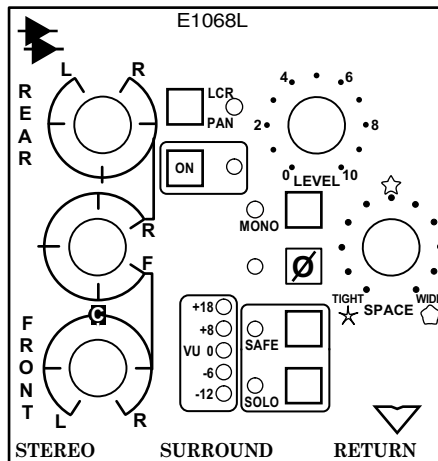
**CHAN#**



**TITLE**

**NOTES**

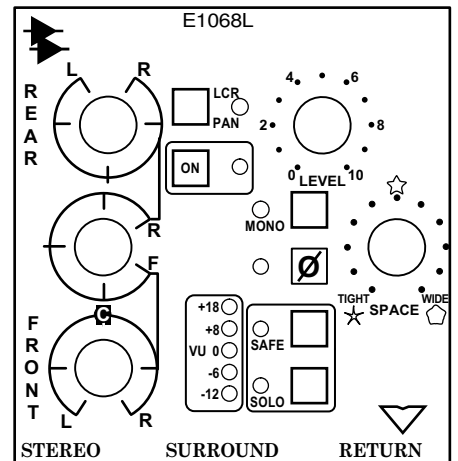
**CHAN#**



**TITLE**

**NOTES**

**CHAN#**



**TITLE**

**NOTES**

# Master Section Set Up Sheet

ARTIST:

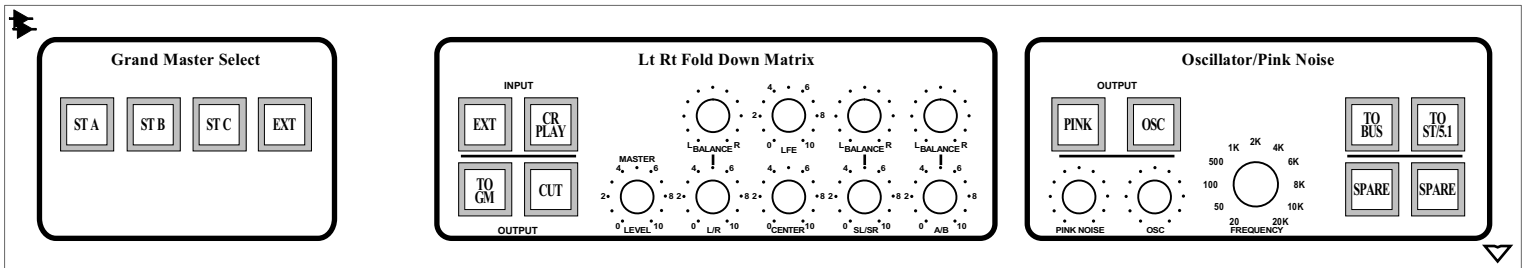
ENGINEER:

DATE:

