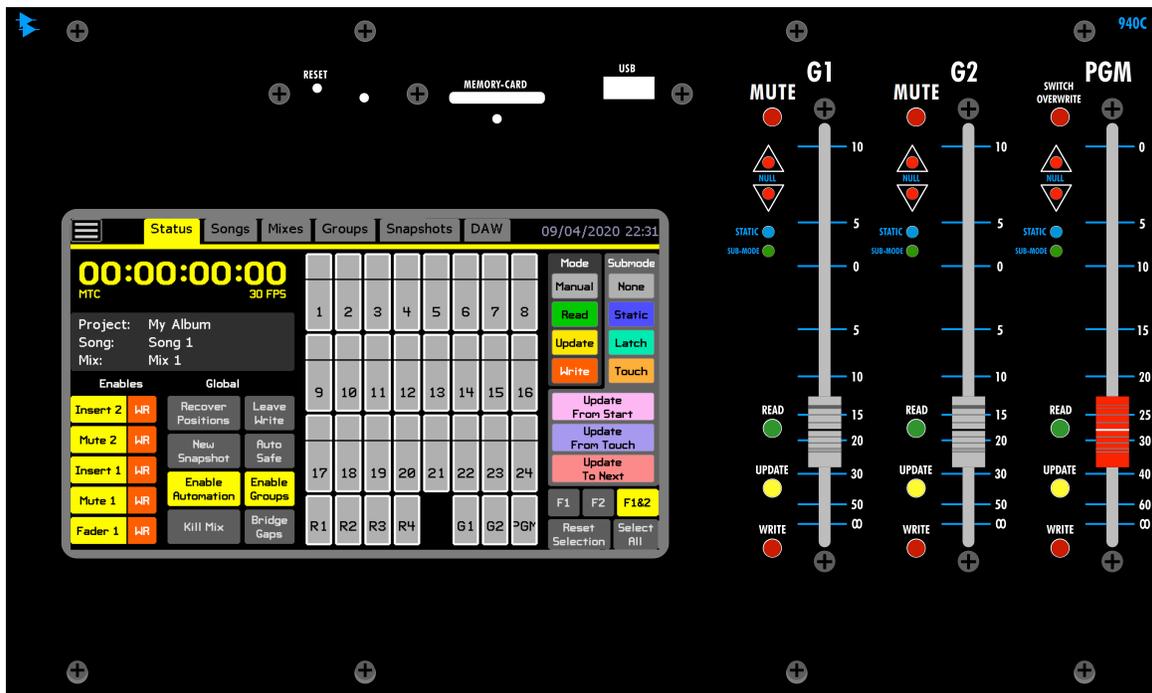




# ***Final Touch Automation***®



***1608-II \* 2448 \* AXS \* Vision+***

## **USER'S MANUAL**

***Revised 2026-01-18***

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# About this Manual

This manual covers the user operation of the *Final Touch Automation*® system designed for the API 1608-II, 2448, Legacy, AXS, and Vision recording consoles. This manual will address *Final Touch Automation*® operations in general as they apply to all four consoles and as they apply to each specific console.

For the purposes of this manual, most graphics and screenshots are based on 24-channel and 32-channel consoles. Screens for 16, 48, 64, 80, and 96-channel consoles look identical with the exception of the number of channels. Vision consoles are equipped with a second LCD touch-screen, a second page of controls, and an extra tab for channel assignments. Refer to section [21.0 Vision Consoles](#) for specific information regarding Vision consoles.

Most sections are useful to all users and it's recommended that the manual be read thoroughly before purchase and delivery. Experienced engineers may get up and running quickly, but if you are new to API consoles and automated mixing, it's recommended that you read the entire manual at least once and keep it at the console for reference during your first mixes.

## MANUAL CONVENTIONS:

1. Operationally (and accordingly in this manual) the automation controls for the Large and Small Fader paths are sometimes labeled as Fader 1 (FD1) and Fader 2 (FD2). Whenever this is encountered Fader 1 is synonymous with the Large Fader and Fader 2 is synonymous with the Small Fader and vice versa.
2. Operationally (and accordingly in this manual) the automation controls fall into two categories: Faders and switches. Functionally, mutes are switches and are referred to as such in this manual.
3. Vision console references are primarily made to Vision+ consoles equipped with 1068L V3 channel modules. Variances for earlier Vision consoles are noted as needed.

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# 1.0 Overview

## 1.1 Introduction

The *Final Touch Automation*<sup>®</sup> system is a fully integrated and self-contained automation package designed for API 1608-II, 2448, AXS, Vision, and Vision+ consoles. The system provides comprehensive moving fader, mute, and switch automation with extended DAW control and snapshot capabilities on all four consoles. All Vision consoles are also capable of automated Aux Send ON/off and EQ Bypass. Offering comprehensive automated control during a mix via a powerful feature set and easy-to-use user interface the *Final Touch Automation*<sup>®</sup> system is designed to meet the needs of today's audio professionals.

Combining API's prior console automation experience with extensive customer input, API has developed the *Final Touch Automation*<sup>®</sup> system specifically for API consoles. *Final Touch Automation*<sup>®</sup> is the next evolution of the API Vision and 1608 automation systems, so users who are familiar with these systems will immediately be at home operating *Final Touch Automation*<sup>®</sup>. Incorporating an intuitive touch-screen user interface, easy-to-understand automation concepts, and workflow-friendly design, all users can quickly be proficient with operation of the system.

Each console supports the following automated functions:

- **1608-II:**
  - Channel Fader: Fader, mute, and insert
  - Stereo Return 1-4: Fader, mute, and insert
  - Stereo Program Masters: PGM Master Fader and insert
  - Group Masters 1 and 2: Fader and mute
- **2448:**
  - Channel Large Fader: Fader, mute and insert
  - Channel Small Fader: Mute and insert
  - Stereo Return 1-4: Fader, mute, and insert
  - Stereo Program Masters: PGM Master Fader and insert
  - Group Masters 1 and 2: Fader and mute
- **AXS:**
  - Channel Large Fader: Fader, mute and insert
  - Channel Small Fader: Mute and insert
  - Stereo Returns 1-6: Fader, mute, and insert
  - Stereo Program Masters A, B, C, and GM: Master Faders and inserts
  - Group Masters 1 and 2: Fader and mute
- **Vision and Vision+:**
  - Fader 1: Fader, mute, and insert
  - Fader 2: Fader, mute, and insert
  - Aux Send ON/off
  - EQ Bypass
  - Stereo Program Masters A, B, C, and GM: Master Faders
  - Surround Program Masters L/R, C, LFE, SUR, and 5.1: Master Faders
  - Group Masters 1-6: Fader and mute

The *Final Touch Automation*<sup>®</sup> system is the perfect complement to the easy-to-use signal flow architectures, features, and superior sound quality of API consoles. *Final Touch Automation*<sup>®</sup> is built to the same exacting standards of reliability, performance, and intuitive use of previous API console automation systems, and sets the new standard for modern recording console automation systems. As with all API products, the *Final Touch Automation*<sup>®</sup> system offers the same exacting craftsmanship featured on all API products, including a unique 5-year warranty on all parts.

## 1.2 Final Touch Automation® Features

*Final Touch Automation®* contains features and operational control that include:

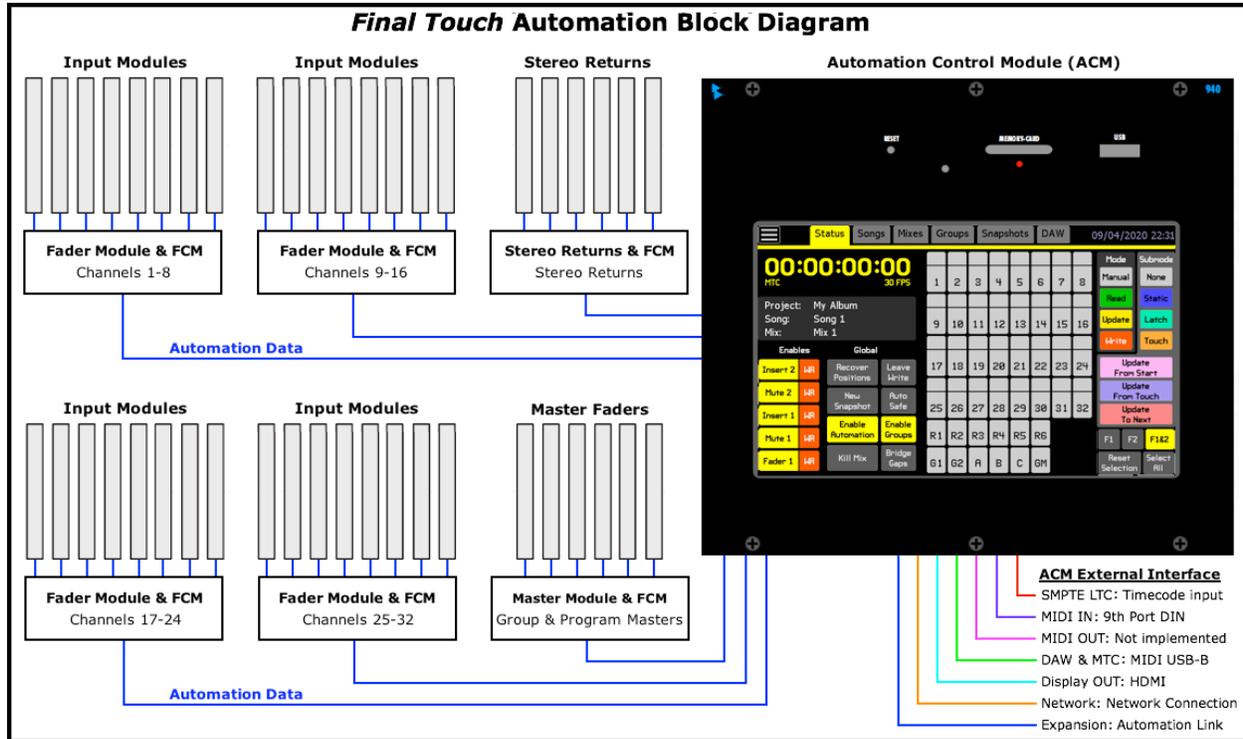
- **Channels:** Moving fader, mutes, and inserts
  - Full-sized, 100mm, touch-sensitive, resistive moving faders (no VCAs)
  - Offline and remote fader trim utilities
  - Aux Send ON/off and EQ Bypass (Vision and Vision+ only)
- **Stereo Returns:** Moving fader, mutes, and inserts
  - Full-sized, 100mm, touch-sensitive, resistive moving faders (no VCAs)
  - Offline and remote fader trim utilities
  - All consoles but Vision and Vision+
- **Program Masters:** Moving fader and inserts (no inserts on Vision and Vision+)
  - Full-sized, 100mm, touch-sensitive, resistive moving faders (no VCAs)
  - Offline and remote fader trim utilities
- **Grouping:** Fader, mute, and insert grouping (plus switches on Vision)
  - Unlimited groups
  - Two dedicated Group Masters: G1 and G2 (1608-II, 2448, AXS)
  - Six (6) dedicated Group Masters: G1 – G6 (Vision and Vision+ only)
- **Snapshots:** The static positions of faders and automated switches can be taken, stored, and recalled for later use.
  - All Fader 1 or Large channel faders (all consoles)
  - Channel mutes and inserts (all consoles)
  - Channel Fader 2, Aux ON/off, and EQ Bypass (Vision and Vision+ only)
  - Stereo Returns (1608-II, 2448, AXS)
  - All Group Masters, and Program Master faders (all consoles)
  - Program Bus Inserts (1608-II, 2448, AXS)
  - Recall switches and channel assignments (Vision and Vision+ only)
  - DYN to FDR1 and ALT LINE (Vision+ only)
- **DAW Control:**
  - Control over DAW faders, mutes, solos, and track arming and/or to control the console with DAW automation using HUI and Mackie Control protocols
  - Two-way control via MIDI over USB
  - Fader, mute, solo, and record enable control
  - Channel “shifting” for flexible channel assignment
  - Channel “banking” to handle sessions with large track counts
  - Unity gain fader bypass available
  - Enhanced transport control
  - DAW program commands
- **Main Interface (ACM):** Touch-screen main interface
  - Intuitive hardware and software interface (“We work the way you work!”)
  - Touch-screen control for ease of use and low maintenance
  - Easy-to-understand automation concepts and modes
  - Time saving automation submodes
  - Integrated computer (no external computer necessary)
  - Memory card file storage
  - USB interface for external keyboard (user supplied)
  - HDMI output for external display
  - Easy portability of automation data between all *Final Touch Automation®* equipped consoles
- **Synchronization:** MIDI timecode (MTC) or longitudinal SMPTE timecode (LTC) at a variety of frame rates.

## 2.0 System Architecture

The hardware and processing for the *Final Touch Automation*® system is distributed among five subsystems:

- **Automation Control Module (ACM)**: System processor and primary control panel:
  - Touch-screen interface
  - Reset button (reboot)
  - Memory card slot
  - USB port for external keyboard
  - Beeper for audio alerts
  - 940L Vision ACM module (dual-screen)
  - 940 ACM module (AXS)
  - 940C ACM module (1608-II and 2448)
- **Channel Fader Modules**: 100mm, touch-sensitive, motorized, resistive faders:
  - 944C 4-channel module (AXS, 1608-II and 2448)
  - 1044L 4-channel module (Vision+)
  - Individual fader packs (original Vision)
  - Associated 8-channel Fader Control Modules (FCM)
  - The number of fader modules and FCMs are based on console configuration
- **Channel Modules**: Channel mutes and inserts
  - **1608-II**: 548C: Channel mute and insert
  - **2448**: 648C: Large and Small Fader, mute, and insert
  - **AXS**: 968: Large and Small Fader, mute, and insert
  - **Vision and Vision+**: 1068L, 1068L V2, & 1068L V3: Fader 1, mute, and insert; Fader 2, mute, and insert; plus Aux Send ON/off and EQ Bypass
- **Stereo Returns**: 100mm, touch-sensitive, resistive stereo faders and associated mutes and inserts with an associated Fader Control Module (FCM)
  - **1608-II**: 265C: 4 returns: Stereo fader, mute, and insert
  - **2448**: 265C: 4 returns: Stereo fader, mute, and insert
  - **AXS**: 265: 6 returns: Stereo fader, mute, and insert
  - **Vision and Vision+**: Not available
- **Program Masters**: Stereo and surround Program Master Faders and inserts
  - 100mm, touch-sensitive, moving resistive faders
  - **1608-II**: 940C: Stereo Program Master Fader and inserts
  - **2448**: 940C: Stereo Program Master Fader and inserts
  - **AXS**: 946: STA, STB, STC, and GM stereo Program Master faders and inserts
  - **Vision and Vision+**:
    - STA, STB, STC, and GM stereo Program Master Faders
    - L/R, C, LFE, and SURR surround Program Master faders with a 5.1 Group Master
- **External Interface**: Automation interfacing
  - Rear panel on 1608-II and 2448, looming on AXS and Vision/Vision+
  - MIDI IN port: 9th MIDI IN port for MTC synchronization
  - MIDI OUT port: Currently not implemented
  - SMPTE timecode input (LTC)
  - USB-B for DAW control over MIDI (HUI/MC) and MIDI Timecode (MTC)
  - HDMI Out: Video out for external monitor (user supplied)
  - NETWORK: Network port for system time and date (possible future features)
  - 8-channel automation expansion ports

The diagram below shows the conceptual block diagram for a *Final Touch Automation*® system for a 32-channel console with six Stereo Returns, four stereo Program Masters, two Group Masters, and a 940 Automation Control Module (AXS).



## 3.0 Automation System Components

As mentioned above, the *Final Touch Automation*<sup>®</sup> system is composed of the following components:

- Automation Control Module (ACM)
- Channel Fader Modules with Fader Control Modules (FCMs)
- Input Modules
- Stereo Returns with FCM
- Program Masters with FCM
- Group Masters with FCM
- Interface

These components work together as a system to provide a comprehensive mixing automation system for most audio applications. Details for each component are provided in the following sections.

### 3.1 Automation Control Module (ACM)

The 940, 940C, or 940L Automation Control Module (ACM) is the central component in the *Final Touch Automation*<sup>®</sup> system. It's the master user interface and handles all global automation operations, file/firmware management, and system configuration. The ACM is responsible for all real time automation features and holds the current mix pass data in its memory.

The ACM contains the following components:

- **On-Board Processor:** Stand-alone and fully integrated dedicated processor
- **Touch-Screen:** Large, color touch-screen display and central user interface
- **MEMORY-CARD Slot:** Standard memory-cards for file and firmware management
- **Memory-Card LED:** Red LED indicates memory-card activity
- **RESET Button:** Recessed system reboot button
- **Beeper:** Aural indicator of channel/section selection
- **USB Slot:** For external keyboard
- **ACM Interfaces:** USB-B port, MIDI IN port, MIDI OUT port (not implemented), SMPTE LTC input, HDMI port, NETWORK port, Automation expansion ports

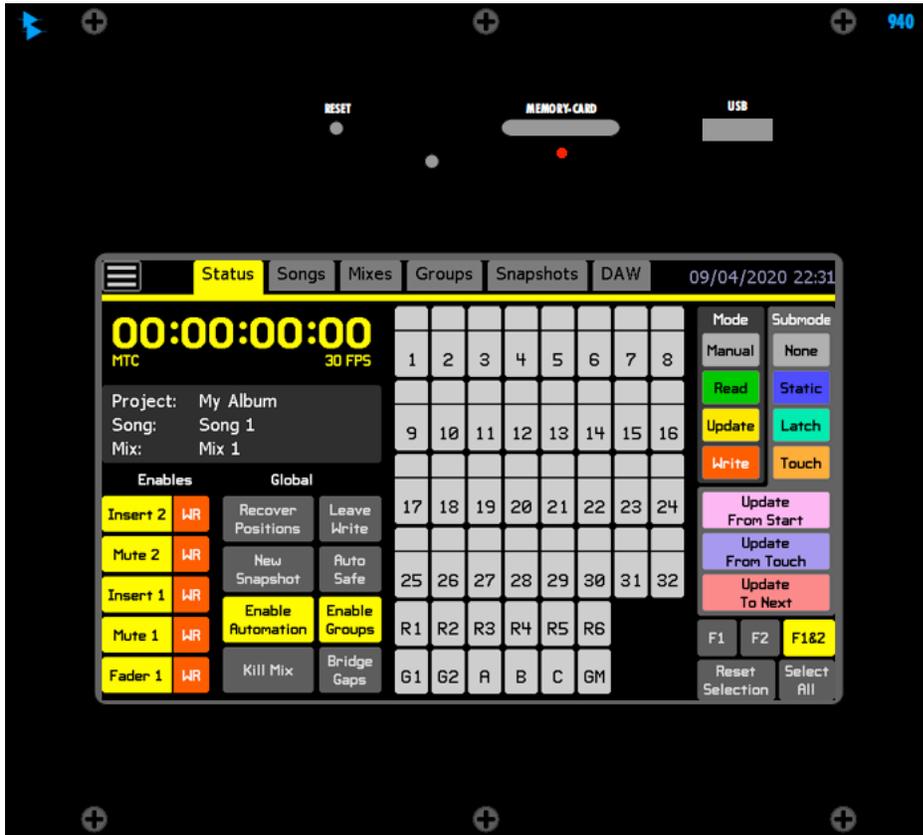
#### 3.1.1 ACM Configurations

There are three versions of the *Final Touch Automation*<sup>®</sup> ACM:

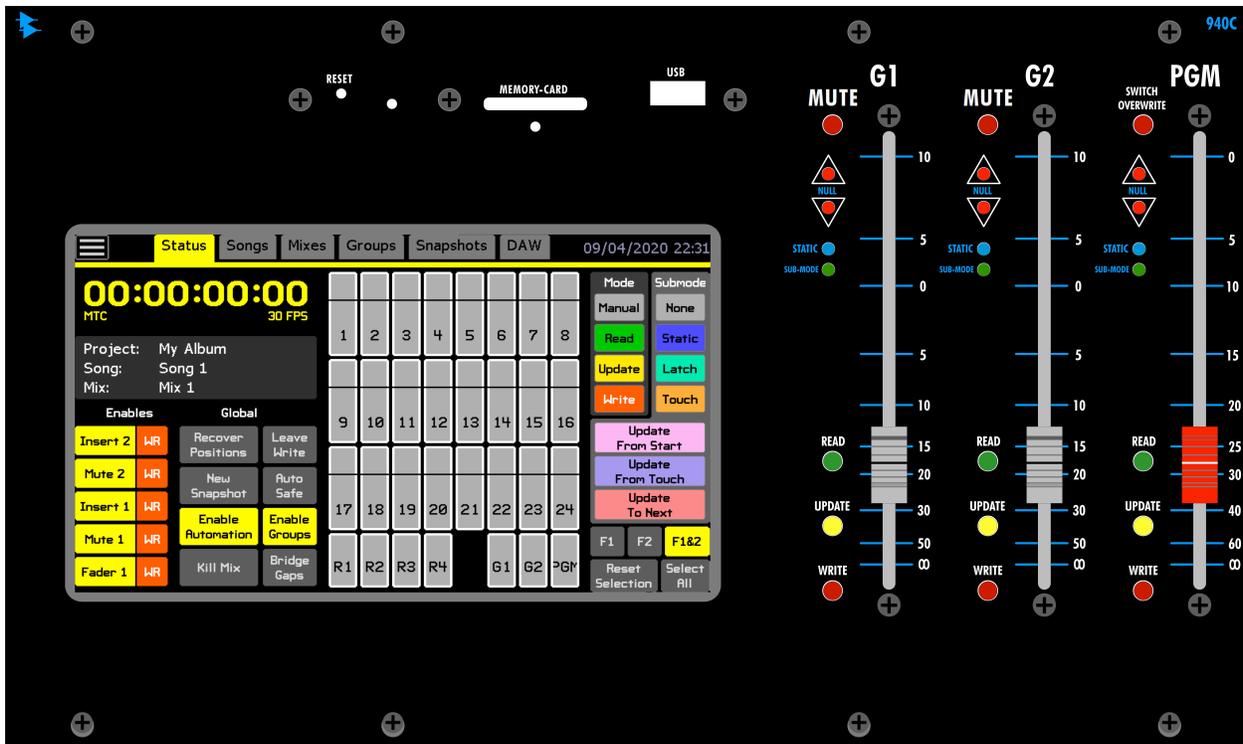
- **940:** AXS consoles
- **940C:** 1608-II and 2448 consoles
- **940L:** 2-screen version for Vision and Vision+ consoles

Functionally, all ACMs operate identically. The 940L ACM for Vision and Vision+ consoles uses two touch-screens to support the larger channel counts and features. The functions of the Vision 940L ACM operate the same as the 940 and 940C ACMs, although the functions are spread across two screens. The only difference between the 940 and 940C ACMs is the 940C has the stereo Program Master Fader and two Group Master Faders built in. The 940C replaces the 440C manual master fader module on 1608-II and 2448 consoles. AXS consoles equipped with the 940 ACM must also be equipped with an automated 946 module that contains stereo Master Faders for Stereo A, B, C and Grand Master Program Masters and two Group Master Faders. Vision+ consoles equipped with a 940L ACM must also be equipped with Stereo A, B, C and Grand Master Stereo Program Masters, Surround Program Masters, and six (6) Control Group Master Faders. Original Vision consoles fitted with *Final Touch Automation*<sup>®</sup> are equipped with individual stereo and surround Program Master Faders and Group Master Faders.

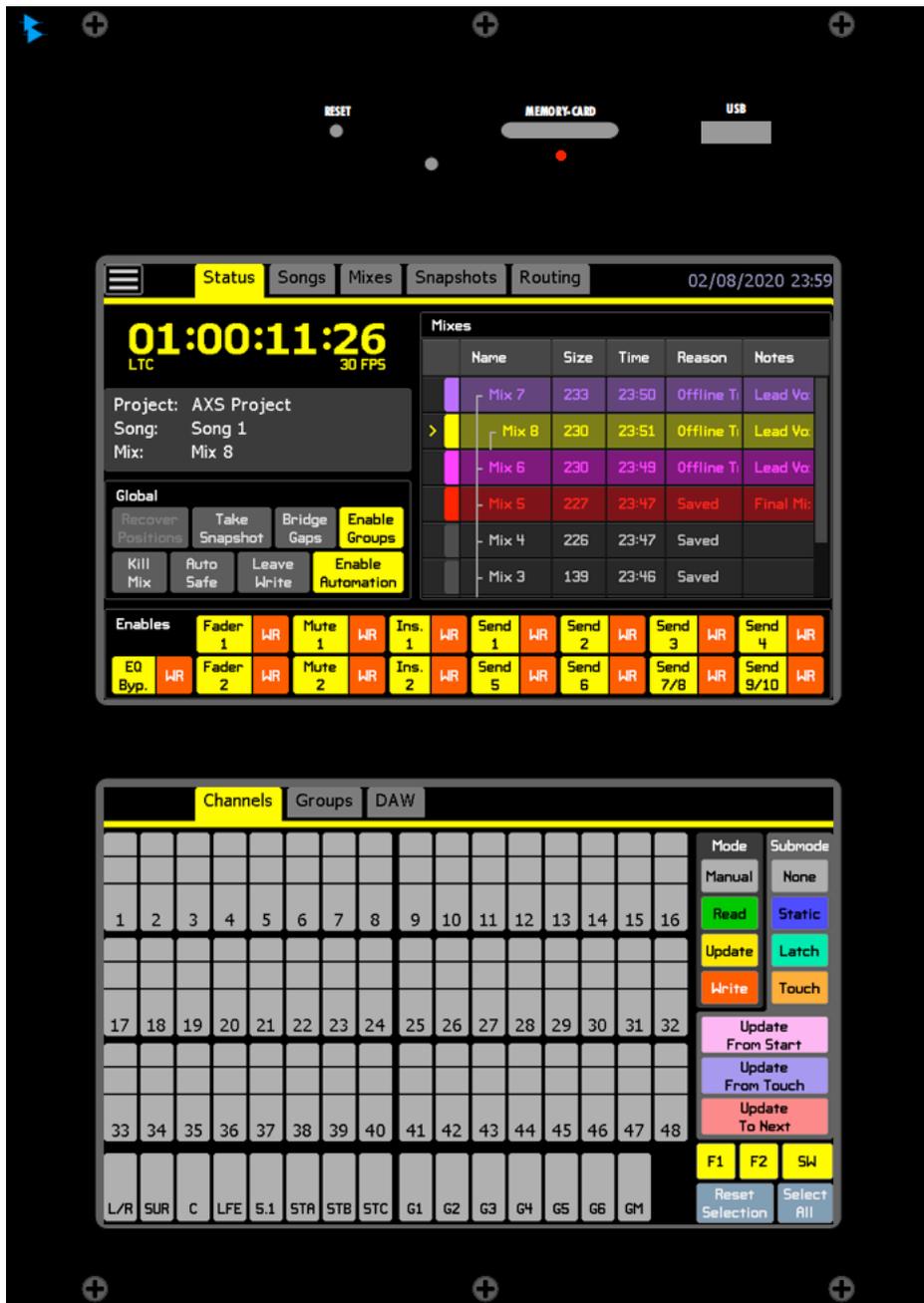
**940 ACM:** AXS consoles



**940C ACM:** 1608-II and 2448 consoles

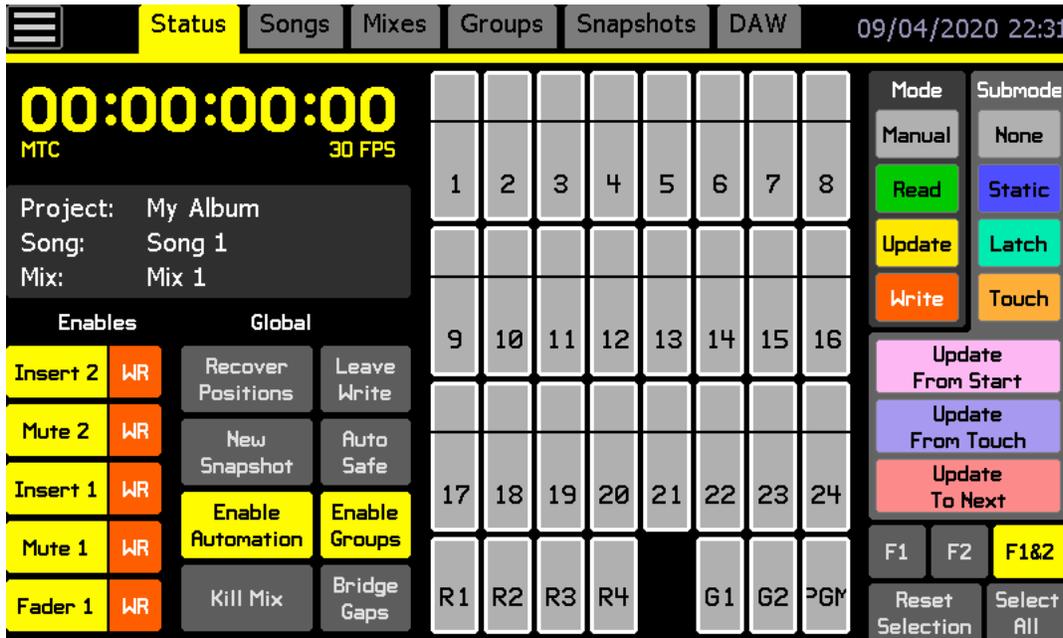


**Vision 940L ACM:** Vision and Vison+ consoles (dual-screen)



### 3.1.2 Touch-Screen

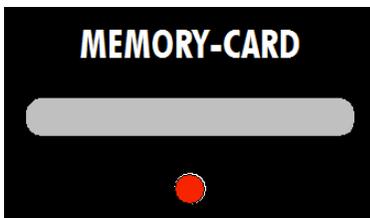
The ACM is equipped with a large color touch-screen display. This touch-screen is the central user interface and its menus, buttons, and scrolling operate with the touch or a press of a finger.



Together with the LEDs on the faders, the touch-screen provides a visual and tactile interface for the system. The Main menu and tabs for the primary pages, Status, Songs, Mixes, Groups, Snapshots, and DAW, are normally available on the screen except when some operations are underway.

*NOTE: Vision and Vision+ consoles are equipped with a dual-screen 940L ACM.*

### 3.1.3 Memory-Card Slot



The *Final Touch Automation*<sup>®</sup> system employs commonly available standard memory-cards for the storage of projects and files and firmware updates. The “MEMORY-CARD” slot and its LED indicator are located above the touch-screen on the ACM. The LED illuminates to show when the memory-card is being accessed. File storage and memory-card use will be explained in detail in subsequent sections of this manual.

### 3.1.4 Reset Button



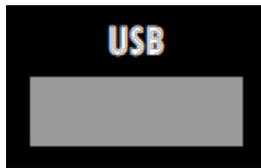
A recessed system “RESET” button is located on the ACM above the touch-screen. Pressing this button will immediately reboot the automation system.

### 3.1.5 Beeper



A recessed beeper is included in the ACM to provide an aural indication of when a fader or section has been selected or deselected for group, snapshot, or offline trim assignments. The beeper is not labeled and is located between the RESET button and MEMORY-CARD slot.

### 3.1.6 USB Slot



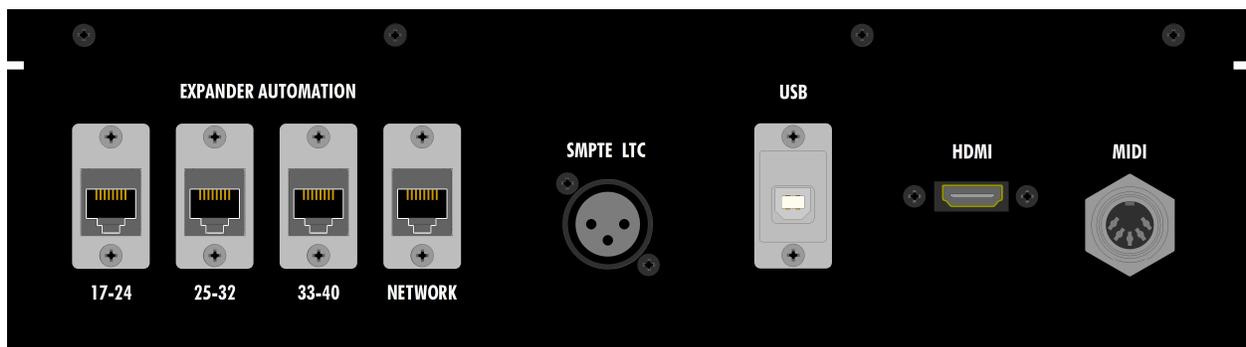
A USB slot is provided on the ACM above the touch-screen for users who prefer to use an external keyboard to operate the system. This is particularly useful if the touch-screen is displayed on an external monitor.

This USB port **only** facilitates the use of a keyboard and does not support file management, firmware updates, MIDI, or the display. Messages will appear in the ACM when the USB port is connected, disconnected, or a USB write error occurs.

*WARNING: Do not use this USB slot for charging external devices.*

### 3.1.7 External Interfacing

1608-II and 2448 consoles equipped with *Final Touch Automation*<sup>®</sup> are fitted with a rear panel for interfacing the automation system with external devices such as DAWs, multitrack tape machines, video, and any other timecode sources. Support for external display of the touch-screen and system expansion are also provided. *Final Touch Automation*<sup>®</sup> interfacing for AXS, Vision, and Vision+ consoles support the same functions and is handled as part of the console's interface looming.



The ACM is equipped with the following hardware interfaces:

- **EXPANDER AUTOMATION**: Automation data ports for console expanders equipped with *Final Touch Automation*<sup>®</sup> (1608-II rear panel shown)
- **SMPTE LTC (input)**: 3-pin female XLR connector, balanced, line-level audio input for SMPTE longitudinal timecode (LTC) synchronization
- **USB-B Port**: DAW control via MIDI (HUI/MC) and MIDI timecode (MTC) synchronization
- **HDMI Port**: HDMI out for connection to an external monitor for enlarged display
- **MIDI (IN)**: Standard DIN connector for MIDI timecode synchronization (9<sup>th</sup> port)
- **MIDI OUT**: On back of ACM, but not implemented (not shown above)
- **NETWORK Port**: Network connection for time, date, and possible future features

## 3.2 Channel Faders

Channel faders are the primary level control for track contributions to the mix. The *Final Touch Automation*® system includes four different channel fader modules, each designed to support their respective console architectures:

- **944**: 4-channel fader module for AXS consoles
- **944C**: 4-channel fader module for 1608-II consoles
- **944C**: 4-channel fader module for 2448 consoles
- **1044L**: 4-channel fader module for Vision+ consoles
- **Fader Packs**: Individual fader packs for each channel on original Vision consoles
- **1068L, 1068L V2, & 1068L V3 Channel Module**: Vision consoles: Fader 2

Consoles are equipped with the number of channel fader modules needed to support the installed channels.

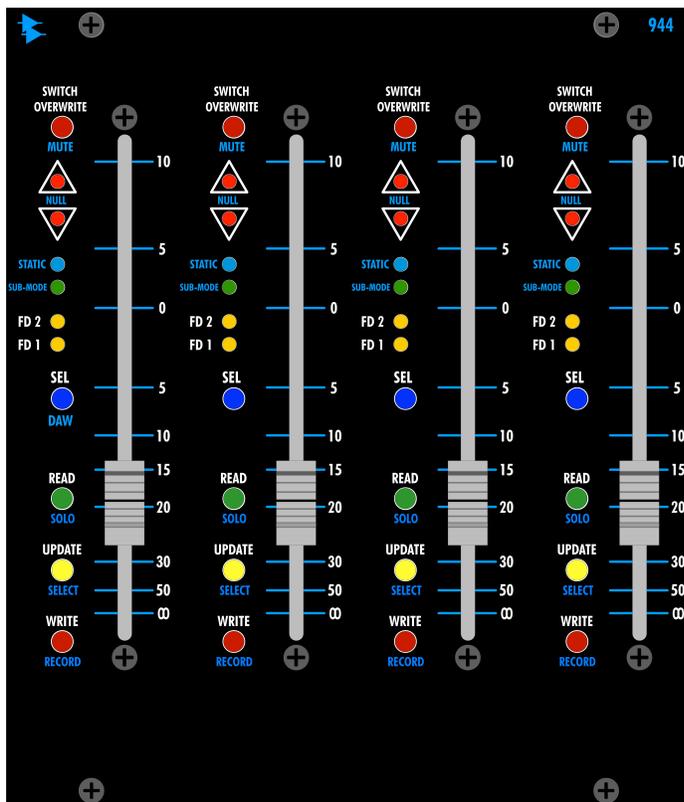
Channel mutes are handled by the MUTE button on channel modules on all consoles.

FCMs are also interfaced with the channel modules to handle mute and insert automation on all consoles, as well as Fader 2, Aux Send ON/off, and EQ Bypass (on Vision consoles only).

All of the console FCMs are interfaced with the ACM for system input, control, and programming. No mix data is stored in the FCMs.

### 3.2.1 Fader Module Configurations

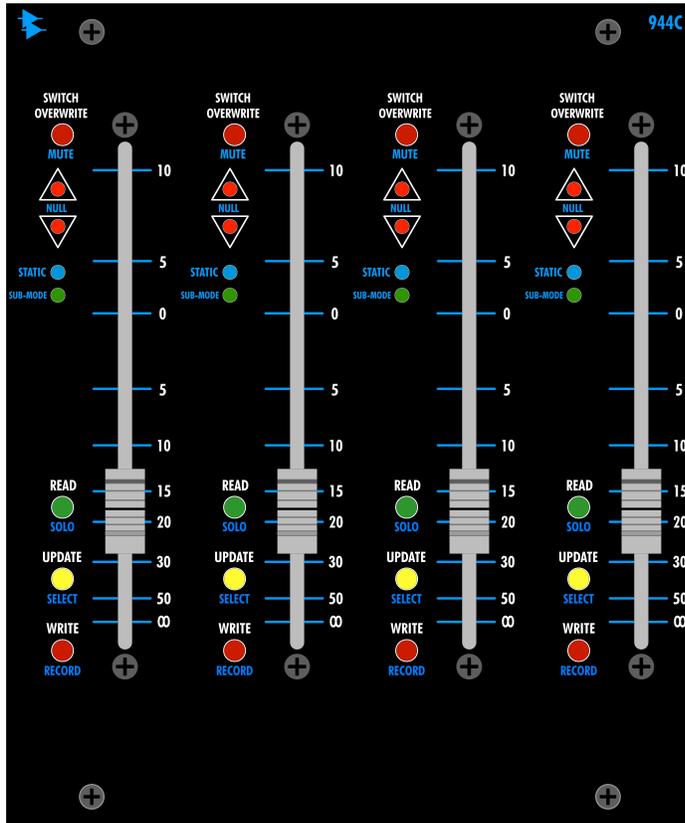
**944**: 4-channel automated fader module: AXS



944 Channel Faders provide the following controls:

- **LEVEL**: 100mm, touch-sensitive resistive faders
- **SEL (Select)**: Channel section
  - Fader 1 (Large Fader)
  - Fader 2 (Small Fader)
  - Both
- **Mode (LED buttons)**:
  - READ (MANUAL)
  - UPDATE
  - WRITE
  - SWITCH OVERWRITE
- **Sub-Mode (LEDs)**:
  - **STATIC**
  - **SUB-MODE**
- **NULL (LEDs)**:
  - UP
  - DOWN
- **DAW Controls**:
  - **MUTE**
  - **SOLO**
  - **SELECT**
  - **RECORD**

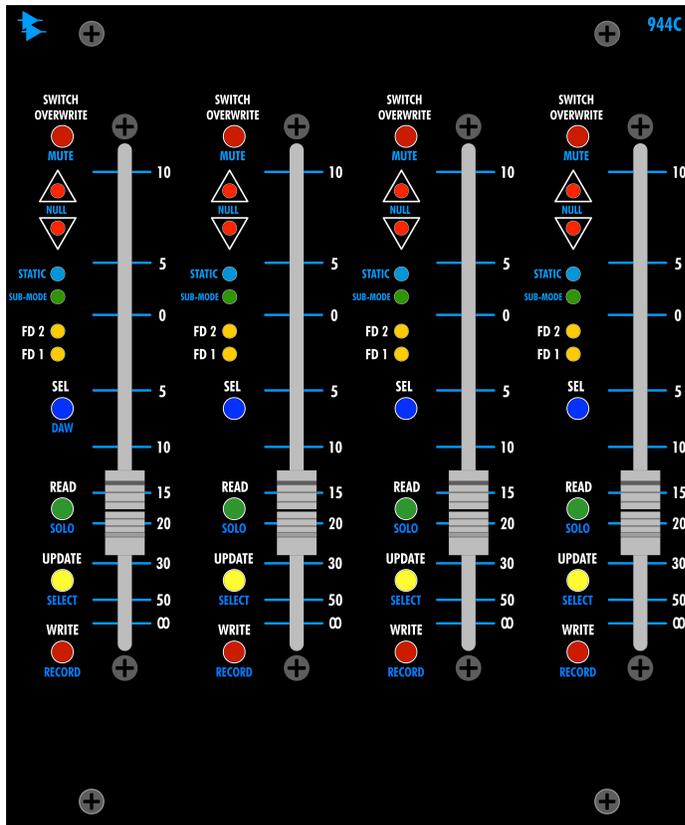
## 944C: 4-channel automated fader module: 1608-II Version



The Channel Faders on the 1608-II version of the 944C provide the following controls:

- **LEVEL:** 100mm, touch-sensitive resistive faders
- **Mode** (LED buttons):
  - READ (MANUAL)
  - UPDATE
  - WRITE
  - SWITCH OVERWRITE
- **Sub-Mode** (LEDs):
  - **STATIC**
  - **SUB-MODE**
- **NULL** (LEDs):
  - UP
  - DOWN
- **DAW** Controls:
  - **MUTE**
  - **SOLO**
  - **SELECT**
  - **RECORD**

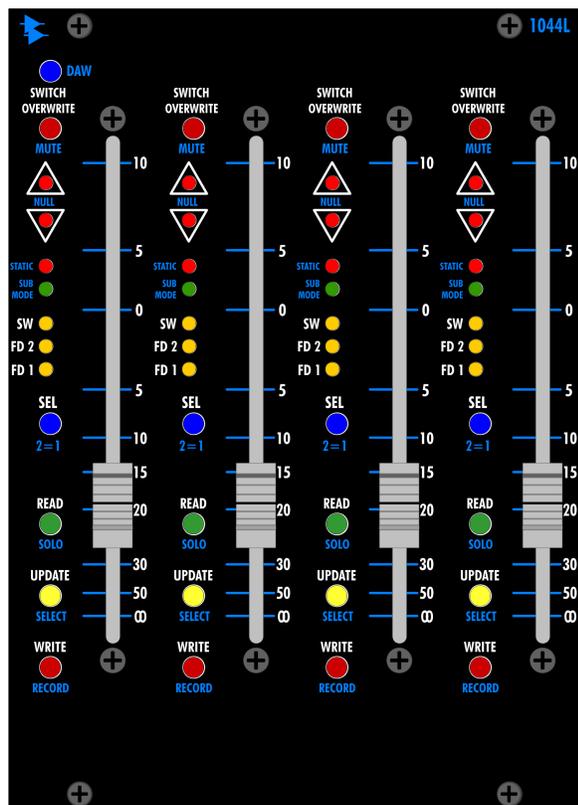
## 944C: 4-channel automated fader module: 2448 Version



The Channel Faders on the 2448 version of the 944C provide the following controls:

- **LEVEL:** 100mm, touch-sensitive resistive faders
- **SEL** (Select): Channel section
  - Fader 1 (Large Fader)
  - Fader 2 (Small Fader)
  - Both
- **Mode** (LED buttons):
  - READ (MANUAL)
  - UPDATE
  - WRITE
  - SWITCH OVERWRITE
- **Sub-Mode** (LEDs):
  - **STATIC**
  - **SUB-MODE**
- **NULL** (LEDs):
  - UP
  - DOWN
- **DAW** Controls:
  - **MUTE**
  - **SOLO**
  - **SELECT**
  - **RECORD**

## 1044L: 4-channel automated fader module: Vision+ with 1068L V3 input modules

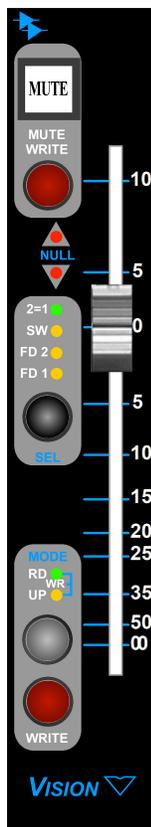


The individual Channel Faders on Vision consoles provide the following controls:

- **LEVEL:** 100mm, touch-sensitive resistive faders
- **SEL (Select):** Channel section
  - Fader 1
  - Fader 2
  - Switches (EQ Bypass, AUX ON/off)
  - All
  - 2=1 (Fader 2 follows Fader 1)
- **Mode (LED buttons):**
  - UPDATE/READ (MANUAL) (grey)
  - WRITE (red)
  - MUTE OVERWRITE
- **NULL (LEDs):**
  - UP
  - DOWN
- **DAW Controls:**
  - MUTE WRITE = **MUTE**
  - UPDATE READ = **SOLO**
  - SEL = **SELECT**
  - WRITE = **RECORD**

*NOTE: The FADER 1 mode controls apply to the FADER 2 and SWITCHES when those sections are selected.*

## Original Vision Fader Pack: Single-channel automated fader: Original Vision consoles



The individual Channel Faders on Vision consoles provide the following controls:

- **LEVEL:** 100mm, touch-sensitive, motorized, resistive faders
- **SEL (Select):** Channel section
  - Fader 1
  - Fader 2
  - Switches (EQ Bypass, AUX ON/off)
  - All
  - 2=1 (Fader 2 follows Fader 1)
- **Mode (LED buttons):**
  - UPDATE/READ (MANUAL) (grey)
  - WRITE (red)
  - MUTE OVERWRITE
- **NULL (LEDs):**
  - UP
  - DOWN
- **DAW Controls:**
  - MUTE WRITE = **MUTE**
  - UPDATE READ = **SOLO**
  - SEL = **SELECT**
  - WRITE = **RECORD**

*NOTE: The FADER 1 mode controls apply to the FADER 2 and SWITCHES when those sections are selected.*

### 3.3 Channel Modules

Channel modules handle automated mutes and inserts for all consoles. Vision 1068L and 1068L V2 channel, as well as Vision+ 1068L V3 modules also support the automated Fader 2, Aux Send ON/off, and EQ Bypass functions.

The *Final Touch Automation*® system supports four different channel modules, each designed to support their respective console architectures:

- **548C**: 1608-II single signal path channel module
- **648C**: 2448 dual signal path channel module
- **968**: AXS dual signal path channel module
- **1068L, 1068L V2, and 1068L V3**: Vision dual signal path channel module

#### 3.3.1 Channel Module Configurations

Each channel module supports the following automated functions:

##### **1608-II:** 548C

- Channel: Mute and insert

##### **2448:** 648C

- Large Fader: Mute and insert
- Small Fader: Mute and insert

##### **AXS:** 968

- Large Fader: Mute and insert
- Small Fader: Mute and insert

##### **Vision:** 1068L or 1068L V2

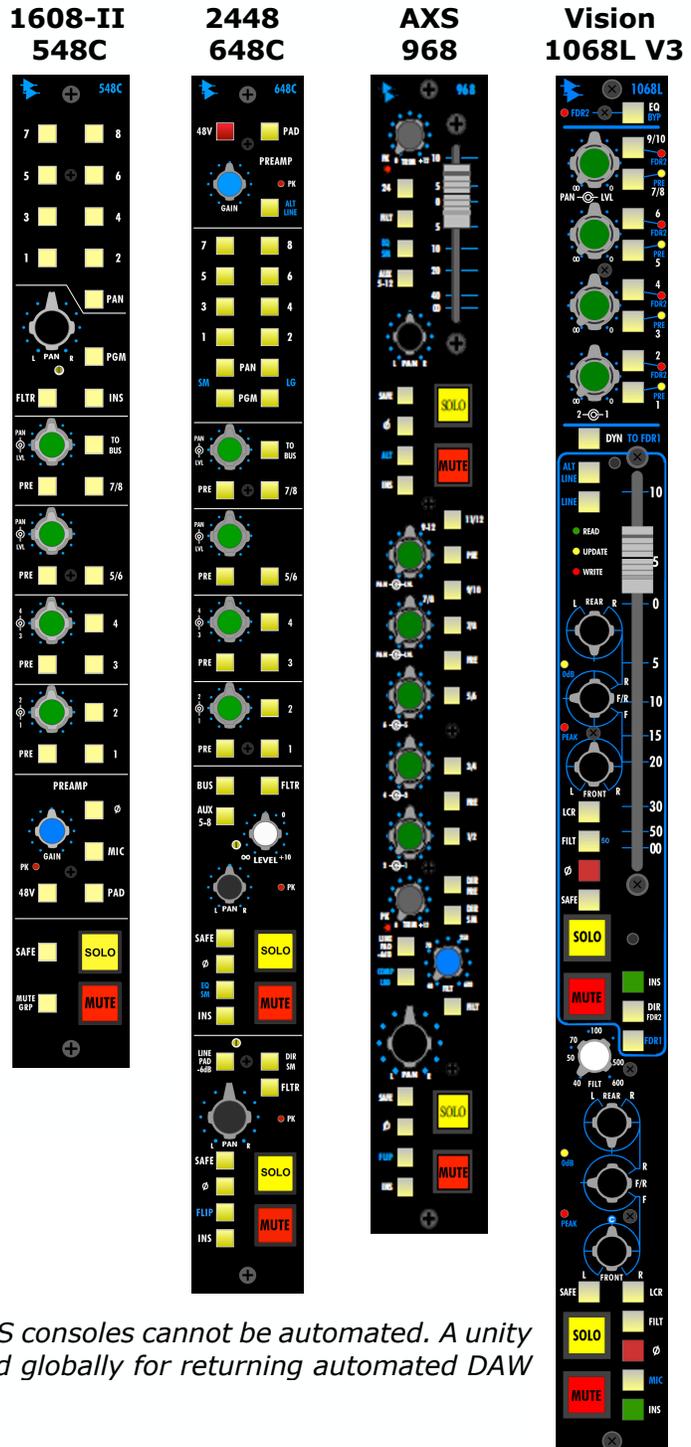
- Fader 1: Mute and insert
- Fader 2: Fader, mute, and insert
- Aux Send ON/off
- EQ Bypass

##### **Vision+:** 1068L V3

- Fader 1: Mute and insert
- Fader 2: Fader, mute, and insert
- Aux Send ON/off
- EQ Bypass

Channel modules are interfaced with their associated faders and FCMs.

Automation of these controls is explained in detail later in this manual.



*NOTE: The Small Fader on 2448 and AXS consoles cannot be automated. A unity gain fader bypass can be applied globally for returning automated DAW outputs.*

### 3.4 Stereo Returns

1608-II and 2448 consoles are equipped with four (4) automatable Stereo Returns. The AXS console is equipped with six (6) automatable Stereo Returns. Vision consoles are not equipped with Stereo Returns. Stereo Return faders, mutes, and inserts can be automated.

The *Final Touch Automation*<sup>®</sup> system supports two different Stereo Return modules, each designed to support their respective console architectures:

- **265**: AXS consoles
- **265C**: 1608-II and 2448 consoles

*NOTE: Vision*

*consoles are not equipped with automated Stereo Returns. The E1068L Stereo/Surround Echo Return that's available for Vision consoles is not automated.*

Each Stereo Return provides the following automation system components:

- **Stereo Fader**: 100mm, touch-sensitive, resistive fader
- **Mute**: Illuminating mute switch
- **Insert**: Illuminating insert switch
- **Automation Controls**: Buttons, fader caps, and indicators for automation control for each return

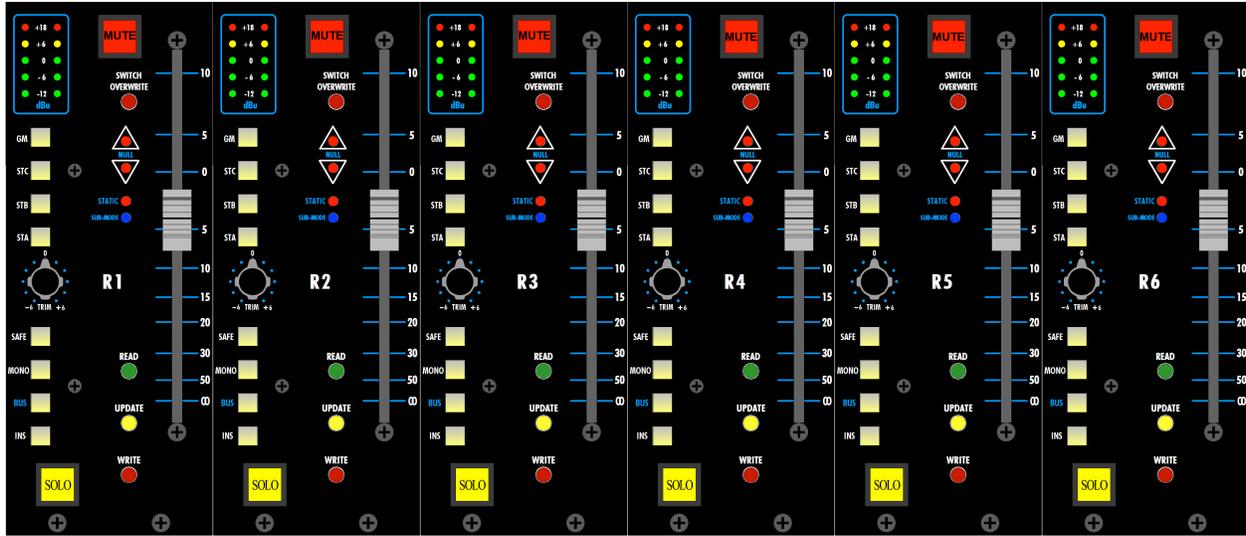
Stereo Returns are supported by a Fader Control Module (FCM) that handles the automation functions for the stereo fader, mute, and insert on each return. All of the console FCMs are interfaced with the ACM for system input, control, and programming. No mix data is stored in the Stereo Return FCMs.

265 and 265C Stereo Returns provide the following controls:

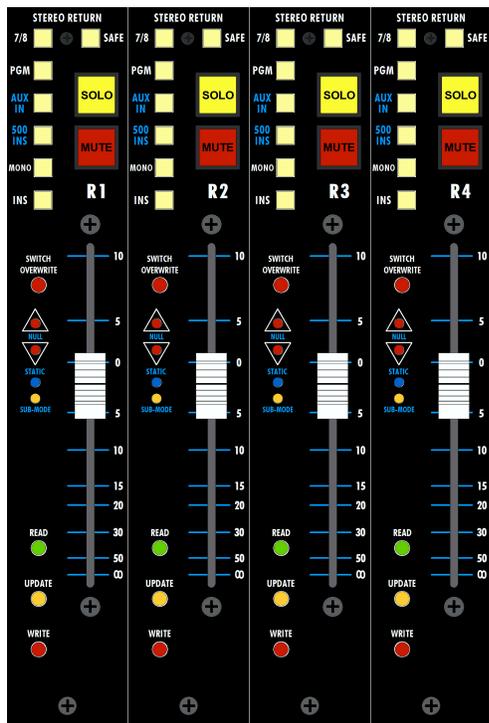
- **LEVEL**: 100mm, stereo touch-sensitive resistive faders
- **MUTE**: ON/off switch
  - **R1-R6**: 265
  - **R1-R4**: 265C
- **INS (Insert)**: Stereo Insert IN/out switch
- **Mode (LED buttons)**:
  - READ (MANUAL)
  - UPDATE
  - WRITE
  - SWITCH OVERWRITE
- **Sub-Mode (LEDs)**:
  - **STATIC**
  - **SUB-MODE**
- **NULL (LEDs)**:
  - UP
  - DOWN

### 3.4.1 Stereo Return Configurations

#### 265: AXS Stereo Returns 1-6



#### 265C: 1608-II and 2448 Stereo Returns 1-4



### 3.5 Program Masters and Group Masters

Program Masters handle the summing and output of the main stereo mix. Vision and Vision+ consoles have surround mixing capabilities that are independent of the many stereo mixes. Group Masters are faders that are used to control a group of other faders, but do not pass audio themselves.

Program Masters and Group Masters are packaged differently depending on the console, each designed to support their respective architectures. The *Final Touch Automation*® system supports three different Program Master and Group Master configurations:

- **946**: Master Fader module for AXS consoles
- **940C**: ACM with Master Faders w/ 268C Program Bus Masters for 1608-II and 2448
- **Fader Packs**: Individual faders or fader packs are used on Vision and Vision+ consoles

Master Faders provide the following automation system components:

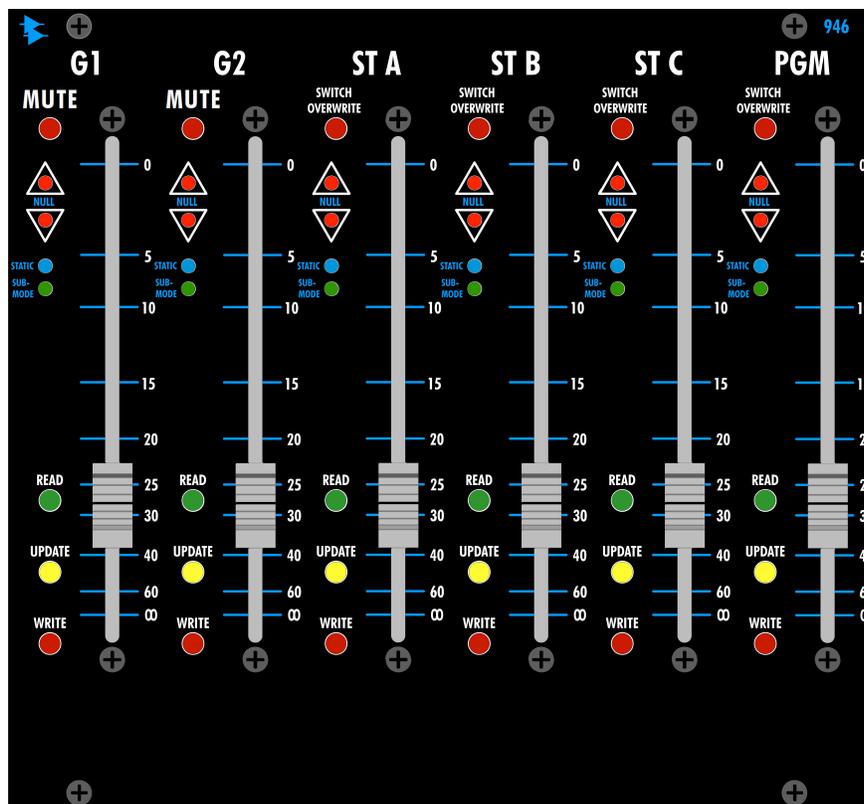
- **Program Master Faders**: Four (4) stereo 100mm, touch-sensitive resistive faders
- **Group Master Faders**: Two (2) 100mm, touch-sensitive control faders
- **Automation Controls**: Buttons, fader caps, and indicators for automation control

The 946 Master Fader Module and 940C ACM are equipped with a Fader Control Module (FCM) that handles the automation functions for the Program Masters and Group Masters. Vision consoles are equipped with a separate FCM for the Stereo Program Masters, Surround Program Masters, and Group Masters. All of the console FCMs are interfaced with the ACM for system input, control, and programming. No mix data is stored in the FCMs.

#### 3.5.1 Program Bus Master and Group Master Fader Configurations

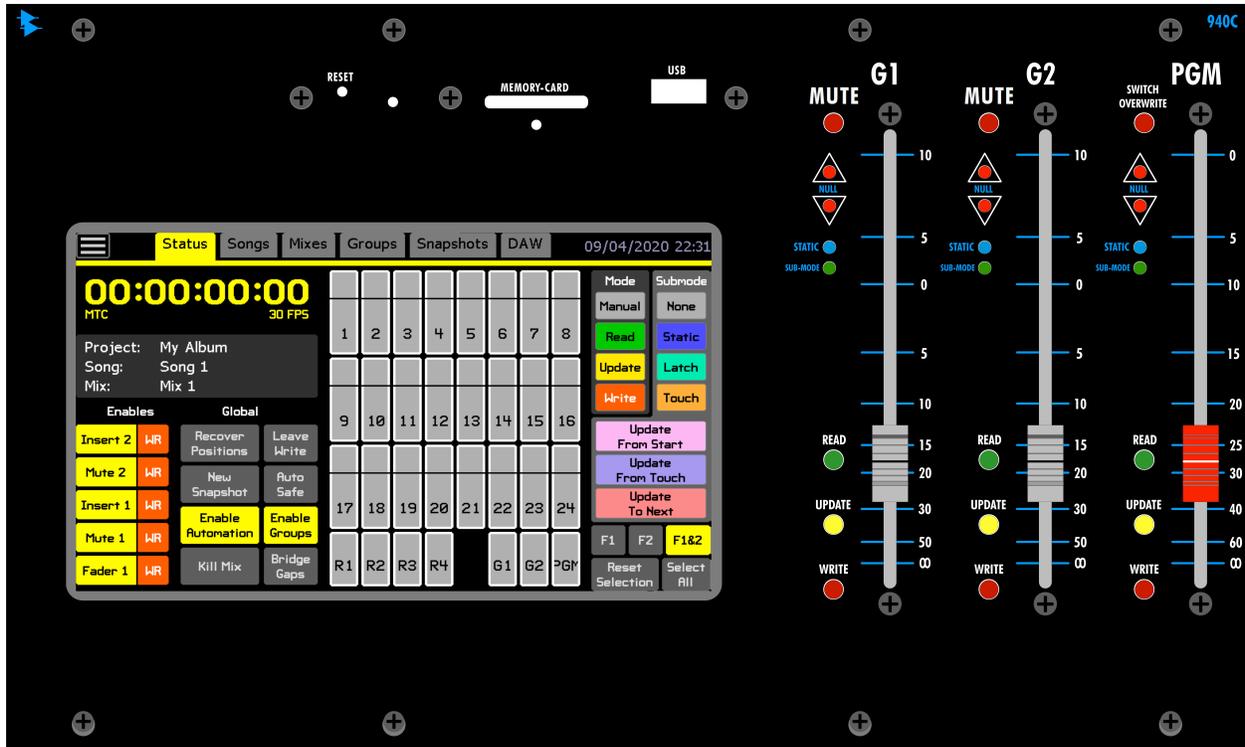
**946**: Master Fader module: AXS

- Stereo STA, STB, STC, GM Program Bus Master Faders
- G1 and G2 Group Masters



**940C:** ACM with Master Faders: 1608-II and 2448

- Stereo Program Bus Master Fader (on ACM)
- G1 and G2 Group Masters (on ACM)

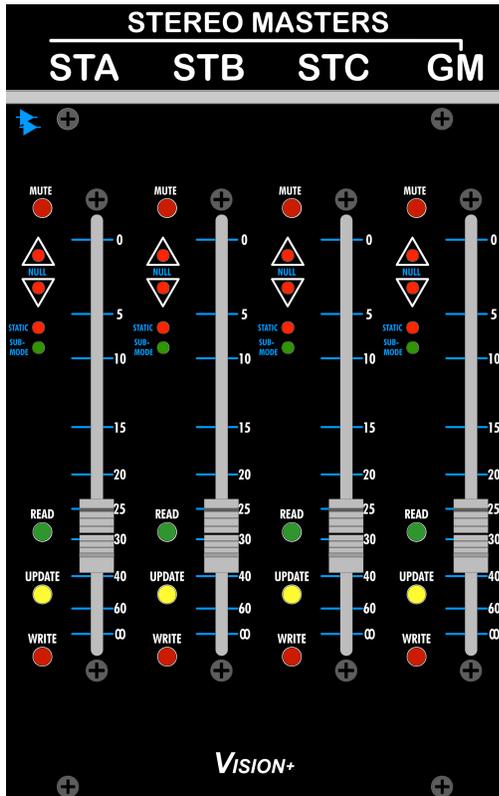


**268C:** Stereo Program Bus Master 1608-II and 2448:

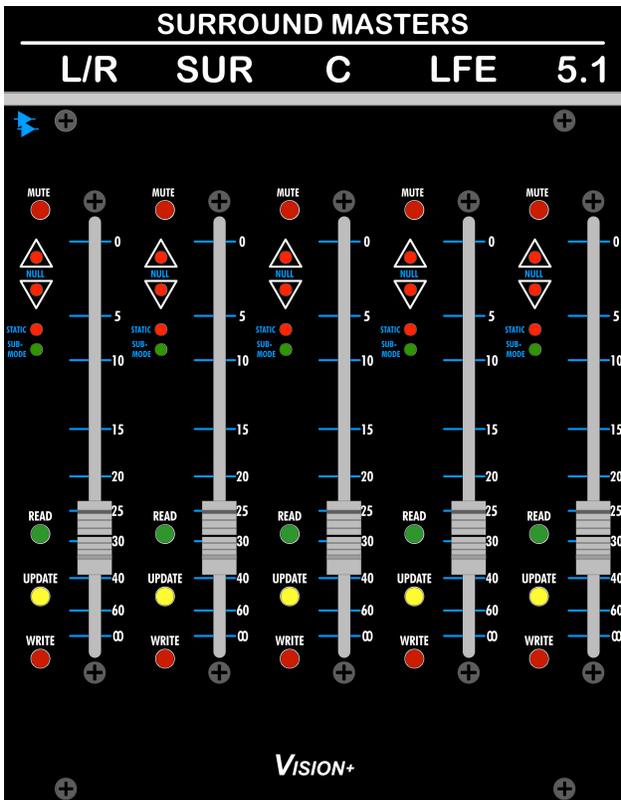
- Stereo Program Bus Insert



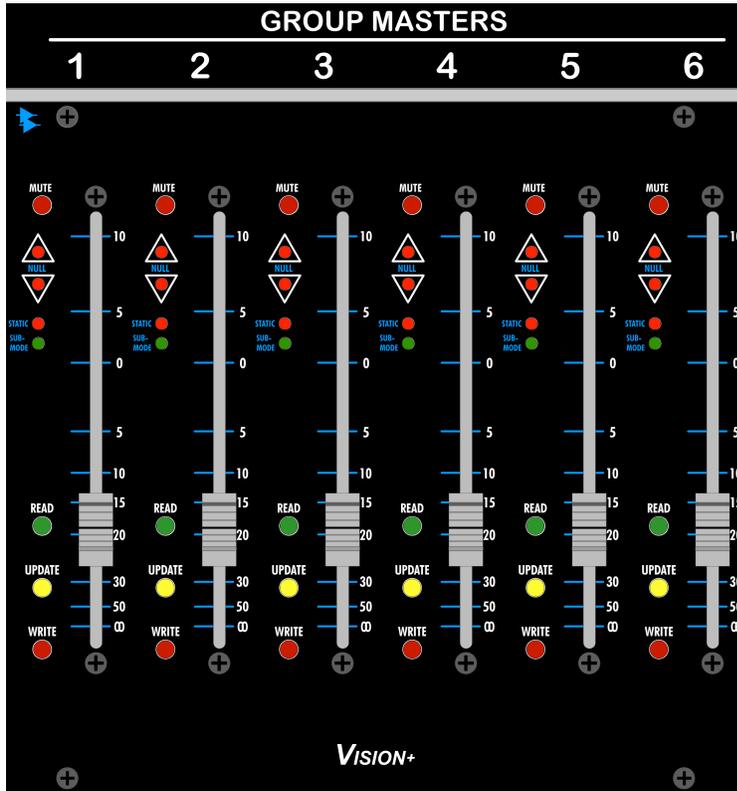
## Vision+: Stereo Program Master Faders



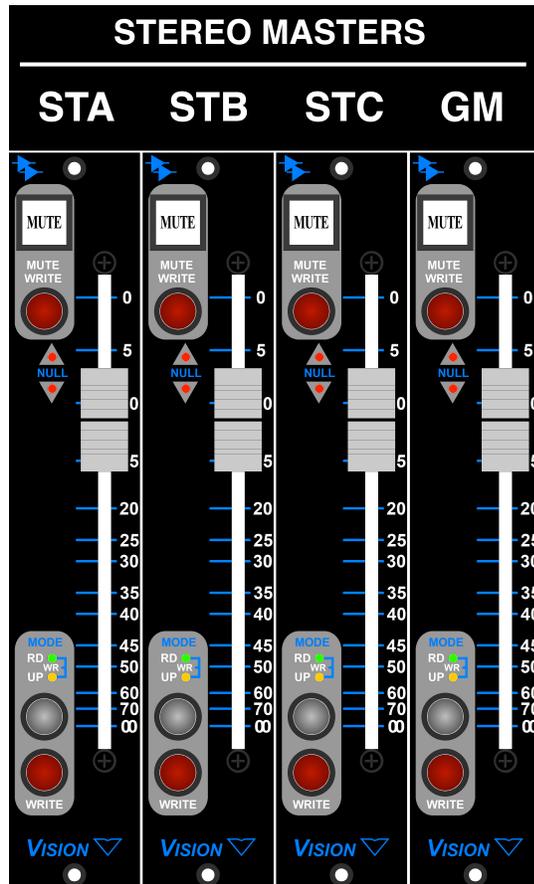
## Vision+: Surround Program Master Faders



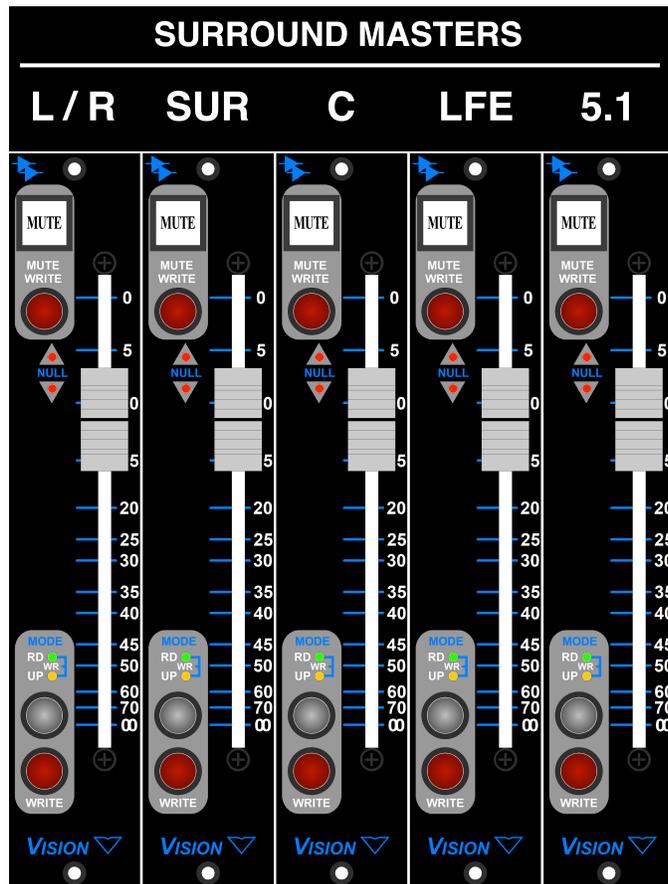
**Vision+:** Group Master Faders



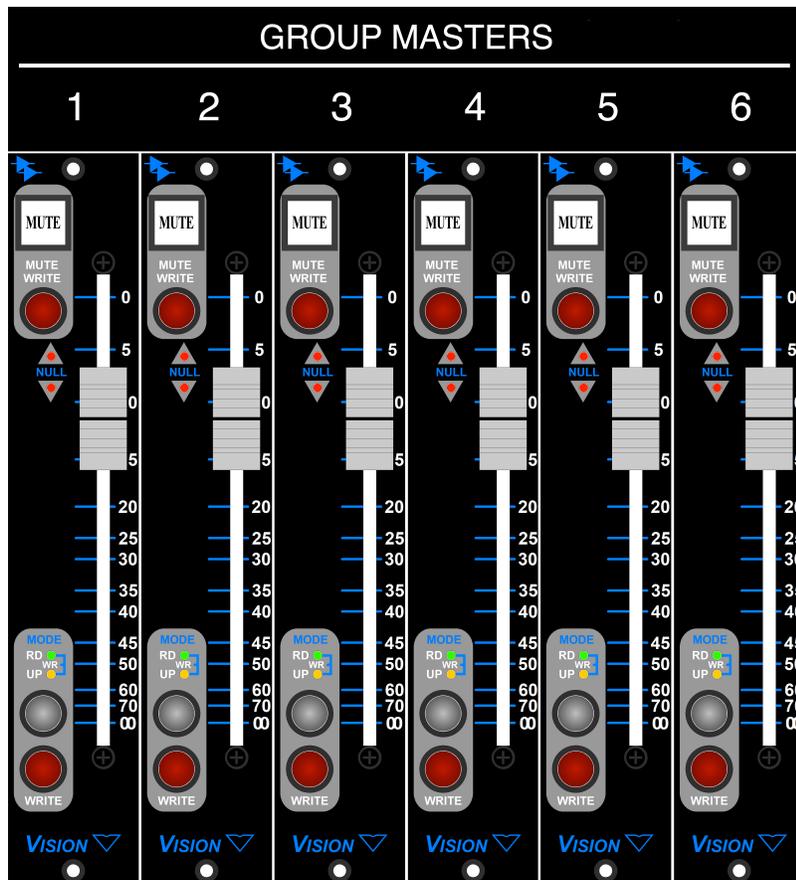
**Original Vision:** Stereo Program Master Faders



## Original Vision: Surround Program Master Faders



## Original Vision: Group Master Faders

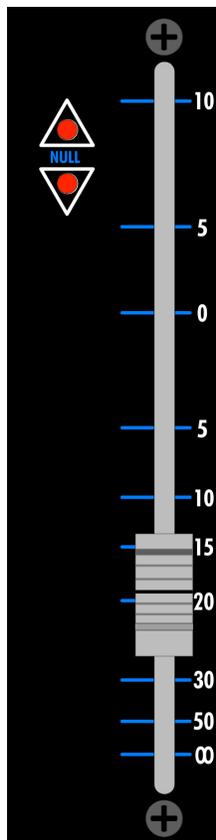


## 4.0 Fader Automation Controls

The automation controls are similar on all faders, but there are some variations based on fader function and console architecture. Faders fall into two basic functional groups:

- Channel Faders
- Stereo Return Faders, Program Master Faders, and Group Master Faders

**Fader:** Primary level control for the audio path



**Fader Cap:** Every fader cap is touch-sensitive and can serve as a trigger for various automation functions (such as switching between writing moves and playback in **Update** mode).

Each automated fader is equipped with a set of up and down LED “**NULL**” indicators. These LEDs indicate if the physical position of the fader matches the written automation data or if it is higher or lower. When updating previously written fader moves, the **NULL** indicators will show which direction to move the fader to match the written level. This is very helpful when using **Leave Write** for matching levels to create seamless data transitions.

If both LEDs are illuminated, the fader position matches the written data.



**Fader NULL Point Indicators:** Up and down LED indicators that show the offset between the physical fader position and the written automation data when the fader is touched.



**NULL Up:** Indicates the physical fader position is below the level of the written data. Move the fader “up” to match the fader position with the written data



**NULL Down:** Indicates the physical fader position is above the level of the written data. Move the fader “down” to match the fader position with the written data

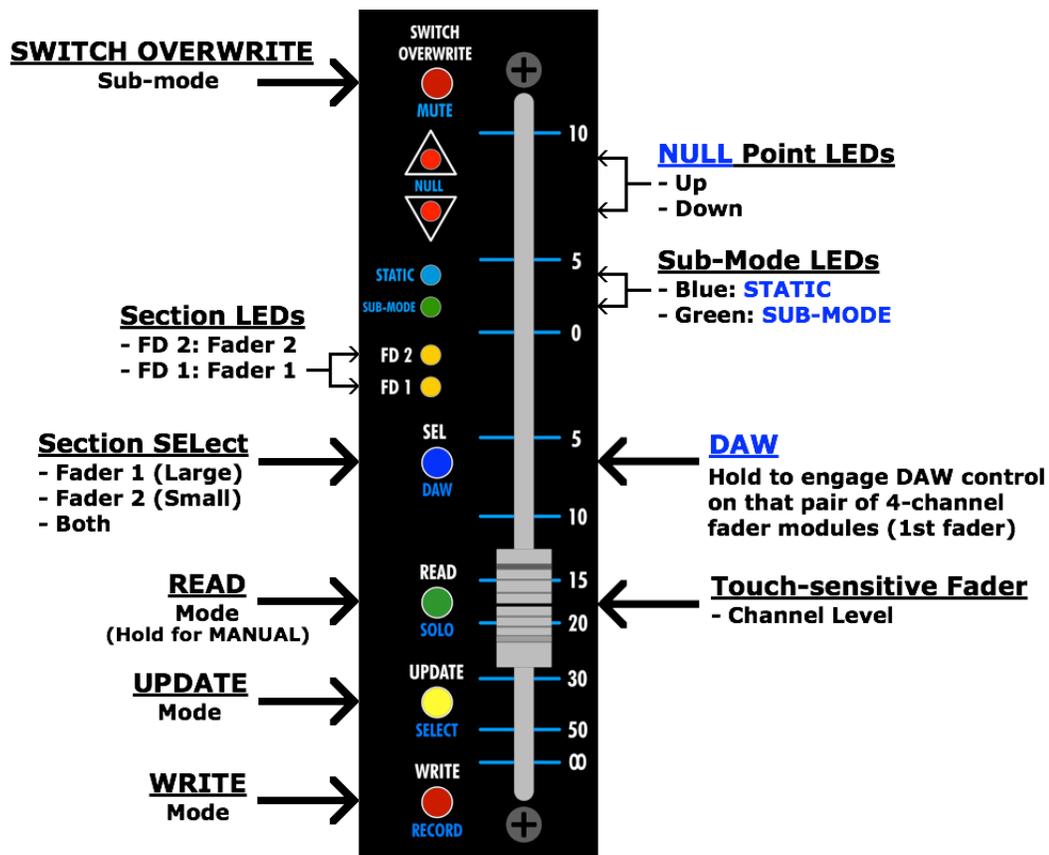
## 4.1 Channel Fader Automation Controls

In addition to being a primary channel level control, all 944, 944C, and individual channel faders are equipped with a collection of automation controls. These controls include:

- **Fader:** Level control
- **Fader Cap:** Activation of touch-sensitive automation features
- **Mode Selectors:** READ (MANUAL), UPDATE, WRITE, SWITCH OVERWRITE
- **Section SElector:** Channel section selection control (except 1608-II)
- **Submode LED Indicators:** **STATIC** and **SUB-MODE**
- **NULL Point LED Indicators:** Up and down arrows
- **DAW Functions:** LEVEL, **MUTE**, **SOLO**, **SELECT**, **RECORD** (track record ready)

*Final Touch Automation*® channel faders only vary in regard to channel section selection. The AXS and 2448 both have Large and Small Fader paths and identical channel automation features, so channel faders on both consoles support mode assignment to Fader 1 (Large), Fader 2 (Small), or both channel sections. All Vision consoles support mode assignment to Fader 1, Fader 2, Switches, or ALL channel sections. 1608-II consoles have only one signal path per channel and do not have a channel section selector.

The image below illustrates the location of each automation control and indicator on an AXS (944) or 2448 (944C) channel fader (DAW controls not called-out).



*NOTE: 1608-II 944C channel faders are not equipped with a channel section selector.*

*NOTE: Vision and Vision+ channel faders are equipped with a channel section selector that supports Fader 1, Fader 2, Switches, or All, as well as Fader 2=Fader 1.*

*NOTE: Original Vision faders combine READ, UPDATE, and MANUAL functions on the grey mode button.*

*NOTE: Original Vision faders are not equipped with submode indicators.*

**NOTE:** **DAW** control activation is included only on the first of every eight 944 and 944C channel faders.

Some of the automation mode controls are dual function buttons and perform different functions when DAW control is enabled. In normal operation, the SEL (Section Select), READ, UPDATE, WRITE, SWITCH OVERWRITE buttons change the automation mode of the fader. When DAW control is enabled, these buttons change function. DAW control is explained in detail later in this manual.

## 4.2 Stereo Return and Master Fader Automation Controls

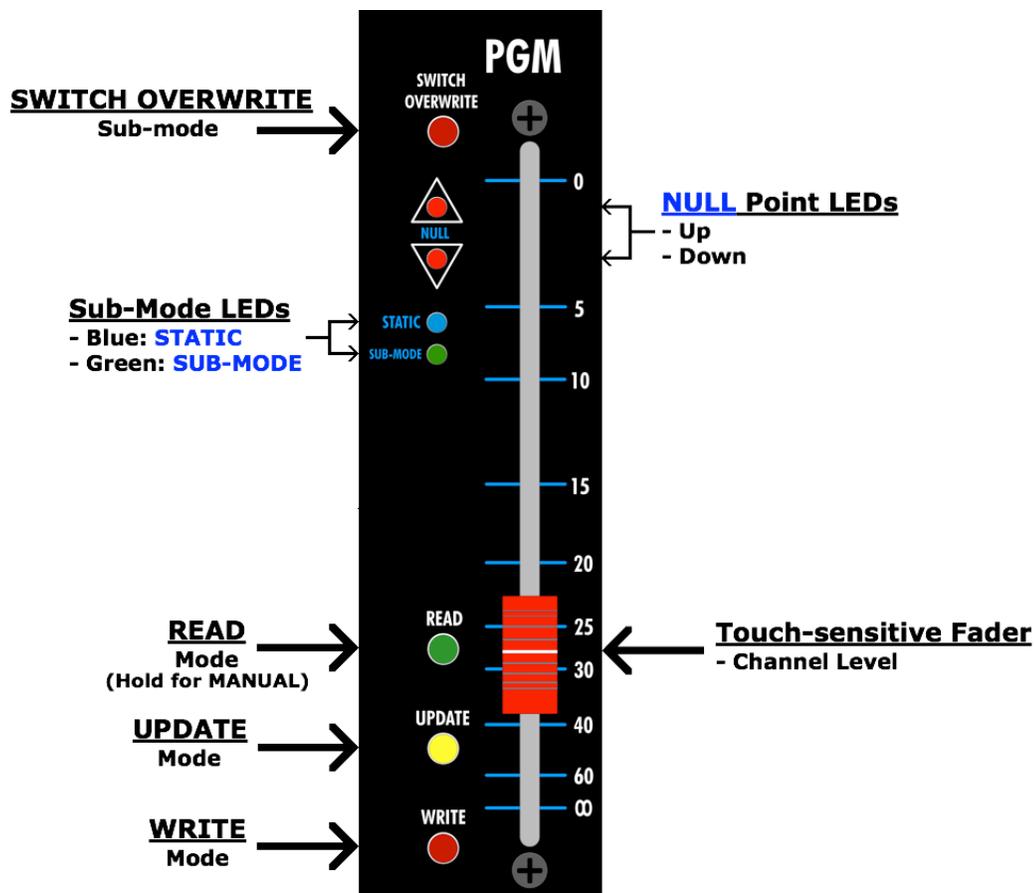
In addition to being a primary level control, all 265 and 265C Stereo Return faders and 946, 940C, and individual master faders are equipped with a collection of automation controls. These controls include:

- **Fader:** Level control
- **Fader Cap:** Activation of touch-sensitive automation features
- **Mode Selectors:** READ (MANUAL), UPDATE, WRITE, SWITCH OVERWRITE
- **Sub-mode LED Indicators:** **STATIC** and **SUB-MODE**
- **NULL Point LED Indicators:** Up and down arrows

Stereo Return and Group Master faders vary only from the Program Masters in regard to audio function and scaling. All Stereo Return and Group Master faders have a  $-\infty$ dB to +10dB range. Program Master faders have a  $-\infty$ dB to 0dB range.

*Final Touch Automation*<sup>®</sup> Stereo Return faders, Program Master faders, and Group Master faders do not support DAW control.

The image below illustrates the location of each automation control and indicator on a Stereo Return, Program Master, or Group Master fader.



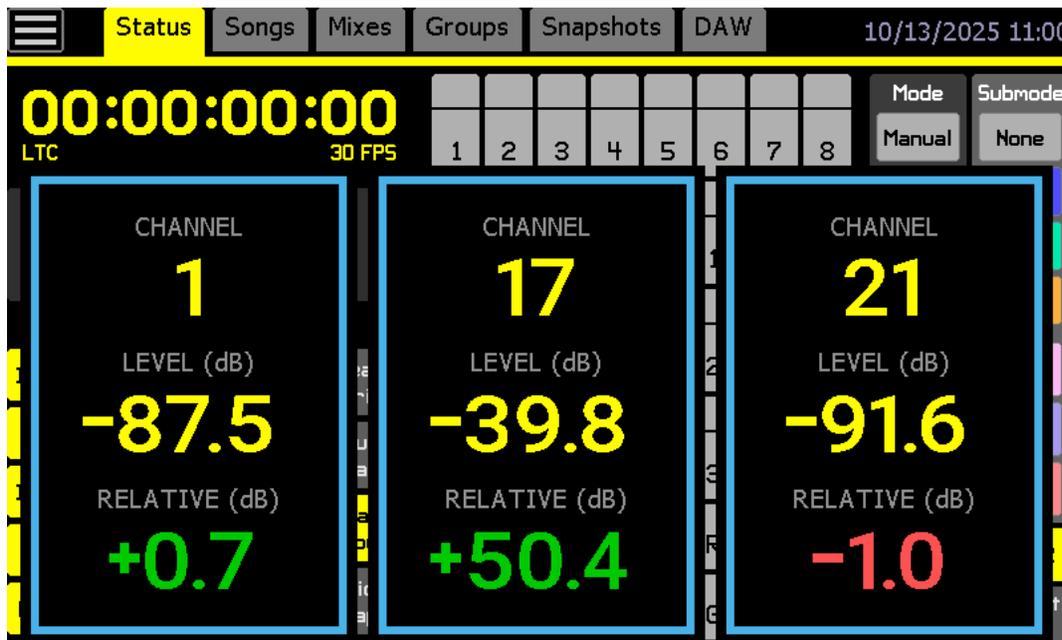
*NOTE: The program master faders on some consoles are equipped with a MUTE switch. However, program masters do not have a mute function, so the MUTE switch on program masters does NOT cut the output from the master. It can however be used to mute group members with the program master is used as a group master.*

*NOTE: Original Vision faders combine READ, UPDATE, and MANUAL functions on the grey mode button.*

*NOTE: Original Vision faders are not equipped with sub-mode indicators.*

### 4.3 Fader Status Display

The level status of the first three faders that are touched and held, will displayed on the touch-screen. The touched and held faders are shown in numeric order.

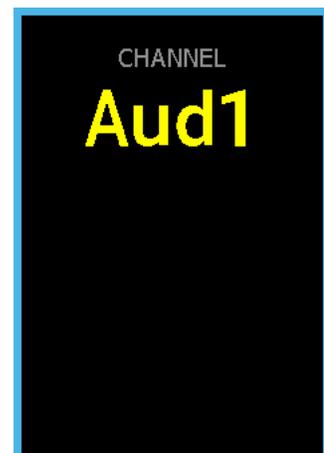


The following fader status information is displayed:

- **Channel:** Channel number of the touched fader
- **Fader Level (dB):** Current fader position in decibels
- **Relative (dB):** Difference in level in decibels from where the fader was first touched to the current position



When touching a fader in DAW mode, the DAW channel name will be shown instead of the console channel number.



# 5.0 Software Startup

## 5.1 Automation System Startup and Reboot

The *Final Touch Automation*<sup>®</sup> system will boot when its power supply is switched ON. This is typically when the console is powered up. The automation system typically remains ON whenever the console is powered.



Upon power-up, the ACM touch-screen will display the AXS boot screen.

This screen will briefly display the currently installed ACM boot version, ACM ID, Printed Circuit Board version (PBC), FPGA version, and Firmware version as the system boots up.

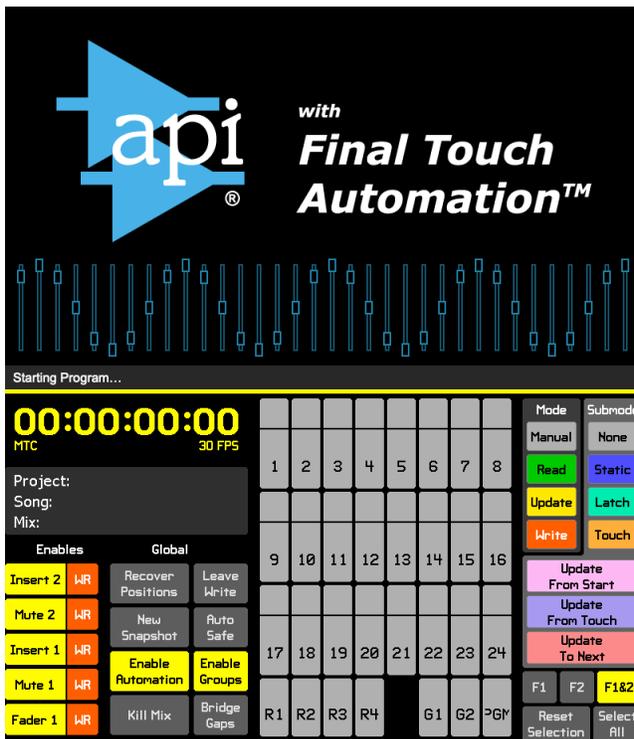


The MIDI and USB driver is loaded following the AXS boot sequence.

This screen will briefly display the version of the currently installed MIDI-USB driver.



As startup continues, the boot screen will change to indicate the ACM program is being loaded.



After the program is loaded into the ACM, the screen will change to indicate the ACM program is starting.

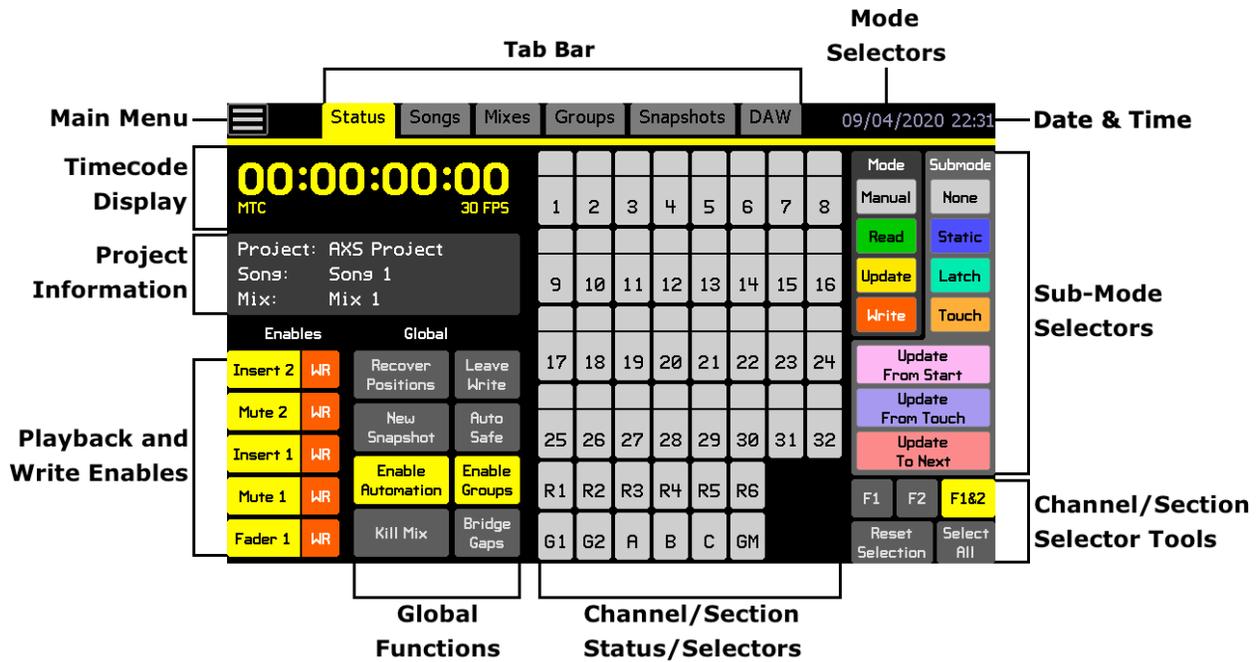
Once the startup processes are complete, the screen will display the Status page and the system will beep to indicate it is ready for use.