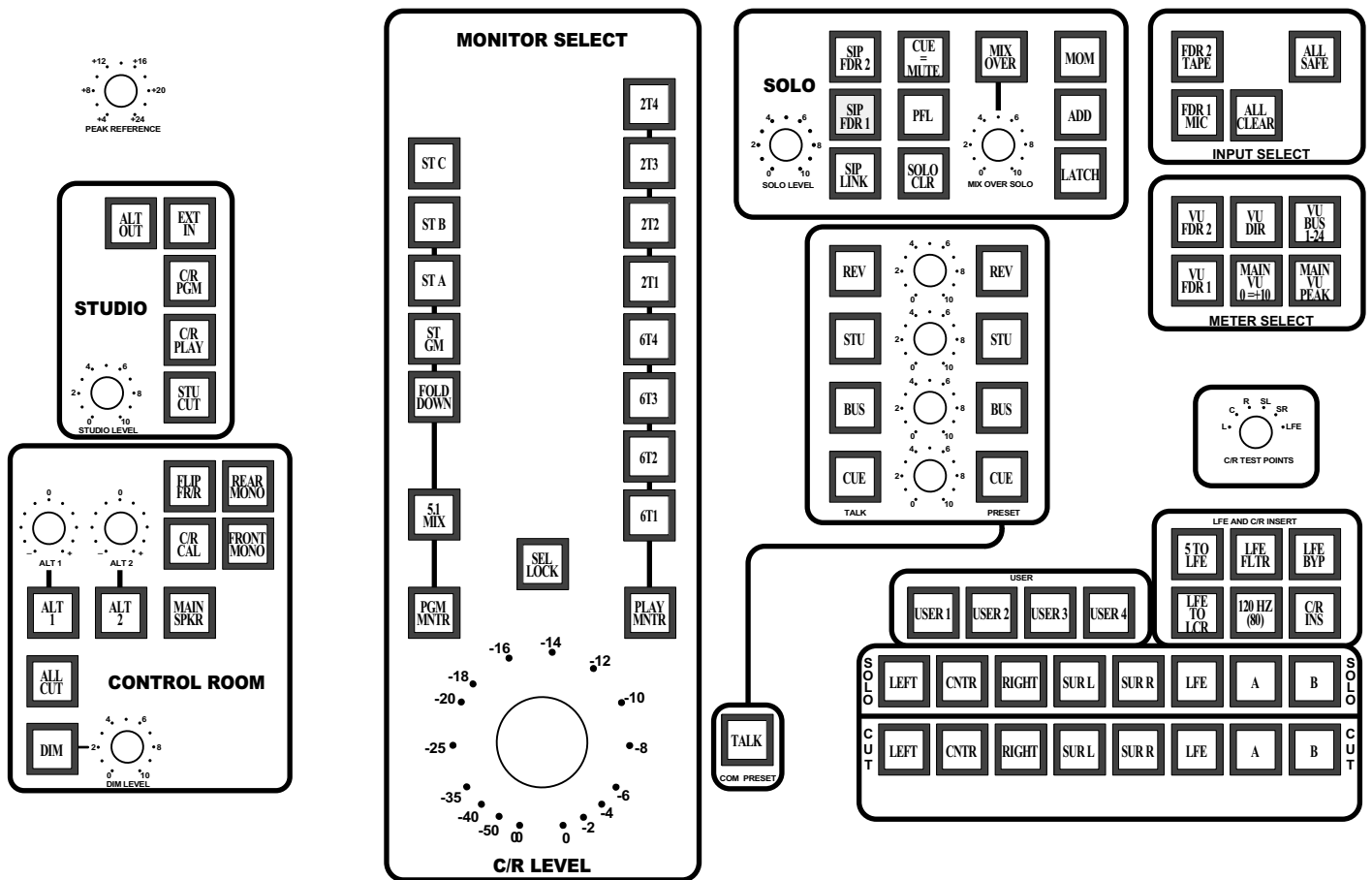
NOTES:

DRAWN BY:

STUDIO:



## api *VISION* all discrete console



NOTES



# API VISION

## Automation Quick Reference

### PREPARATION:

1. Generate time code from DAW or other media:
  - a. Select proper frame-rate
  - b. Set to generate SMPTE time code (LTC) or MIDI time code (MTC)
2. Vision set up:
  - a. Create a new Project or open an existing one
  - b. Open the desired Song (if needed)
  - c. Select Manual mode console-wide from the Vision Control Panel or Channels window
  - d. Create your initial mix
  - e. Enable time code ( En: TC) to enable time code synchronization
  - f. Enable faders ( En: Faders) to enable fader automation
  - g. Enable switches (En: Switches) to enable switch automation
  - h. Enable groups (En: Groups) to enable group functions
  - i. Select NEW MIX from the ACM menu on the Vision Control Panel and follow the prompts as needed

*Important Note: When NEW MIX is selected from the ACM menu a new mix with the initial mix positions is created across all time code addresses.*

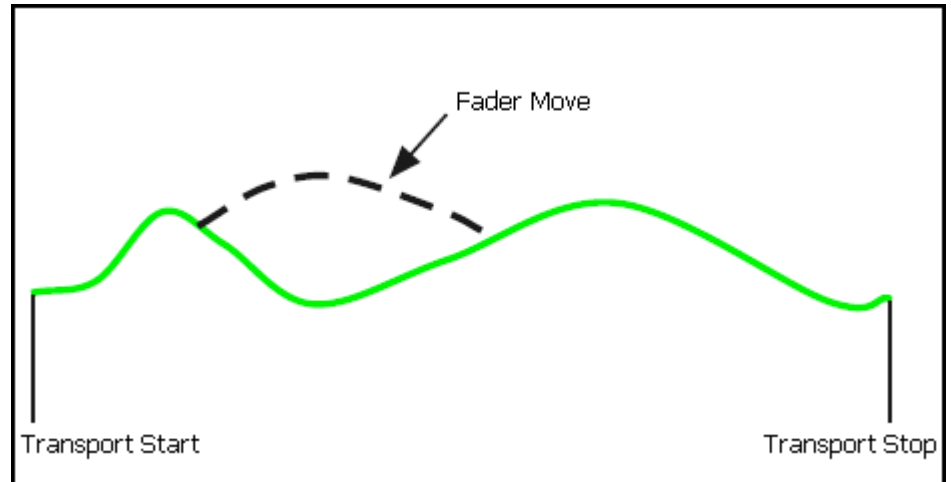
3. Automation Options:
  - a. Press "Save Mix" to save the mix in the ACM to the PC at any time
  - b. Engage "Auto Save" to save the mix in the ACM to the PC automatically each time new data is written to the mix pass in the ACM
  - c. Engage "Auto Safe" to return channels to Read mode when time code is stopped