A project file must be open in order to create, save, and edit mixes and snapshots.

# 6.0 Software Overview

## 6.1 Status Page Overview

The Status page is the primary software interface for automation operation. It provides the information and controls needed for easy and efficient automation of channel faders and switches.



The Status page provides information and operational functions as follows:

- **Main Menu:** Project file management, fader demo mode, and system configuration
- **Tab Bar:** Tabs to pages that support operations within a project and DAW control
- **Date & Time Display:** Current system time and date
- **Timecode Display:** Current or last timecode location, source, and frame rate
- **Project Information:** Name of currently loaded project file, song, and mix
- **Playback and Write Enables:** Allows mix events to be written to and/or played back from automation
- **Global Functions Enables:** Activates global automation functions
- **Mode Selectors:** Applies main automation modes to selected channels/sections
- **Submode Selectors:** Applies automation submode to selected channels/sections
- **Channel/Section Selector Tools:** Buttons to help select/deselect multiple channels/sections
- **Channel/Section Status and Selectors:** Channel/section selection grid for all installed Input Channels, Stereo Returns, Group Masters, and Program Master faders for mode/submode assignment and status indication

## 6.2 Tab Bar



The touch-screen has a tab bar across the top of the screen that provides two primary means of access to the *Final Touch Automation*® software:

- **Main Menu:** File management, demo modes, and system configuration
- **Tabs:** Tabs that open the project and operational pages
  - Status: Primary user interface page
  - Songs: Directory and tools for the songs within a project
  - Mixes: Directory and tools for mixes within a song
  - Groups: Directory and tools for groups within a song
  - Snapshots: Directory and tools for the snapshots within a project
  - DAW: “Enables,” “Shift,” and “Bank” buttons, transport control, and DAW program control

To open the Main menu or page, touch the icon in the tab bar.

The tab bar also displays current system date and time.

A brief overview of the Main menu and each project page follows. Each will be discussed in detail later in this manual.

### 6.2.1 Vision and Vision+ Tab Bars

Vision and Vision+ consoles are equipped with two (2) touch-screen controllers to accommodate greater capabilities and channel counts. Each screen has a unique tab bars to support the functions each contain.



- **Main Menu:** File management, demonstration mode, and system configuration
- **Main Screen Tabs:** File management, demo modes, and system configuration
  - Status: Primary page for project information, global controls, and enables
  - Songs: Directory and tools for songs within a project
  - Mixes: Directory and tools for mixes within a song
  - Snapshots: Directory and tools for snapshots within a project
  - Routing: Control page for setting Vision Recall Settings



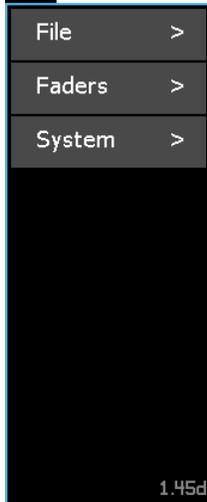
- **2<sup>nd</sup> Screen Tabs:** Group and recall settings pages
  - Channels: Control page for applying modes and submodes to channels
  - Groups: Directory and tools for groups within a mix
  - DAW: “Enables,” “Shift,” and “Bank” buttons, transport control, and DAW program control

*Note: Tabs can be moved from screen-to-screen by pressing and holding the tab to be moved.*

## 6.3 Main Menu



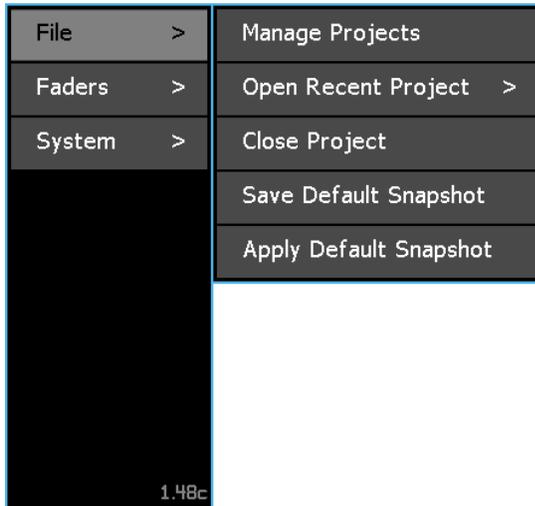
To access the main menu, press the menu button in the upper left-hand corner of the touch-screen.



The Main menu provides access to three sub-menus:

- **File:** Project management tools
- **Faders:** Position Faders, Remote Trim, and demonstration tools
- **System:** System configuration and synchronization tools

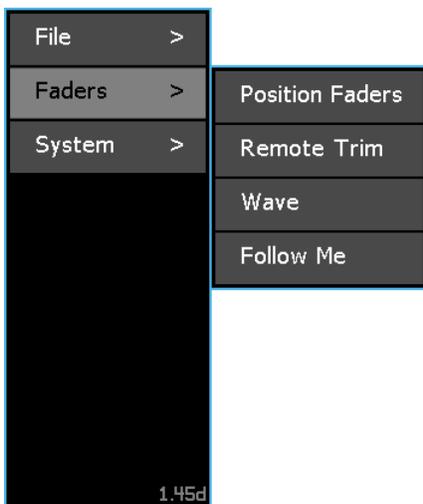
### 6.3.1 File Menu



The File menu opens dialog boxes for the following project management functions:

- **Manage Projects:** Create a new project or open, edit, delete existing projects
- **Open Recent Project:** Opens a menu of recently used projects to be quickly opened
- **Close Project:** Close the currently open Project
- **Save Default Snapshot:** Saves the current positions as the Default Snapshot
- **Apply Default Snapshot:** Applies the settings stored in the Default Snapshot to the console controls

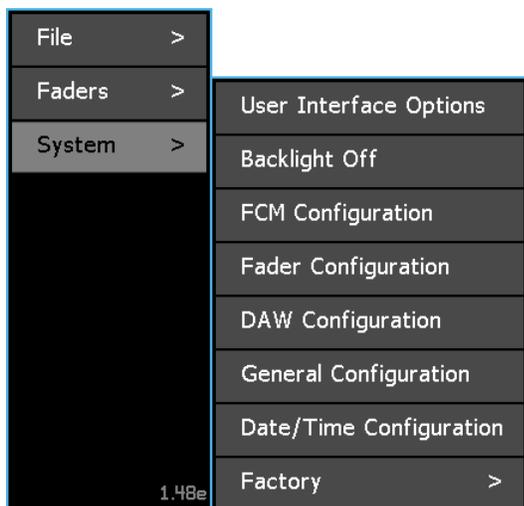
### 6.3.2 Faders Menu



The Faders menu opens dialog boxes for the following fader functions:

- **Position Faders:** Sets the all or selected faders to a user specified level patterns
- **Remote Trim:** Allows a temporarily assigned master fader to write trim moves to one or more member faders
- **Wave:** Enters a demo mode where all faders move in a waveform pattern
- **Follow Me:** Enters a demo mode where all faders follow the one that's touched and moved

### 6.3.3 System Menu



The System menu opens dialog boxes for the following features:

- **User Interface Options:** Controls for options such as fader level popups, cross-hair touch cursor, sticky mix colors, and channel grid response to mode changes
- **Backlight Off:** Display backlight on/off control
- **FCM Configuration:** Fader Control Module firmware updates and calibration
- **Fader Configuration:** Fader firmware updates and calibration
- **DAW Configuration:** Selection of DAW Type and channel mapping for DAW control via Mackie Control and Mackie HUI
- **General Configuration:** Timecode Source and number of console channels
- **Date/Time Configuration:** Settings for date and time
- **Factory:** Sub-menus for factory settings and testing (API access only)

### 6.4 Project Pages

There is a tab for each of the five (5) project pages that support the currently open project and one (1) tab for the DAW control page.

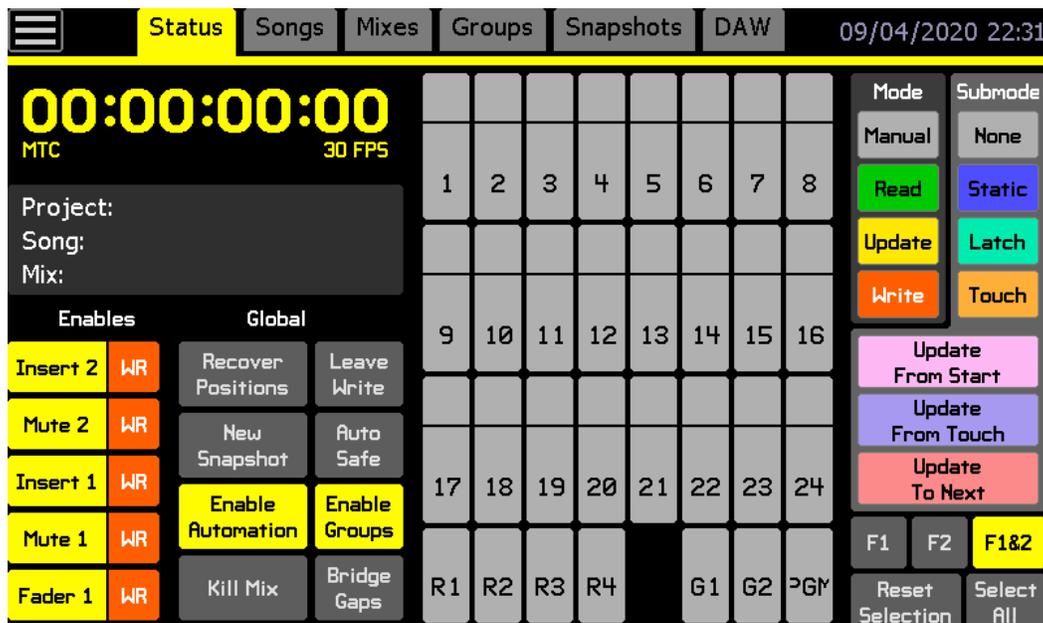


#### Project pages:

- Status
- Songs
- Mixes
- Groups
- Snapshots

#### 6.4.1 Status Page

The Status page is the main page of the *Final Touch Automation*® system and the primary user interface. It provides a display of project information and the current timecode, contains system enables and global processes, and facilitates the application of modes and submodes to channels.

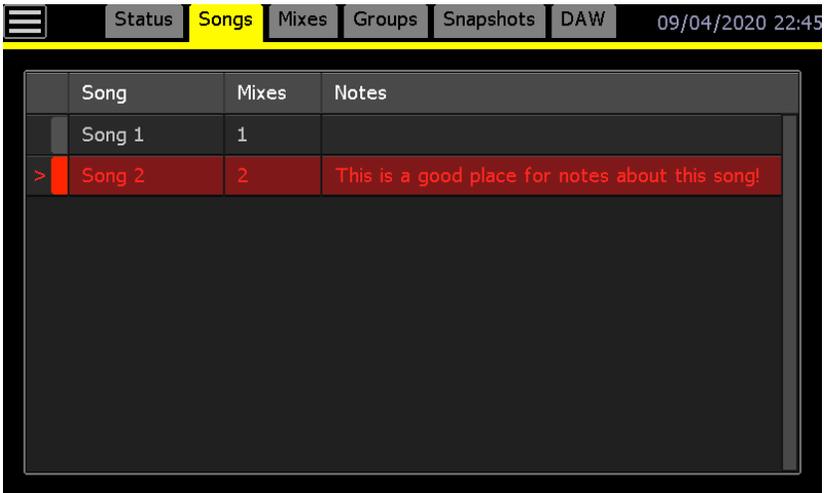


## 6.4.2 Songs Page

The Songs page contains a directory of the songs within a project.

A “song” contains all the mixes associated with a specific segment of recorded audio. All of the mixes within a song are available on the Mixes page.

The current song is indicated with an arrow symbol (>), and its name, the number of mixes it contains, and notes are displayed.



	Song	Mixes	Notes
	Song 1	1	
>	Song 2	2	This is a good place for notes about this song!

New...
Make Current
Delete...
Properties...
Multiselect

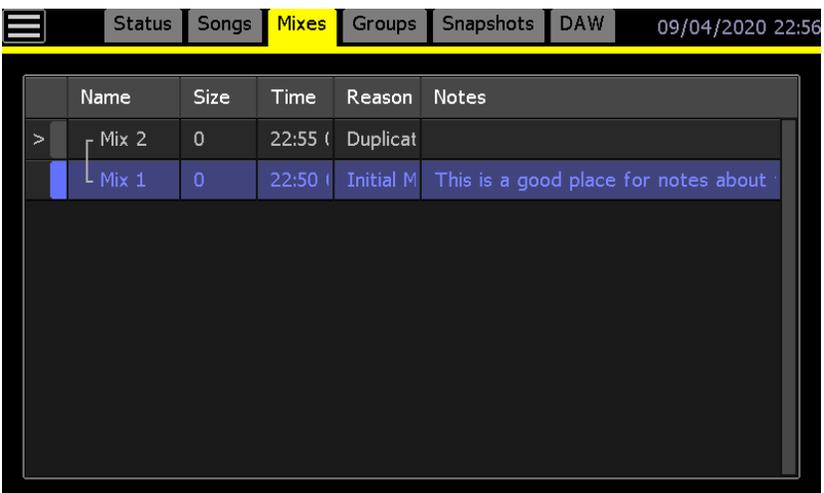
The Song menu will open if the screen is pressed in the Songs page.

The Song menu allows a new song to be created, a selected song (highlighted) to be made the current song (and mix tree), or an existing song to be deleted. Song properties can also be modified and multiple songs can be selected for properties edits or deletion.

## 6.4.3 Mixes Page

The Mixes page contains the “Mix Tree,” which is the directory of the mixes within a song. A “mix” contains all the automated mix events for automated faders and switches, as well as entered data about each mix (name, color, notes). All of the mixes within a song are available on the Mixes page.

The current mix is indicated with an arrow symbol (>), and its name, size, time of creation, reason for creation, and notes are displayed.



	Name	Size	Time	Reason	Notes
>	Mix 2	0	22:55	Duplicat	
	Mix 1	0	22:50	Initial M	This is a good place for notes about

Make Current
Duplicate
Delete
Clear Events
Offline Trim
Copy/Swap Mix Events
Export Mix
Import Mix
Properties
Multiselect

The Mix menu will open if the screen is pressed in the Mixes page. The Mix menu allows the selected mix (highlighted) to be made the current mix, duplicated, deleted, have mix events cleared, have offline fader trims applied, copy or swap mix events between channels, or have mix properties modified. Mixes can also be exported and imported via this menu. Multiple mixes can be selected for properties edits or deletion.

### 6.4.4 Groups Page

The Groups page contains a directory of the groups within a mix. A "group" allows control of automated fader or switches for two or more channels, masters, and/or stereo returns by an engineer-designated master. The Groups page facilitates the creation of new fader and switch groups.

The names, controls, master, members, and notes are displayed for each group.

Name	Controls	Master	Members	Notes
Drums	Fader	G1	F1: 1-8	This is a good place for notes
Drums	Mute	G1	F1: 1-8	This is a good place for notes
Drums	Insert	G1	F1: 1-8	This is a good place for notes

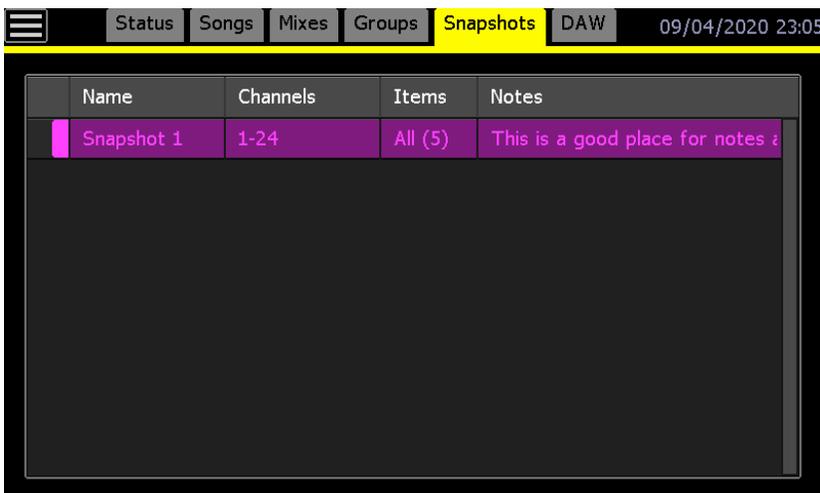
New
Delete
Coalesce & Delete
Coalesce & Keep
Coalesce w/ Audio Master
Properties
Multiselect

The Group menu will open when the Groups page is pressed. The Group menu allows a group to be created, deleted, coalesced and deleted, coalesced and kept, or coalesced with the Audio Master. Group properties can also be modified and multiple groups can be selected for simultaneous deletion.

The number of groups possible is limited only by console size and the number of installed channels.

## 6.4.5 Snapshots Page

The Snapshots page contains a directory of the snapshots within a project. A “snapshot” allows the positions of a user-specified set of automated faders and switches for one or more channels, masters, and/or stereo returns to be stored and recalled. The Snapshots page facilitates the creation of new automated fader and switches snapshots.



The snapshot names, channels, items (controls), and notes are displayed for each snapshot.



The Snapshot menu will open if the Snapshots page of the screen is pressed. The Snapshot menu allows snapshots to be created, applied, deleted, exported, and imported.

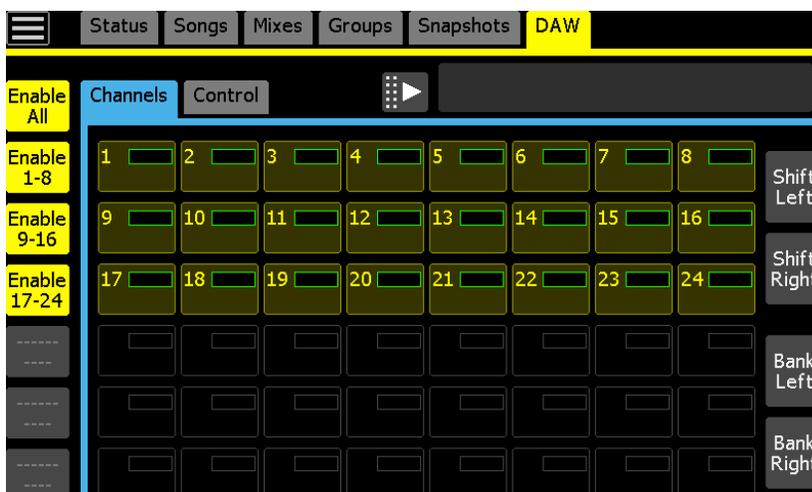
Snapshot properties can also be modified and multiple snapshots can be selected for properties edits or deletion.

A project can have any number of songs, mixes, and snapshots as long as there is sufficient available space on the memory-card.

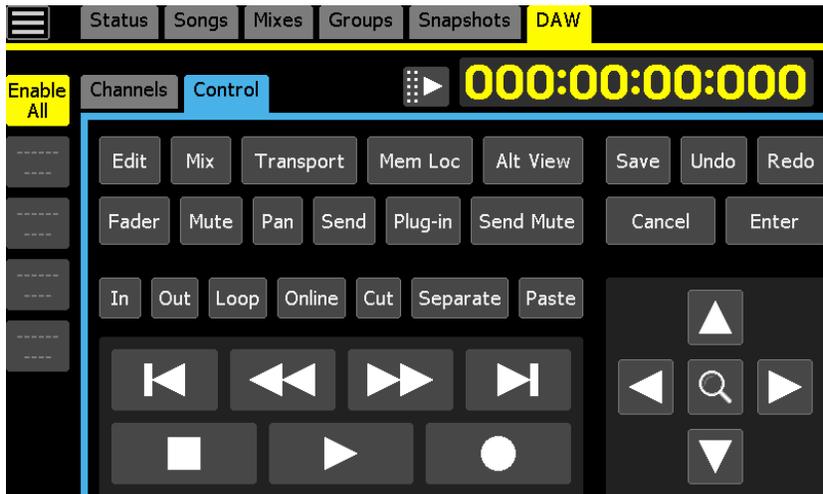
## 6.4.6 DAW Page

*Final Touch Automation*® provides control over several types of DAWs via Mackie Control or Mackie HUI over MIDI. The DAW page contains two (2) tabs, “Channels” and “Control.”

Depending on the DAW being used, the Channels page provides “Enable” buttons for either four (4) or six (6) banks of eight (8) DAW channels. Shift/Bank, Left-Right functions, transport controls, and a display of the channel map are also provided. Individual channel labels have no function, but will inherit the track labels from the DAW and illuminate when active. Each channel also provides a signal meter (audio or data) to indicate current content on that channel.



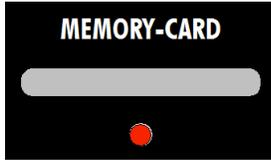
The Control tab provides a larger set of DAW transport controls, timecode/position display, and buttons for control of specific DAW programs. The buttons and displays provided on the Control page are configured to support the DAW being used and are determined by the DAW Type selected via DAW Configuration.



# 7.0 File Management

The *Final Touch Automation*® software is designed for easy management of the various files generated by the system during use. The Main menu, Project Manager window, Songs page, and Mixes page are the primary tools for creating projects and file management. Projects and other files are stored on commonly available memory-cards.

## 7.1 Memory-Card



The *Final Touch Automation*® system employs commonly available standard memory-cards for the storage of projects and files and firmware updates. The memory-card should be at least 2Gb in size. Memory cards should be formatted to FAT32 before use in the *Final Touch Automation*® system. Formatting can be accomplished using an external computer with a card reader. Files on the memory-card can also be accessed and backed-up using an external computer.

## 7.2 Project Files

A “project” is intended to support one or more individual audio recordings that are part of a larger work, like an album or movie. For each individual recording, a collection of mixes, groups, and snapshots are generated and stored within a project. For music recordings, all of the mixes for individual songs would be saved within the project as “songs,” along with the snapshots for the project. For film/video projects, individual scenes could be stored as songs or as individual projects. These concepts are 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 project or whatever method is appropriate.

Projects, songs, mixes, groups, and snapshots are organized as follows:

- Groups are created and stored within mixes
- A collection of mixes are stored in a “song” and displayed on the Mixes page
- Songs are stored within a “Project File”
- Project files are stored within a “Project Folder”
- Snapshots are stored within the “Project File”
- Exported mixes snapshots can be stored anywhere, but are typically stored in a project folder
- Project folders are stored in the “PROJECTS” folder on the memory-card

## 7.3 File Structure

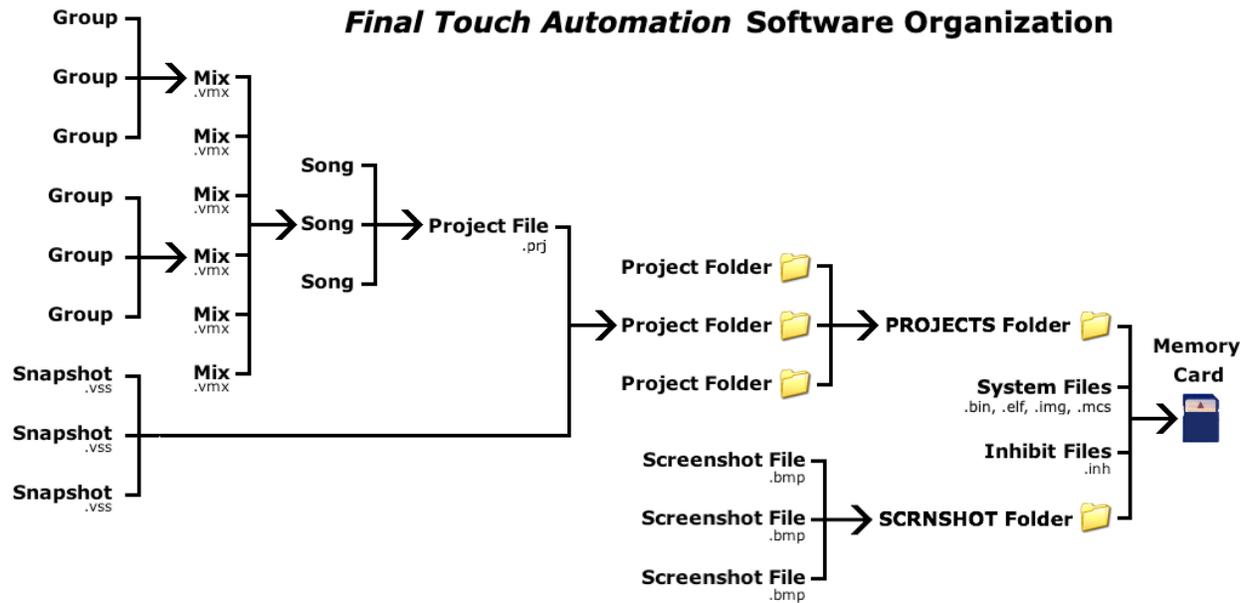
There are two types of files that support the *Final Touch Automation*® system:

**OPERATIONAL FILES**: Files that are generated and used during normal operation of the system:

- **Project File (.prj)**: The primary software file that is generated by the system for each recording. It contains songs and mixes with groups associated with the recording.
- **Mix Files (.vmx)**: Mix files are the data files that are created and used by the automation system. Every time a new mix is generated by the system, a new mix file is created and stored on the memory-card. Mix files are stored within a song and are displayed in the Mixes page. Groups are stored as part of the mix files.
- **Snapshot Files (.vss)**: Snapshot files store static positions of automated faders and switches that can be recalled for later use. Snapshot files are stored virtually within the Snapshots page within the project file, but actual files are not created unless the export function is used. Snapshot files can be exported and imported for use with other projects.

- **System Files:** Files that facilitate and support the functionality of the system. These files are stored in the root directory of the memory-card:
  - **ACM Boot File (.bin):** Automation Control Module (ACM) boot file
  - **ACM Application File (.img):** Automation Control Module (ACM) application software
  - **0368 FCM Application File (.elf):** The firmware file contains the application programs that the Fader Control Modules (FCM) use for operation.
  - **0368 FPGA Boot File (.mcs):** Fader Control Module (FCM) boot file
  - **0369 Fader Application File (.bin):** Fader application firmware
  - **0369 Fader Boot File (.bin):** Fader boot firmware
  - **Inhibit Files (.inh):** Upon startup, the processor in the ACM first looks to update firmware using the files stored on the memory-card. The inhibit files suppress this function if stored on the memory-card. If these files are not present, the processor will automatically update itself from the files on the memory-card.
  - **Screenshots (.bmp):** Bitmap screenshot files contain images of the display screen captured by the system. Pressing the PRINTSCRN key on an external keyboard will take a screenshot of the screen and store in on the memory-card as a bitmap file with an AXS0xxx file name.

*Final Touch Automation*® software, files, and folders are typically organized as illustrated in the diagram below. Example file and file suffixes are shown below associated items.



*NOTE: Exported snapshot files can be stored anywhere on the saved memory-card, but are typically stored within a project folder.*

## 7.4 Card Reader

A card reader interfaced with an external computer provides an easy means of backing up the project folders and files on a memory-card. It also allows folders and files to be deleted or renamed.

Once a memory-card is inserted, the card will appear as an external storage device in the computer's directory system and the folders and files can be manipulated using normal computer techniques.

### 7.4.1 Renaming Folders and Files

Projects can be named via the Project Manager window, but can also be renamed offline using an external computer. To rename a project folder or any file without using the ACM, open the memory-card on an external computer and click on the name of the file or folder to be changed, enter a new name or edit the existing one, and press the "return" key on the computer keyboard.

*IMPORTANT NOTE: Do not rename mix files (.vmx) on the memory-card. Renamed mix files are not recognized by the project and will not be accessible.*

*NOTE: Only the name of a project folder should be changed.*

*NOTE: Do not change the name of the main "PROJECTS" folder, firmware files, or file suffixes.*

### 7.4.2 Deleting Projects and Files

Projects can be named via the Project Manager window, but can also be renamed offline using an external computer. To delete an individual project folder or any file without using the ACM, open the memory-card on an external computer and delete the unwanted folder or file. Make sure to empty the "trash" or "recycle bin" before removing the memory-card

*NOTE: Deleting the "PROJECTS" folder will delete all the projects within it.*

**WARNING:** *Do not delete mix files (.vmx) from the memory-card. Deleting one or more mix files will corrupt the project file and project will no longer load.*

### 7.4.3 File Backup

To make a backup of the project folders and files on the memory-card, open the memory-card on the external computer and copy the project folders and files to the computer's hard drive or other connected storage device.

Individual project folders are stored in the main "PROJECTS" folder by default. This folder is stored in the root directory of the memory-card. Backing up the "PROJECTS" folder will backup all the projects within it.

Stored files can be reloaded to the memory-card by copying the needed project folder(s) and/or files from the storage device to the memory-card.

### 7.4.4 Software/Firmware Files

The most current firmware files are available from API. For information about the most recent firmware release, how to check the versions currently installed in your console, and to request updates, complete and submit the form available at this link: <https://service.apiaudio.com/finaltouch>

A card reader should be used to transfer any updated firmware files from an external computer to a memory-card.

When the firmware finishes loading onto the console ACM, an "inhibit" file is written to the memory-card. When the system is powered up or rebooted (RESET), it searches the root directory of the memory-card for inhibit files. If these files are found, the system boots using the currently installed firmware. If these inhibit files (.inh) are not found, the system will automatically load the firmware files found on the memory-card. Accordingly, the inhibit files on the memory-card must be removed from previously used memory-cards before firmware updates can be accomplished.

## 7.5 File Menu

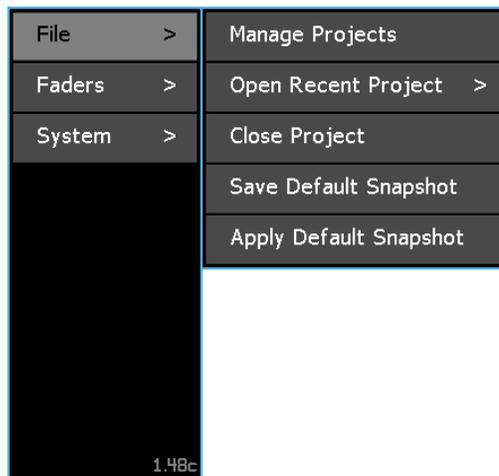
The File menu provides access to the primary tools to create and manage projects while using the *Final Touch Automation*® system.

The File menu is accessible from the Main menu.



The File menu provides five (5) functions:

- **Manage Projects:** Tools for project creation and editing
- **Open Recent Project:** Opens a submenu to select a recent project to be reopened
- **Close Project:** Closes the current project
- **Save Default Snapshot:** Creates and saved the Default Snapshot
- **Apply Default Snapshot:** Allows the Default Snapshot to be loaded onto the console



These functions are explained in the remainder of Chapter 7.

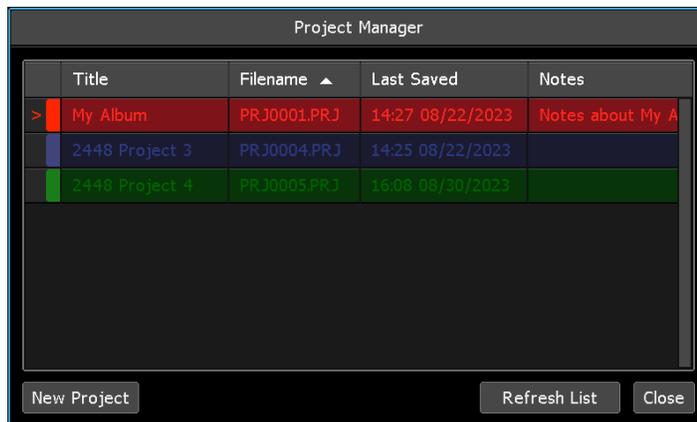
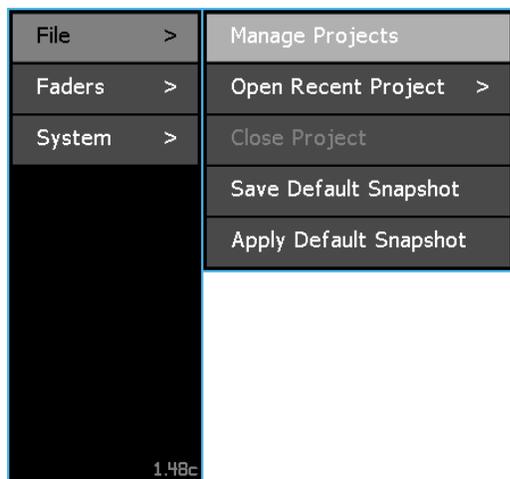
## 7.6 Projects and Project Manager

For the *Final Touch Automation*® system to be fully functional, a “project” file must be open. When a new project is created, a project folder is created and stored in the “PROJECTS” directory on the memory card. This folder contains the project file with project info, an initial song, and an initial mix file, is created. Subsequent data, songs, mix files (including groups), and snapshots for this project will be stored in this folder as they are created by the system. As noted earlier, all project folders are stored in the “PROJECTS” folder on the memory-card.

When a project is opened, the data, songs, mixes, and snapshots associated with the project are loaded into the ACM to become available for use. The AMC display will change to the Status Page and the system will be ready for use. As new data, songs, mixes, and snapshots are created, they will be stored with the previously existing data within this project in the ACM and on the memory card.

A list of projects stored on the memory card is displayed in the Project Manager window.

To open the Project Manager, select “Manage Projects” from the File sub-menu. The “Project Manager” window will open.



The Project Manager window has columns that display the title, filename, the date the project was last updated, and notes for each project. Projects can also be color-coded and the columns can be resized by pressing a line between the columns in the header and dragging it to a new position.

	Title	Filename ▲	Last Saved	Notes
>	My Album	PRJ0001.PRJ	14:27 08/22/2023	Notes about My A

The “current” project is indicated by an arrow symbol (>) in the left-hand column.

The Songs page contains a list of songs for the current project. Each song contains a “mix tree” that displays all the mixes for the current song. When a project is loaded or a song is made current, the mix tree for the current song will be loaded automatically

Pressing a project will highlight it and select it for use with the Project Manager menu, but does not open the project. In the examples above, “My Album” is highlighted and is the current song.

## 7.7 Project Manager Menu

The Project Manager menu will open if the screen is pressed in the Project Manager window.

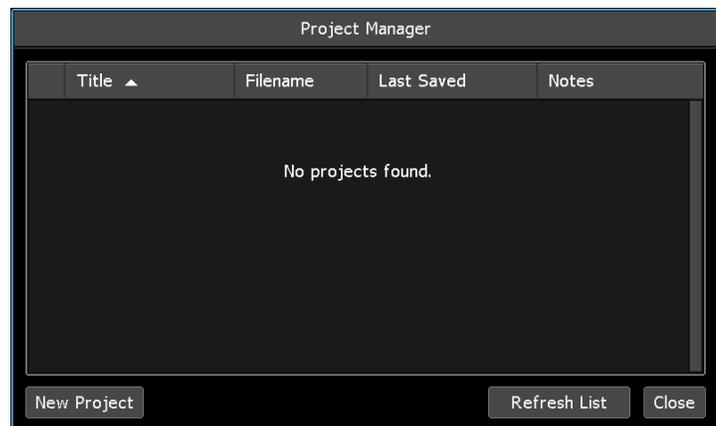
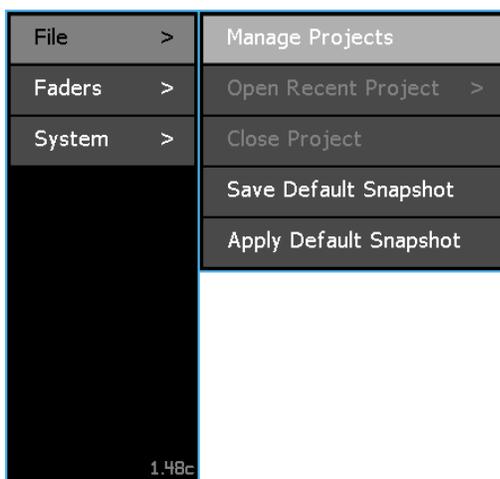
The Project Manager menu provides five (5) functions:

- **Open**: Opens the selected project
- **New...**: Creates a new project
- **Delete...**: Deletes the selected project
- **Properties...**: Edit the selected project name, notes, and color
- **Multiselect**: Allows two or more projects to be selected for simultaneous deletion or color change



### 7.7.1 Create a New Project

To create a new project, open the Main menu and select “Manage Projects” from the File sub-menu.

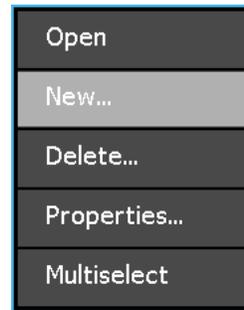


The Project Manager window will open.

Press the “New Project” button and the “New Project” dialog box will open.

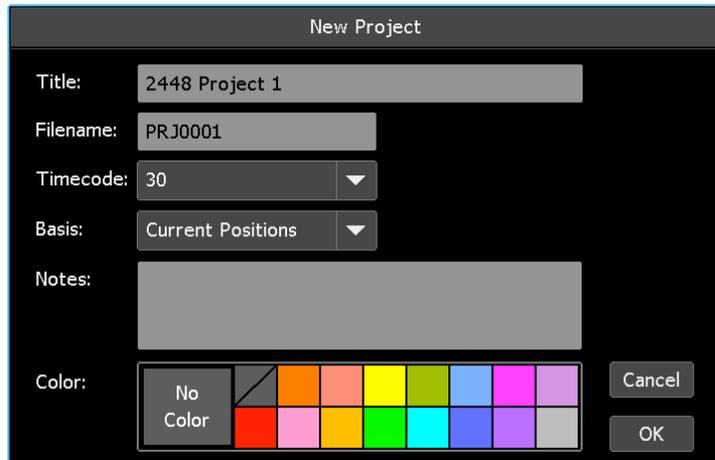


Alternately, pressing in the Project Manager window will open the Project Manager menu. Press "New..." and the "New Project" dialog box will open.

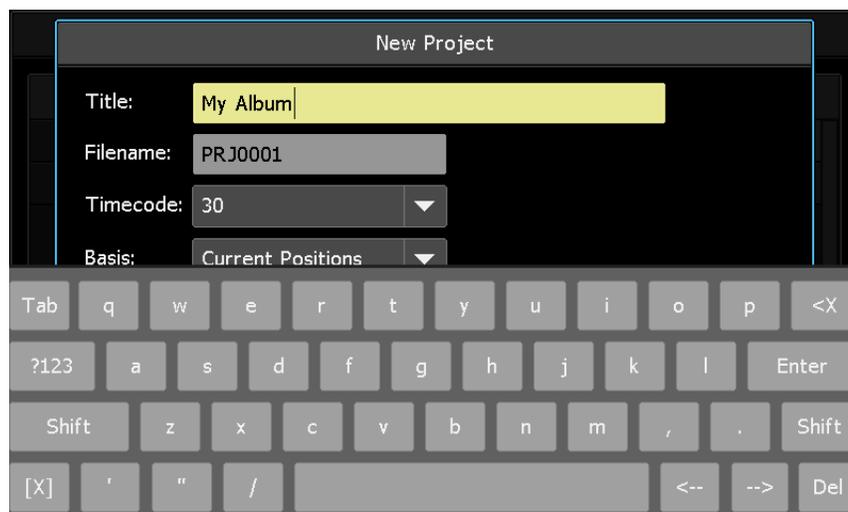


The "New Project" dialog box allows the following information to be entered or selected:

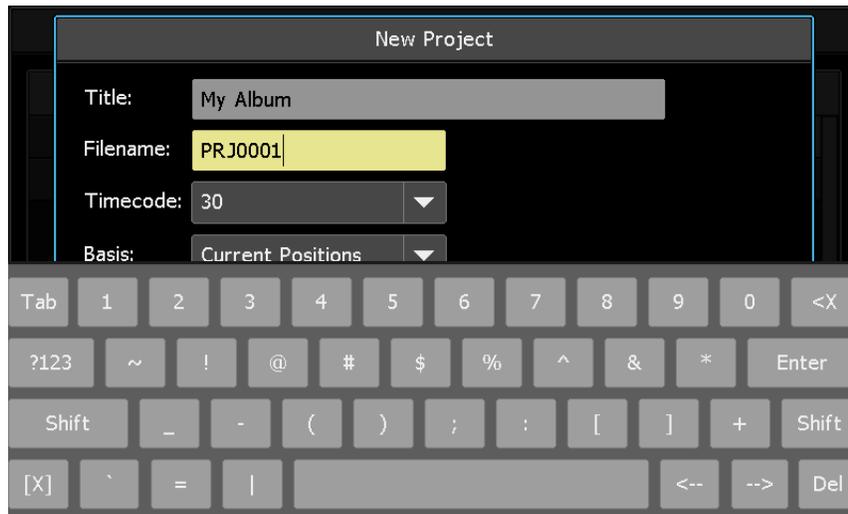
- **Title:** Name of the new project folder
- **Filename:** Name of the new project file (8 character limit)
- **Timecode:** Frame rate for the project
- **Basis:** Data used to create the initial mix
- **Notes:** Text entry for project information
- **Color:** Color assigned to the project in the Manage Projects window



To enter the name of the new project folder, press in the "Title" text-entry field. The field will turn yellow and the cursor and keyboard will appear, indicating that the system is ready to accept a new name. Use the backspace (<X) or delete (DEL) keys to erase the default title name and the keyboard to enter the new project title.



To enter the name of the new project file, press in the "Filename" text-entry field. The field will turn yellow and the cursor and keyboard will appear. Use the backspace (<X) or delete (DEL) keys to erase the default title name and the keyboard to enter the new filename. The file name is limited to 8 characters.



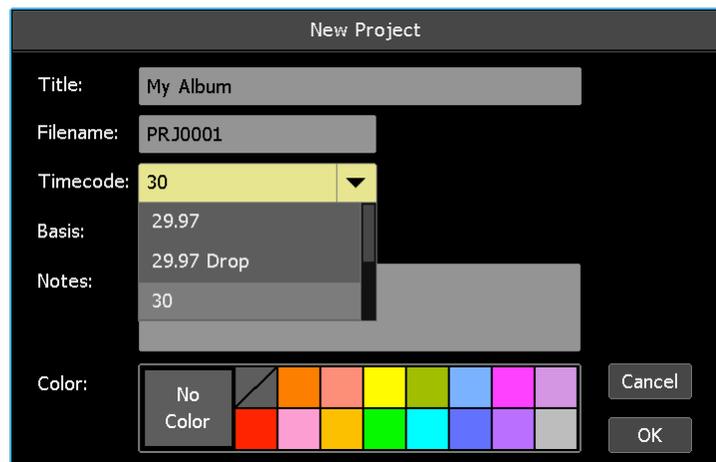
Press [X] to close the keyboard after the "Title" and/or "Filename" have been entered.

Select a timecode frame rate for the project by pressing the "Timecode" pull-down menu. 30 frames per second is the default timecode frame rate.

The following timecode frame rates are available (frames per second):

- 30
- 29.97
- 29.97 Drop
- 25
- 24
- 23.976

Scroll to select the desired frame rate by highlighting it.

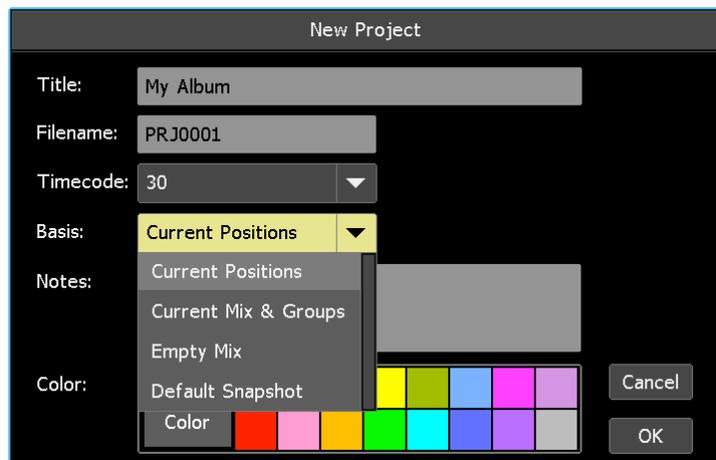


*NOTE: The frame rate for all projects is determined only when the project is created. The frame rate for existing projects cannot be changed.*

Select the "Basis" for the new project. When a new project is created an "initial mix" is created as part of the project. The "Basis" is the data (automated fader and switch positions) that are used to create this initial mix. "Current Positions" is the default basis for new projects.

The following data sets can be selected as the basis for the initial mix:

- **Current Positions:** The current physical positions of automated faders and switches
- **Current Mix & Groups:** The current active mix in the ACM (with moves and groups)
- **Empty Mix:** Physical positions of automated faders will be fully down and no mutes and switches will be engaged



- **Default Snapshot:** The contents of the stored Default Snapshot will be applied

To select the desired "Basis" scroll to highlight it.

If desired, information about the new project can be stored in the "Notes" text-entry field. To enter text information for the new project, press in the "Notes" text-entry field. The field will turn yellow and the cursor and keyboard will appear, indicating that the system is ready to accept new information. Use the keyboard to enter the needed project notes.



Press [X] to close the keyboard after the notes have been entered.

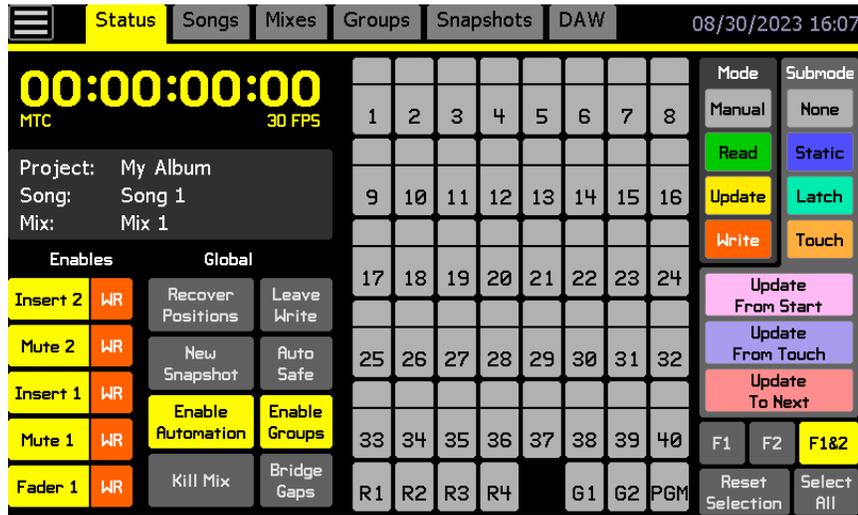
If desired, select a "Color" for the new project. To select a color, press on the desired color. The new project will appear in the selected color in the Project Manager window.



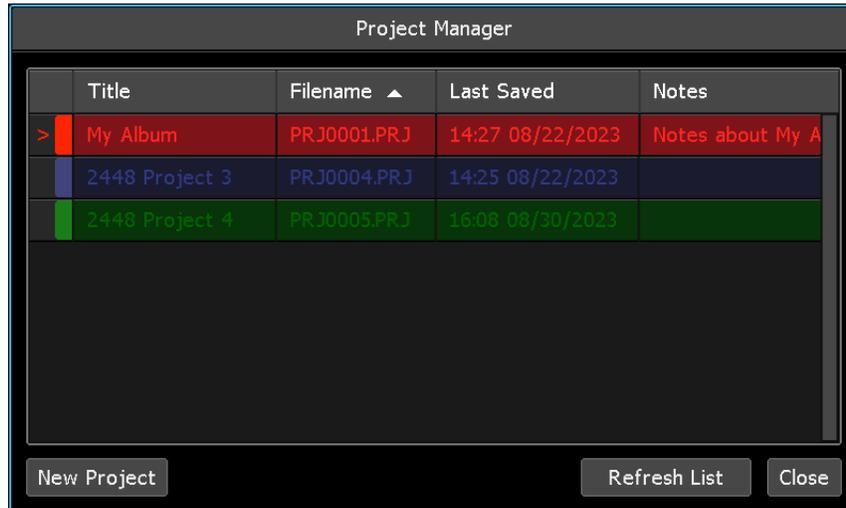
**OK** Once all the desired info has been entered, press "OK" to create the new project.

**Cancel** Press "Cancel" to cancel.

After "OK" is pressed, the new project folder and project file will be created, stored on the memory card. The new project will become the open project in the ACM. Accordingly, the AMC display will change to the Status Page and the system will be ready for use. As additional data and mix events are created, they be stored within this project in the ACM and on the memory card.

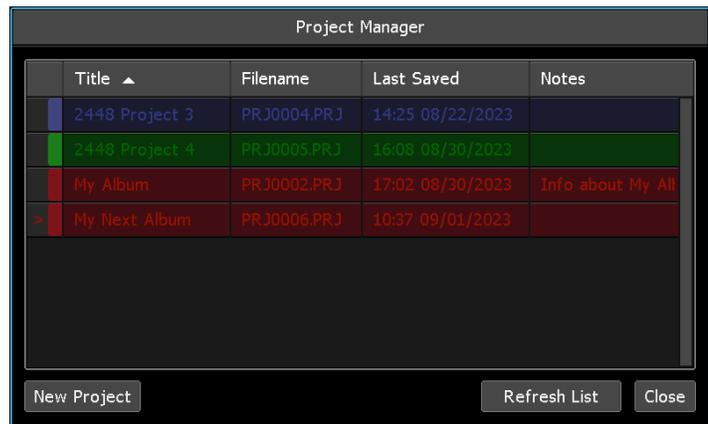
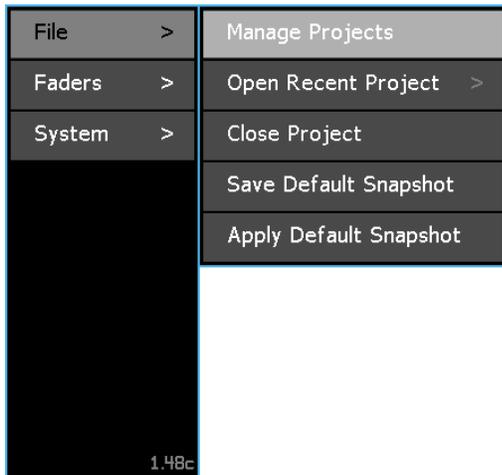


The new project will also be listed in the Project Manager window as the open project as indicated by an arrow symbol (>) in the left-hand column. The filename, date when the project folder was created, and notes about the project are displayed next to its Title.



### 7.7.2 Open An Existing Project

To open an existing project, open the Main menu and select "Manage Projects" from the File sub-menu. The Project Manager window will open.

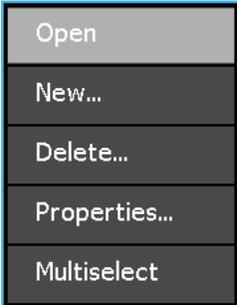
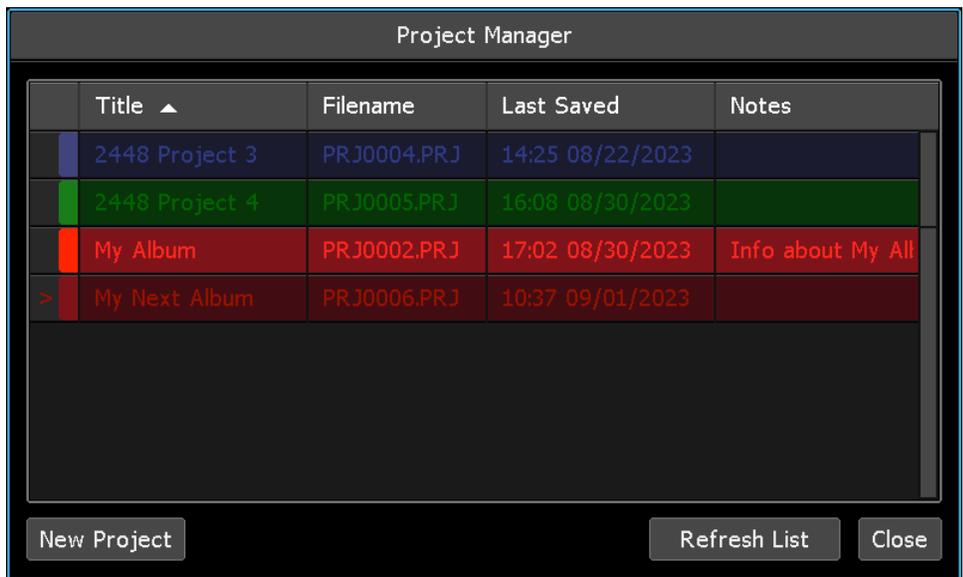


If the project to be opened is on the currently inserted memory card, it should be listed in the Project Manager window. If the project is on a different memory card, insert the needed memory card into the ACM and press the "Refresh List" button in the Project Manager window. This will load the stored projects into the ACM and Project Manager list.



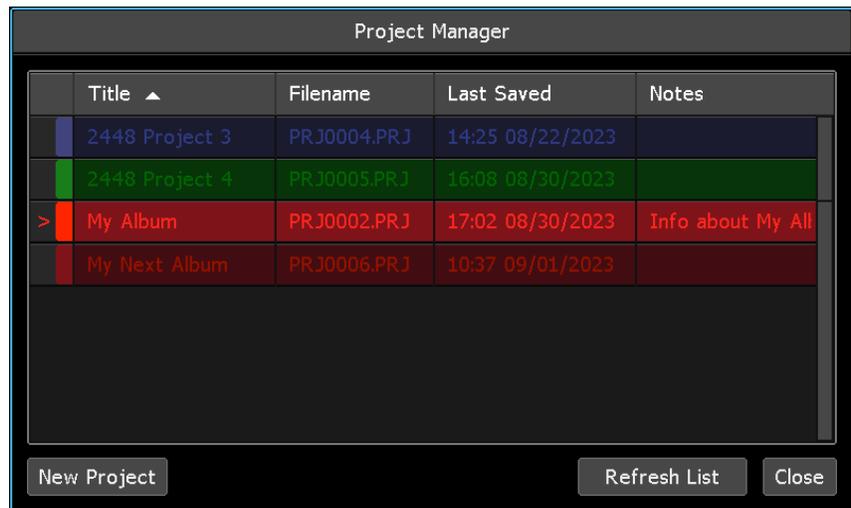
*NOTE: The Project Manager will only find projects that are saved in the PROJECTS directory on the memory card. To assure projects are found, it's recommended that projects are not moved or copied outside the PROJECTS directory.*

Press the project to be opened in the Project Manager window. This will open the Project Manager menu.



Select "Open" from the menu to open the selected project.

The Project Manager window will change to display the selected project as the open project, as indicated by an arrow symbol (>).



When a project opens, its data, songs, mixes (with groups) and snapshots are loaded into the ACM.

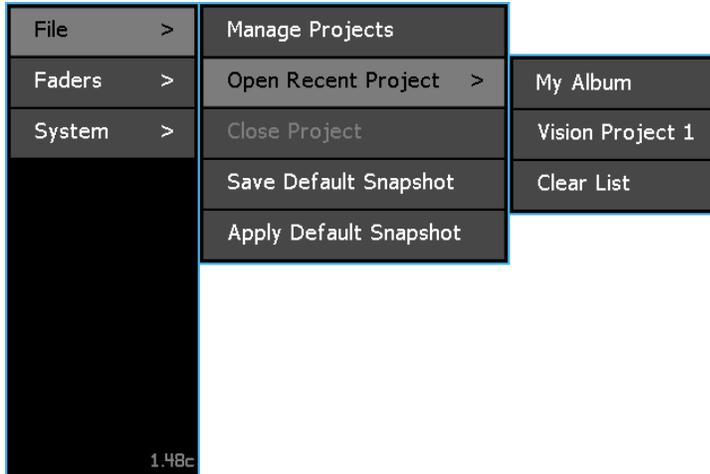
**Close**

Press "Close" to close the Project Manager and return to the Status page.

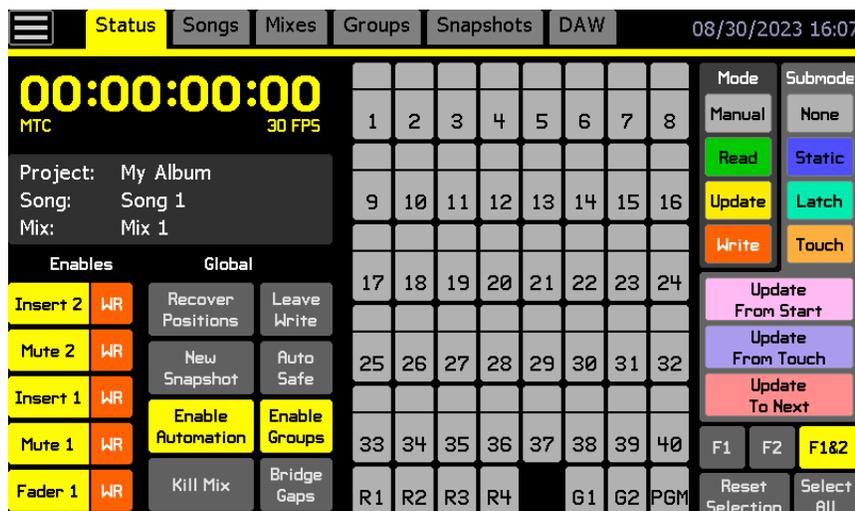
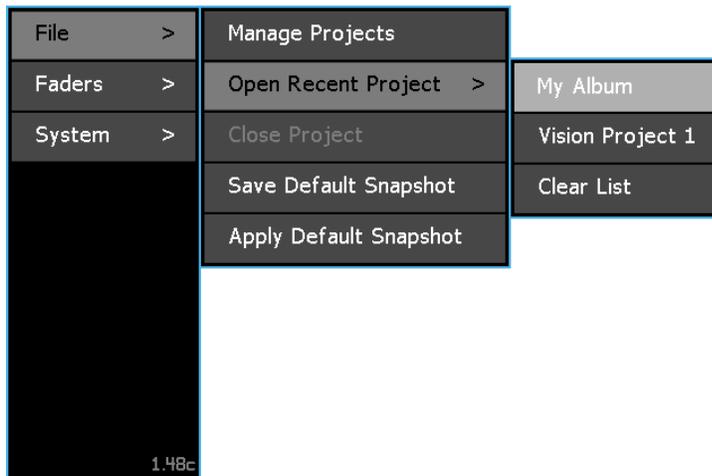
### 7.7.3 Open A Recent Project

As a convenience, a quick method of opening a recently used project is provided. This method skips all the needed steps to open an existing project and allows fast access to the last five (5) opened projects without the need for file navigation.

To reopen a recently used project, open the Main menu and select "Open Recent Project" from the File sub-menu. A submenu of recently used projects will open.

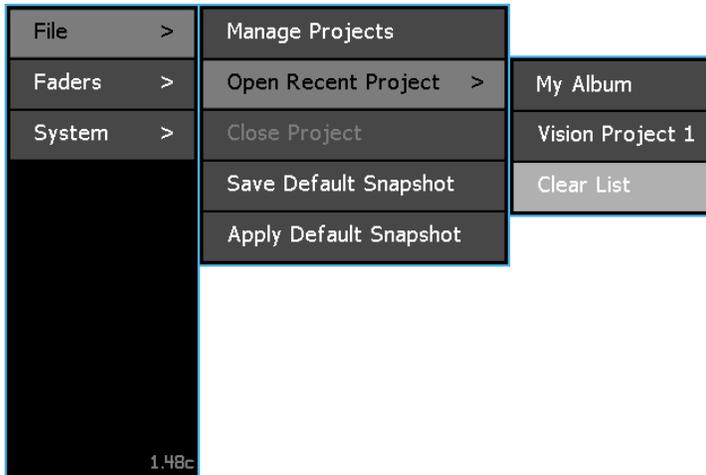


Press the project to be opened from the submenu list and it will become the current project.

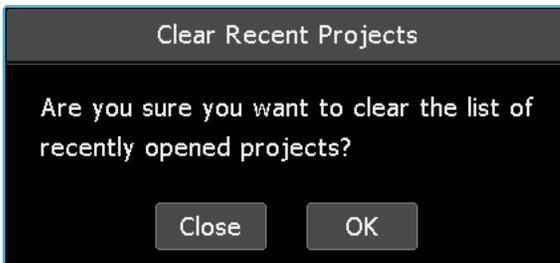


### 7.7.3.1 Clear Recent Projects List

To clear the list of recently used projects, open the Main menu and select "Open Recent Project" from the File sub-menu. A submenu of recently used projects will open.

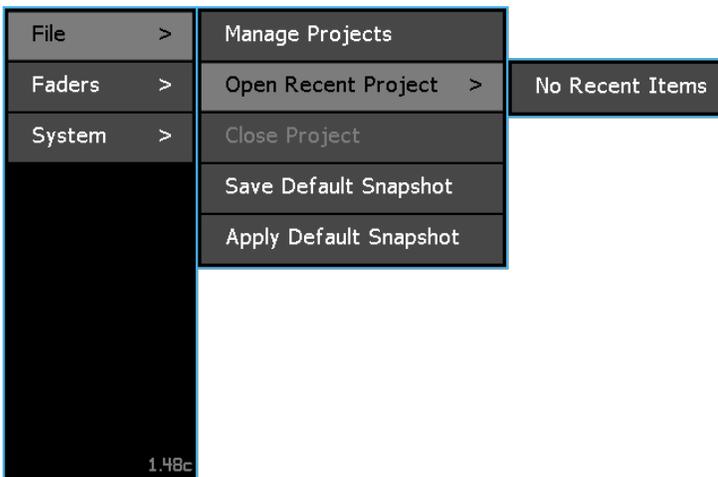


Press "Clear List" in the submenu list and the "Clear Recent Projects" dialog box will open.



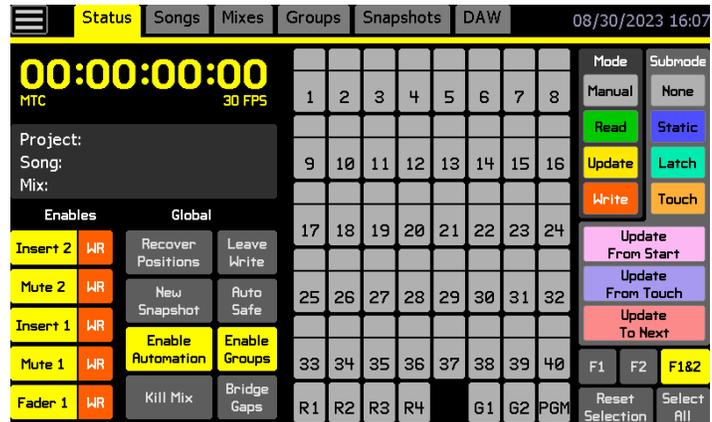
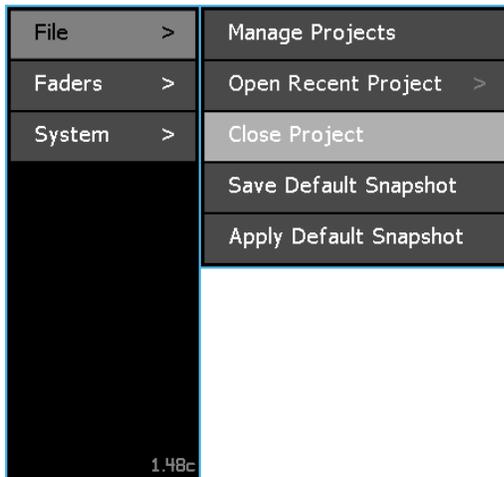
**OK** Press "OK" to clear the list of recently opened projects.

**Close** Press "Close" to cancel clearing the list and return to the Status page.



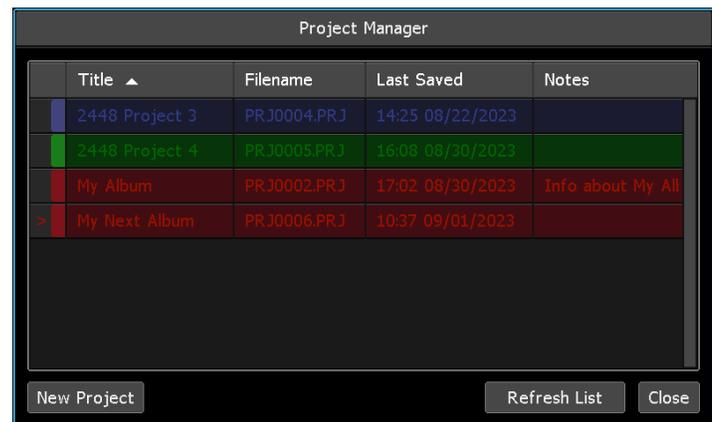
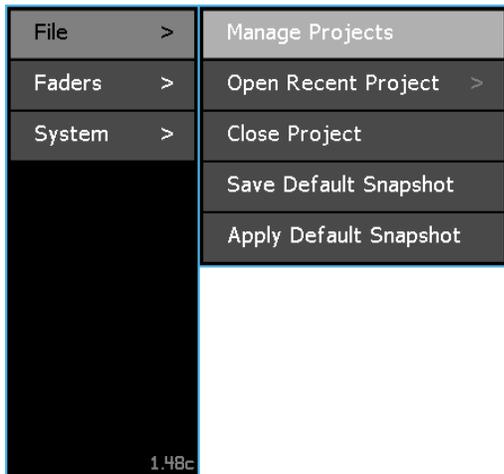
## 7.7.4 Close An Open Project

To close an open project, open the Main menu and select “Close Project” from the File sub-menu. The open project in the ACM will close and the ACM will assume the default state.

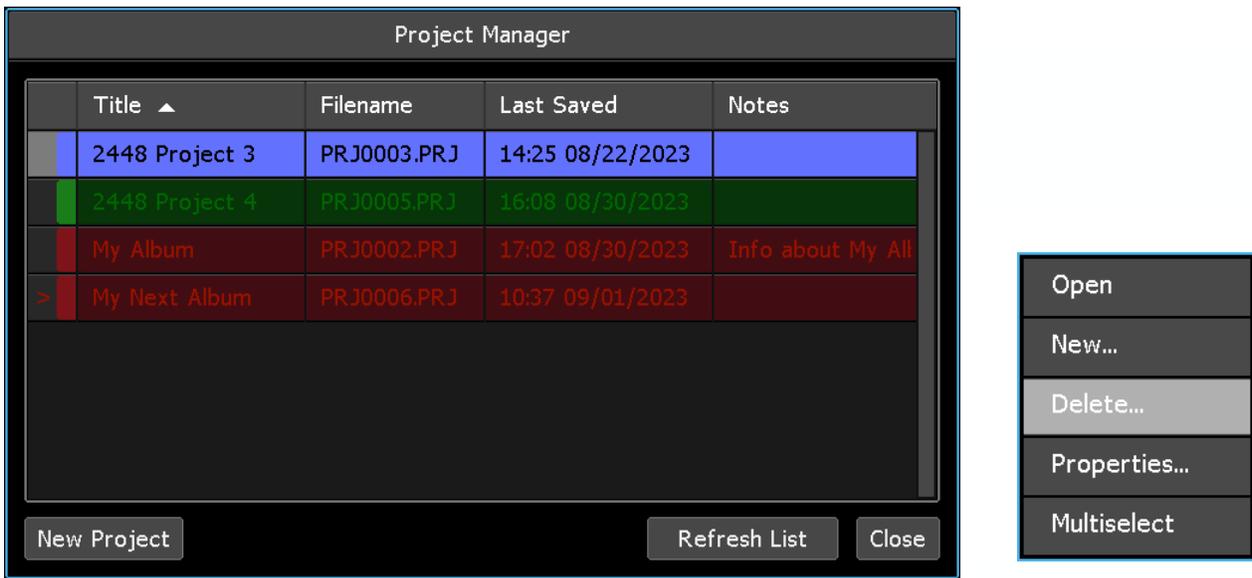


## 7.7.5 Delete a Project

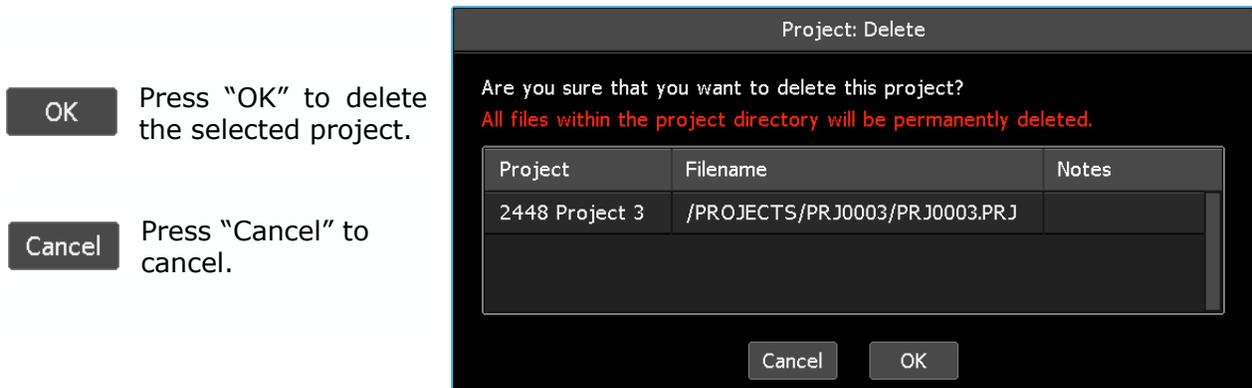
To delete an existing project, including its songs, mixes, groups, and snapshots, open the Main menu and select “Manage Projects” from the File sub-menu. The Project Manager window will open.



Press the project to be deleted in the Project Manager list. This will open the Project Manager menu.

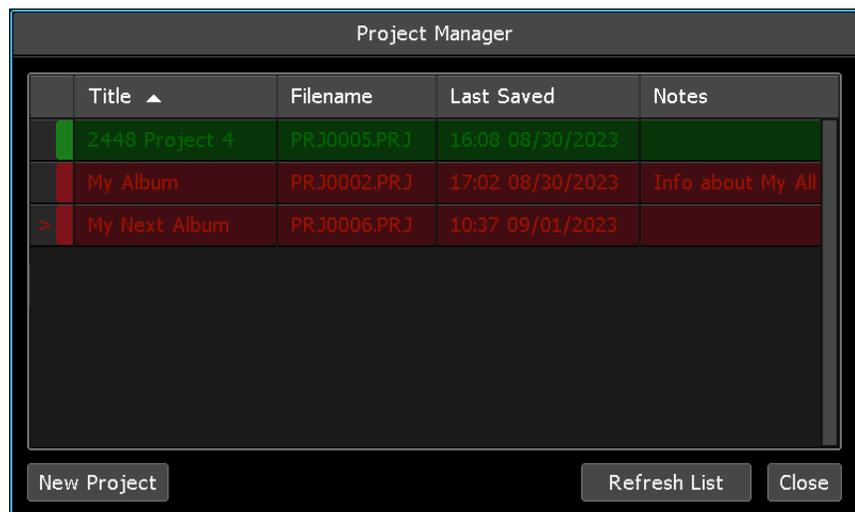


Select "Delete..." from the menu to open the "Project: Delete" dialog box.



**WARNING:** Deleting a project will also delete all of the information, songs, mixes (with groups), and snapshots within it. This action cannot be undone.

The Project Manager window will update to show the remaining projects, without the deleted project.

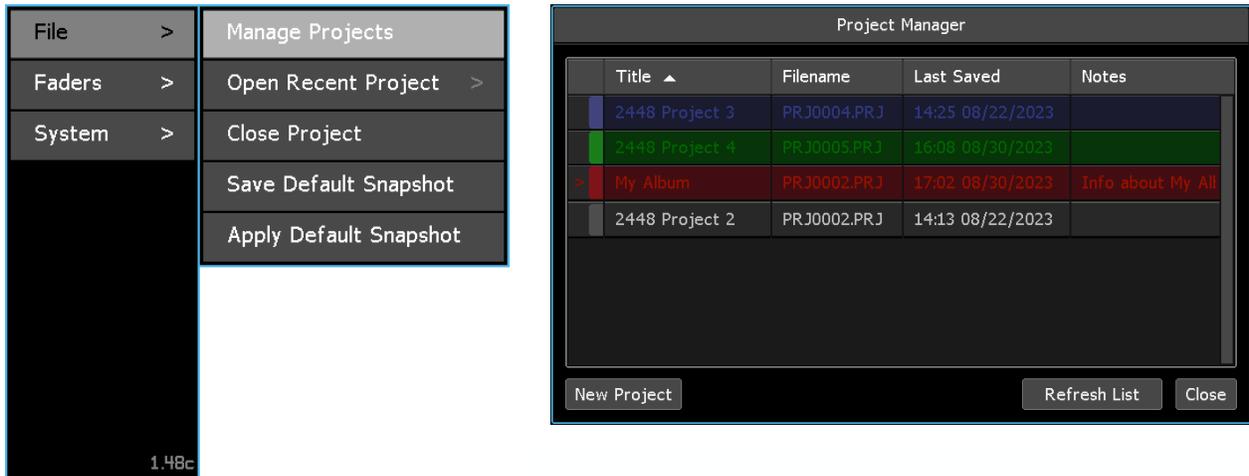


To delete two or more songs simultaneously refer to section [7.7.6 Project Multiselect](#).

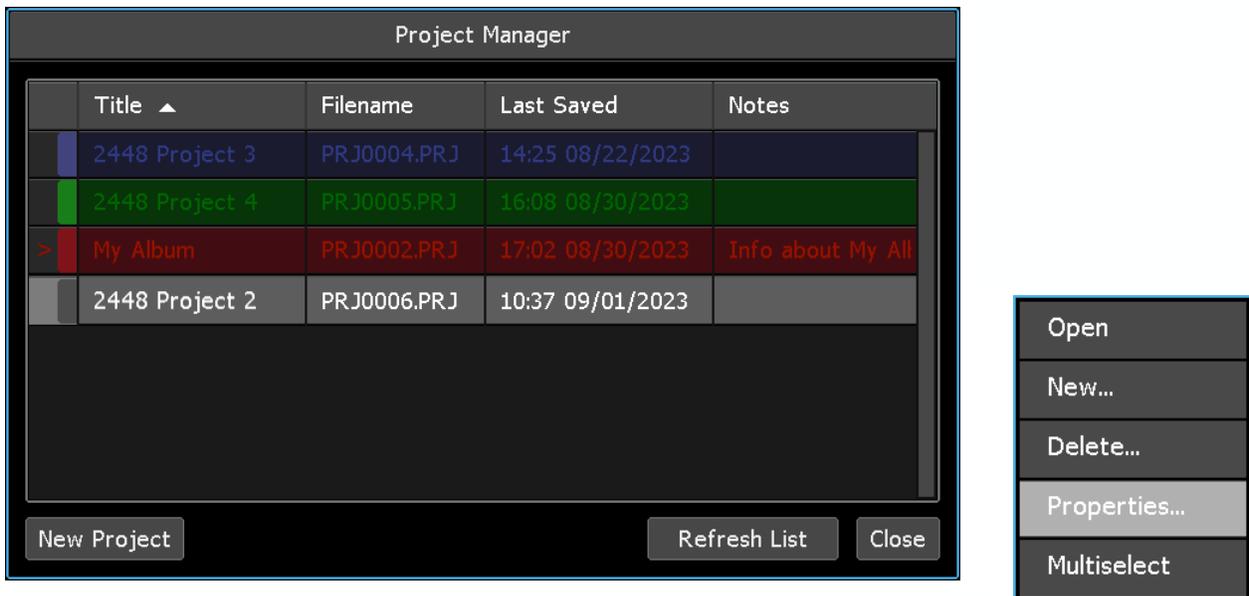
## 7.7.6 Project Properties

An existing project's title, notes, and color can be edited via the Project Manager window.

To edit a project's properties, open the Main menu and select "Manage Projects" from the File sub-menu. The Project Manager window will open.



Press the project to be edited in the Project Manager list. This will open the Project Manager menu.



Select "Properties..." from the menu to open the "Project Properties" dialog box.

Make the desired edits to the project title, notes, and/or color.

**OK** Press "OK" to apply the edited project properties.

**Cancel** Press "Cancel" to cancel.

The Project Manager window will display the edited project properties.

	Title ▲	Filename	Last Saved	Notes
	2448 Project 3	PRJ0004.PRJ	14:25 08/22/2023	
	2448 Project 4	PRJ0005.PRJ	16:08 08/30/2023	
	My Album	PRJ0002.PRJ	17:02 08/30/2023	Info about My All
>	My Next Album	PRJ0006.PRJ	10:37 09/01/2023	

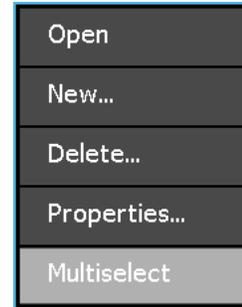
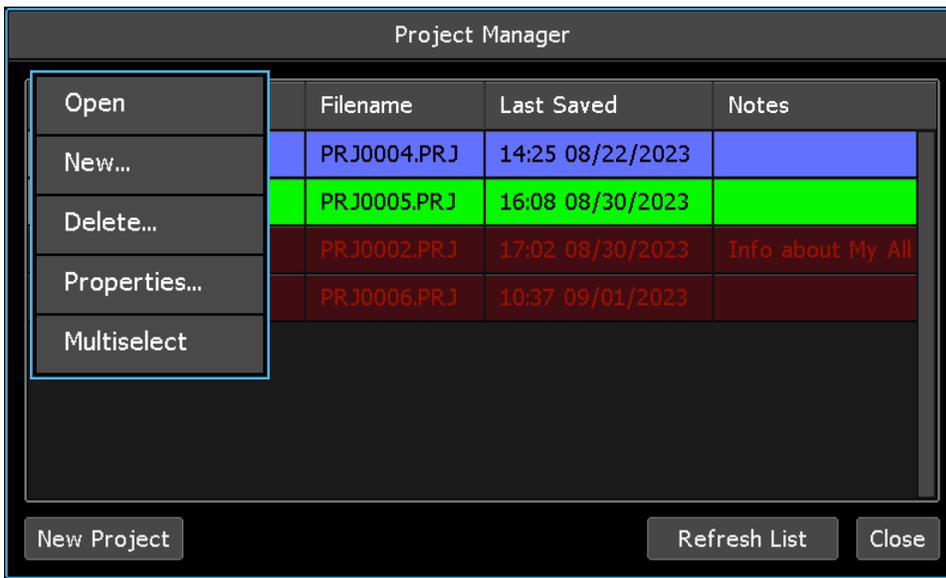
Buttons: New Project, Refresh List, Close

To edit the properties of two or more projects simultaneously refer to section [7.7.6 Project Multiselect](#).

### 7.7.7 Project Multiselect

Project Multiselect allows two or more projects to be deleted simultaneously.

To select two or more projects in the Project Manager window and press one of the projects to open the Project Manager menu.



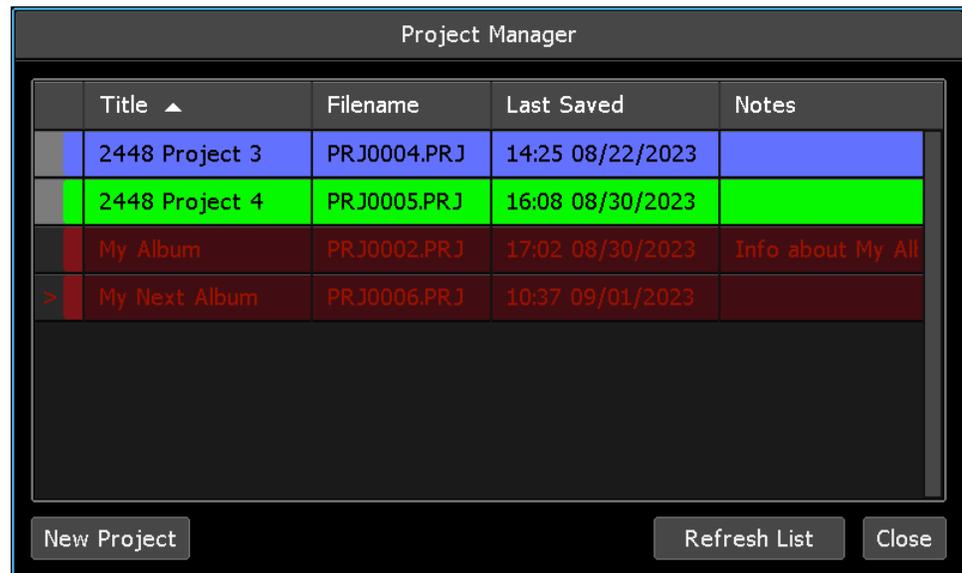
Select "Multiselect" from the menu.



The Multiselect icon will appear in the upper left-hand corner of the Project Manager window and start blinking to indicating the Multiselect is active.

The screen will return to the Project Manager allowing additional projects to be selected.

Select any additional projects to be edited or deleted.



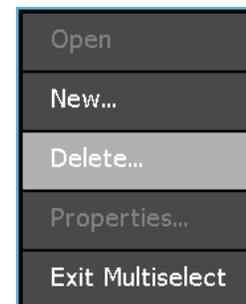
(Projects 3 and 4 are selected in the example above.)

*NOTE: Pressing and holding a project will select it and activate the Project Multiselect function, allowing immediate selection of additional songs without accessing the Project Manager.*



With Multiselect active, press the Project Manager multiselect icon to open the Project Multiselect menu. Select "Delete" to open the "Project: Delete" dialog box.

*NOTE: Multiselect does not apply to the "New..." Project Manager menu item, although the new group function is still accessible.*



OK

Press "OK" to delete the selected projects.

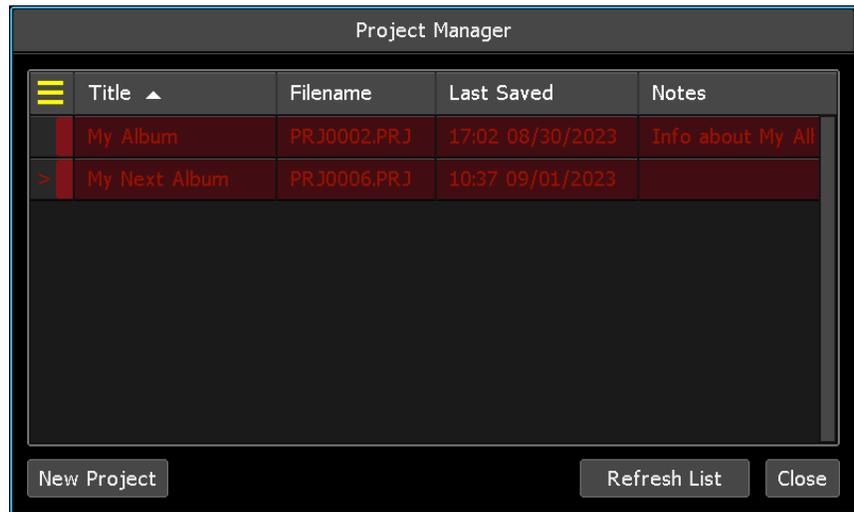
Cancel

Press "Cancel" to cancel.



**WARNING:** Deleting a project will also delete all of the information, songs, mixes (with groups), and snapshots within it. This action cannot be undone.

The Project Manager window will update to show the remaining projects, without the deleted projects.



Press within the Project Manager window to reopen the Project Manager menu. Select "Exit Multiselect" to leave the Multiselect function.

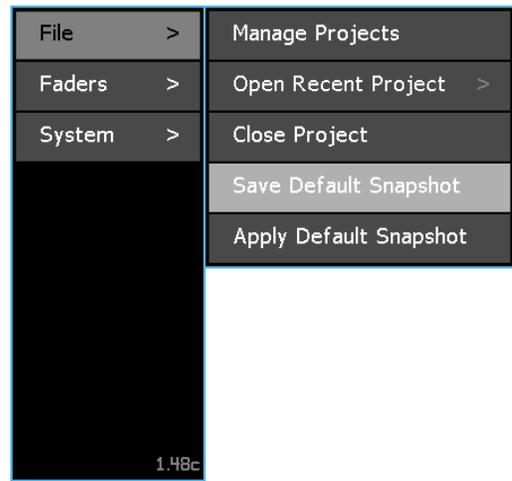
## 7.8 Save Default Snapshot

The physical positions of all automated faders and switches can be captured and stored in the ACM as the "Default Snapshot." On Vision and Vision+ consoles the Recall Settings are also stored in the Default Snapshot. The Default Snapshot can be used to store console positions that are most often used in production as a starting point for typical sessions.



To save the Default Snapshot, open the Main menu and select "Save Default Snapshot" from the File sub-menu. The "Snapshots: Create New" dialog box will open.

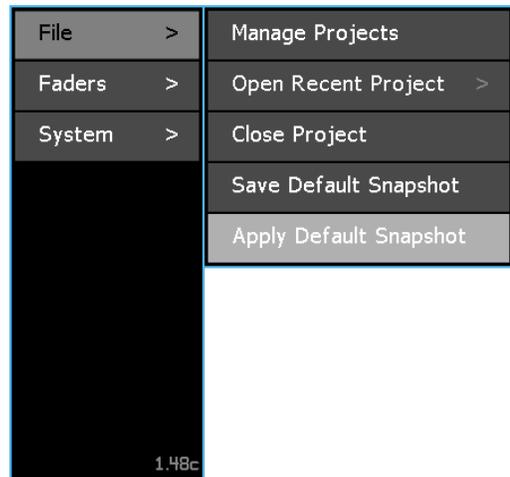
Refer to section [18.2.1 Create a New Snapshot](#) for detailed instructions for selecting faders and switches that will be stored in the ACM as the Default Snapshot.



## 7.9 Apply Default Snapshot



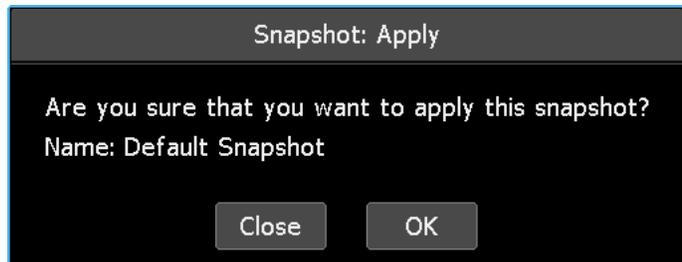
Console settings that are most often used in production can be stored in the "Default Snapshot" and used as a starting point for later sessions. The physical positions of all automated faders and switches stored in the Default Snapshot, including Recall Settings on all Vision consoles, can be applied to the console hardware directly from the File menu using the "Apply Default Snapshot" function.



To apply the Default Snapshot, open the Main menu and select "Apply Default Snapshot" from the File sub-menu. The "Snapshot: Apply" dialog box will open.

**OK** Press "OK" to apply the Default Snapshot.

**Close** Press "Close" to cancel.



Refer to section [18.2.2 Apply a Snapshot](#) for details regard applying snapshots.

*NOTE: The current positions of console controls included in the snapshot system will be lost when the Default Snapshot is applied and cannot be undone.*

## 8.0 Automation Concepts

To operate the *Final Touch Automation*<sup>®</sup> system and make full use of its features, the engineer must first understand some basic automation concepts and how the system components interact with one another. This section will explore these concepts and how to prepare the system for use. It is important for new users to read this entire section.

The 940, 940C, or 940L Automation Control Module (ACM) provides a suite of automation controls and parameters that are accessible via a touch-screen control panel display. All Vision consoles have two touch-screen displays. Channel faders, channel modules, Stereo Returns, Program Masters, and Group Masters all provide additional automation controls. Used as a system, the console hardware and software components allow the creation and modification of an automated mix.

A project file must be open to work with the mix in memory and the mixes in the mix tree. The project file (and therefore the mix tree) is stored to the memory-card and is considered to be non-volatile.

### 8.1 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 playback of written automation moves, but groups remain operational. It allows you to experiment with levels and build a basic, unchanging mix to use as a starting point for your automated mix.

To put the entire console in **Manual** mode, press "F1&2" to engage it (illuminated in yellow) and then press "Select All" to select all channels. Then press **Manual** to put all the automated controls in **Manual** mode.

	<b>F1&amp;2 (Fader 1 and 2):</b> Selects both channel sections for mode or submode assignment in the channel grid (Fader 1: Fader, mute, and insert, Fader 2: mute and insert)
	<b>Select All:</b> Selects all channels in the channel grid for mode or submode assignment
	<b>Manual:</b> Assigns <b>Manual</b> mode to the selected channels/sections in the channel grid

For faders and switches in **Manual** mode, the automation system does not interact with the hardware and mix passes can neither be written, altered, or played back. With all channels and sections in **Manual**, you can mix and experiment as much as you like without recording your changes or interference from the automation system.

Once you've arrived at a good starting point for your mix, a snapshot can be made to save the static positions of the faders and switches. This snapshot will be available for use at any time, like the start of an overdub or final mix session for example.

A mix should be created in **Manual** mode as the starting point for automated mixing. Once a good preliminary mix is created in **Manual** mode, the automation system can be engaged at a convenient point.

*NOTE: A good preliminary mix should be created in **Manual** mode before creating an automated mix so adequate initial positions are established for the first automated mix pass. This is best done before a new project or song is created so the initial positions from the preliminary manual mix are incorporated in the first mix pass in the mix tree of the new project. Alternately, initial positions can be set or reset at the beginning of a mix using **Static** and **Write**. See "Resetting Initial Positions" later in this section.*

## 8.2 Mix Passes

A "mix pass" or "mix" is simply a file containing time-stamped mix events for fader and switch changes throughout the entire length of the recording. Whenever timecode is started, the channels in **Read** or **Update** will playback the previously recorded moves in that mix at the proper time.

The ACM can contain only one mix pass at a time. This mix is known as the "current mix" or the "active mix" and it is the one that will be played back in **Read** or **Update** mode. Any mix pass in the mix tree can be "made current" at any time by pressing its name and selecting "Make Current" from the Mix menu.

If changes are made to a mix pass using hardware or software interfaces, the new moves are processed and a new mix is added to the mix tree when timecode is stopped or an edit is performed. The new pass automatically becomes the "current mix" so it can be quickly reviewed or further modified. A new "mix file" is also created and added to the current project folder as a .VMX file.

In addition to using the hardware interfaces to alter mixes, the Mix menu provides an additional suite of tools for editing and working with mixes and mix data. Performing additional moves and/or edits to an existing mix will add new mix passes to the mix tree without deleting the originals. Because of this method, the manipulation of mixes can be performed in a nondestructive manner and numerous levels of "undo" are provided using the mix passes stored in the mix tree.

If the "Kill Mix" function is engaged before timecode is stopped, the end-of-pass processes are suppressed so any changes are discarded and a new mix pass is not created in the mix tree.

*NOTE: Group assignments are made and stored within mix passes. This means that when an existing mix is loaded from the mix tree, all of the groups are restored exactly as they were when the mix was saved. If you load a different mix, the groups within that mix are restored and may be different. If groups were created in later mixes, they will not be included in earlier mixes.*

## 8.3 Initial Mix Basis

When a new project is created via the File menu, an "initial mix" is created and placed in the mix tree. The "Basis" for this mix must be determined in the "New Project" dialog box when the new project is created. The "Basis" is the data for all automated faders and switches that is used to create the "initial mix." This data is either the "initial positions" of all automated controls or an existing mix.

Select the "Basis" for the new project. When a new project is created an "initial mix" is created as part of the project. The "Basis" is the data (automated fader and switch positions) that are used to create this initial mix. "Current Positions" is the default basis for new projects.

The following data sets can be selected as the basis for the initial mix:

- **Current Positions:** The current physical positions of automated faders and switches
- **Current Mix & Groups:** The current active mix in the ACM (with moves and groups)
- **Empty Mix:** Physical positions of automated faders will be fully down and no mutes and switches will be engaged
- **Default Snapshot:** The contents of the stored Default Snapshot will be applied



To select the desired "Basis" scroll to highlight it.