# MODES:

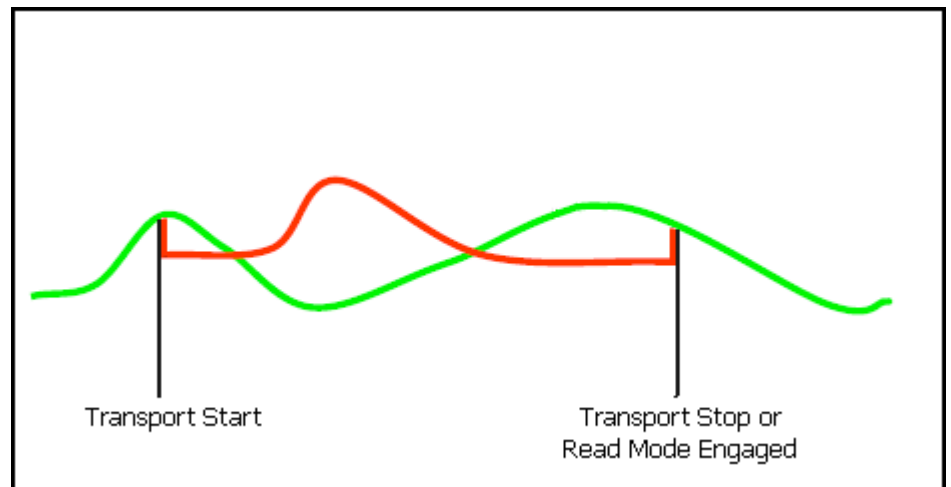
## READ

- Faders playback recorded automation data
- Moved faders will be “auditioned,” but moves will not be recorded



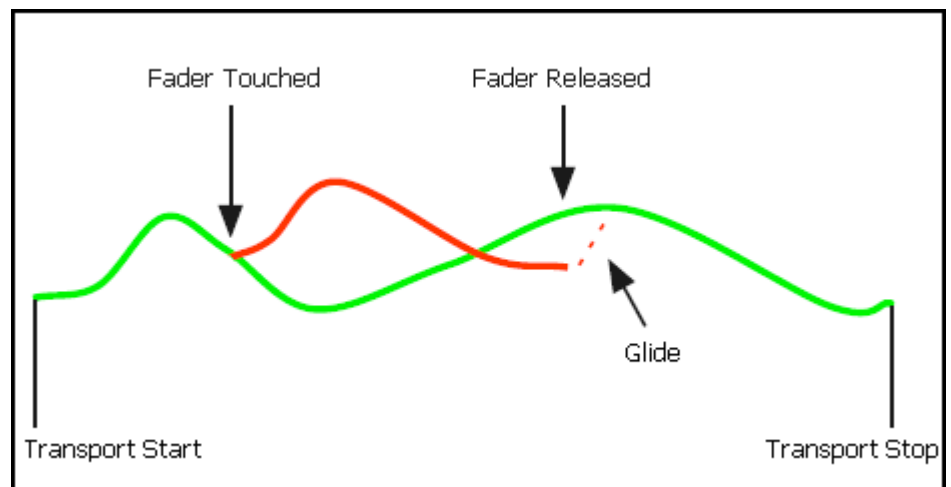
## WRITE (before transport start)

- Faders record new data from transport start to transport stop
- Existing data is erased between transport start and stop



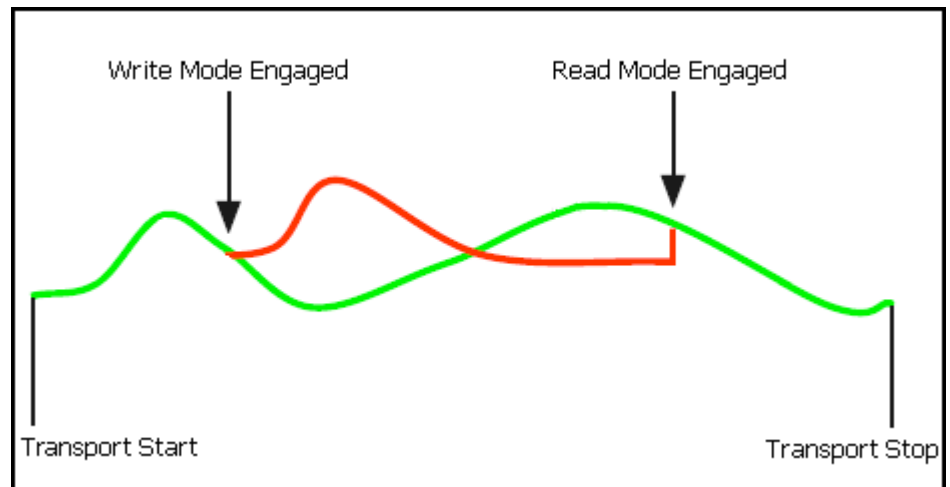
## UPDATE

- Faders playback recorded data until touched
- Faders record new data from fader touch to fader release and existing data is erased
- Faders glide back to playback of recorded data after release