### 8.3.1 Initial Positions

The static positions of all automated controls are recorded as the "initial positions" for the initial mix in the mix tree if "Current Positions" or "Empty Mix" is selected as the "Basis" when a new project is created. These "initial positions" serve as a starting point for an automated mix.

"Initial positions" are written for the entire duration of timecode, from 00:00:00:00 to 23:59:59:2X, and essentially become an "initial mix snapshot." Channels in **Read** or **Update** will play back the "initial positions" in the initial mix (Mix 1) no matter where timecode is started. These positions will be the starting point for subsequent fader and switch moves.

If these positions are changed with any channels in **Manual** mode, the faders and switches will return to the "initial positions" of Mix 1 when switched back to **Read** or **Update**. So, the changed positions must be updated as the "initial positions" using the **Static** submode if they are to be used as a starting point for subsequent automated mixes. ("Recover Positions" can restore previous positions if needed.)

If no changes to the "initial positions" are written, they will be used throughout the mix. If changes to faders and/or switches are written to automation, they will be played back at the timecode locations at which they were recorded. If playback is started from an earlier location than moves recorded in previous passes, the "initial positions" will be replayed by the automation system and held until the playback reaches the first recorded move. Depending on how the mix pass was written, the automation control will typically return to the previously written positions after automated moves are written. After the last written move, this will be the initial positions, unless the last move is written to the end of timecode.

### 8.3.2 Current Positions

If "Current Positions" is selected as the "Basis" when a new project is created, the current physical positions of all automated faders and switches are recorded as the "initial positions" for the project's initial mix.

Using "Current Positions" allows the engineer to build a good preliminary static mix in **Manual** mode before creating the new project and then use these positions as the starting point for automated moves. When using this method, it's important to remember to select "Current Positions" as the Basis when the new project is created. Doing otherwise will result in the loss of the current positions of the automated controls when the project is created.

### 8.3.3 Current Mix & Groups

If “Current Mix & Groups” is selected as the “Basis” when a new project is created, the current mix in the ACM will be copied along with its groups to the new project and used as its initial mix.

Using “Current Mix & Groups” allows the engineer to use existing mix data in a new project. This can be useful when creating multiple versions of a mix of the same audio or to create a project with a “clean” mix tree that contains only the final mix.

It’s important to remember that selecting “Current Mix & Groups” as the Basis when the new project is created will result in the loss of the current positions of the automated controls when the project is created.

### 8.3.4 Empty Mix

If “Empty Mix” is selected as the “Basis” when a new project is created, the physical positions of automated faders will be fully down and no mutes and switches will be engaged. These “Empty Mix” positions will be recorded as the “initial positions” for the project’s initial mix.

It’s important to remember that selecting “Default Positions” as the Basis when the new project is created will result in the loss of the current positions of the automated controls when the project is created.

### 8.3.5 Default Snapshot

If “Default Snapshot” is selected as the “Basis” when a new project is created, the physical positions of all automated faders and switches stored in the ACM as the “Default Snapshot” will be recorded as the “initial positions” for the project’s initial mix. On Vision and Vision+ consoles the Recall Settings are also stored in the Default Snapshot. The Default Snapshot can be used to store console positions that are most often used in production as a starting point for typical sessions.

### 8.3.6 Resetting Initial Positions

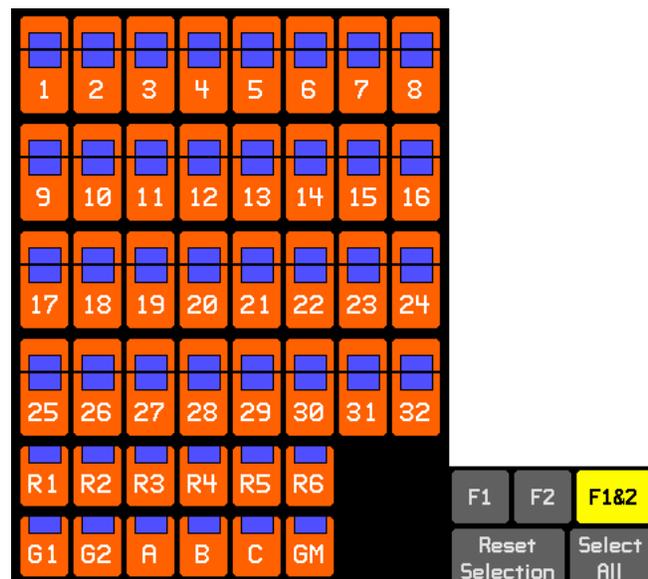
Initial positions can be reset console-wide or on individual channels/sections using the “**Static**” submode and **Write** mode. Used in combination, this will write the last position of the automated controls to all timecode locations, essentially resetting their initial positions.

To set new static positions (initial positions), select the desired channels and sections in the channel grid on the Status page.

**Static** Press “**Static**” to put the selected channels/sections into the **Static** submode.

**Write** Press “**Write**” to put the selected channels/sections into **Write** mode.

Start timecode and set the faders and switches on the selected channels/ sections as needed.



When timecode is stopped, the physical positions of the selected automated controls will be recorded to all timecode locations in a new mix. This new mix will be added to the mix tree and will become the current mix.

### 8.3.7 Recover Positions

If a mix is created in **Manual** mode as the starting point for automated mixing, but is not saved as part of a mix, all automated faders and switch positions will resume their last valid positions stored in the current ACM mix when placed in **Read** or **Update** from the ACM, replacing the new mix positions. This will result in the loss of the new mix positions. However, the altered fader and switch positions from all sections of all channels are automatically stored in a temporary buffer whenever **Read** or **Update** is entered from **Manual** or **Write**. The fader positions stored in this temporary buffer can be recovered by pressing the **Recover Positions** button.



**Recover Positions:** Changes the automation mode to **Manual** and moves automated faders and switches to the positions stored in the temporary buffer.

Additionally, positions are saved whenever the **Recover Positions** button is pressed. So if positions were recovered and the automated faders or switches (which are now in **Manual**) are moved, and **Recover Positions** is pressed again, these faders and switches will jump back to their previously saved positions. Press **Recover Positions** again and these faders and switches will jump back to the positions they had just moved to manually.

Positions will also be recovered if **Read** or **Update** is entered and then immediately returned back to **Manual** or **Write** before running timecode. Once timecode has run, going back into **Manual** or **Write** will not recover positions, but the **Recover Positions** button will still work.

The **Recover Positions** button is greyed out until there are positions available to be recovered.

*NOTE: Mode changes made on fader modules are not recognized by the Recover Positions function. Accordingly, individual faders/sections that aren't in **Manual** will not recover when the **Recover Positions** button is pressed.*

## 8.4 End-Of-Pass Processing

When any changes are written during an online pass, "end-of-pass" processes are performed when timecode playback is stopped. These processes include:

- Processing of all data transitions, updating the current mix pass with the new data
- Creation of a new mix in the mix tree and making it the current mix
- "**Auto Safe**" functions (if engaged)
- "**Bridge Gaps**" functions (if engaged)

Nothing is written to the ACM memory until timecode is stopped.

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 the preset glide rate set in the song properties.

*NOTE: Watch out when looping! Many engineers will want to loop the transport over a certain portion of the media, 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. This time is typically a few seconds, but it can grow slightly with larger mix files. During this time, the ACM will not chase timecode and will not record moves. When using a DAW with instant locates and looping,*

*be sure to build in enough pre-roll to allow the ACM time to lock to the incoming timecode.*

End-of-pass processes may be modified using the following global functions:

### **Kill Mix**

**Kill Mix**: Suppresses all 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 toggled ON and off anytime while timecode is running. If **Kill Mix** is engaged when timecode is stopped, a new mix will not be created. Any moves written during the pass will be discarded.

### **Auto Safe**

**Auto Safe**: All channels in **Write** automatically change to **Update** when timecode is stopped. **Auto Safe** can be engaged at any time.

### **Bridge Gaps**

**Bridge Gaps**: Allows positions and modes from the point when timecode is stopped to be applied up to a later timecode location. The transport must be stopped, **Bridge Gaps** engaged, and the transport restarted at a later location without rewinding.

## 9.0 Function Enables

Several functions of the automation system can be globally “enabled” and “disabled” during operation. Playback and write enables allow automated mix events to be written and played back selectively. Enables are also provided to engage and disengage other global automation functions such as **Leave Write** and the alternate end-of-pass processes mentioned in the previous section.

The ability of the automation controls to write and playback automated mix events is determined by the playback enables and the **WR** write enables on the Status page. These enables are global and work console-wide.

The yellow playback enables can be disengaged in order to suspend the automated playback of previously recorded moves for the selected set of controls.

The orange write enables (**WR**) can be disengaged to protect previously written automation moves for the selected controls from being overwritten.

Enables	
Insert 2	WR
Mute 2	WR
Insert 1	WR
Mute 1	WR
Fader 1	WR

There is a playback and write enable (**WR**) for each of the automation controls:

- **Ins 2**: Small Fader insert
- **Mute 2**: Small Fader mute
- **Ins 1**: Large Fader, Stereo Return, and Master fader inserts
- **Mute 1**: Large Fader, Stereo Return, Group mute
- **Fdr 1**: Large Fader, Stereo Return, Group, and Master faders

All playback and write enables are engaged by default when the system is powered up or rebooted.

### Enable Automation

**Enable Automation**: Globally enables all automation functions including playback/write enables and synchronization to the incoming timecode when engaged. Press **Enable Automation** to engage or disengage all automation functions. Disabling automation will place the entire console in **Manual** and suspend all automated controls when the media is being played back. Automation is enabled by default.

*NOTE: Groups and snapshots still function with automation disabled. However a project needs to be loaded to save snapshots or create groups.*

### Enable Groups

**Enable Groups**: Enables the control groups within the current mix. Press **Enable Groups** to engage or disengage all of the groups in the current mix. Disabling groups will suspend all current groups. Groups are enabled by default.

### Leave Write

**Leave Write**: Enables a level matching function when writing or updating fader moves. **Leave Write** is not enabled by default. Refer to the **Leave Write** section later in this manual for details about using this function.

# 10.0 Timecode and Synchronization

The recorded media to be mixed (typically on DAW) must be synchronized with the automation system so recorded automation moves are played back in time. SMPTE timecode (LTC) or MIDI timecode (MTC) is used for synchronization.

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
- "Bridge Gaps" uses timecode to know the transport has been moved forward
- Setting timecode ranges for offline data trimming

The current timecode address, source, and frame rate are displayed on the Status page as follows:



For synchronization to take place, automation must be enabled. Press "Enable Automation" to engage synchronization with the incoming timecode. This function is engaged by default. Disengaging automation will suspend synchronization and automation playback and write enables when the media is being played back.

The timecode frame rate is determined by the frame rate of the open project.

The system can use six (6) SMPTE timecode frame rates:

- 23.976
- 24
- 25
- 29.97
- 29.97 drop
- 30 (default)

The project frame rate is set at the time a new project is created. The frame rate of the current or an existing project cannot be changed after it is created.

## 10.1 Timecode Source

To set the timecode source, open the Main menu and select the "General Configuration" sub-menu from the "System" menu item. The "General Configuration" dialog box will open.

*NOTE: Timecode frame rate is determined by the project file and is set when a project is created. The frame rate cannot be changed for existing projects.*

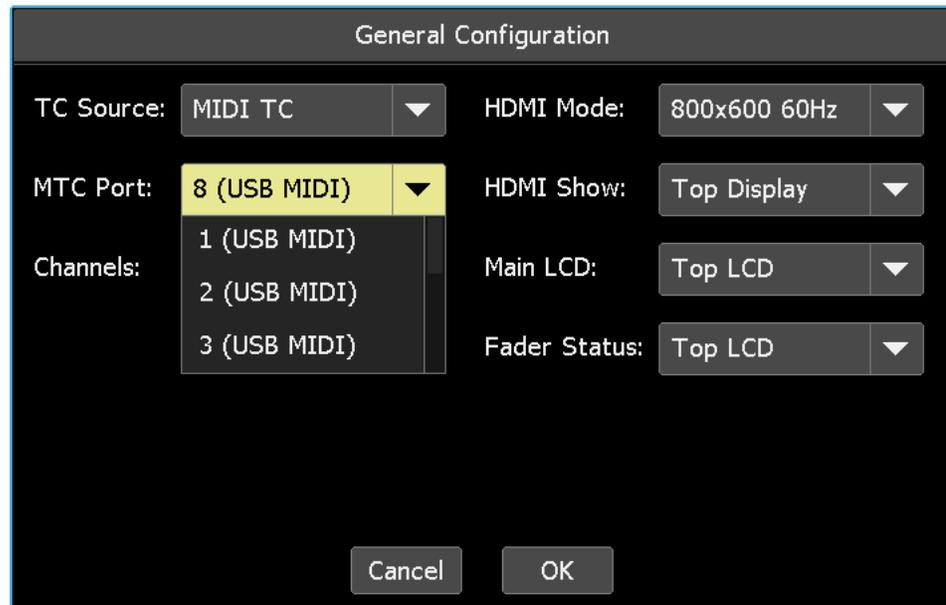
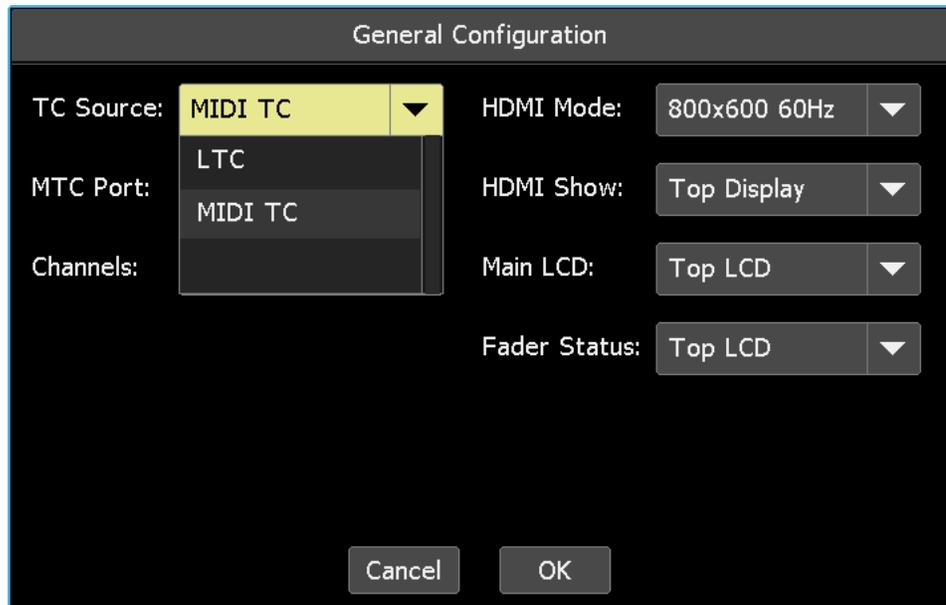
Select the desired source for timecode from the "TC Source" pull-down menu. The menu choices are as follows:

- **LTC:** SMPTE Longitudinal timecode
- **MIDI TC:** (MTC) MIDI timecode

If LTC is selected, the incoming SMPTE timecode will be received at the SMPTE LTC XLR interface connector.

If MIDI TC is selected, incoming MIDI timecode will be received on the selected MTC Port.

MTC is received at the selected USB-B MIDI port or MIDI IN port.



# 11.0 Global Functions

When any changes are written during an online pass, nothing is written to the ACM memory until timecode is stopped. "End-of-pass" processes are performed when timecode playback is stopped. Normal "end-of-pass" processes include:

- Processing of all data transitions, updating the current mix pass with the new data
- Creation of a new mix in the mix tree and making it the current mix

End-of-pass processes may be modified using four (4) "Global Functions:"

- **Bridge Gaps**: Allows positions and modes from the point when timecode is stopped to be applied up to a later timecode location
- **Leave Write**: Level matching function for seamless data transitions
- **Auto Safe**: Sets all channels in **Write** to **Update** when timecode is stopped
- **Kill Mix**: Suppresses all end-of-pass processes when timecode is stopped

In addition to the Global Functions that alter end-of-pass processes, the **Leave Write** Global Function provides a level matching function that facilitates seamless data transitions when touching up fader moves.

A **New Snapshot** button is also included to enable quick access to the "Snapshot: Create New" dialog box.

## 11.1 Bridge Gaps

### Bridge Gaps

**Bridge Gaps** saves time by avoiding the need to write the same control positions over an extended section of a mix in real-time. **Bridge Gaps** allows the control positions and automation mode from the point when timecode is stopped to be applied up to a later timecode location and then used from there.

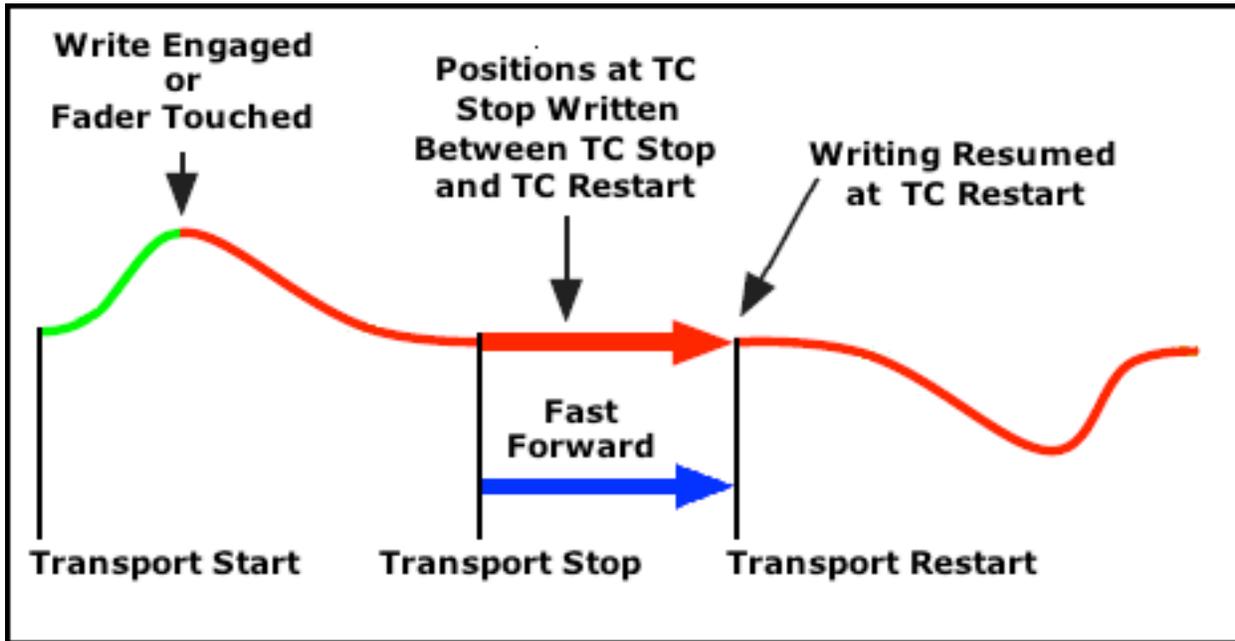
**Bridge Gaps** allows the user to move quickly through mixes by quickly writing control positions over spans of time by fast-forwarding and applying automation data between when the transport was stopped and started again. It can be used to perform complicated edits incrementally, starting and stopping 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.

**Bridge Gaps** only works for faders and switches in **Write** when timecode stops. The **Bridge Gaps** function will not work if playback is restarted from an earlier timecode location than the initial stopping point.

To use **Bridge Gaps**, run timecode and mix with controls in **Write** up to a point where the current fader and switch positions can be used over the next section of the mix. Press **Bridge Gaps** and stop the transport. Restart the transport at a later timecode location where the positions are still needed. With **Bridge Gaps** engaged, all intervening mix events will be written over, as if timecode had never stopped at all. The control positions when timecode was stopped will "bridge the gap" between the timecode stop and restart locations. **Write** mode will also be retained over the gap and writing will continue from the restart position.

In other words, when **Bridge Gaps** is engaged, the positions of automation controls in **Write** will be "held" or "remembered" when timecode is stopped. If timecode is restarted at that point or a later timecode address, those positions will be written between the stopping point and the later starting point. Writing will resume at the point where timecode was restarted. The result is the "gap" between the previous stopping point and later starting point is "bridged" or filled-in with the positions the controls were in at the stopping point.

## Bridge Gaps



*NOTE: When **Bridge Gaps** is used, all previously written moves between the timecode stop and restart locations will be replaced on channels/sections in **Write**.*

### 11.2 Leave Write

#### Leave Write

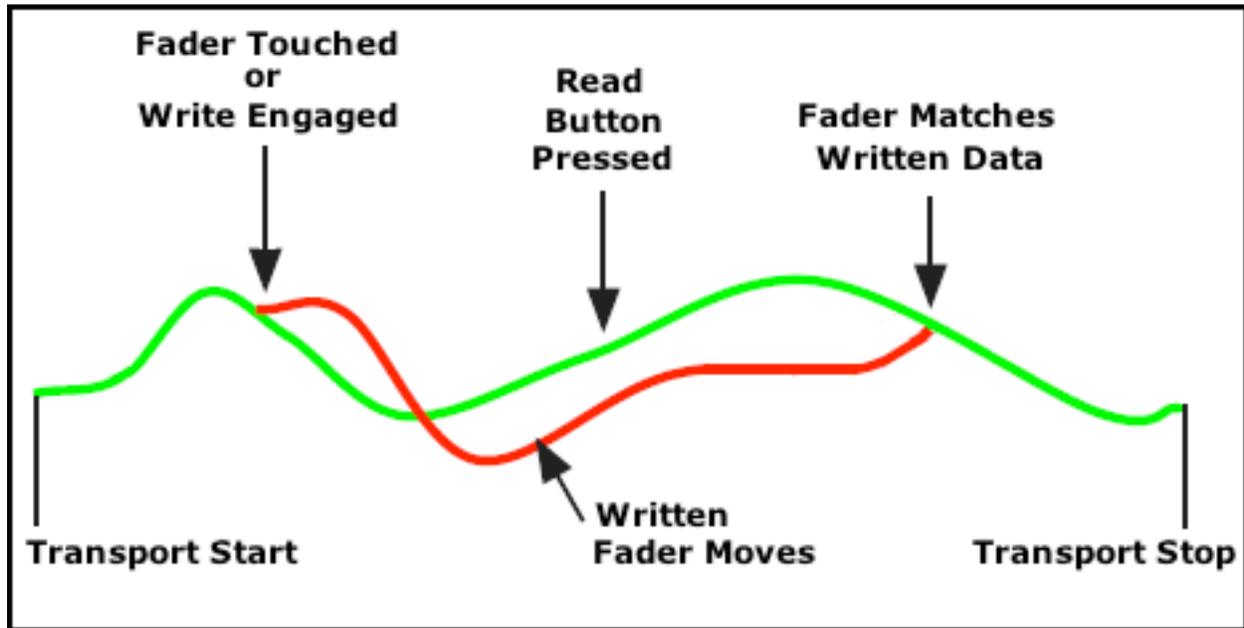
**Leave Write** enables a level matching function when writing or updating fader moves. **Leave Write** is useful for editing fader moves when it's desired to change a recorded move and match seamlessly back up with the existing mix events. This will avoid possible jumps in fader position and the related jumps in level. **Leave Write** helps assure precision data transitions and smooth fader movement.

**Leave Write** is not enabled by default.

**Leave Write** enables the automation system to automatically switch from writing to playback (**Update** or **Write** to **Read**) when the position of the fader matches the previously recorded position

To use **Leave Write**, press **Leave Write** to enable the function after the desired fader(s) are in **Update** or **Write**. Start timecode playback and move the fader away from its written position. Press READ on the fader module. The mode LEDs will "shimmer" to indicate the fader is in **Leave Write**. One of the fader "**NULL** indicators" (up or down arrows) will illuminate to indicate which direction to move the fader to match the previously recorded level. 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** mode.

## Leave Write



### 11.3 Auto Safe

#### Auto Safe

**Auto Safe** helps safeguard the automation moves that were just written in the previous pass. When **Auto Safe** is engaged, all channels/sections in **Write** will automatically change to **Update** when timecode is stopped. This function helps prevent accidental erasure of mix events. **Auto Safe** can be engaged at any time.

### 11.4 Kill Mix

#### Kill Mix

**Kill Mix** discards the current mix pass if engaged prior to timecode being stopped. **Kill Mix** suppresses all end-of-pass processes and a new mix is not created. Any changes made during the current automation pass are discarded.

**Kill Mix** can be toggled ON and off anytime while timecode is running, but if engaged prior to timecode being stopped, any moves written during the pass will be discarded and a new mix will not be created.

### 11.5 New Snapshot

#### New Snapshot

**New Snapshot** will open the "Snapshot: Create New" dialog box, allowing quick snapshot creation.

*NOTE: Refer to section [18.2.1 Create a New Snapshot](#) for details about creating a snapshot.*

# 12.0 Automation Modes

Automation “modes” and “submodes” determine how the system records and plays back control moves. Modes dictate basic functionality. Submodes allow the value of a control position to be applied to the mix in a variety of ways and will be explained in the next section of this manual.



There are four (4) primary automation modes:

**Manual:** No automation control, record or playback

**Read:** Playback of recorded moves

**Update:** Records fader moves only when pressed; Records switches when engaged

**Write:** Records moves whenever engaged, replacing existing mix events

Automation modes govern how and when moves made to faders and switches are recorded and played back. These modes may be assigned to any channel at any time with few restrictions. Different channels may be in different modes at the same time.

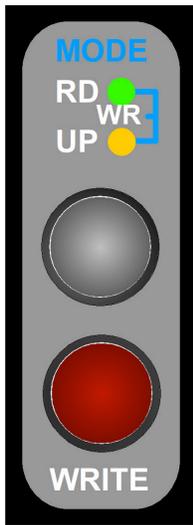
**Manual, Read, Update, and Write** can be assigned to channels/sections individually, as a group, or on a global basis by highlighting the desired channels/sections selectors in the channel grid and using the “Mode” buttons on the Status page.



Modes can also be assigned on individual channels, Stereo Returns, and Master faders using the MODE buttons on the faders (READ (Manual), UPDATE, WRITE).

The function and operation of each automation mode is described in the subsequent sections. The buttons and channel grid indications on the Status page are shown for each mode. The automation buttons and LED indicators on the faders are also shown.

Original Vision faders are equipped with two buttons for **MODE** assignment.



The green LED (RD) indicates READ mode. The yellow LED (UP) indicates UPDATE mode. Both LEDs (WR) indicates WRITE mode.

The grey button cycles READ and UPDATE. Holding the grey button down for a few seconds will engage MANUAL mode.

The red button engages WRITE mode when in any other mode. A press of the grey button will disengage WRITE mode and put the fader in UPDATE.

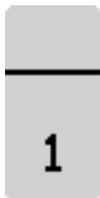
## 12.1 Manual Mode

Use **Manual** mode for tracking, manual mixing, setting the initial positions for a new project, or suspending automation control for experimentation during an automated mix.



**Manual:** The channel is disconnected from automation

- Automation controls will not record new moves
- Automation controls will not play back previously recorded moves



**Manual** mode can be assigned to channels individually, as a group, or on a global basis by highlighting the needed channels/sections in the channel grid and pressing "**Manual**" on the Status page.

- Channels/sections in **Manual** turn grey in the Status page channel grid



**Manual** mode can be engaged from the fader for the selected channel section(s) by holding READ for about two seconds.

- None of the MODE buttons are illuminated when **Manual** is engaged

*NOTE: Groups will remain active when **Manual** mode is selected. Channels in **Manual** will still function as group masters or group members if so assigned.*

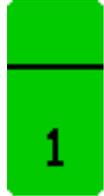
## 12.2 Read Mode

Use **Read** to play back existing moves while building an automated mix. **Read** should also be used when printing a final mix.



**Read:** Previously recorded automation moves are played back

- Faders and switches will move to their recorded positions for each timecode address
- Automation controls in **Read** will not record new moves



**Read** mode can be assigned to channels individually, as a group, or on a global basis by highlighting the needed channels/sections in the channel grid and pressing "**Read**" on the Status page.

- Channels/sections in **Read** turn green in the Status page channel grid



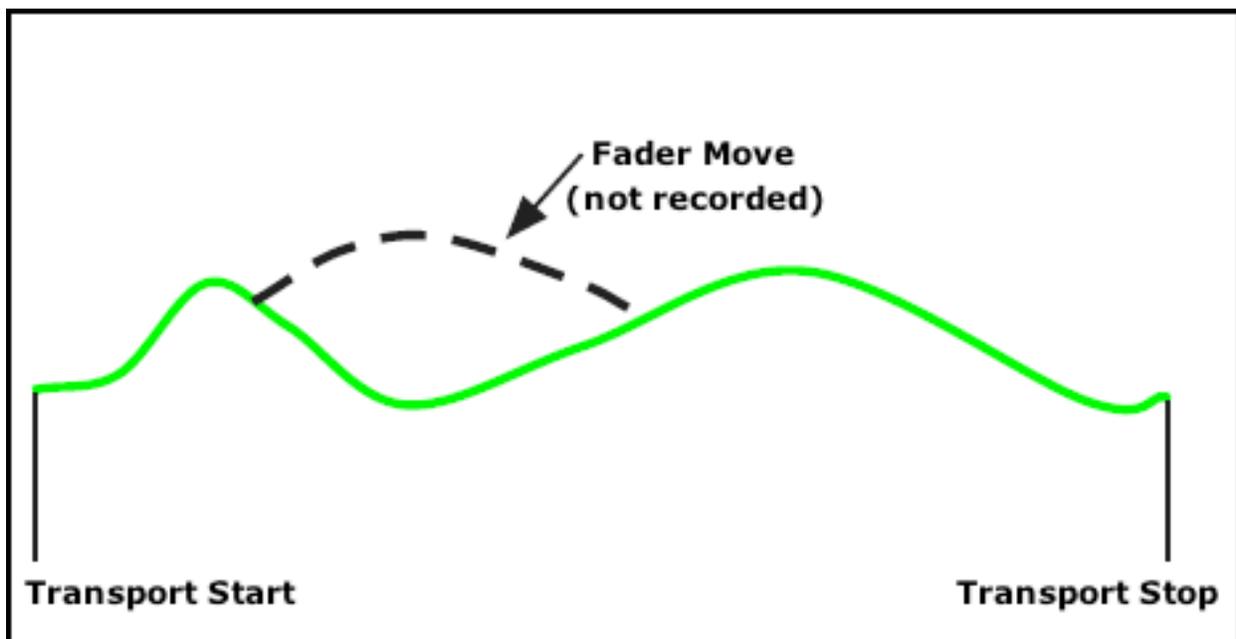
**Read** mode can be engaged from the fader for the selected channel section(s) by pressing READ when in **Manual, Update, or Write** mode.

- The READ button illuminates when **Read** is engaged

In **Read** mode:

- Channels/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
- Switches may be changed, but will not be recorded
- Switches will continue to playback recorded moves after any changes have been made

**Read**



## 12.3 Update Mode

Use **Update** mode to record new moves and touch-up previously recorded moves.



**Update:** Previously recorded moves are played back until a change is made

- Playback is exactly as if in **Read** until changes are made
- When a fader is touched, it will record moves as if in **Write** until released
- When a touched fader is released, it will return back to its recorded position using a preset glide rate set in the song properties and resume playback of previously recorded moves
- Switches will record any changes and will also playback any previously recorded changes



**Update** mode can be assigned to channels individually, as a group, or on a global basis by highlighting the needed channels/sections in the channel grid and pressing "**Update**" on the Status page.

- Channels/sections in **Update** turn yellow in the Status page channel grid

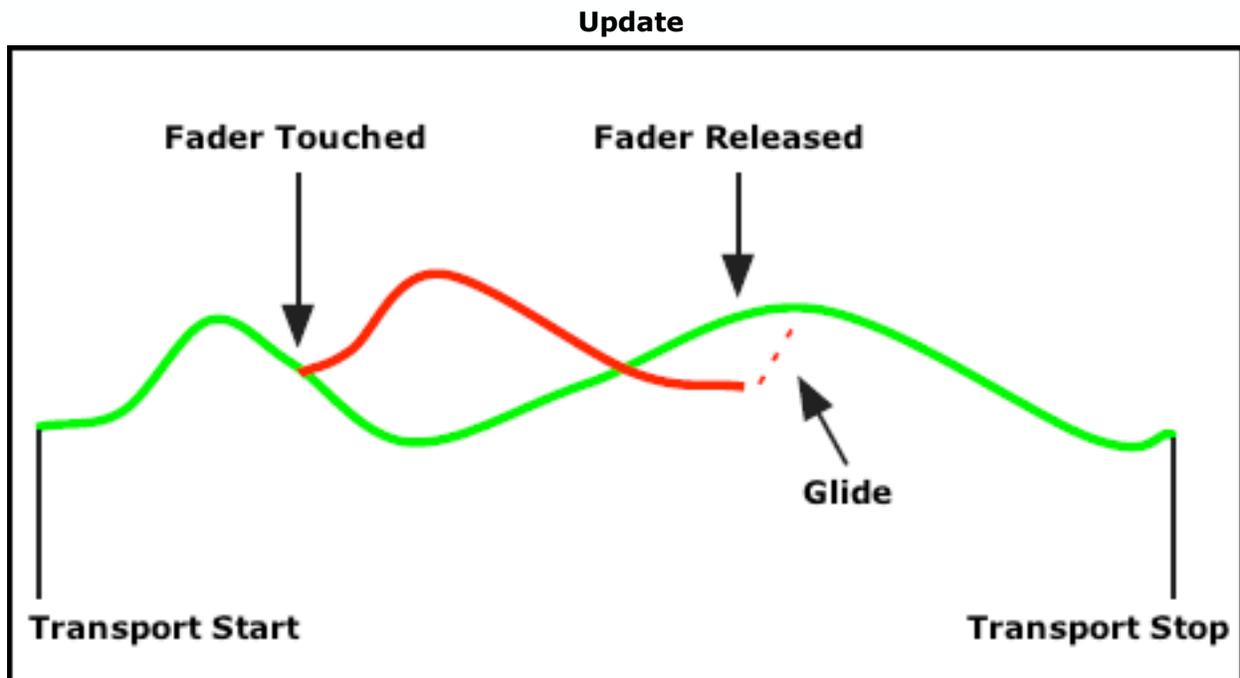


**Update** mode can be engaged from the fader for the selected channel section(s) by pressing UPDATE when in **Manual, Read, or Write** mode.

- The UPDATE button illuminates when **Update** is engaged

**Update** mode:

- Can function as a "record ready" state for the **Write** mode
  - Required when putting channels/sections in **Write** from the Status page
- Can be engaged at any time



## 12.4 Write Mode

Use **Write** mode to record new moves and overwrite previously recorded moves. It also provides an easy way to erase unwanted moves during a certain window of time such as a verse or scene.



- Write:** Current positions and moves will be recorded over any existing moves
- Previously recorded moves are not played back and are overwritten
  - Automation controls are recorded at all times, even when faders aren't touched
  - Recording will continue until timecode is stopped or the mode is changed



**Write** mode can be assigned to channels individually, as a group, or on a global basis by highlighting the needed channels/sections in the channel grid and pressing "**Write**" on the Status page.

- Channels/sections in **Write** turn red in the Status page channel grid



**Write** mode can be engaged from the fader for the selected channel section(s) by pressing WRITE when in **Manual**, **Read**, or **Update** mode.

- The WRITE button illuminates when **Write** is engaged

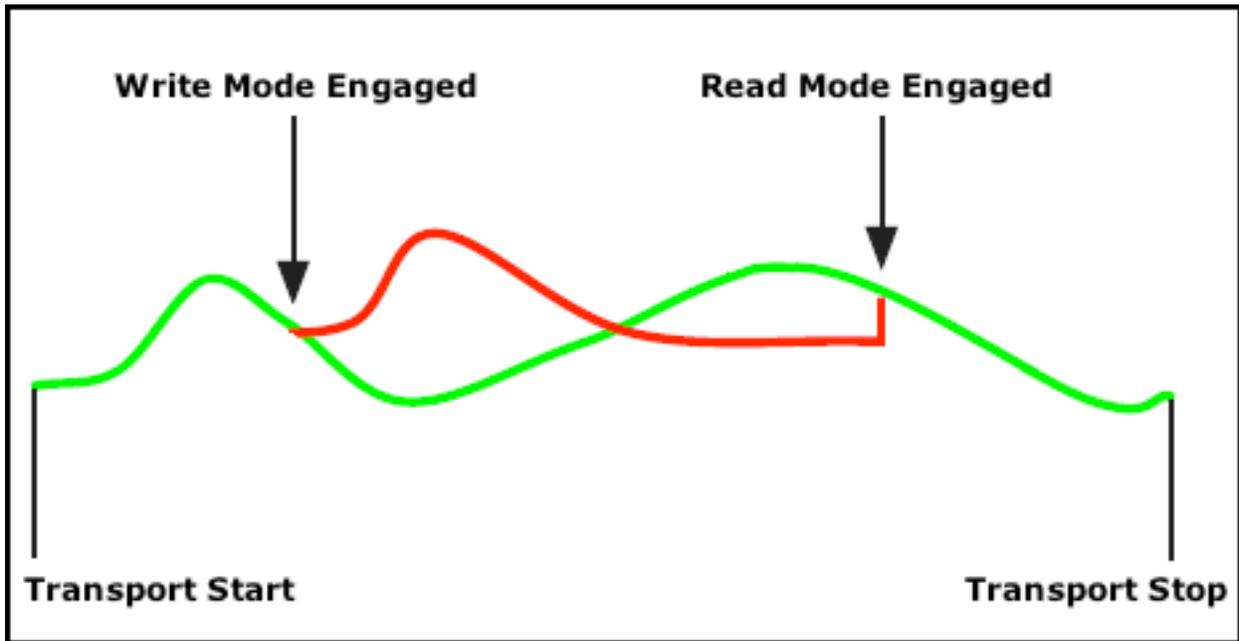
**Write** mode:

- Can be engaged from the Status page only if **Update** or **Static** is engaged first
- **Write** can be engaged from **Manual** or **Read** without being in **Update** using the red **WRITE** button on the fader

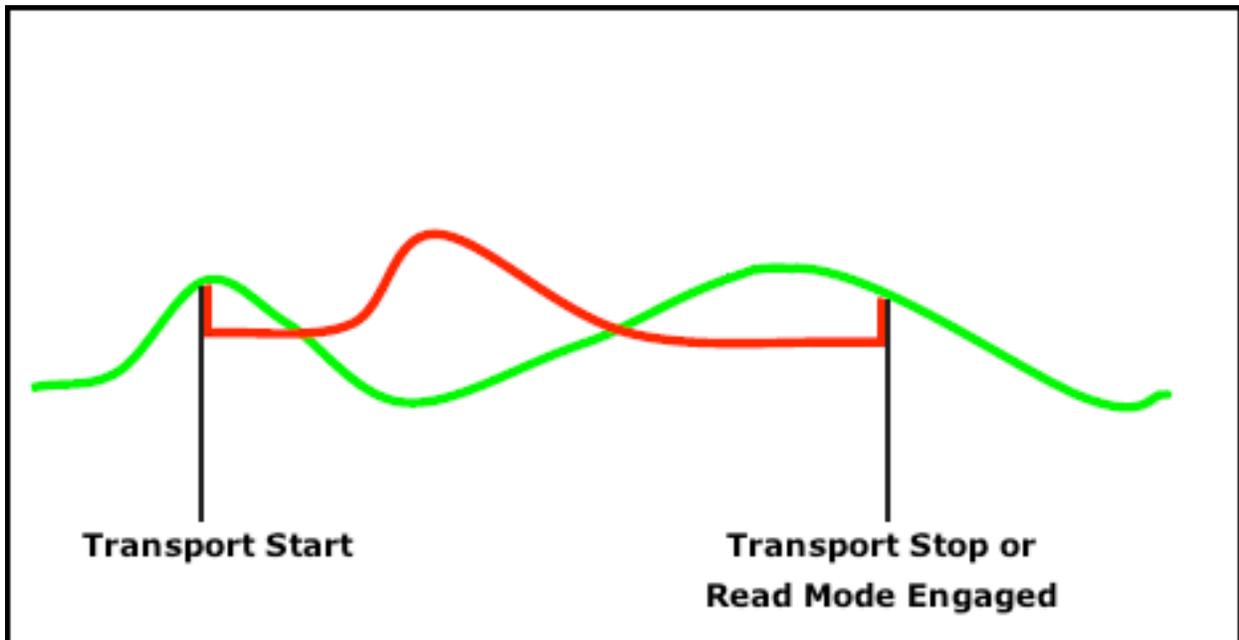
**Write** mode can be very destructive to your mix, so there is a safety interlock for entering **Write** from the Status page. Any channels commanded to enter **Write** from the Status page will not do so unless they are already in **Update** mode or the **Static** or **Latch** submodes. This allows you to "record-enable" a selection of channels/sections using **Update**, **Static**, or **Latch**, start playback, and punch the selected channels into **Write** mode using the **Write** button on the Status page.

Whenever a channel/section is in **Write** while timecode is running, existing mix events will be erased and new mix events will be recorded. Changing modes from **Read** or **Update** to **Write** allows the engineer to "punch-in" to the automation data on the selected channels/sections. Changing modes from **Write** to **Read** allows the engineer to "punch-out" and stop recording new automated mix events on the selected channels/sections.

### Write with Timecode Running



### Write before Timecode Start



*NOTE: **Write** mode can also be entered using the "**Touch**" submode and exited using the "**Leave Write**" global function. These features are explained in detail in subsequent sections of this manual.*

### 12.4.1 Switch Overwrite Submode

It is sometimes necessary to separate the fader from its mute and other switches when writing mix passes. For example, the fader moves are good, but the mute or other switches need to be rewritten. The "**SWITCH OVERWRITE**" function allows the Fader 1 (Large) and Fader 2 (Small) mutes and other switches to be changed without affecting the fader.



**SWITCH OVERWRITE:** Puts the switches (mute and insert on all consoles, plus EQ Bypass and Aux ON/off on Vision and Vision+) in the selected channel section in **Write** mode when engaged.

- Pressing the **SWITCH OVERWRITE** button on the fader, will engage **Switch Overwrite** mode
- Puts the switches in the selected sections in UPDATE
- Replaces all existing mute and selected switch moves for that channel with new mix events while engaged
- Previously written mute and switch moves will be erased as selected
- Previously written fader moves remain unaffected
- Illuminates when engaged

#### **SWITCH OVERWRITE:**

- Is only available in **Update** mode
- Write enables are respected by the switch overwrite function
- On Vision and Vision+ consoles, use the **SEL (Select)** button to select the channel section(s) to apply the switch overwrite function:
  - Fader 1
  - Fader 2
  - Switches (EQ Bypass, AUX ON/off)
  - All

# 13.0 Automation Submodes

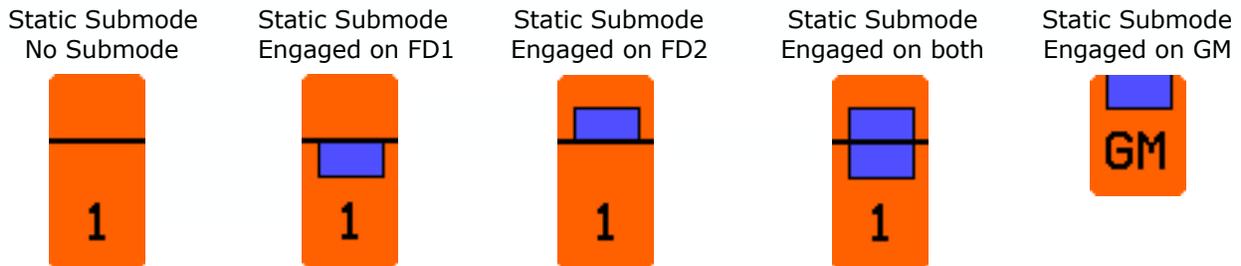
Automation submodes further define the behavior of the automation system in specific ways. While the assigned mode continues to govern when channels record and playback, the submode changes the exact nature of what is recorded and how data transitions are handled.

Submode	Description
None	<b>None:</b> No submodes assigned
Static	<b>Static:</b> Resets initial positions
Latch	<b>Latch:</b> Writes the last recorded position to the end of timecode (23:59:59:2X)
Touch	<b>Touch:</b> Channels/sections in <b>Update</b> will change to <b>Write</b> when its fader is touched or switches are engaged
Update From Start	<b>Update From Start:</b> Writes the last positions to the start of timecode (00:00:00:00)
Update From Touch	<b>Update From Touch:</b> Writes the last positions between the timecode location when the control was first touched or changed to the point that timecode stops
Update To Next	<b>Update To Next:</b> Writes the last positions until the timecode location of the next previously recorded move

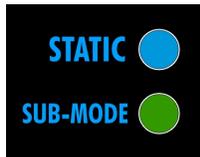
Automation submodes further define how and when moves made to faders and switches are recorded and played back and how data transitions are handled. These submodes may be assigned to any channel at any time with few restrictions. Different channels may be in different modes at the same time.

Submodes can be assigned to channels individually, as a group, or on a global basis by highlighting the desired channels/sections in the channel grid and using the "Submode" buttons on the Status page. Submodes can only be assigned from the Status page and cannot be assigned from faders.

Submode assignments are indicated by a colored box added to the channel/section selectors in the channel grid on the Status page:



Submodes are also indicated on faders as follows:



**STATIC:** A blue LED indicates the **Static** submode is engaged on that channel

**SUB-MODE:** A green LED indicates that a submode other than **Static** is engaged on that channel

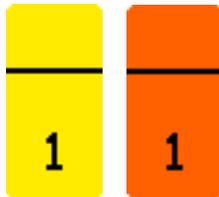
The function and operation of each submode is described in the subsequent sections. The buttons and channel grid indications on the Status page are shown for each mode. The LED indicators on the faders are also shown.

### 13.1 No Submode (None)

Submodes on selected channels/sections can be cleared by pressing **None**. Most automation operations can be accomplished without the use of submodes.

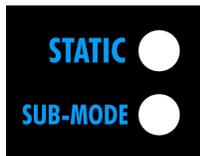


**None:** Clears the automation submodes from the selected channels/sections in the channel grid on the Status page



Submodes can be cleared from channels/sections individually, as a group, or on a global basis by highlighting the needed channels/sections in the channel grid and pressing "**None**" on the Status page.