## WRITE From UPDATE (drop-in)

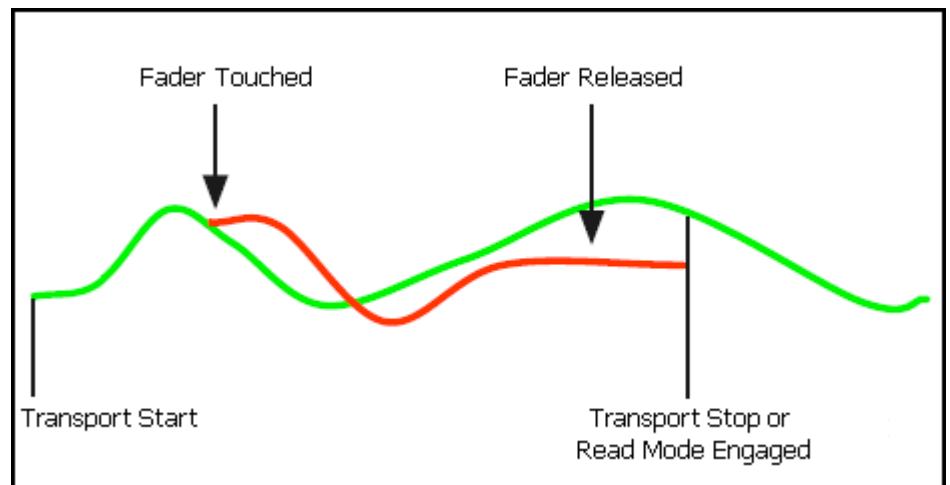
- Faders playback recorded automation data until WRITE is engaged
- Engage WRITE to start recording data
- Engage READ to stop recording data
- Existing data is erased while WRITE is engaged
- Faders resume playback of recorded data when READ is engaged



## SUBMODES:

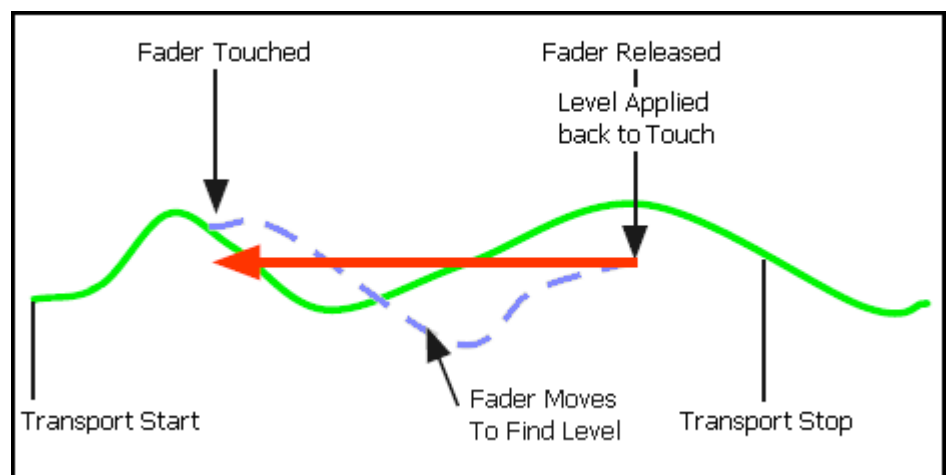
### TOUCH INTO WRITE (Submode of Update)

- Faders playback recorded automation data until touched
- Faders drop into WRITE when touched
- Faders stay in WRITE after release and until either READ is engaged or the transport is stopped
- Existing data is erased while WRITE is engaged



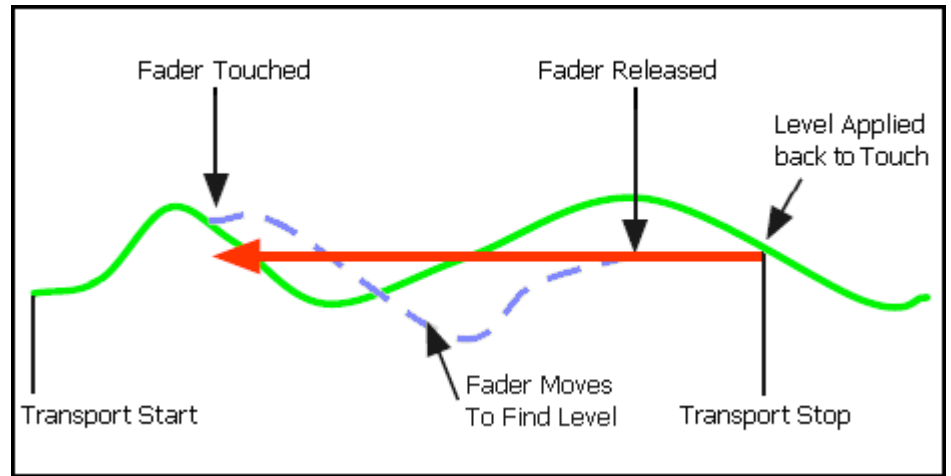
### UPDATE FROM TOUCH (Submode of Update)

- Faders playback recorded automation data until touched
- Touch a fader at the beginning of a song section and move it to find the level for that section
- Release the fader at the end of the song section
- The fader level when released will be recorded back to the point the fader was touched



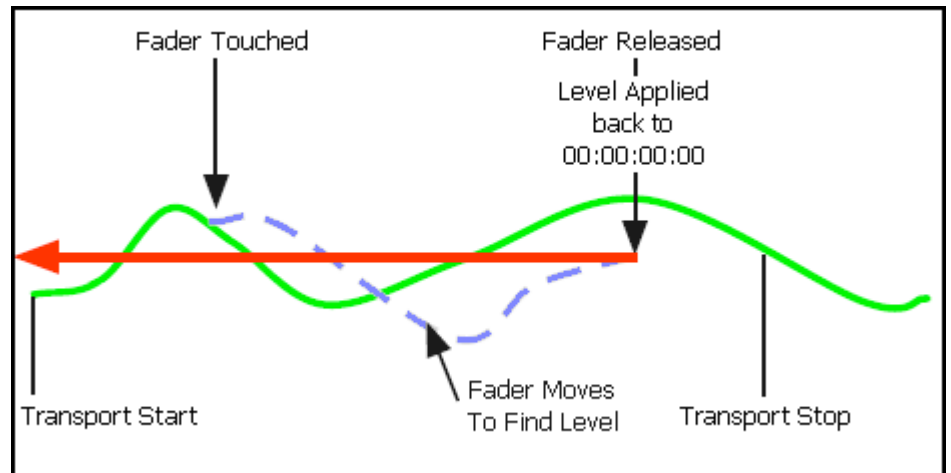
## UPDATE FROM TOUCH (Submode of Write)

- Faders playback recorded automation data until touched
- Touch a fader at the beginning of a song section and move it to find the level for that section
- Stop the transport at the end of the section or other location
- The fader level when the transport was stopped will be recorded back to the point the fader was touched



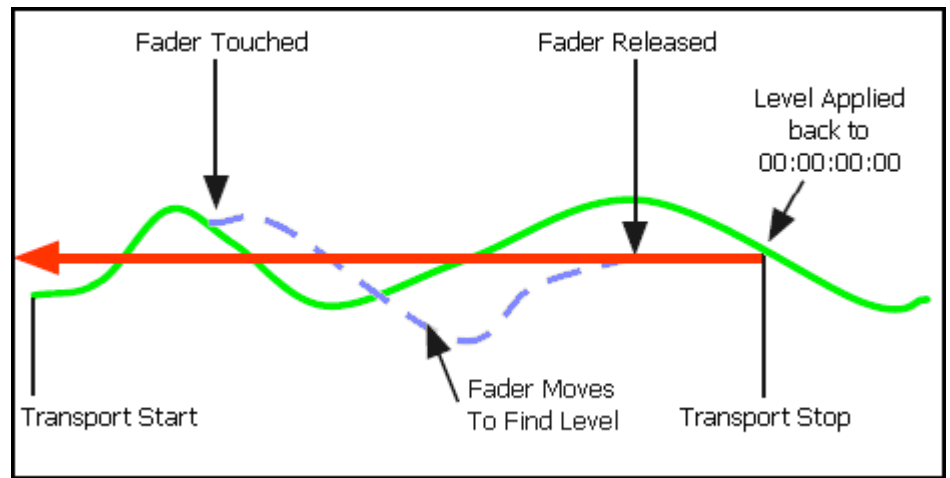
## UPDATE FROM START (Submode of Update)

- Faders playback recorded automation data until touched
- Touch a fader and move it to find the level to be recorded back to the beginning of time code
- Release the fader at the end of a song section or other location
- The fader level when released will be recorded back to the beginning of time code 00:00:00:00