- When there are no submodes assigned, there is no submode box in the selected channels/sections on the Status page



When no submodes are engaged, neither **STATIC** or **SUB-MODE** LED on the fader is illuminated.

## 13.2 Static

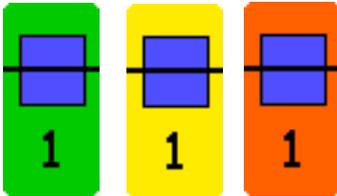
Use **Static** to create new initial positions at the start of a mix or when it is desirable to clear all recorded moves and start over with new initial positions.



**Static:** Last positions of controls are written to all timecode (resets initial positions)

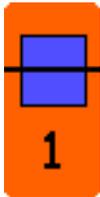
- When timecode is stopped with **Static** engaged, the last physical positions of automation controls will be written to all timecode locations
- Moves made while in **Static** are not recorded, only the positions of the automated controls when timecode is stopped are written

**Static** only works in **Write** mode, but can be enabled in **Read** or **Update** as well as **Write**. **Static** can be engaged at any time.

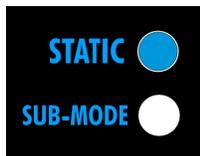


**Static** can be assigned to channels/sections individually, as a group, or on a global basis by highlighting the needed channels/sections in the channel grid and pressing "**Static**" on the Status page.

- A blue box appears in the selected channels/sections on the Status page when Static is engaged

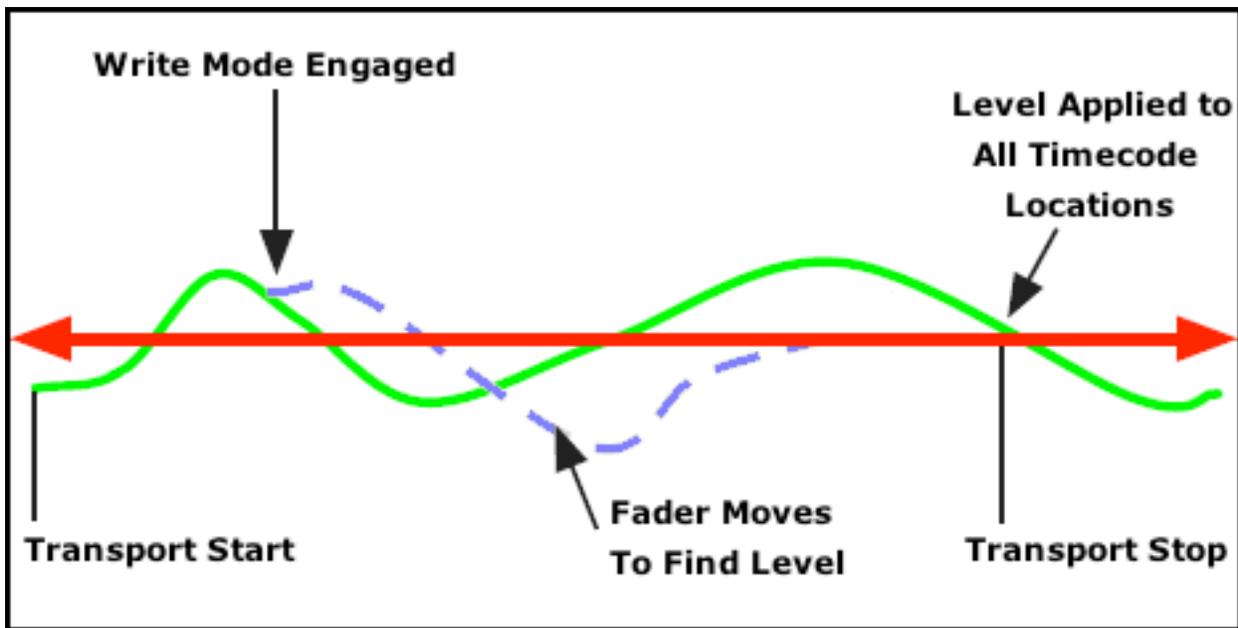


The **Static** submode will only function for channels/sections in **Write** and has no effect in **Read** or **Update**. If **Static** is enabled in **Read** or **Update**, **Write** must be engaged before timecode is stopped. If the timecode is stopped with **Static** and **Write** engaged, the last positions of controls will be written to all timecode locations in a new mix. This mix will become the current mix.



When **Static** is engaged the blue **STATIC** LED on the fader illuminates.

### Static



*NOTE: When **Static** is used, all previously recorded moves for the selected channels/sections will be erased throughout the entire range of timecode (00:00:00:00 to 23:59:59:2X).*

## 13.3 Latch

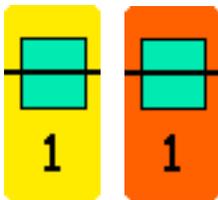
Use **Latch** to apply the position of faders and/or switches from the point fader was released or timecode was stopped all the way to the end. For example, the level of a track was moved to a good level at the beginning of the vamp out of a song. With **Update** and **Latch** engaged, release the fader once the desired level is reached. When timecode is stopped, that position will be written over all remaining moves to the end of timecode without having to play the song past the end.

### Latch

**Latch**: Last positions of controls are written to the end of timecode

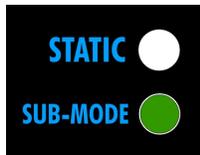
- When the fader is released in **Update** and **Latch**, the position of the fader will be recorded to the end of timecode (23:59:59.2X)
- When in **Write** and **Latch** and timecode is stopped or the mode is changed, the position of the fader and switches will be recorded to the end of timecode (23:59:59.2X)

**Latch** is only available in **Update** and **Write** modes and can be engaged at any time a channel/section is in one of these modes.



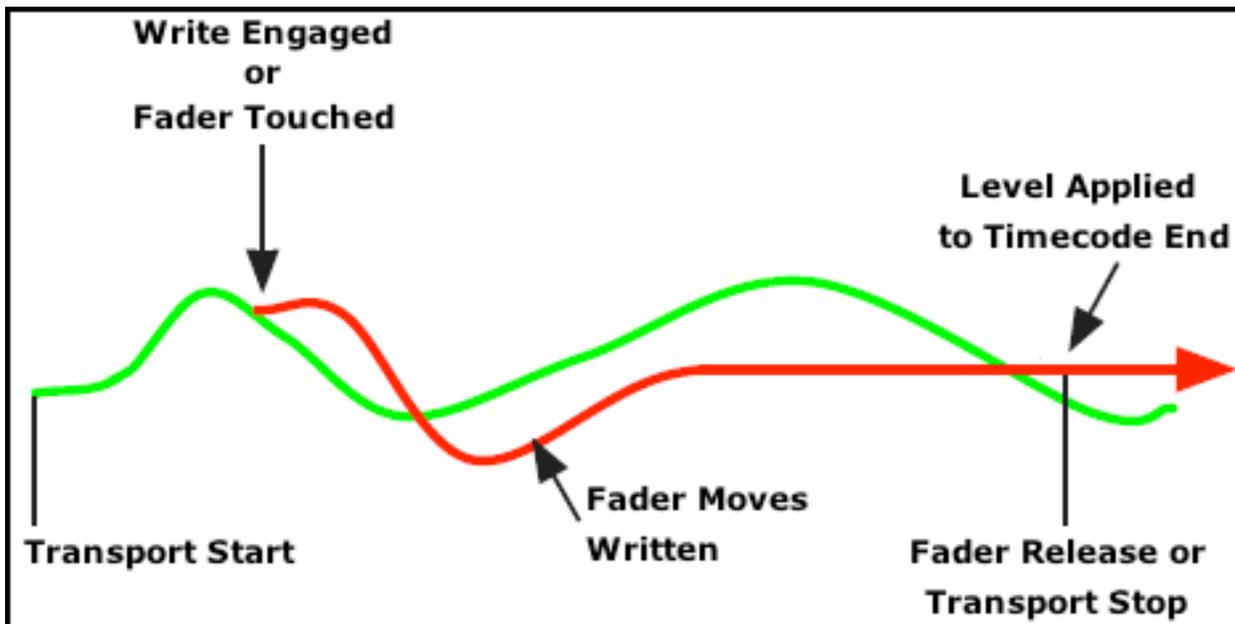
**Latch** can be assigned to channels/sections individually, as a group, or on a global basis by highlighting the needed channels/sections in the channel grid and pressing "**Latch**" on the Status page.

- A teal box appears in the selected channels/sections on the Status page when **Latch** is engaged



When **Latch** is engaged the green **SUB-MODE** LED on the fader illuminates.

### Latch



*NOTE: When **Latch** is used, all previously recorded moves for the selected channels/sections will be erased to the end of timecode (23:59:59.2X).*

## 13.4 Touch

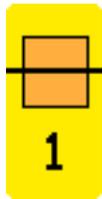
Use **Touch** to playback previously recorded moves up to a certain point and then start recording in **Write** mode. For example, the fader moves in the first verse of a song are good, but the moves in the chorus need to be rewritten. Playback the verse and touch the fader at the start of the chorus. The verse moves will be played back and recording new moves in **Write** mode will start at the beginning of the chorus.



**Touch:** Faders in **Update** change to **Write** when touched

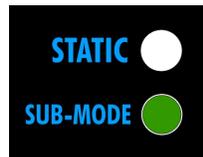
- Playback is exactly as if in **Update** until a fader is touched
- Touched faders will stay in **Write** after the fader is released and move will be recorded until the transport is stopped or the mode is changed

**Touch** is only available in **Update** mode and can be engaged at any time a channel/section is in **Update**.



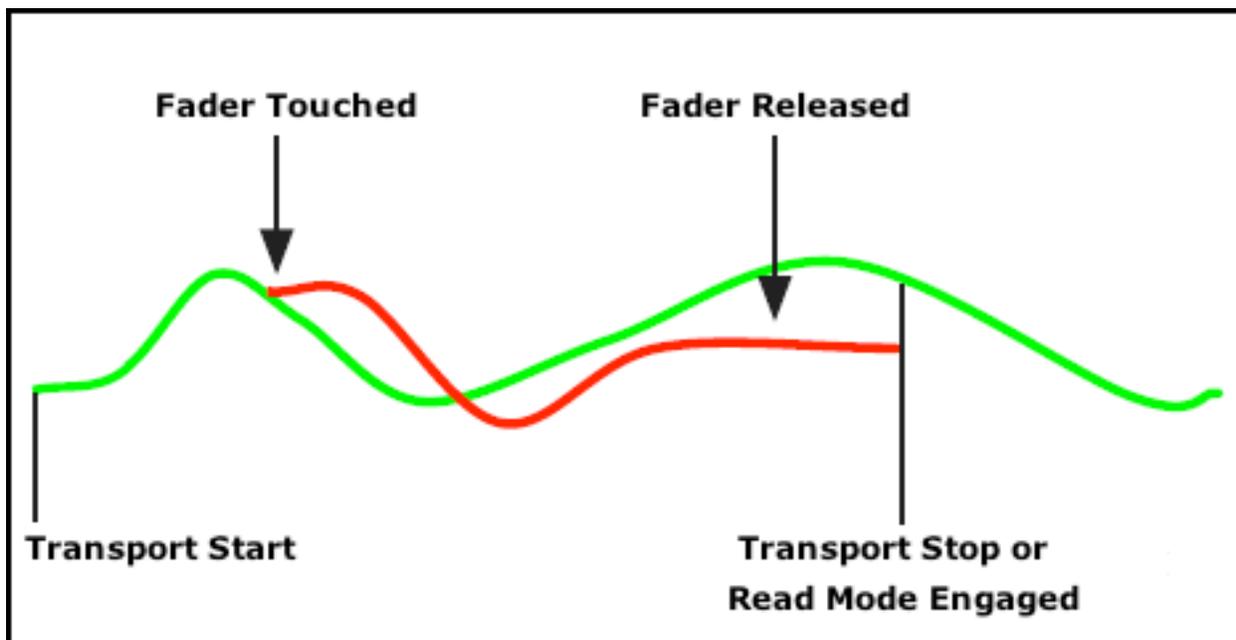
**Touch** can be assigned to channels/sections individually, as a group, or on a global basis by highlighting the needed channels/sections in the channel grid and pressing "**Touch**" on the Status page.

- An orange box appears in the selected channels/sections on the Status Page when **Touch** is engaged



When **Touch** is engaged the green **SUB-MODE** LED on the fader illuminates.

### Touch



*NOTE: Any previously recorded moves will be erased as long as writing continues.*

## 13.5 Update From Start

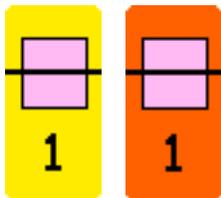
Use **Update From Start** to apply a static position from a certain point back to the very beginning. **Update From Start** is useful when setting the level of a track from the start of a recording up to a chosen point. A fader can be moved until the proper level is found and then held until the end of the first section of the recording. The last position will be applied to the start of timecode. 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. Hold that level and release the fader when 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.

### Update From Start

**Update From Start:** The last positions of controls are written to the start of timecode:

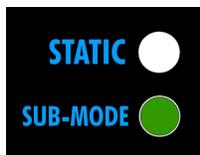
- When the fader is released in **Update** and **Update From Start**, the position of the fader will be recorded to the start of timecode (00:00:00.00)
- When timecode is stopped or the mode is changed in **Write** and **Update From Start**, the positions of the fader and switches will be recorded to the start of timecode (00:00:00.00)
- Moves made while in **Update From Start** are not recorded, only the positions of the automated controls when the fader is released or timecode is stopped

**Update From Start** is only available in **Update** and **Write** modes and can be engaged at any time a channel/section is in one of these modes.



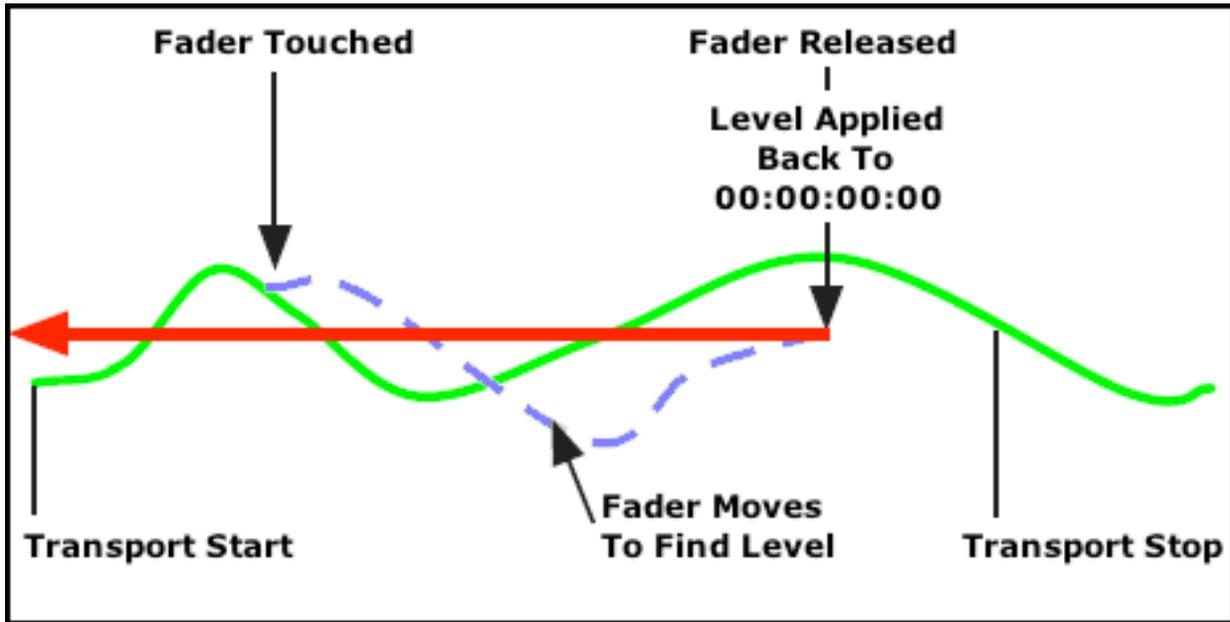
**Update From Start** can be assigned to channels/sections individually, as a group, or on a global basis by highlighting the needed channels/sections in the channel grid and pressing "**Update From Start**" on the Status page.

- A pink box appears in the selected channels/sections on the Status page when **Update From Start** is engaged

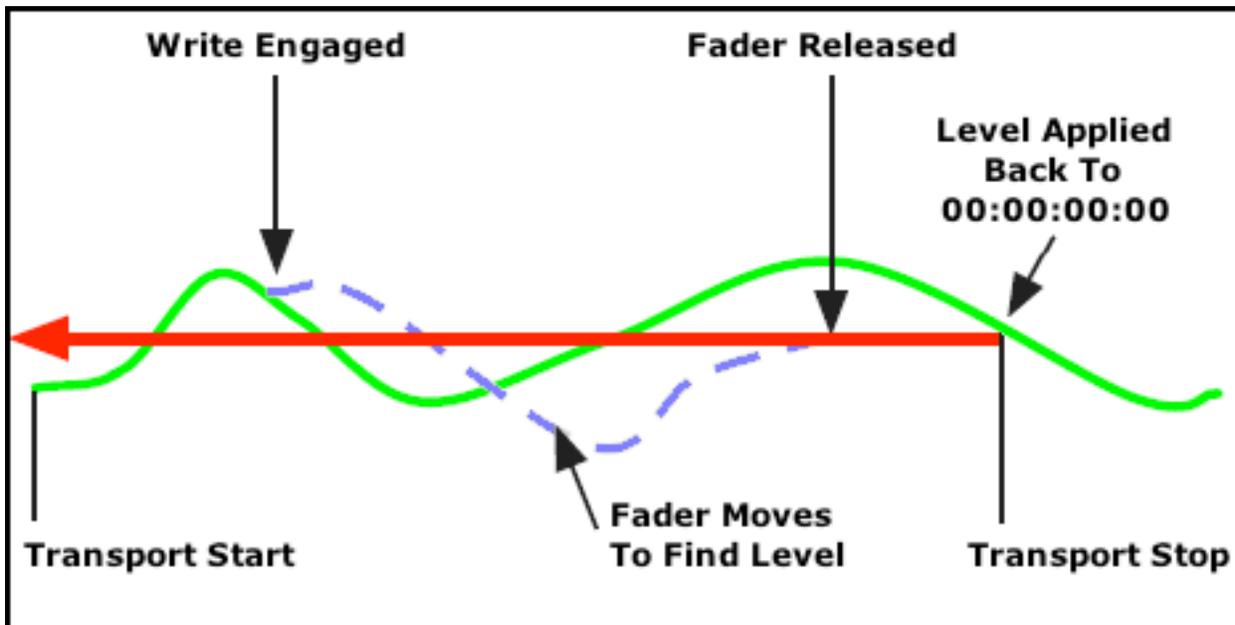


When **Update From Start** is engaged the green **SUB-MODE** LED on the fader illuminates.

### Update From Start in Update



### Update From Start in Write



*NOTE: When **Update From Start** is used, all previously recorded moves for the selected channels/sections will be erased to the start of timecode (00:00:00:00).*

## 13.6 Update From Touch

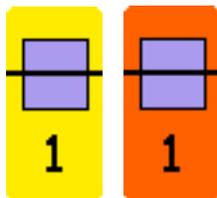
Use **Update From Touch** to apply a static position between two points, but not before or after. **Update From Touch** is useful when setting the level of a track during a certain section of a recording (such as a verse). A fader in **Update** and **Update From Touch** can be touched at the beginning 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 when the fader is released. For example, in **Update** and **Update From Touch**, touch a fader at the beginning of a verse in a song. 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. Moves recorded before and after the verse will be retained.

### Update From Touch

**Update From Touch:** The last positions of controls are written between the timecode location when the control was first touched to the point recording stops.

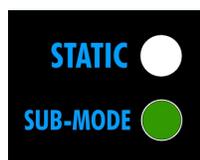
- In **Update** and **Update From Touch**, when the fader is touched and released, the position of the fader when it was released will be written between the touch and release locations
- In **Write** and **Update From Touch**, when the fader is touched and released the fader will stay in **Write** until timecode stops or the mode is changed. The position of the fader when timecode stopped or the mode was changed will be written between the touch location and the location where writing was stopped.
- Moves made while in **Update From Touch** are not recorded, only the positions of the automated controls when the fader is released or writing is stopped are written.

**Update From Touch** is only available in **Update** and **Write** modes and can be engaged at any time a channel/section is in one of these modes.



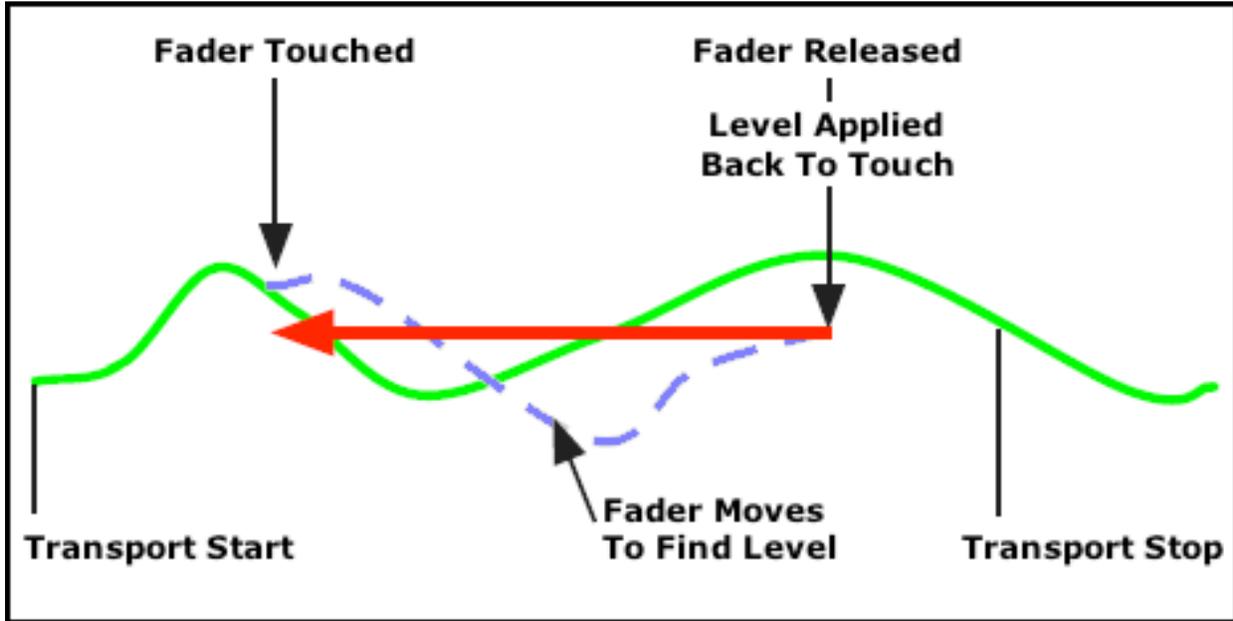
**Update From Touch** can be assigned to channels/sections individually, as a group, or on a global basis by highlighting the needed channels/sections in the channel grid and pressing “**Update From Touch**” on the Status page.

- A purple box appears in the selected channels/sections on the Status page when **Update From Touch** is engaged

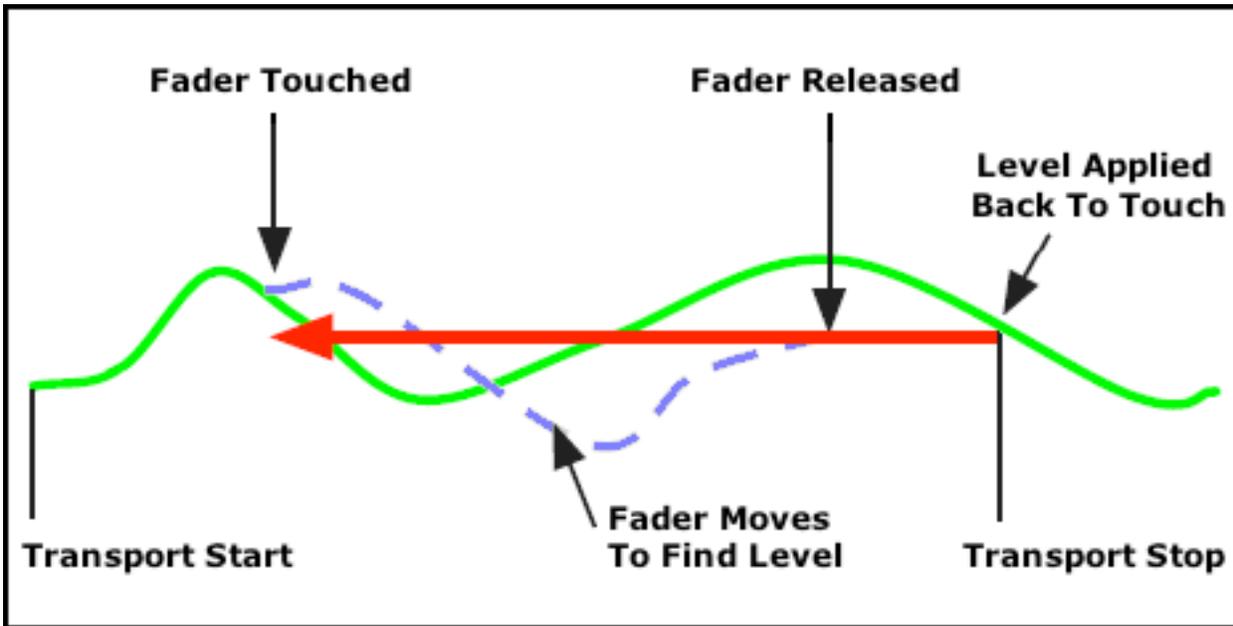


When **Update From Touch** is engaged the green **SUB-MODE** LED on the fader illuminates

### Update From Touch in Update



### Update From Touch in Write



*NOTE: When **Update From Touch** is used, all previously recorded moves for the selected channels/sections will be erased between the touch and the end of writing.*

## 13.7 Update to Next

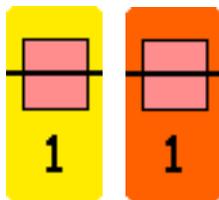
Use **Update To Next** to apply a static position between a certain point and the next recorded move. **Update To Next** is useful when you want to apply the last position of a control until the next previously recorded automation move. A fader in **Update** and **Update To Next** can be touched at the beginning of a section and recording can then be stopped. The last position will be applied until the next recorded move is reached. 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**, touch the fader at the needed point in the chorus and make the desired moves. Once a good level is reached for the remainder of the chorus, release the fader. Even if the release is well before the bridge, the last position will be retained between the release point and the previously recorded move in the bridge. When that "next move" arrives, the fader will stop writing and perform the previously recorded moves recorded in the bridge.

### Update To Next

**Update to Next:** The last positions of controls are written until the timecode location of the next previously recorded move

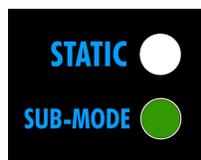
- When the fader is released in **Update** and **Update To Next**, the last positions are written between the point the fader was released and the next recorded move
- When timecode is stopped or the mode is changed in **Write** and **Update To Next**, the positions of the fader and switches will be written between the point writing was stopped and the next recorded move
- Moves made before the fader was released or writing is stopped are not recorded

**Update To Next** is only available in **Update** and **Write** modes and can be engaged at any time a channel/section is in one of these modes.



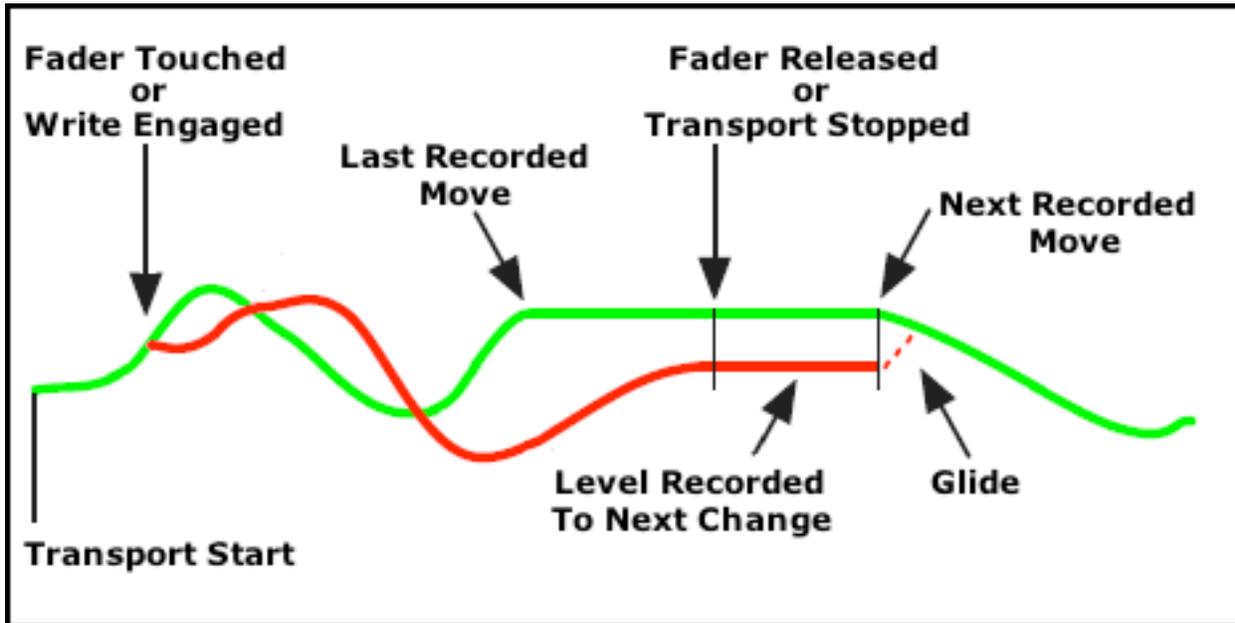
**Update To Next** can be assigned to channels/sections individually, as a group, or on a global basis by highlighting the needed channels/sections in the channel grid and pressing "**Update To Next**" on the Status page.

- A peach box appears in the selected channels/sections on the Status page when **Update To Next** is engaged



When **Update To Next** is engaged the green **SUB-MODE** LED on the fader illuminates.

# Update To Next



# 14.0 Automation Mode and Submode Assignment

Automation modes can be assigned to channels/sections in two ways:

- Using the channel grid and mode buttons on the Status page
- Using the SEL and MODE buttons on the faders

Automation submodes can be assigned to channels/sections only using the channel grid and submode buttons on the Status page. Submodes cannot be assigned from the fader.

## 14.1 Channels and Sections

For automation purposes, the Input Channels, Stereo Returns, Group Masters, and Program Master faders are all considered "channels." Each "channel" will have a selector in the channel grid on the Status page.

To provide maximum flexibility, the automation controls on input channels are divided into two "sections" on 2448 and AXS consoles and three "sections" on all Vision consoles.

- **FD 1** (Fader 1): Large Fader audio path controls: large moving fader, mute, and insert
- **FD 2** (Fader 2): Small Fader audio path controls: mute and insert (+Fader 2 on Vision)
- **SW** (Switches): EQ Bypass and Aux ON/off (Vision Only)

*NOTE: The small fader is not automated on the AXS or 2448 consoles.*



Fader 2 (FD2) is the top section of the Input Channels in the channel

Fader 1 (FD1) is the bottom section of the Input Channels in the channel grid selectors

Only input channels have 2 sections. Stereo Returns, Group Masters, and Program Master faders have only one section, so all automated controls for these facilities are in the Fader 1 section.

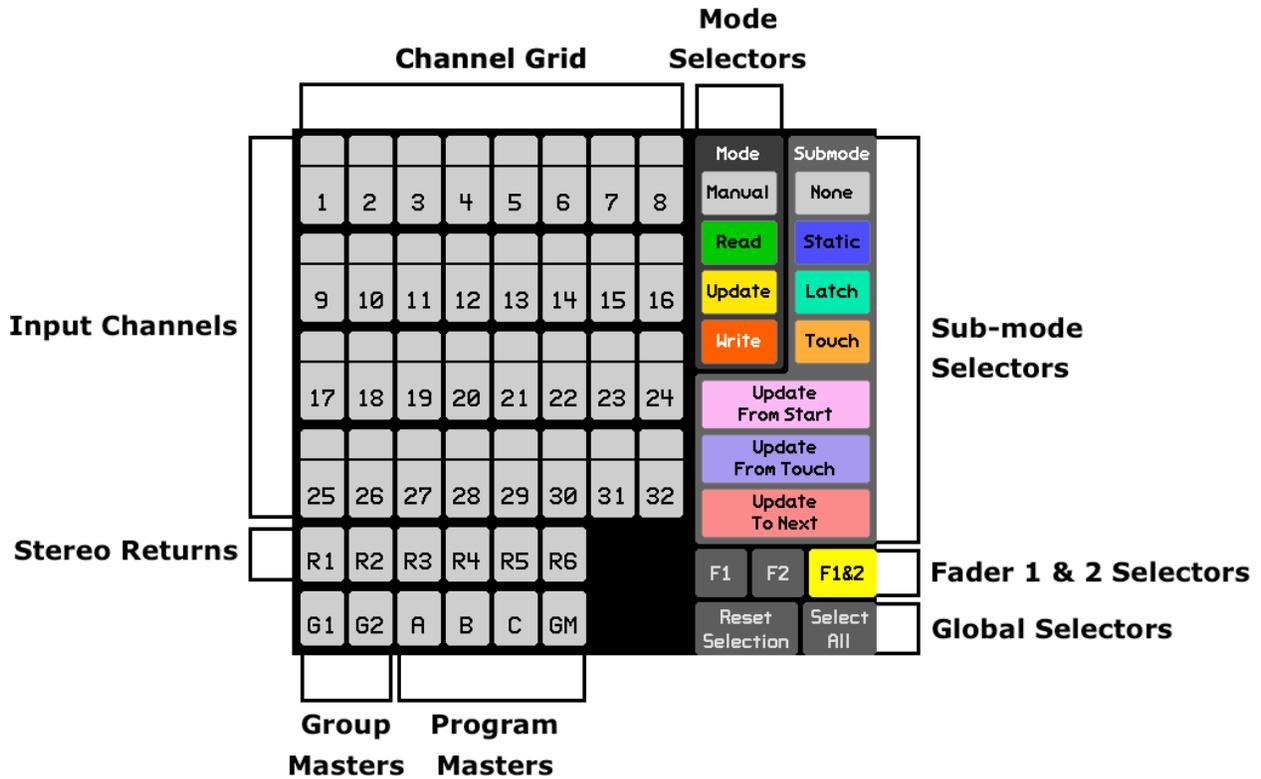
*NOTE: Input channels of all Vision consoles have a third section for switches (**SW**).*



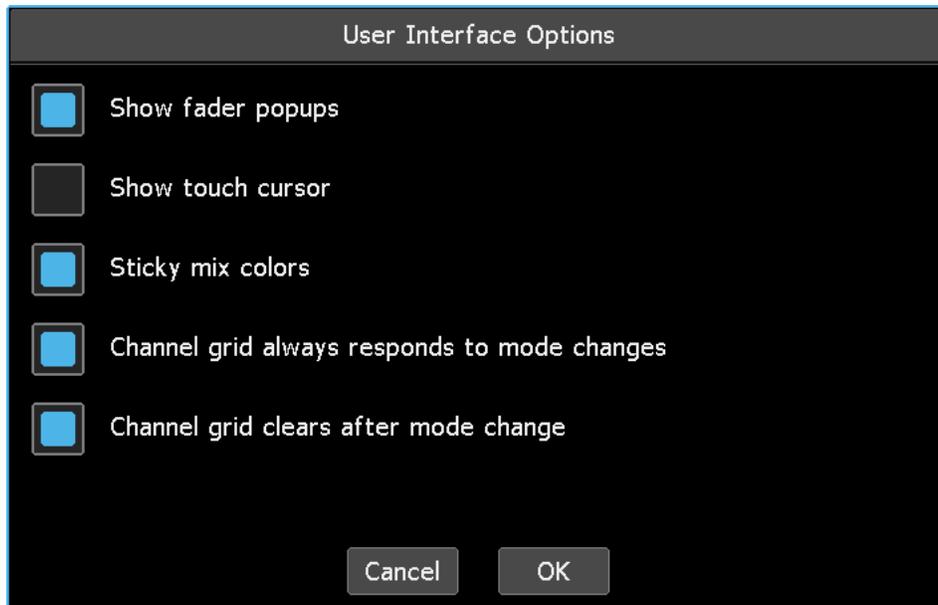
Stereo Returns, Group Masters, and Program Master faders are in the Fader 1 section

## 14.2 Status Page Mode and Submode Assignment

The Status page provides a set of tools that assign automation modes and submodes to channels and sections using the channel grid and assignment buttons.



Using these tools, modes and submodes can be assigned to individual channels/sections, a group of channels/sections, or all channels/sections in a variety of ways. The behavior of these controls is determined by the Channel Grid options selected on the "User Interface Options" dialog box via the System menu.

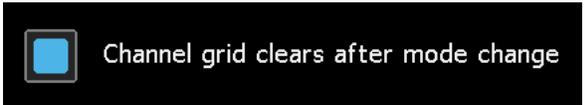




When "Channel grid always responds to mode changes" is engaged (blue indicator) **and** no channels are selected in the channel grid, modes and submodes can be directly assigned to all channels globally by pressing the mode and/or submode button.

When no channels/sections are selected and "Channel grid always responds to mode changes" is active, channels do not have to be selected in the grid before global mode and submode assignments can be made. Pressing **Reset Selection** will clear the grid so mode and submode assignments can be quickly made to all channels/sections by pressing the desired mode or submode button.

When this function is not engaged, channels and sections must first be manually selected in the grid before modes and submodes can be assigned. This option is active by default.

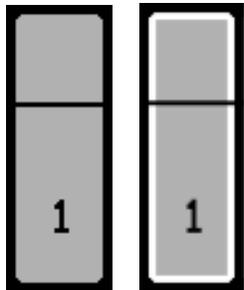


When "Channel grid clears after mode changes" is engaged (blue indicator), channel selections will clear themselves when the mode or submode has changed **and** a new channel has been selected a new channel.

This makes it quick to select a set of channels, change the mode, and then select another set of channels, without having to explicitly press the **Reset Selection** button. This option is enabled by default.

Channels and sections selection can be made or modified in the channel grid on an individual, subset, or global basis.

**Unselected Selected**



To select an individual channel or section, simply press it. To select multiple channels/sections, drag a finger over several channels and/or sections. Selected channels and sections will brighten and be surrounded by a white halo to indicate they're selected. Once the desired channels/sections are selected, press the mode and submode to be assigned. The selected channels/sections will change color to indicate the assignment has been made. Channels/sections will remain selected after the assignment has been made so further manipulations can be made to the same set of controls.

As a safeguard, channels/sections can only be placed in **Write** mode from the Status page if they are in **Update** mode or the **Static** or **Latch** submodes.



The channel grid is equipped with a set of selection tools that assist with the quick and easy assignments of modes and submodes to sections on all channels. The "F1, F2, and F1&2," buttons select which section(s) will be selected or deselected for mode and submode assignment. "Select All" will select all channels and sections. **Reset Selection** will deselect all channels and sections.



For example, to change all sections on all channels from **Read** to **Update**, press "F1&2" followed by "Select All."

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
R1	R2	R3	R4		G1	G2	PGM

All sections on all channels will become selected, indicated by brightening and white halos.



Press "Update" to assign the **Update** mode to all sections on all channels.

1	2	3	4	5	6	7	8
9	10	11	12	13	14	15	16
17	18	19	20	21	22	23	24
R1	R2	R3	R4		G1	G2	PGM

All sections on all channels will change from **Read** to **Update** mode.

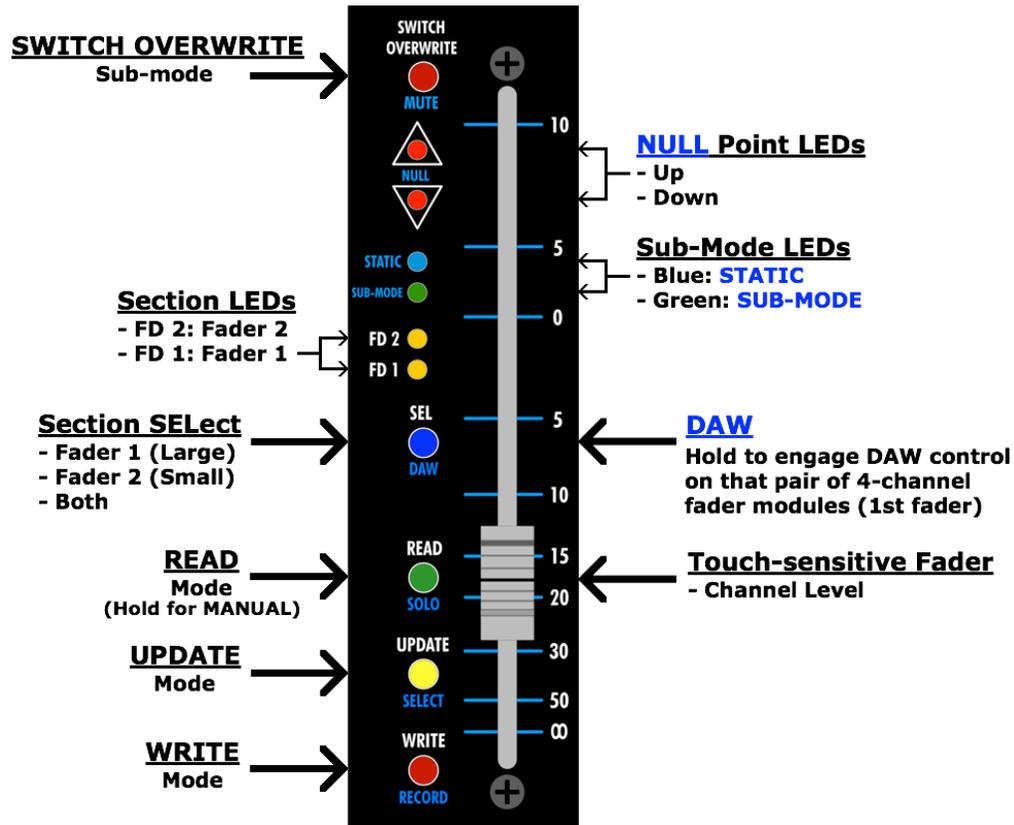


Alternately, if "Channel grid always responds to mode changes" is engaged on the User Interface Options page, all sections on all channels can quickly be changed from **Read** to **Update** by first pressing "Reset Selection" followed by the "Update" button. This eliminates the need to select sections and channels in the channel grid before changing modes.



## 14.3 Fader Mode Assignment

Automation modes can be assigned to individual channels using the MODE and section selection (SEL) buttons on the fader modules. Submodes cannot be assigned from the fader. The automation controls on channel faders are shown in the diagram below.



LEDs illuminate to indicate the currently selected sections.

Consecutive presses of the section selection (SEL) button will cycle through three options:

- **FD 1**: Fader 1 (Large Fader path fader, mute, and insert)
- **FD 2**: Fader 2 (Small Fader path mute and insert)
- **Both**: Automation controls for both fader paths



**NOTE:** *The Stereo Returns, Group Masters, Program Master faders, 1608-II channels faders do not have a section selection (SEL) button.*

The selected sections will change to modes when the mode buttons are pressed.

Pressing READ will change the mode to **Read**. Holding READ for about two seconds will change the mode to **Manual**.

Pressing UPDATE will change the mode to **Update**.

Pressing WRITE will change the mode to **Write**, regardless of the current mode. When used with the READ or UPDATE buttons, automation can effectively be “punching in and out.” Unlike with the Status page, **Write** mode can be entered from the fader without being in **Update** first. The MODE buttons illuminate to indicate the currently selected mode.

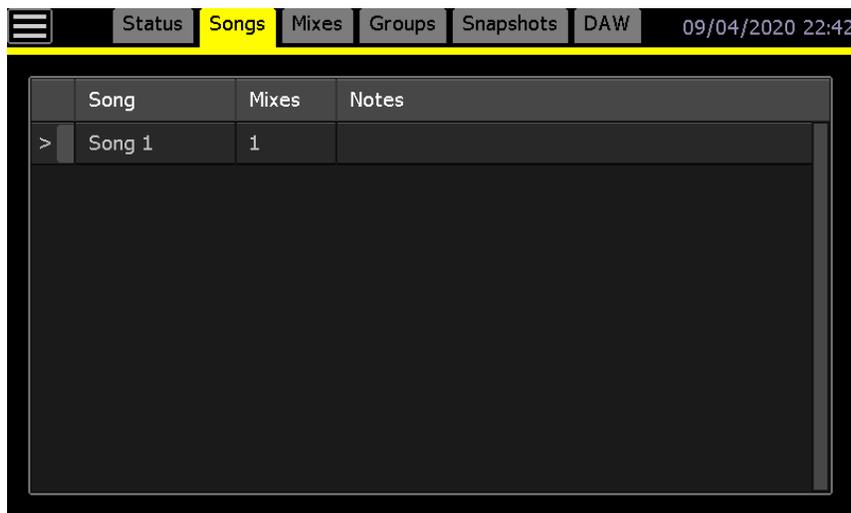
# 15.0 Songs

As mentioned earlier, projects, songs, mixes, and snapshots provide the means for organizing production workflow. If an album of music is being produced, the engineer might create a project (folder and file) for the entire production. Within that project, a "song" can be created for each musical composition to be recorded and stored on the Songs page. Within each song, several "mixes" can be created and stored on the Mixes page. Groups are created and stored within mixes using the Groups page. A set of "snapshots" can also be generated and store with the project via the Snapshots page. If scenes from a film or video are being mixed, a similar organizational structure can be adopted. A project might be created for the entire film. Songs can be created for each scene using the Songs page, multiple Snapshots can be generated and stored using the Snapshots page, mixes are created within the songs and are stored and manipulated on the Mixes page, while groups are created within mixes and stored/modified on the Groups page. While each engineer may utilize the system in other ways, these conventions will work well for most productions.