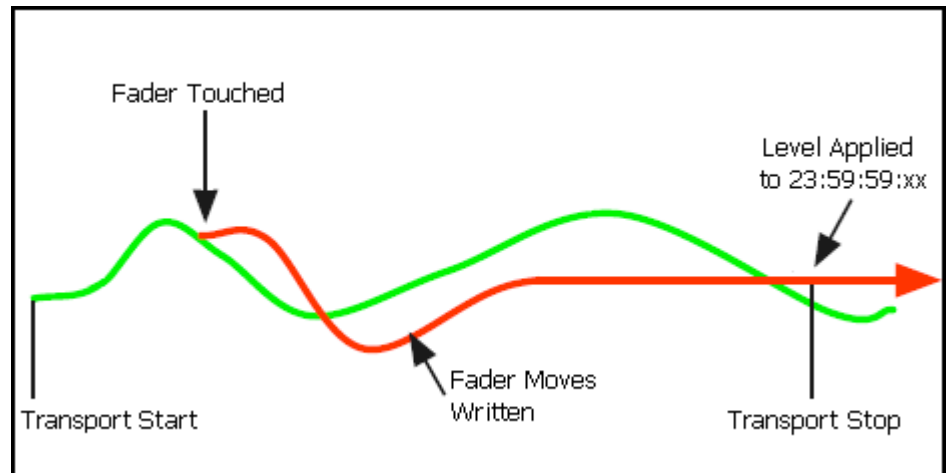
## UPDATE FROM START (Submode of Write)

- Faders playback recorded automation data until touched
- Touch a fader and move it to find the level to be recorded back to the beginning of time code
- Stop the transport at the end of a song section or other location
- The fader level when the transport was stopped will be recorded back to the beginning of time code 00:00:00:00



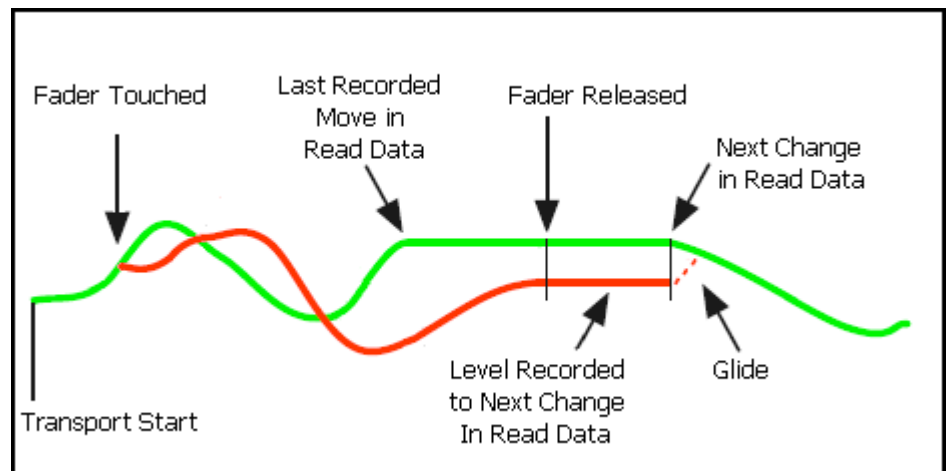
## LATCH (Submode of Update or Write)

- Faders playback recorded automation data until touched
- Touch a fader and move it as needed
- Stop the transport after the last needed move has been made
- The fader level when the transport was stopped will be recorded to the end of time code 23:59:59:xx



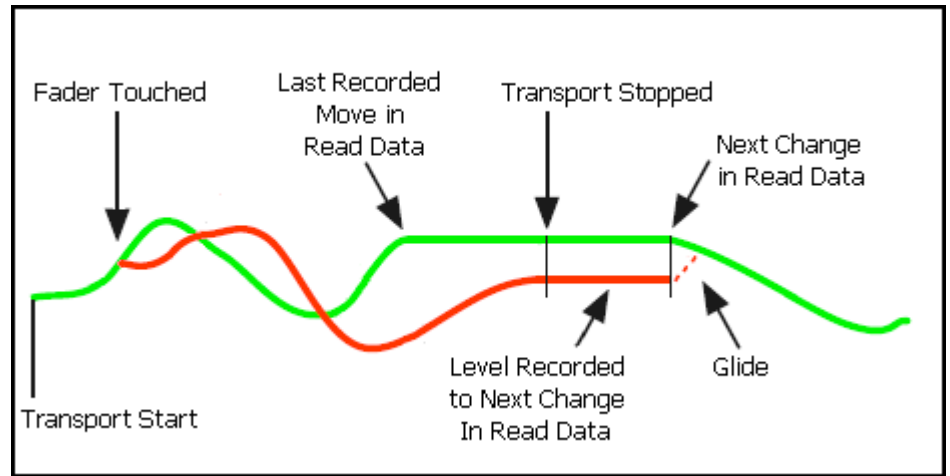
## UPDATE TO NEXT MOVE (Submode of Update)

- Faders playback recorded automation data until touched
- Touch a fader and move it as needed
- Release the fader after the last needed move has been made
- The level when the fader released will be recorded until the next change in the recorded Read data



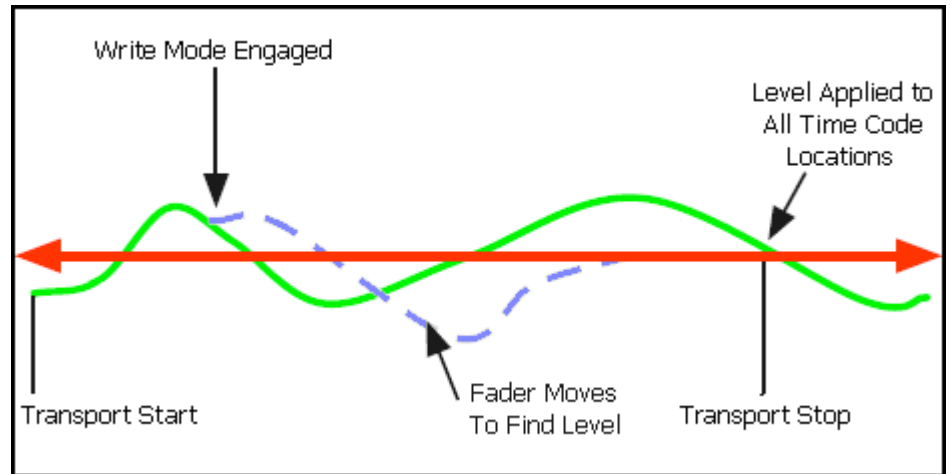
## UPDATE TO NEXT MOVE (Submode of Write)

- Faders playback recorded automation data until touched
- Touch a fader and move it as needed
- Stop the transport after the last needed move has been made
- The fader level when the transport was stopped will be recorded until the change in the recorded Read data



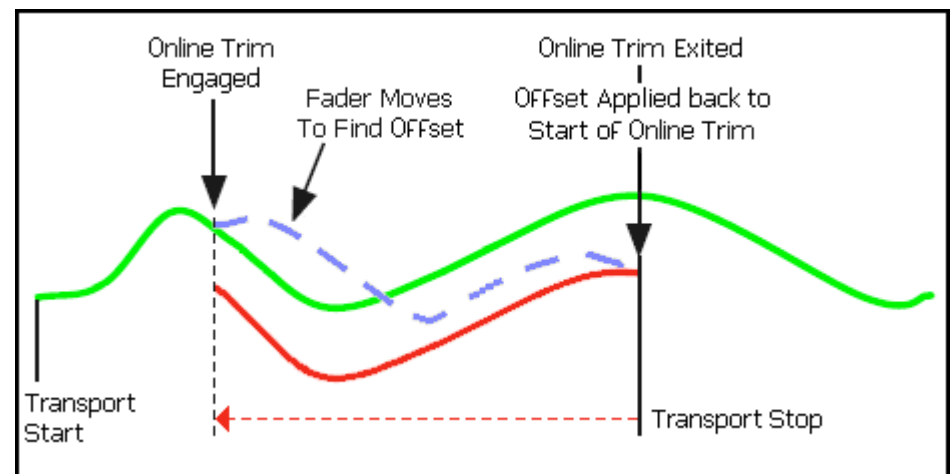
## STATIC (Submode of Write)

- Faders playback recorded automation data until touched
- Touch a fader and move it to find the level to be applied to the entire recording
- Stop the transport after level has been found
- The fader level when the transport was stopped will be recorded to all time code addresses



## Online Fader Trim (Available only in Update)

- Offsets can be applied to previous fader moves
- Hold down the WRITE button for 2 seconds until the Null LEDs shimmer (blink fast)
- Move the fader to find the desired level offset
- The level of the offset at the time the transport stops will be applied from the stop location back to the timecode location where online fader trim was engaged.

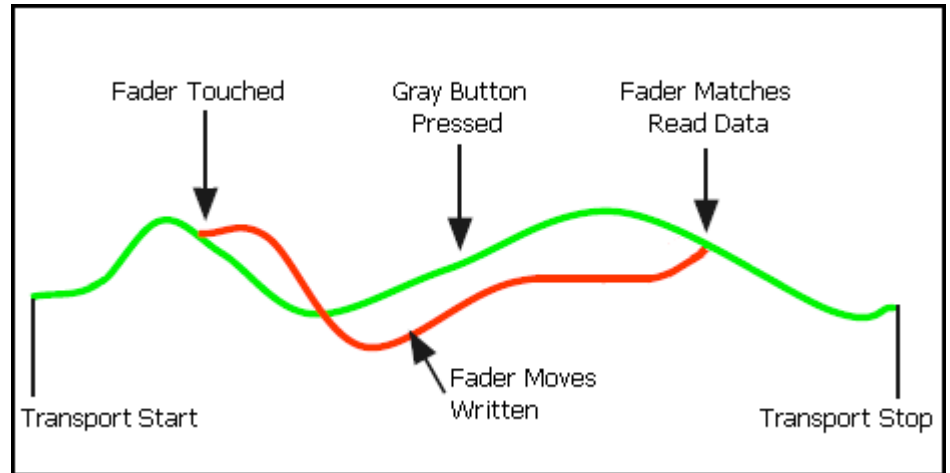


## GLOBAL FUNCTIONS:

### LEAVE WRITE

(Global Function used with Update or Write)