This section of the manual will explore songs and their associated pages and menus in detail. Mixes, groups, and snapshots will be explained in detail in subsequent sections of this manual.

## 15.1 Songs Page

The Songs page supports the creation, modification, and deletion of songs.

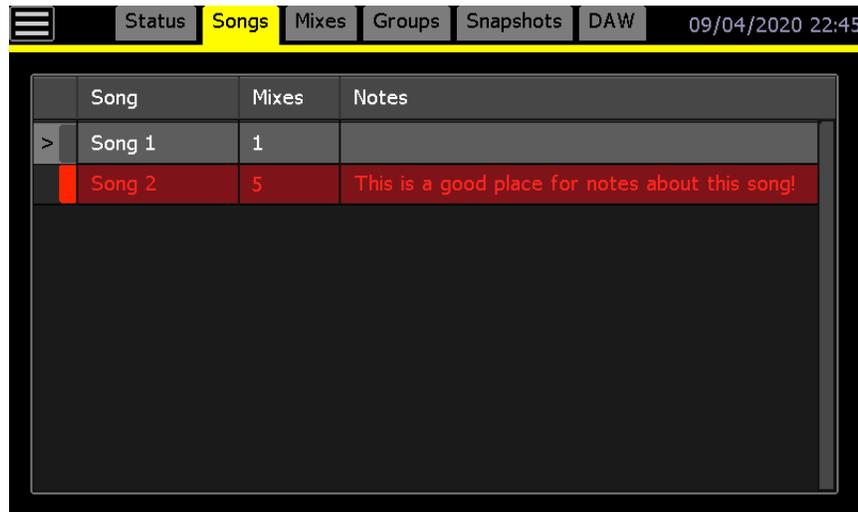


A song contains all the mixes associated with a specific segment of recorded audio. All of the mixes within a song are available in a "mix tree" on the Mixes page. The Songs page displays all the songs available within the current project.

The Songs page has columns that display the song title, number of mixes, and notes for each song. Songs can also be color-coded and the columns can be resized by pressing a line between the columns in the header and dragging it to a new position.

	Song	Mixes	Notes
>	Song 1	1	

The "current" song is indicated by an arrow symbol (>) in the left-hand column. The Mixes page contains a mix tree for the current song the displays all the mixes for the current song. When a project is loaded or a song is made current, the mix tree for the current song will be loaded automatically.



Pressing a song will highlight it and select it for use with the Song menu, but does not make it current. In the example above, Song 1 is highlighted and is the current song.

## 15.2 Song Menu

The Song menu will open if the screen is pressed in the Songs page.

The Song menu provides five (5) functions:

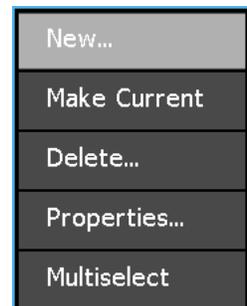
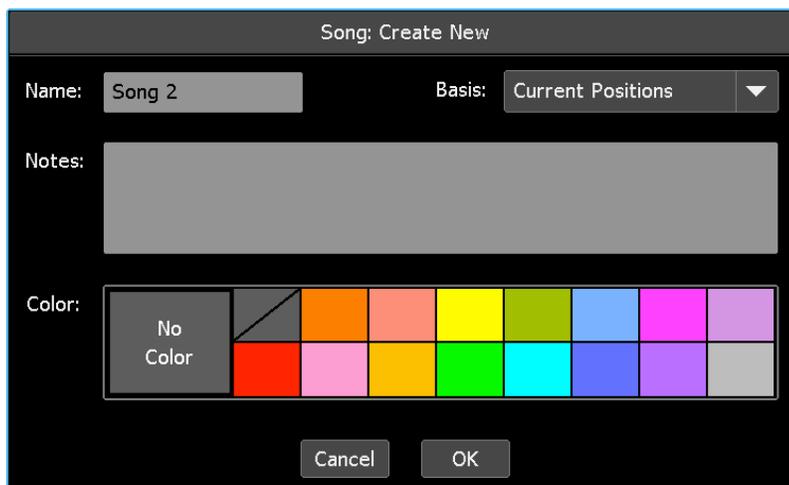
- **New...**: Creates a new song
- **Make Current**: Makes the selected song the current song
- **Delete...**: Deletes the selected song
- **Properties...**: Edit the selected song name, notes, and color
- **Multiselect**: Allows two or more songs to be selected for simultaneous deletion or color change



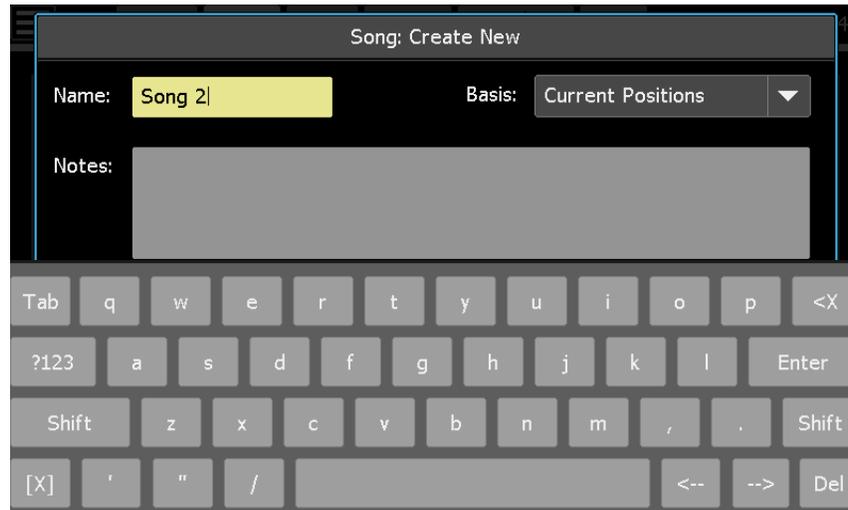
### 15.2.1 Create a New Song

To create a song and mix tree, press within the Songs page to open the Song menu.

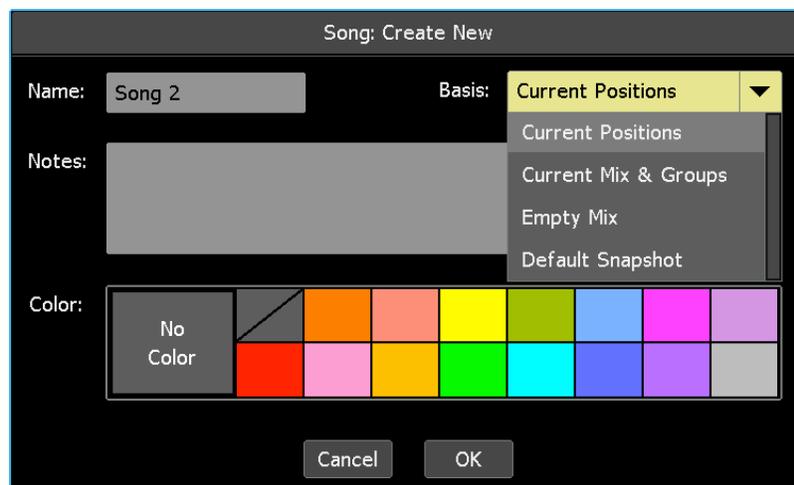
Select "New..." and the "Song: Create New" dialog box will open.



Press in the "Name" text-entry field to enter the name of the new song. The field will turn yellow and the cursor and keyboard will appear, indicating that the system is ready to accept a new name. Use the backspace (<X) or delete (DEL) keys to erase the default name and the keyboard to enter the new song name. The song "Name" can be edited anytime after creation. Press [X] to close the keyboard after the song "Name" has been entered.



Select the "Basis" for initial mix in the new song. The "Basis" is the data (automated fader and switch positions) that are used to create the initial mix in the song.



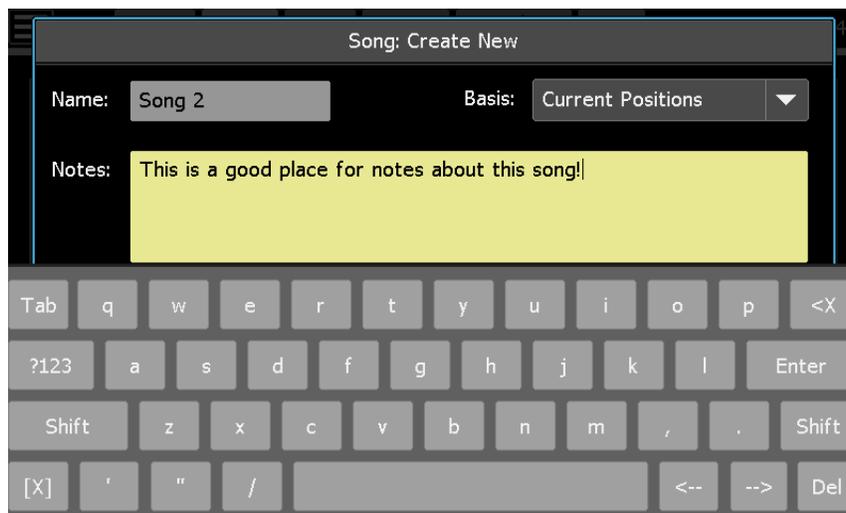
"Current Positions" is the default Basis for new songs.

Scroll to select the desired "Basis" by highlighting it.

The following data sets can be selected as the basis for the initial mix in the new song:

- **Current Positions**: The current physical positions of automated faders and switches
- **Current Mix & Groups**: The current active mix in the ACM (with moves and groups)
- **Empty Mix**: Physical positions of automated faders will be fully down and no mutes and switches will be engaged
- **Default Snapshot**: The contents of the stored Default Snapshot will be applied

Press in the "Notes" text-entry field to enter any notes about the new song. The field will turn yellow and the cursor and keyboard will appear, indicating that the system is ready to accept notes. Use the backspace (<X) or delete (DEL) keys as needed. Song "Notes" can be edited anytime after creation. Press [X] to close the keyboard after the song "Notes" have been entered.

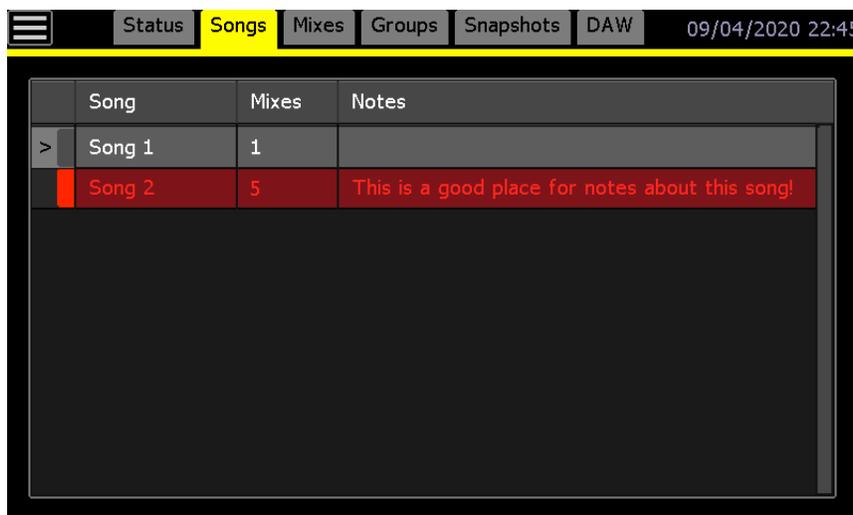


Songs can be color-coded for easy visual organization. To select a color for a song, press the desired color using the “Color” selectors. 16 colors are available and song color can be edited anytime after creation.

**OK** Once all the desired selections and info have been entered, press “OK” to create the new song. This song will not become the current song in the ACM.

**Cancel** Press “Cancel” to cancel.

The newly created song will be displayed in the Songs page along with the other songs within the project.



### 15.2.2 Make a Song Current

To make a song current and load its mix tree, press the song to highlight it in the Songs page.

	Song	Mixes	Notes
>	Song 1	1	
	Song 2	5	This a good place for notes about this song.

Press the song to open the Song menu and select "Make Current."



The Songs page will display the selected song as the current song.

	Song	Mixes	Notes
	Song 1	1	
>	Song 2	5	This is a good place for notes about this song!

### 15.2.3 Delete a Song

To delete a song and its mix tree, press the song to select it in the Songs page.

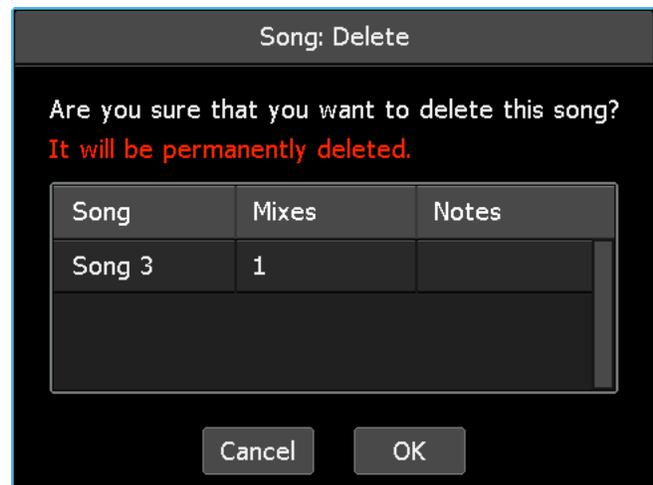
	Song	Mixes	Notes
>	Song 1	1	
	Song 2	5	This a good place for notes about this song.

Press the song to open the Song menu. Select "Delete..." to open the "Song: Delete" dialog box.



**OK** Press "OK" to delete the selected song.

**Cancel** Press "Cancel" to cancel.



The Songs page will display the remaining songs.

	Song	Mixes	Notes
>	Song 1	1	

**WARNING:** Deleting a song will also delete its mix tree and all the mixes within it. This action cannot be undone.

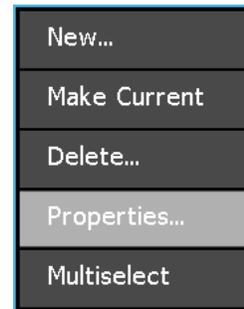
To delete two or more songs simultaneously refer to section [15.2.5 Song Multiselect](#).

### 15.2.4 Song Properties

A song's name, glide rate, notes, and color can be edited via the "Song: Properties" dialog box.

To edit a song's properties, press the song to select it in the Songs page.

	Song	Mixes	Notes
	Song 1	1	
>	Song 2	5	This a good place for notes about this song.

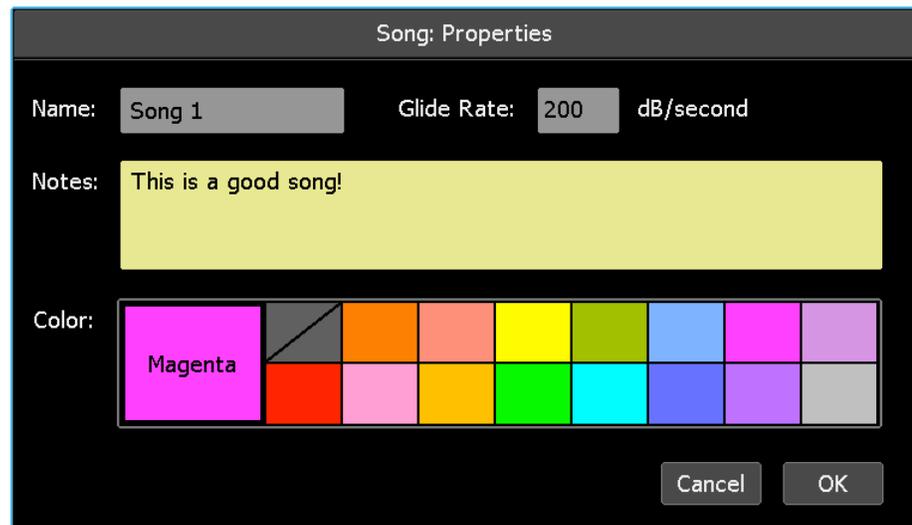


Press the song to open the Song menu. Select "Properties..." to open the "Song: Properties" dialog box.

Make the desired edits to the song name, glide rate, notes, and/or color.

**OK** Press "OK" to apply the entered song properties.

**Cancel** Press "Cancel" to cancel.



The Songs page will display the edited song properties.

	Song	Mixes	Notes
	Song 1	1	
>	My Song	23	This is a good song!

To edit the properties of two or more songs simultaneously refer to section [15.2.5 Song Multiselect](#).

### 15.2.4.1 Song Glide Rate

The "Glide Rate" is the speed at which a fader will move from a new position to the previously written position at transition points, such as end-of-pass processing. The default Glide Rate for a new song is 200 decibels per second for new songs and the mixes it contains. The Glide Rate can be changed in the "Song: Properties" dialog box.

To edit a song's Glide Rate, press the song to select it in the Songs page.

	Song	Mixes	Notes
	Song 1	1	
>	Song 2	5	This a good place for notes about this song.

- New...
- Make Current
- Delete...
- Properties...
- Multiselect

Press the song to open the Song menu. Select "Properties..." to open the "Song: Properties" dialog box.

Song: Properties

Name:       Glide Rate:  dB/second

Notes:

Color: Magenta 

Press in the "Glide Rate" field to activate the entry-field. Drag up or down to select the Glide Rate to be applied. Glide Rates can be set between 10 and 200 dB/second in 5dB/second increments.

Glide Rate:  dB/second

The new Glide Rate will apply to all subsequent mixes created within the song. The Glide Rate can be changed multiple times within a song so different glide rates can be employed as needed.

## 15.2.5 Song Multiselect

Multiselect allows two or more songs to be selected for simultaneous deletion or name change, and/or change to a common color.

To select two or more songs, press one of the songs to open the Song menu.

	Song	Mixes	Notes
	Song 1	1	
	Song 2	5	This is a good place for notes about this song!
	Song 3	14	
>	My Song	23	This is a good song!

(Song 1 is selected in the example above.)

New...
Make Current
Delete...
Properties...
Multiselect

Select "Multiselect" from the menu.



The Multiselect icon will appear in the upper left-hand corner of the Songs page and start blinking to indicating the Multiselect is active.

The screen will return to the Songs page allowing additional songs to be selected.

	Song	Mixes	Notes
	Song 1	1	
	Song 2	5	This is a good place for notes about this song!
	Song 3	14	
>	My Song	23	This is a good song!

Select the additional songs to be edited.

	Song	Mixes	Notes
	Song 1	1	
	Song 2	5	This is a good place for notes about this song!
	Song 3	14	
>	My Song	23	This is a good song!

(Songs 1 and 3 are selected in the example above.)



Once all the songs have been selected, press the Multiselect icon to reopen the Song menu.

*NOTE: Pressing and holding a song will select it and activate the Song Multiselect function, allowing immediate selection of additional songs without accessing the Song menu.*

Use the procedures in the following sections to delete or edit the properties of the multiple selected songs.

### 15.2.5.1 Multiple Song Deletion

Use the process outlined in section [15.2.5 Song Multiselect](#) to select multiple songs to be deleted.

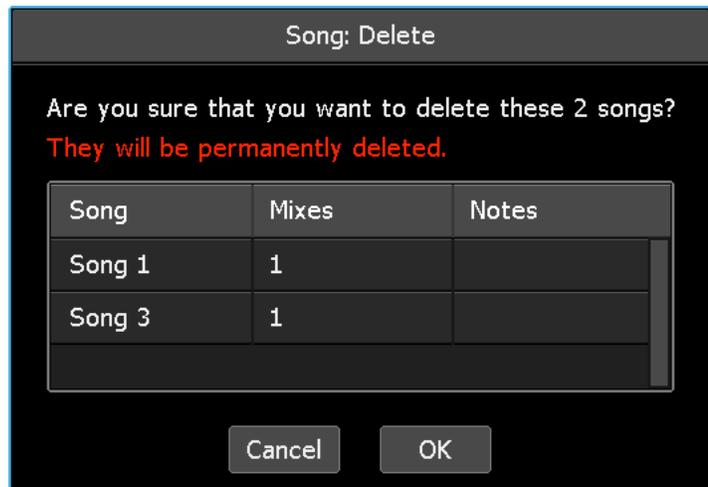
When Multiselect is active the Song menu offers “Delete...” and “Properties...” as the only Multiselect functions.

To delete the selected songs, select “Delete...” to open the “Mix: Delete” dialog box.



**OK** Press “OK” to delete the selected mixes.

**Close** Press “Close” to cancel.



The Songs page will display the remaining songs.

	Song	Mixes	Notes
	Song 2	5	This is a good place for notes about this song!
	> My Song	23	This is a good song!

**WARNING:** Deleting songs cannot be undone.



Press within the mix tree to reopen the Mix menu. Select “Exit Multiselect” to leave the Multiselect function.



### 15.2.5.2 Multiple Song Properties Editing

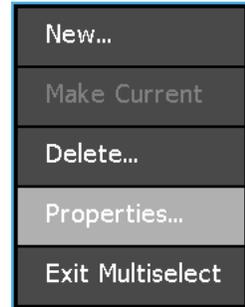
Use the process outlined in section [15.2.5 Song Multiselect](#) to select multiple songs for common color changes.

When Multiselect is active the Song Multiselect menu offers "Delete..." and "Properties..." as the only Multiselect functions.

To apply a common, but sequential name and/or a common color to the selected mixes, select "Properties" to open the "Mix: Properties" dialog box.

To apply a common color to the selected songs, select "Properties..." to open the "Song: Properties" dialog box.

*NOTE: Multiselect does not apply to the "New" Song menu item, although the new song function is still accessible.*



Select a new color for the selected songs. All selected songs will receive the same color.

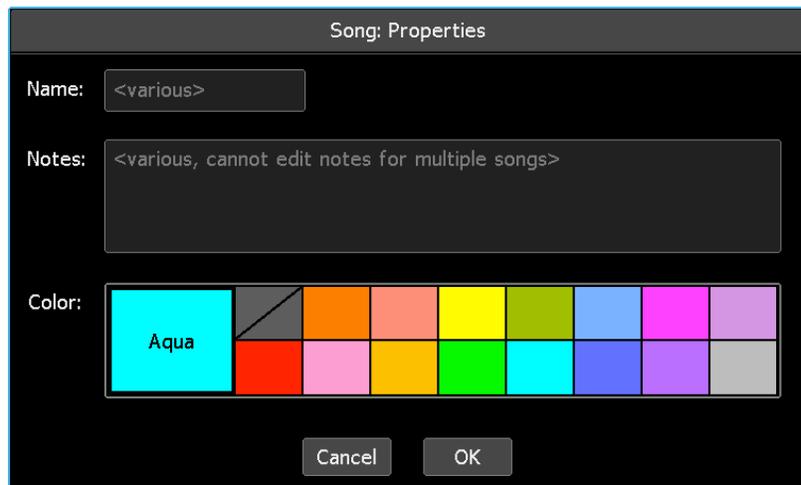
Changes cannot be made to the song name or notes.



Press "OK" to apply the chosen color to the selected songs.

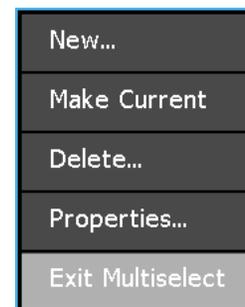


Press "Cancel" to cancel.



The Songs page will display the edited song properties.

	Song	Mixes	Notes
	Song	1	This song is a no go!
	Song 2	5	This is a good place for notes about this song!
	Song	14	This song is a no go!
>	My Song	23	This is a good song!



Press within the Songs Page to reopen the Songs menu. Select "Exit Multiselect" to leave the Multiselect function.

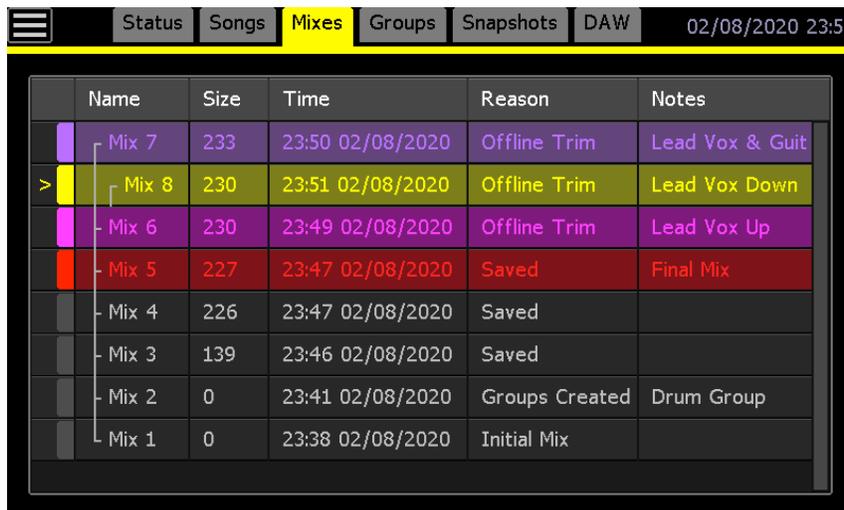
# 16.0 Mixes

As mentioned earlier, projects, songs, mixes, and snapshot provide the means for organizing production workflow. If an album of music is being produced, the engineer might create a project (folder and file) for the entire production. Within that project, a "song" can be created for each musical composition and stored on the Songs page. Within each song several "mixes" can be created and stored on the Mixes page. Groups are created and stored within mixes using the Groups page. A set of "snapshots" can also be generated and store within the project. If scenes from a film or video are being mixed, a similar organizational structure can be adopted. A project might be created for the entire film. Songs and snapshots can be created for each scene, while mixes and groups are created and stored on the Mixes page for each scene. While each engineer may utilize the system in other ways, these conventions will work well for most productions.

This section of the manual will explore mixes and their associated pages and menus in detail. Groups and snapshots will be explained in detail in subsequent sections of this manual.

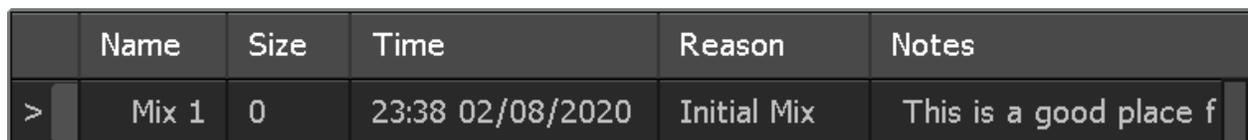
## 16.1 Mixes Page

The Mixes page displays the "mix tree." The mix tree shows the progression of a mix on a pass-by-pass basis, including which pass each mix originated from and how the mixes "branch" off each other.



	Name	Size	Time	Reason	Notes
	Mix 7	233	23:50 02/08/2020	Offline Trim	Lead Vox & Guit
>	Mix 8	230	23:51 02/08/2020	Offline Trim	Lead Vox Down
	Mix 6	230	23:49 02/08/2020	Offline Trim	Lead Vox Up
	Mix 5	227	23:47 02/08/2020	Saved	Final Mix
	Mix 4	226	23:47 02/08/2020	Saved	
	Mix 3	139	23:46 02/08/2020	Saved	
	Mix 2	0	23:41 02/08/2020	Groups Created	Drum Group
	Mix 1	0	23:38 02/08/2020	Initial Mix	

The mix tree displays all the mixes available within the current song. The mix tree has columns that indicate the current mix and display the mix name, size, time of creation, reason for creation, mix notes, and color. The columns can be resized by pressing a line between the columns in the header and dragging it to a new position.



	Name	Size	Time	Reason	Notes
>	Mix 1	0	23:38 02/08/2020	Initial Mix	This is a good place f

A "mix" contains initial positions and all written time-stamped moves for automated faders and switches for a specific segment of recorded audio. Mixes are organized in a "mix tree" and displayed on the Mixes page. Each song has one mix tree.

The "current" mix is the mix-pass data that is loaded in the ACM memory and used for playback and as the basis for addition mix passes and edits. The "current" mix is indicated

by an arrow symbol (>) in the left-hand column. When new automation moves are written or edited, a new mix is created and added to the mix tree. This mix will become the current mix after the transport stops or an edit is made.

Pressing a mix will highlight it and select it for use with the Mix menu, but does not make it current.

As indicated by its name, the mix tree will “branch” if an earlier mix is used as the basis for updates. In the example to the right, Mix 1 through Mix 3 were made in consecutive order. After Mix 3 was made, Mix 2 was made the current mix and used to create Mix 4. Mix 5 was created from Mix 4.

Name	Size	Time	Reason
Mix 3	6	03:03	Offline Trim
Mix 5	6	03:05	Group Added
Mix 4	6	03:04	Offline Trim
Mix 2	4	02:36	Duplicated
Mix 1	4	02:33	Initial Mix

## 16.2 Mix Menu

The Mix menu will open if the screen is pressed in the Mixes page. The Mix menu allows the selected mix (highlighted) to be made the current mix, duplicated, deleted, have all automation events cleared, have offline fader trims applied, copy or swap mix events between channels, or have mix properties modified. Mixes can also be exported and imported via this menu. Multiple mixes can be selected for properties edits or deletion.

The Mix menu provides six (6) functions:

- **Make Current:** Makes the mix selected (highlighted) in the mix tree the current mix
- **Duplicate:** Makes a copy of the selected mix
- **Delete:** Deletes the selected mix(es)
- **Clear Events:** Clears all mix events on specified channels within a specified timecode window
- **Offline Trim:** Offsets fader moves by a prescribed amount on specified channels within a specified timecode window
- **Copy/Swap Mix Events:** Copies or swaps mix events between specified channels within a specified timecode window
- **Export Mix:** Exports the selected mix as a separate file on the memory card
- **Import Mix:** Imports a selected mix from the memory card
- **Properties:** Edit the selected mix name, notes, and color
- **Multiselect:** Allows multiple mixes to be selected for simultaneous deletion, name changes, and/or color changes

Make Current
Duplicate
Delete
Clear Events
Offline Trim
Copy/Swap Mix Events
Export Mix
Import Mix
Properties
Multiselect

### 16.2.1 Make a Mix Current

To make a mix the “current” mix, press the mix to select it in the mix tree.

	Name	Size	Time	Reason	Notes
>	Mix 2	22	23:41 02/08/2020	Groups Created	Drum Group
	Mix 1	22	23:38 02/08/2020	Initial Mix	

(Mix 1 is selected in the example above.)

Press the mix to open the Mix menu and select "Make Current."

Make Current
Duplicate
Delete
Clear Events
Offline Trim
Copy/Swap Mix Events
Export Mix
Import Mix
Properties
Multiselect

The mix tree will display the selected mix as the current mix.

	Name	Size	Time	Reason	Notes
	Mix 2	22	23:41 02/08/2020	Groups Created	Drum Group
>	Mix 1	22	23:38 02/08/2020	Initial Mix	

### 16.2.2 Duplicate a Mix

To make a copy of a mix, press the mix to highlight it in the mix tree.

	Name	Size	Time	Reason	Notes
>	Mix 1	22	23:38 02/08/2020	Initial Mix	

Press the mix to open the Mix menu and select "Duplicate."

Make Current
Duplicate
Delete
Clear Events
Offline Trim
Copy/Swap Mix Events
Export Mix
Import Mix
Properties
Multiselect

The mix tree will display the new duplicated mix.

	Name	Size	Time	Reason	Notes
	Mix 2	22	23:41 02/08/2020	Duplicated	
>	Mix 1	22	23:38 02/08/2020	Initial Mix	

### 16.2.3 Delete a Mix

To delete a mix, press the mix to select it in the mix tree.

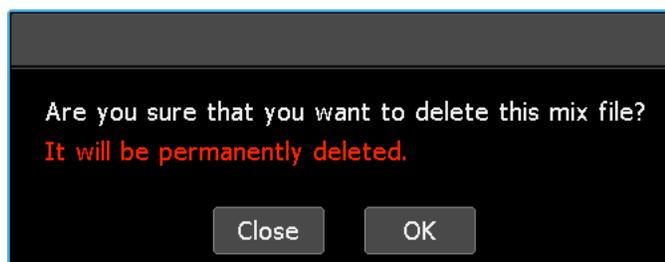
	Name	Size	Time	Reason	Notes
>	Mix 2	22	23:41 02/08/2020	Groups Created	Drum Group
	Mix 1	22	23:38 02/08/2020	Initial Mix	

Press the mix to open the Mix menu and select "Delete" to open the "Mix: Delete" dialog box.

Make Current
Duplicate
Delete
Clear Events
Offline Trim
Copy/Swap Mix Events
Export Mix
Import Mix
Properties
Multiselect

**OK** Press "OK" to delete the selected mix.

**Close** Press "Close" to cancel.



The mix tree will display the remaining mixes.

	Name	Size	Time	Reason	Notes
>	Mix 2	22	23:41 02/08/2020	Groups Created	Drum Group

**WARNING:** Deleting a mix and its groups cannot be undone.

To delete two or more mixes simultaneously, refer to section [16.2.10 Mix Multiselect](#).

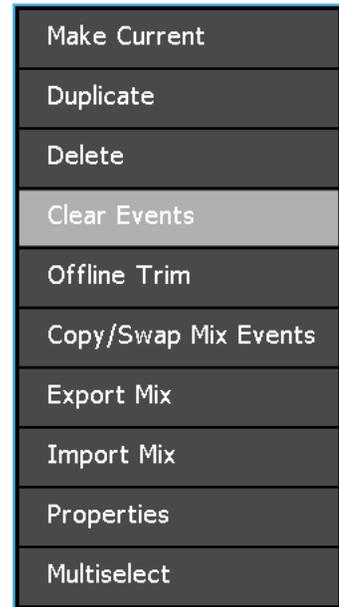
### 16.2.4 Clear Events

Selected mix events (fader moves, mutes, and switches) on specified channels can be cleared within a specified timecode window using the "Clear Events" function.

To clear mix events in a mix, press the mix to highlight it in the mix tree.

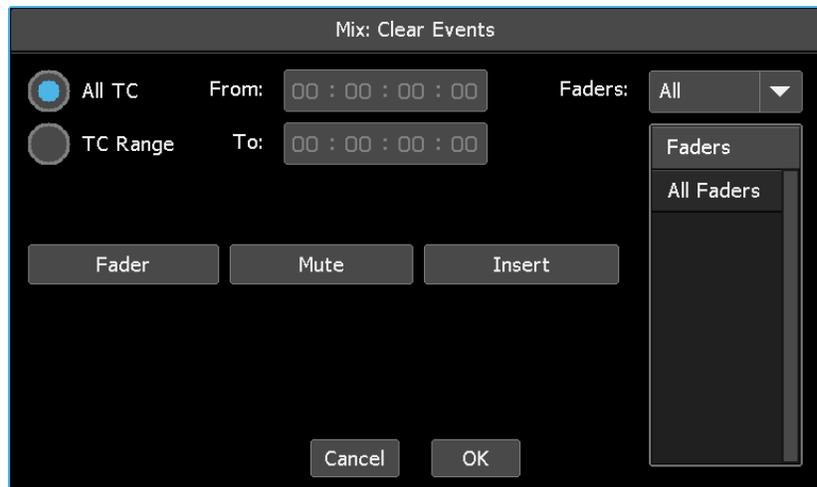
	Name	Size	Time	Reason	Notes
>	Mix 1	22	23:38 02/08/2020	Initial Mix	

Press the mix to open the Mix menu and select "Clear Events" to open the "Mix: Clear Events" dialog box.



Touch the fader caps of the fader or faders to be cleared to select them for editing. The beeper in the ACM will issue an audio alert to indicate when a fader is touched.

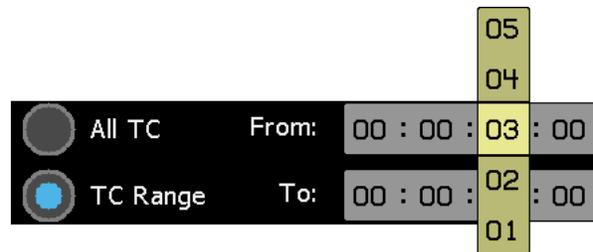
Touched faders will appear in the "Faders" window. A second touch will remove the fader from trim selection.



If mix events are to be cleared for the entire mix, select "All TC" to apply the trim to all timecode locations.



If mix events are to be cleared for only a section of the mix, select "TC Range" and enter "From" and "To" timecode locations.



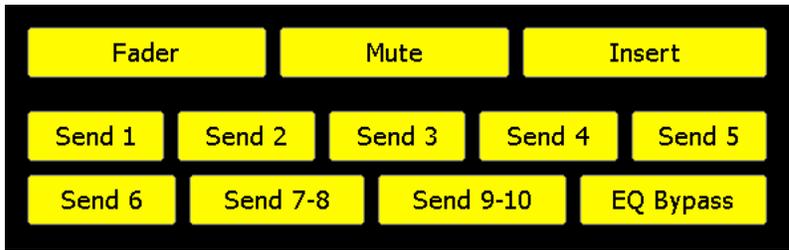
"From" sets the timecode location where cleared mix events will begin. "To" sets the timecode location where the cleared mix events will end. Each timecode section (hours:minutes:seconds:frames) has an entry-field so precise timecode locations can be selected.

Press in each field to activate its entry-field and enter the needed timecode address. Drag to scroll to the desired value.

Select the mix events (controls) to be cleared by pressing the selectors to select or deselect them.

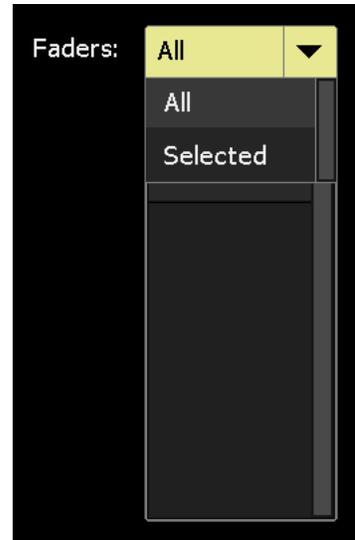


The controls that can be cleared on all Vision consoles are shown in the image on the right.



Select the faders to have mix events cleared using the "Faders" pull-down menu. The menu choices are:

- **All**: All channels, Stereo Returns, Group Masters, and Program Masters
- **Selected**: A specified subset of faders



If "All" is selected, the Faders window will display "All Faders."



If "Selected" is chosen, the Faders window will display the faders that will have mix events cleared.

To select faders, touch the faders on channels to have mix events cleared. Faders can be toggled in and out of the selection as long as the dialog box is open. To provide an audio alert, the beeper will sound each time a fader is selected.

As faders are selected, they will be displayed in the Faders window.



**OK** Once all the desired faders, mix events (controls), and timecode ranges have been selected, press "OK" to create a new mix with the cleared mix events. This mix will become the current mix in the ACM.

**Cancel** Press "Cancel" to cancel.

The mix tree will display a new mix with the cleared mix events.

	Name	Size	Time	Reason	Notes
>	Mix 2	22	23:41 02/08/2020	Clear Events	
	└─ Mix 1	22	23:38 02/08/2020	Initial Mix	

### 16.2.5 Offline Trim

The levels of previously written faders moves can be edited using the "Offline Trim" function. This feature allows an offset to be applied to the previously recorded levels of one or more faders. Previously written levels are preserved, but offset up or down by a user defined amount. Levels can be trimmed up or down by as little as .5dB or as much as 100dB. The offline trim can be applied to all timecode locations or within a timecode window, such as a verse or scene.

Offline Trim can be applied to faders only and has no effect on mutes and other switches.

To trim fader moves in a mix, press the mix to highlight it in the mix tree.

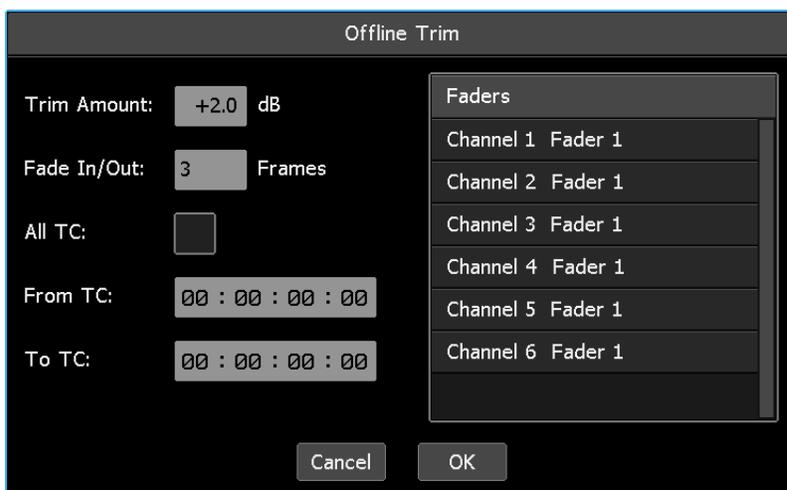
	Name	Size	Time	Reason	Notes
>	Mix 1	22	23:38 02/08/2020	Initial Mix	



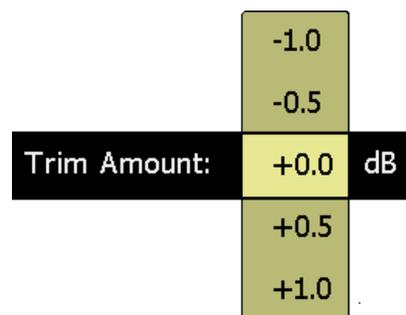
Press the mix to open the Mix menu and select "Offline Trim" to open the "Offline Trim" dialog box.

Touch the fader caps of the fader or faders to be trimmed to select them for editing. The beeper in the ACM will issue an audio alert to indicate when a fader is touched.

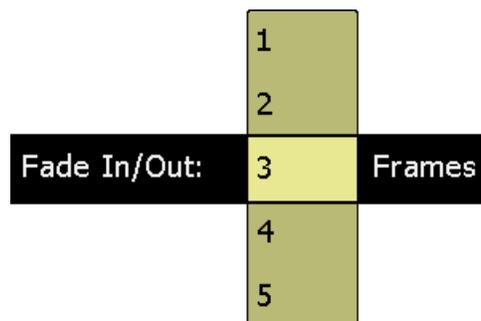
Touched faders will appear in the "Faders" window. A second touch will remove the fader from trim selection.



Press in the "Trim Amount" field to activate the entry-field. Drag up or down to select the amount of offset to be applied. Up to 100dB of gain (+) or attenuation (-) can be selected in .5dB increments.



Press in the "Fade In/Out" field to activate the entry-field. Drag up or down to select the number of frames for the Fade In/Out glide time. The number of frames selected determines the glide time for the "From" and "To" data transition points when only part of a mix is trimmed. 1 to 30 frames can be selected. The exact length of each frame is determined by the project frame rate.



The default Fade In/Out time is 3 frames.

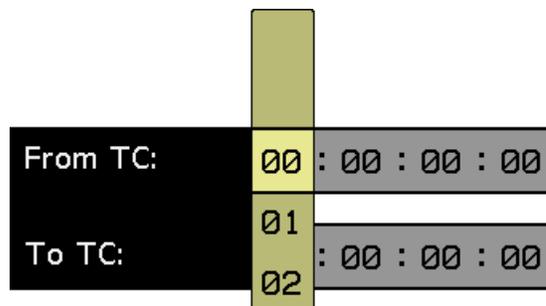
If faders are to be trimmed for the entire mix, select "All TC" to apply the trim to all timecode locations.



If faders are to be trimmed for only a section of the mix, deselect "All TC" and enter "From" and "To" timecode locations.



"From TC" sets the timecode location where the Offline Trim will begin. "To TC" sets the timecode location where the Offline Trim will end. Each timecode section (hours:minutes:seconds:frames) has an entry-field so precise timecode locations can be selected.



Press in each field to activate its entry-field and enter the needed timecode address. Drag to select the desired value.

**OK**

Once all the desired faders and timecode ranges have been selected, press "OK" to create a new mix with the offline trims. This mix will become the current mix in the ACM.

**Cancel**

Press "Cancel" to cancel.

The mix tree will display the new mix with the offline trims.

	Name	Size	Time	Reason	Notes
>	Mix 2	22	23:41 02/08/2020	Offline Trim	
	Mix 1	22	23:38 02/08/2020	Initial Mix	

### 16.2.6 Copy/Swap Mix Events

Selected mix events (fader moves, mutes, and switches) can be copied or swapped between specified channels within a specified timecode window using the "Copy/Swap Mix Events" function.

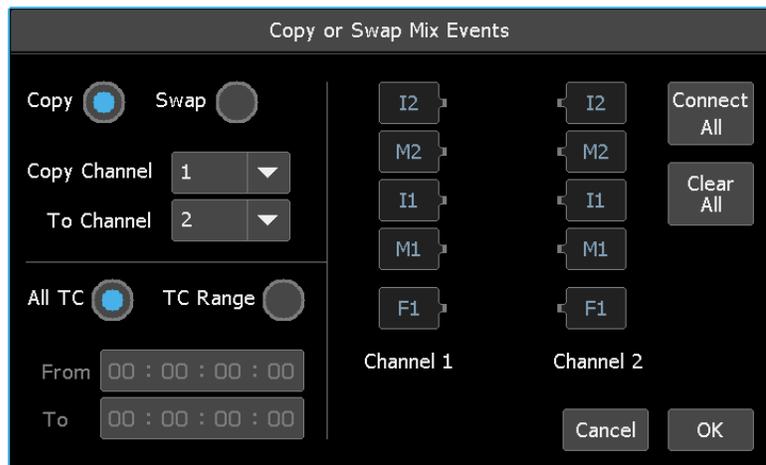
To copy or swap mix events in a mix, press the mix to highlight it in the mix tree.

	Name	Size	Time	Reason	Notes
>	Mix 1	22	23:38 02/08/2020	Initial Mix	

Make Current
Duplicate
Delete
Clear Events
Offline Trim
<b>Copy/Swap Mix Events</b>
Export Mix
Import Mix
Properties
Multiselect

Press the mix to open the Mix menu and select "Copy/Swap Mix Events" to open the "Copy or Swap Mix Events" dialog box.

The "Copy or Swap Mix Events" dialog box allow the selection of copy or swap functions, selection of the channels to copy to or swap with, timecode window, and the mapping of events between channel.



To copy mix events between two channels, select the "Copy" button.