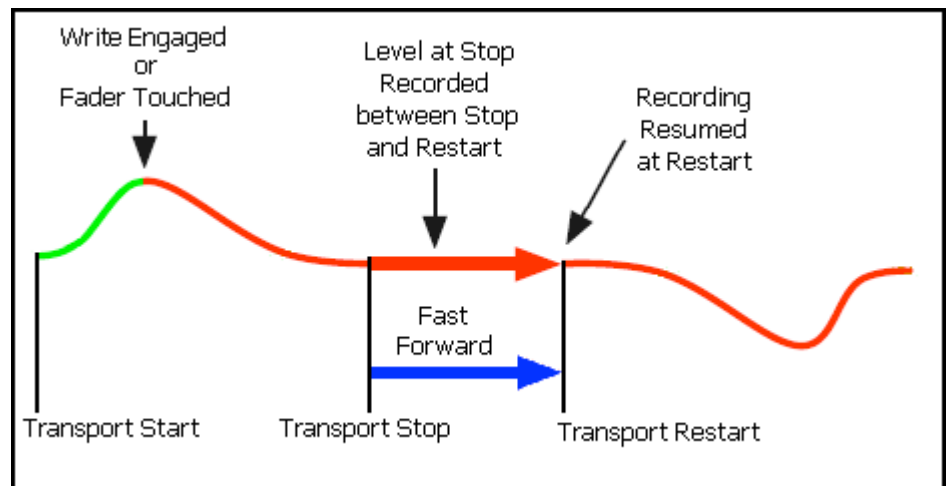
- Faders playback recorded automation data until touched
- Touch a fader and move it away from it's recorded position and make needed changes
- Press the Gray Button on the Fader Module after needed changes have been recorded
- Move the fader to match the recorded level in the Read data for a seamless transition
- The fader will change from WRITE to READ when the level matches and will resume playback of Read data



### BRIDGE GAPS

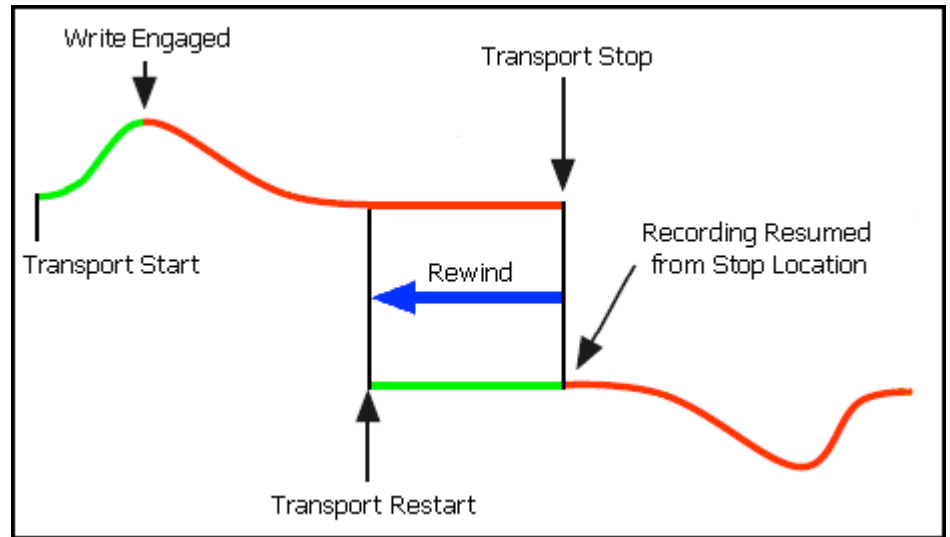
(Global Function used with Update or Write)

- Faders playback recorded automation data until WRITE is engaged or a fader is touched in UPDATE
- Engage Bridge Gaps before the transport is stopped
- When the transport is stopped, the levels and modes are held
- If the transport is moved forward and restarted without rewinding, the "Gap" between the stop and restart locations will be "Bridged" with the level when the transport was stopped
- Recording will be resumed at the where the transport was restarted and will continue until the mode is changed to READ or the transport is stopped



## AUTO TAKEOVER (Global Function used with Update or Write)

- Faders playback recorded automation data until WRITE is engaged or a fader is touched in UPDATE
- Moves will be recorded until transport stop
- Rewind to an earlier location and restart the transport
- Faders that were in WRITE or UPDATE change to READ when the transport restarts
- These faders will return to WRITE or UPDATE when the transport reaches the previous stop location
- Faders previously in WRITE will change from READ to WRITE at the stop location and will resume recording data
- Faders in UPDATE will change from READ to UPDATE at the stop location, but won't record until touched





**Automated Processes, Inc.**