*NOTE: Mix events can be copied to compatible controls within the same channel by selecting the same channel for both the "Copy Channel" and "To Channel."*



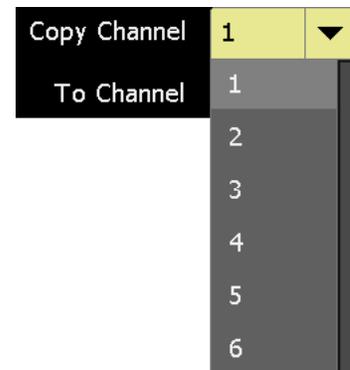
To swap mix events between two channels, select the "Swap" button.

*NOTE: Mix events can be swapped with compatible controls within the same channel by selecting the same channel for both the "Swap Channel" and "With Channel."*

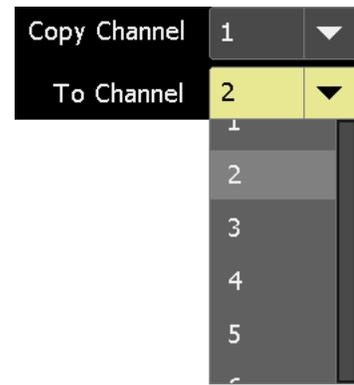


If "Copy" is active, select the "Copy Channel," the channel to copy mix events from and the "To Channel," the channel the mix events will be copied to.

Press on the "Copy Channel" to activate its entry-field and select the channel mix events will be copied from. Drag to scroll to select the desired channel.



Press on the "To Channel" to activate its entry-field and select the channel mix events will be copied to. Drag to scroll to select the desired channel.



If "Swap" is active, select the "Swap Channel," the channel to swap mix events from and the "With Channel," the channel the mix events will be swapped with using the same selection techniques as described above.

If mix events are to be copied or swapped for the entire mix, select "All TC" to apply the trim to all timecode locations.



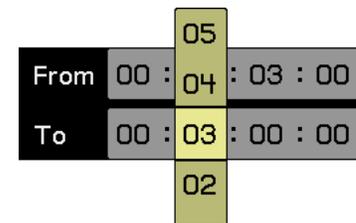
If mix events are to be copied or swapped for only a section of the mix, select "TC Range" and enter "From" and "To" timecode locations.



"From" sets the timecode location where the copied or swapped mix events will begin.



"To" sets the timecode location where the copied or swapped mix events will end.



Each timecode section (hours:minutes:seconds:frames) has an entry-field so precise timecode locations can be selected.

Press in each field to activate its entry-field and enter the needed timecode address. Drag to scroll to the desired value.

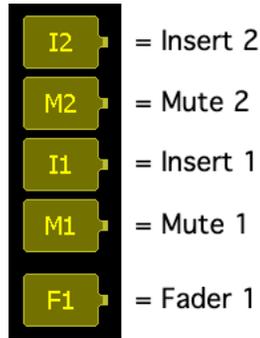
The mix events to be copied or swapped need to be mapped from one channel to the other. This is done by making the needed connections in the "Copy or Swap Mix Events" window.



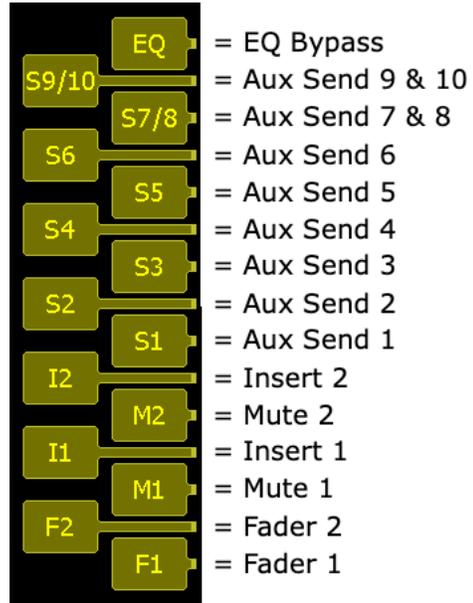
In many cases, it will be desirable to transfer all mix events to/between the equivalent controls on the destination channels. All connections can be quickly made by pressing the "Connect All" button.



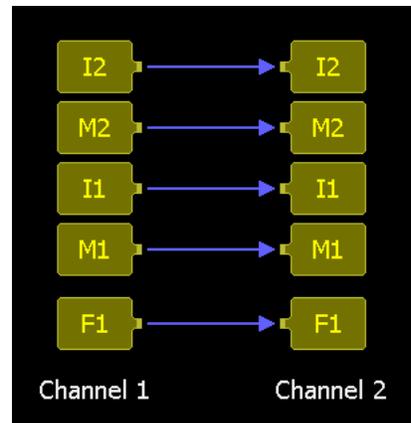
The abbreviations on the incons for the channel controls and associated mix events stand for the following on 2448 and AXS consoles (1608-II consoles have only F1, M1, and I1):



The abbreviations on the incons for the channel controls and associated mix events stand for the following on Vison consoles:



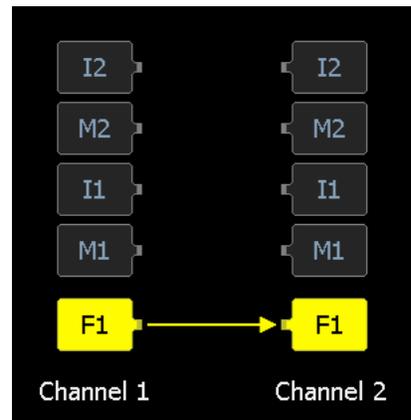
In this case, Fader 1 on the "Copy Channel" or "Swap Channel" will be connected to Fader 1 on the "Copy To" or "Swap With" channel, Mute 1 to Mute 1, and so on as indicated in the example on the right.



Connections between channels can be made manually by pressing the control on the "Copy Channel" or "Swap Channel" followed by pressing the control on the "Copy To" or "Swap With" channel.

Fader 1 on the "Copy Channel" is connected to Fader 1 on the "Copy To" channel in the example on the right.

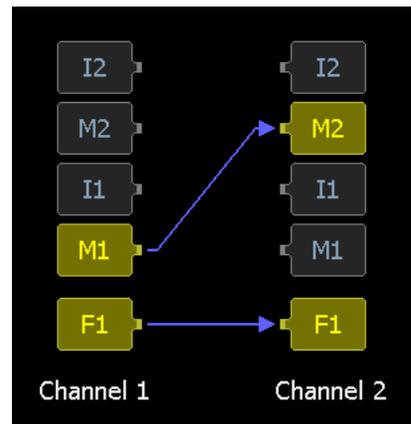
Controls can be disconnected using the same method.



Connections can also be made between non-equivalent controls by manually mapping the connections between channels.

In the example on the right, Mute 1 on the "Copy Channel" is connected to Mute 2 on the "Copy To" channel. F1 is connected to F1.

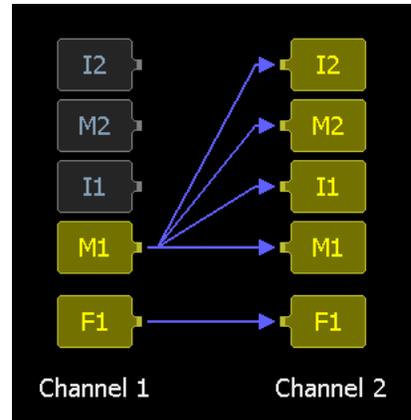
*NOTE: Faders cannot be mapped to Mutes, Inserts, or switches and vice-versa.*



Controls on "Copy" and "Swap" channels can be connected to multiple controls on the "Copy To" or "Swap With" channels.

In the example on the right, Mute 1 on the "Copy Channel" is connected to Mute 1, Insert 1, Mute 2, and Insert 2 on the "Copy To" channel. F1 is connected to F1.

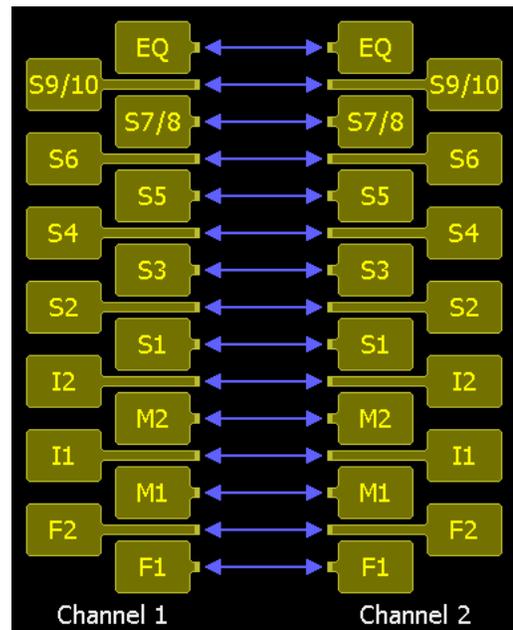
**Clear All** Press "Clear All" to clear all connections between channels.



A control map for swapping all controls between Channel 1 and Channel 2 on all Vision consoles is shown in the image on the right.

**OK** Once the Copy or Swap function, the channels, timecode, and control mapping have been selected, press "OK" to create a new mix with the copied or swapped mix events. This mix will become the current mix in the ACM.

**Cancel** Press "Cancel" to cancel.



The mix tree will display the new mix with the copied or swapped mix events.

	Name	Size	Time	Reason	Notes
>	Mix 2	22	23:41 02/08/2020	Copy Events	
	Mix 1	22	23:38 02/08/2020	Initial Mix	

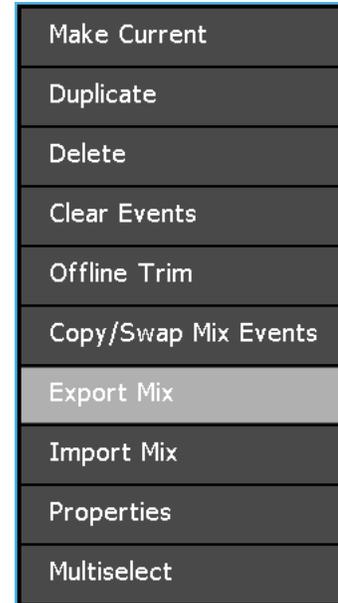
To copy or swap mix events for two or more mixes simultaneously, refer to section [16.2.10 Mix Multiselect](#).

### 16.2.7 Export a Mix

Mixes can be exported as a separate .VMX files to the memory-card for use in other projects.

To export a mix, press the mix to highlight it in the mix tree.

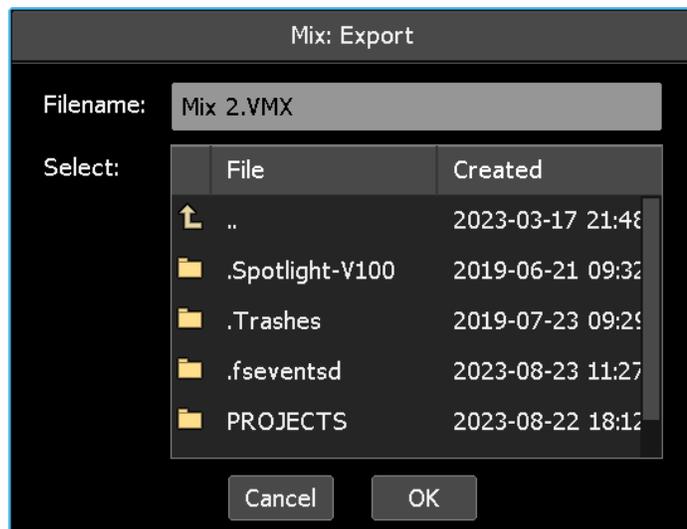
	Name	Size	Time	Reason	Notes
>	Mix 2	22	23:41 02/08/2020	Saved	
	Mix 1	22	23:38 02/08/2020	Initial Mix	



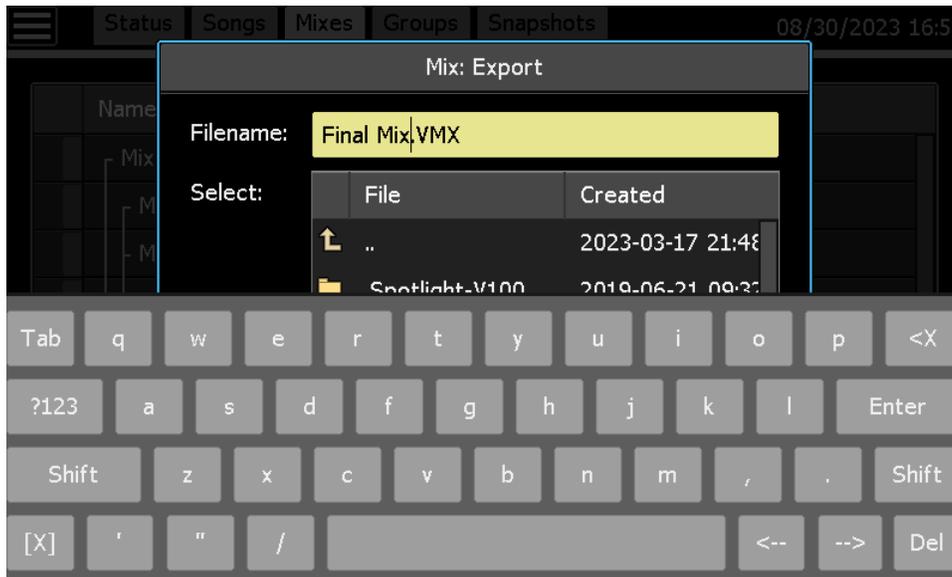
Press the mix to open the Mix menu and select "Export Mix" to open the "Mix: Export" dialog box.

The "Mix: Export" dialog box allows a location on the memory-card to be selected for the exported mix to be saved.

The mix file can be renamed before exporting.



To enter the name of the mix file to be exported, press in the "Filename" text-entry field. The field will turn yellow and the cursor and keyboard will appear, indicating that the system is ready to accept a new name. Use the backspace (<X) or delete (DEL) keys to erase the existing filename and the keyboard to enter the mix filename. Press [X] to close the keyboard after the mix "Filename" has been entered.



**OK**

After the storage location and filename has been selected, press "OK" to save the selected mix as a .VMX file on the memory-card. The exported mix will also be retained in the current project.

**Cancel**

Press "Cancel" to cancel.

### 16.2.8 Import a Mix

Mix .VMX files from other projects can be imported from the memory-card

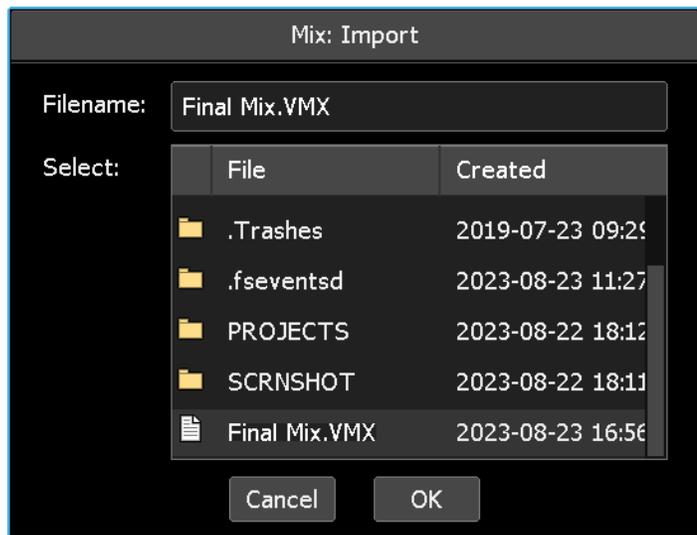
To import a mix, press in the mix tree to open the Mix menu.

Name	Size	Time	Reason	Notes
Mix 1	22	23:38 02/08/2020	Initial Mix	

- Make Current
- Duplicate
- Delete
- Clear Events
- Offline Trim
- Copy/Swap Mix Events
- Export Mix
- Import Mix**
- Properties
- Multiselect

Select "Import Mix" to open the "Mix: Import" dialog box.

The "Mix: Import" dialog box allows the mix to be imported to be located on the memory-card. Once found, press the filename in the directory to select it for importing. The name of the selected file will appear in the "Filename" field.



After the mix file has been selected, press "OK" to import the selected mix to the open project. The mix will also be retained in its original location on the memory-card.

**OK**

**Cancel** Press "Cancel" to cancel.

The imported mix will appear in the mix tree, but will not be the current mix.

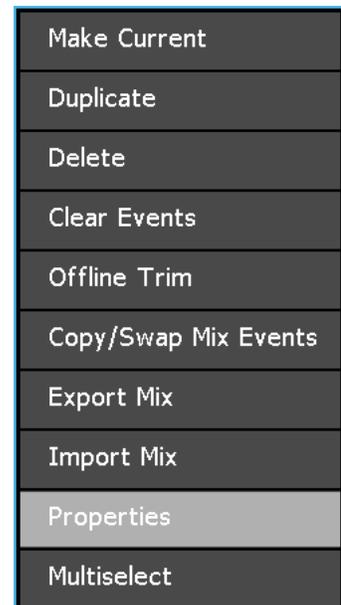
	Name	Size	Time	Reason	Notes
	Final Mix	22	23:41 02/08/2020	Saved	
>	Mix 1	22	23:38 02/08/2020	Initial Mix	

### 16.2.9 Mix Properties

A mix's name, notes, and color can be edited via the "Mix: Properties" dialog box.

To edit mix properties, press the mix to select it in the mix tree.

	Name	Size	Time	Reason	Notes
>	Mix 1	22	23:38 02/08/2020	Initial Mix	

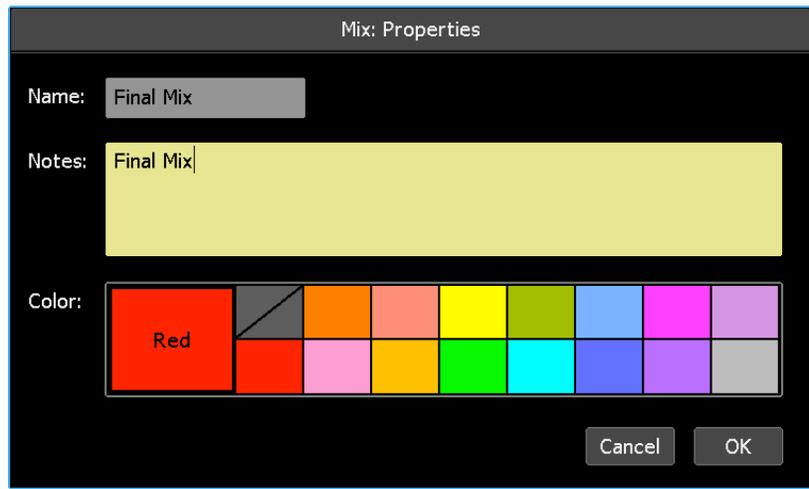


Press the mix to open the Mix menu. Select "Properties" to open the "Mix: Properties" dialog box.

Make the desired changes to the mix name, notes, and/or color.

**OK** Press "OK" to apply changes to the selected mix properties.

**Cancel** Press "Cancel" to cancel.



The mix tree will display the edited mix properties.

	Name	Size	Time	Reason	Notes
>	Final Mix	22	23:38 02/08/2020	Initial Mix	Final Mix

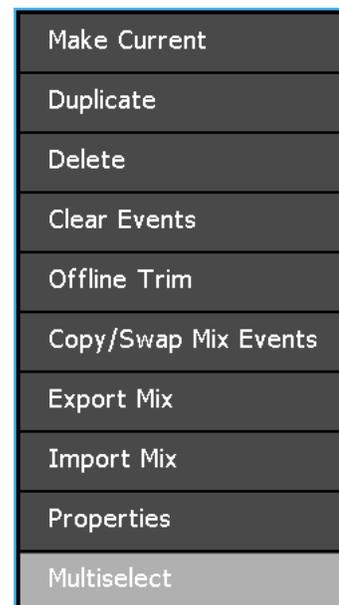
To edit the properties of two or more mixes simultaneously refer to section [16.2.10 Mix Multiselect](#).

### 16.2.10 Mix Multiselect

Multiselect allows two or more mixes to be selected for simultaneous deletion, copy/swap of mix events, name change, and/or change to a common color.

To select multiple mixes, press one of the mixes in the mix tree to open the Mix menu.

	Name	Size	Time	Reason	Notes
	Mix 4	226	23:47 02/08/2020	Saved	
	Mix 3	139	23:46 02/08/2020	Saved	
v	Mix 2	22	23:41 02/08/2020	Groups Created	Drum Group
	Mix 1	22	23:38 02/08/2020	Initial Mix	



Select "Multiselect" from the menu.



The Multiselect icon will appear in the upper left-hand corner of the Mixes page and start blinking to indicating the Multiselect is active.

The screen will return to the mix tree allowing additional mixes to be selected.

	Name	Size	Time	Reason	Notes
<input type="checkbox"/>	Mix 4	226	23:47 02/08/2020	Saved	
<input type="checkbox"/>	Mix 3	139	23:46 02/08/2020	Saved	
<input checked="" type="checkbox"/>	Mix 2	22	23:41 02/08/2020	Groups Created	Drum Group
<input type="checkbox"/>	Mix 1	22	23:38 02/08/2020	Initial Mix	

Select the additional mixes to be deleted or edited.

	Name	Size	Time	Reason	Notes
<input checked="" type="checkbox"/>	Mix 4	226	23:47 02/08/2020	Saved	
<input checked="" type="checkbox"/>	Mix 3	139	23:46 02/08/2020	Saved	
<input checked="" type="checkbox"/>	Mix 2	22	23:41 02/08/2020	Groups Created	Drum Group
<input type="checkbox"/>	Mix 1	22	23:38 02/08/2020	Initial Mix	

*NOTE: Pressing and holding a mix will select it and activate the Mix Multiselect function, allowing immediate selection of additional mixes without accessing the Mix menu.*



Once all the mixes have been selected, press the Multiselect icon again to open the Mix menu.

Use the procedures in the following sections to delete, copy/swap mix events, or edit the properties of the multiple selected mixes.

### 16.2.10.1 Multiple Mix Deletion

Use the process outlined in section [16.2.10 Mix Multiselect](#) to select multiple mixes to be deleted.

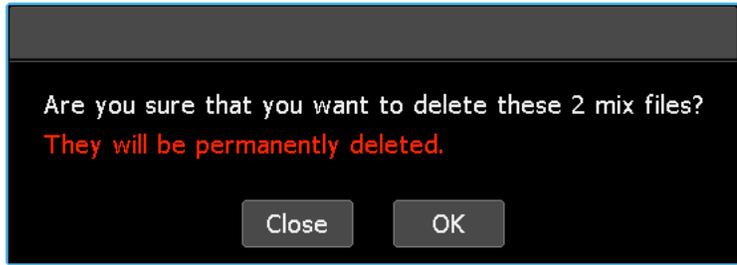
When Multiselect is active the Mix menu offers "Delete," "Copy/Swap Mix Events," and "Properties" as the only Multiselect functions.

To delete the selected mixes, select "Delete" to open the "Mix: Delete" dialog box.

Make Current
Duplicate
Delete
Clear Events
Offline Trim
Copy/Swap Mix Events
Export Mix
Import Mix
Properties
Exit Multiselect

**OK** Press "OK" to delete the selected mixes.

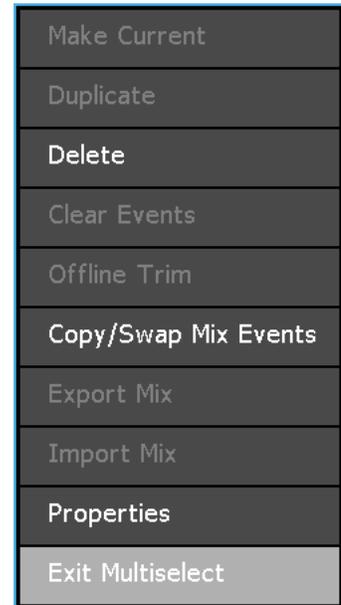
**Close** Press "Close" to cancel.



The mix tree will display the remaining mixes.

	Name	Size	Time	Reason	Notes
>	Mix 2	22	23:41 02/08/2020	Groups Created	Drum Group
	Mix 1	22	23:38 02/08/2020	Initial Mix	

**WARNING:** Deleting mixes and their groups cannot be undone.

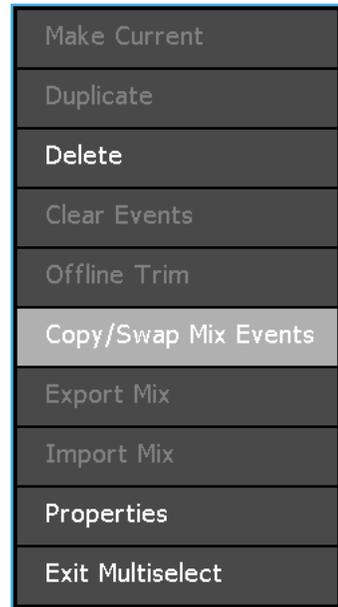


Press within the mix tree to reopen the Mix menu. Select "Exit Multiselect" to leave the Multiselect function.

### 16.2.10.2 Multiple Mix Copy or Swap

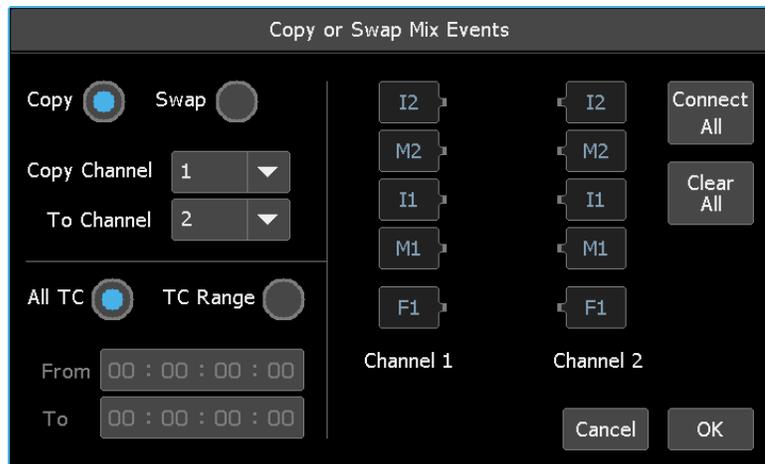
Use the process outlined in section [16.2.10 Mix Multiselect](#) to select multiple mixes to apply the copy or swap mix events function.

When Multiselect is active the Mix menu offers “Delete,” “Copy/Swap Mix Events,” and “Properties” as the only Multiselect functions.



To copy or swap mix events in the selected mixes, select “Copy/Swap Mix Events” to open the “Copy or Swap Mix Events” dialog box.

Follow the procedures outlined in section [16.2.6 Copy/Swap Mix Events](#) to select the copy or swap functions, channels, timecode, and control mapping.

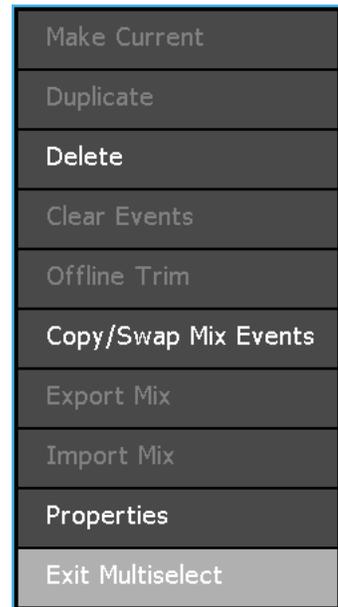


**OK** Once the Copy or Swap function, the channels, timecode, and control mapping have been selected, press “OK” to create additional mixes with the copied or swapped mix events.

**Cancel** Press “Cancel” to cancel.

The mix tree will display the new mixes with the copied or swapped mix events.

	Name	Size	Time	Reason	Notes
	Mix 6	228	23:49 02/08/2020	Mix Events Copy	
	Mix 5	140	23:48 02/08/2020	Mix Events Copy	
>	Mix 4	226	23:47 02/08/2020	Saved	
	Mix 3	139	23:46 02/08/2020	Saved	
	Mix 2	0	23:41 02/08/2020	Groups Created	Drum Group
	Mix 1	0	23:38 02/08/2020	Initial Mix	

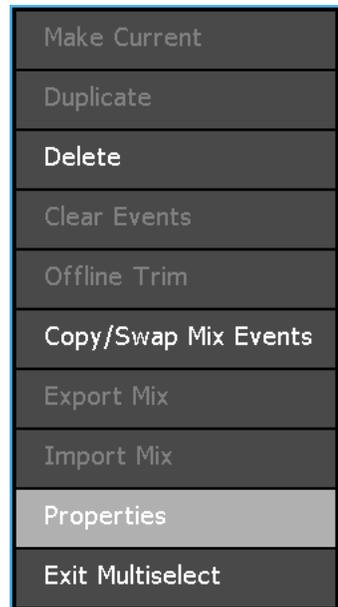


Press within the mix tree to reopen the Mix menu. Select "Exit Multiselect" to leave the Multiselect function.

### 16.2.10.3 Multiple Mix Properties Editing

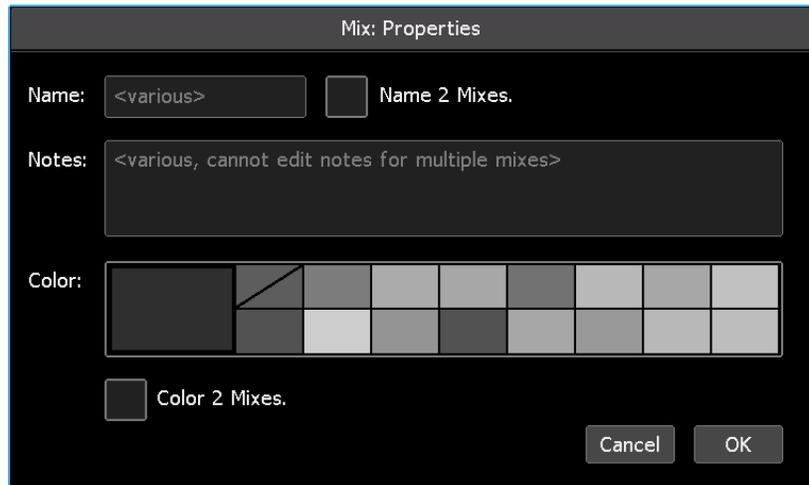
Use the process outlined in section [16.2.10 Mix Multiselect](#) to select multiple mixes for name and/or color changes.

When Multiselect is active the Mix Multiselect menu offers "Delete," "Copy/Swap Mix Events," and "Properties" as the only Multiselect functions.

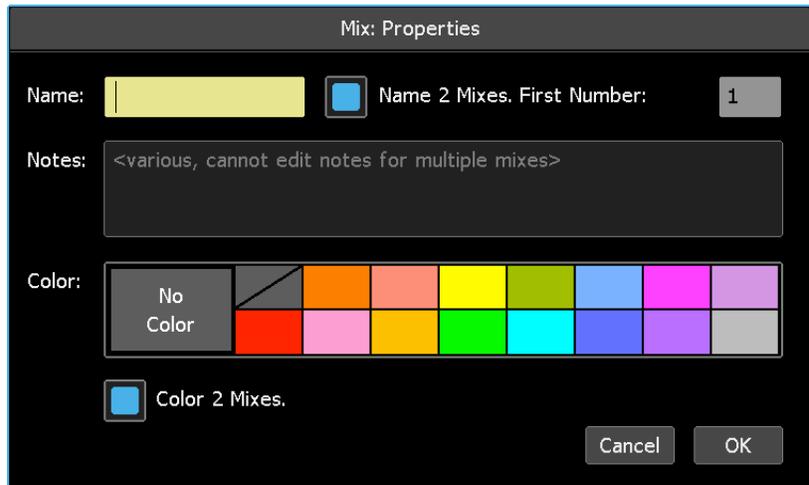


To apply a common, but sequential name and/or a common color to the selected mixes, select "Properties" to open the "Mix: Properties" dialog box.

When the "Mix: Properties" dialog box opens with Multiselect active, editing of the mix name and/or color is facilitated.



To enable editing, press the "Name" and/or "Color" check boxes to select the desired properties for editing. Note that the system will display the number of mixes that are selected to have their properties edited.

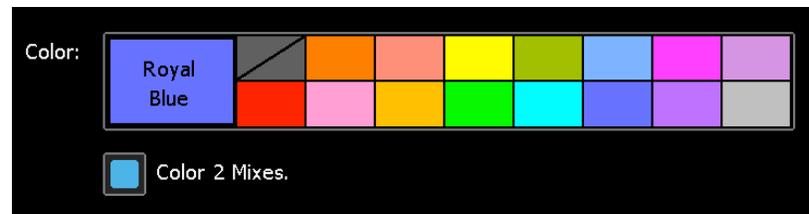


Check the "Name" box to activate the "Name:" and "First Number" entry fields.



Enter a common name for the selected mixes. The system will automatically number the mixes in consecutive order, starting with the number entered in the "First Number:" field.

Check the "Color" box to activate the color picker and press a color to assign it to all of the selected mixes.



**OK** Press "OK" to apply the entered name and/or chosen color to the selected mixes.

**Cancel** Press "Cancel" to cancel.

The mix tree will display the edited mix properties.

	Name	Size	Time	Reason	Notes
	rough 2	226	23:47 02/08/2020	Saved	
	rough 1	139	23:46 02/08/2020	Saved	
>	Mix 2	0	23:41 02/08/2020	Groups Created	Drum Group
	Mix 1	0	23:38 02/08/2020	Initial Mix	

- Make Current
- Duplicate
- Delete**
- Clear Events
- Offline Trim
- Copy/Swap Mix Events
- Export Mix
- Import Mix
- Properties
- Exit Multiselect

Press within the mix tree to reopen the Mix menu. Select "Exit Multiselect" to leave the Multiselect function.

# 17.0 Groups

A “group” contains control links between a “group master” and several “group members” that provides control over a specific set of controls (faders, mutes, or inserts) from the master. The Groups page displays all the groups within the current mix.

Groups can be setup to control the automated controls. Groups can control the following on each console:

- **1608-II:**
  - Channels: Faders, mutes, and inserts
  - Stereo Returns: Faders, mutes, and inserts
  - Program Bus: Master Fader and insert
- **2448 and AXS:**
  - Channels: Large faders and Large and Small Fader path mutes and inserts
  - Stereo Returns: Faders, mutes, and inserts
  - Program Bus: Master Fader(s) and insert(s)
- **Vision and Vision+:**
  - Channels: Fader 1 and Fader 2 faders, mutes and inserts, Aux Send ON/off, and EQ Bypass
  - Program Bus: All Master Faders

Groups are stored within mixes and can be accessed using the Groups page. 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 mix tree. The Group menu is accessible from the Groups page.

Name	Controls	Master	Members	Notes
Drums	Fader	1 F1	F1: 2-8, 1	Drum Group
Drums	Mute	1 F1	F1: 2-8, 1	Drum Group
Drums	Insert	1 F1	F1: 2-8, 1	Drum Group

Groups are setup with a “master” channel or fader and one or more “members.”

Any fader can be a group master or member for faders including input channel faders, Stereo Return faders, Group Master faders, and Program Master faders. Any channel or stereo return can be a group master or member for faders and switches. Only an input channel with a 648C (2448), 968 (AXS), or 1068L/1068L V2/1068L V3 (Vision) channel module can be a master or member of a group with Fader 2 (FD2) controls. However, any Fader 1 can control a Fader 2 fader, mute, and/or insert.

*NOTE: Inserts cannot be controlled from the Group Master faders or Program Master faders.*

The only limit to the number of groups that can be created is the number of channels and fader modules installed in the console. As long as there is at least one automated 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 be “nested” by creating groups whose masters are members in other groups. In this way groups can overlap, so one group can control another, so the master of one group can be a member of another. Nested groups are limited to three (3) nested master faders/switches.

## 17.1 Enable Groups

### Enable Groups

For groups to function, they must be enabled. **Enable Groups** activates and deactivates all the control groups within the current mix. Groups are enabled by default. Disabling groups will suspend all current groups. Press **Enable Groups** to engage or disengage all of the groups in the current mix.

## 17.2 Group Masters

A fader must be designated the “group master” to control the faders and perhaps mutes and other switches on the console’s input channels, Stereo Returns, and Program Masters. A “group master channel” (channel module) is needed to control all other switches on all consoles, including the EQ Bypass and Aux ON/off on all Vision consoles.

As mentioned earlier, the automation controls on input channels are divided into two “sections” on 2448 and AXS consoles and three “sections” on Vision and Vision+ consoles.

- **FD 1 (Fader 1)**: Large Fader audio path controls: large moving fader, mute, & insert
- **FD 2 (Fader 2)**: Small Fader audio path controls: mute & insert (+Fader 2 on Vision)
- **SW (Switches)**: EQ Bypass and Aux ON/off (Vision Only)

*NOTE: The small fader is not automated on the AXS or 2448 consoles.*

For purposes of grouping, automated faders and switches are all considered equal. Any automated control can be designated as the group master for any equivalent automated control. In other words, any fader can be a group master for controlling other faders. This includes Group Master faders, any automated channel fader, Stereo Return faders, and even the Program Master faders (which can serve as extra group masters when not used as program bus masters). A FD2 mute can be a group master for a FD1 mute and vice versa. Likewise, a Group Master fader can control a fader and mute (but not insert or other switches) of any FD1 or FD2 section (or both at the same time).

### 17.2.1 Channels as Group Masters

Used in combination, any channel fader and its associated channel module can be designated as a group master. When used as a group master, a channel provides the most complete control over other channels assigned to the group. This is due to channels being used as group masters having all the controls, (faders and switches) as channels they are assigned to control. Group Master faders, Stereo Returns, and Program Masters cannot control the automated channel assets that are not included in their architecture and therefore are limited when used as group masters that control channels.

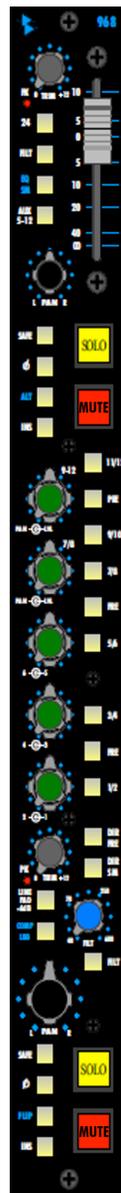
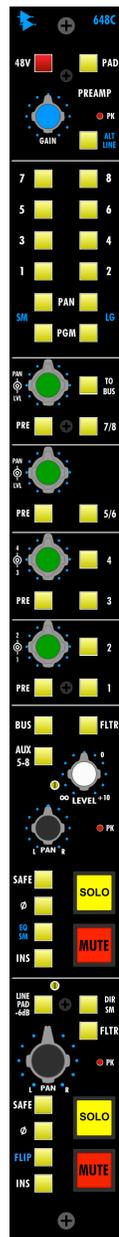
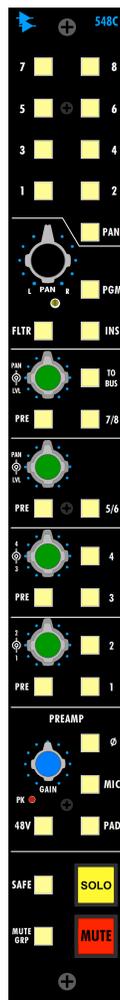
Any channel module can be designated as a group master. Using a channel module as group master has the advantage of being able to control the channel fader (Fader 1/Large fader), mute, and insert on all consoles. Fader 2 (Small Fader) mute and insert can be controlled on all consoles except 1608-II. Channel modules on Vision consoles can also be group masters for Fader 2, EQ Bypass and Aux Send ON/off.

Another advantage of using channels as group masters is the ability to locate a group master next to or near the members it controls.

When using a channel module as group master, it's common to use an unused channel, but any channel, including those passing audio, may be used. Group members can be individually adjusted without interference from the group master, but changes made on the group master will effect all group members. For example, if the group master is passing audio and is muted, it will also mute the group members.

The channel module on all consoles contain controls that can be automated. The automated controls for each console are as follows:

**Channel Fader**    **1608-II 548C**    **2448 648C**    **AXS 968**    **Vision 1068L V3**



Each channel module supports the following automated functions:

**1608-II: 548C**

- Channel: Mute insert

**2448: 648C**

- Large Fader: Mute & insert
- Small Fader: Mute & insert

**AXS: 968**

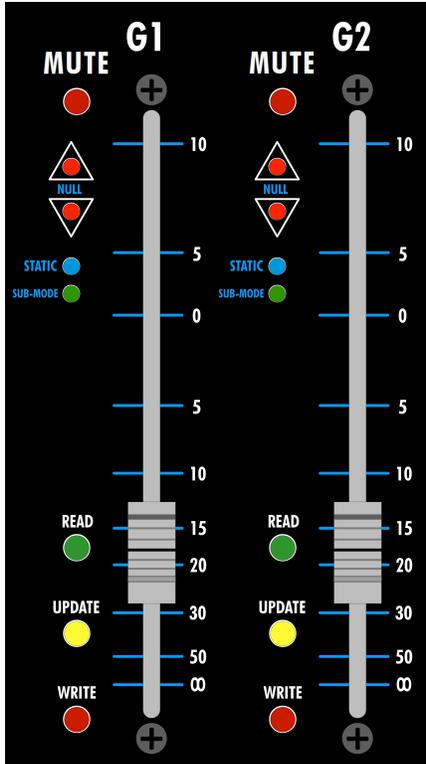
- Large Fader: Mute & insert
- Small Fader: Mute & insert

**Vision: 1068L, 1068L V2, & 1068L V3**

- Fader 1: Mute and insert
- Fader 2: Fader, mute & insert
- Aux Send ON/off
- EQ Bypass

## 17.2.2 Group Master Faders

### 1608-II, 2448, and AXS Group Masters



1608-II, 2448, and AXS consoles are all equipped with two (2) dedicated Group Master faders (G1 and G2) that can be designated as Group Masters for all faders, including channel faders, Stereo Returns and Program Masters. The Group Masters are located on the 946 Master Fader module on AXS consoles and on the 940C ACM on 1608-II and 2448 consoles. All Vision consoles are equipped with six (6) individual Group Master faders.

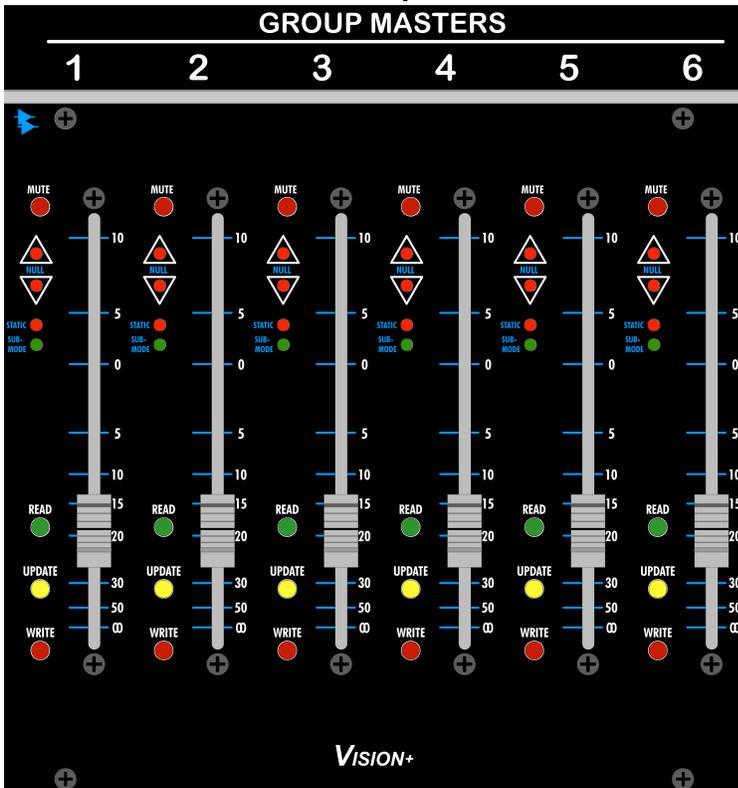
Group Masters are control devices only and cannot be used to carry audio. Group Masters can control faders and mutes only and cannot control inserts or other switches.

**NOTE:** The Group Master **MUTE** buttons are located on the fader modules above the **NULL** LEDs.

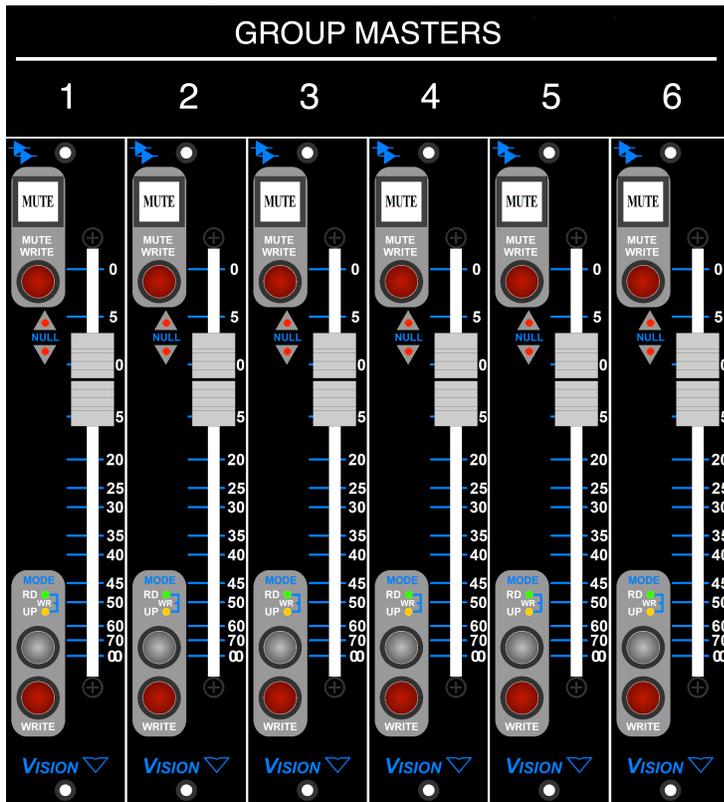
Advantages of using a Group Master fader to control the group include not using any input channel resources as they do not carry audio.

Group Masters are fully automatable and can control fader moves on their assigned "member" channel.

### Vision+ Group Masters

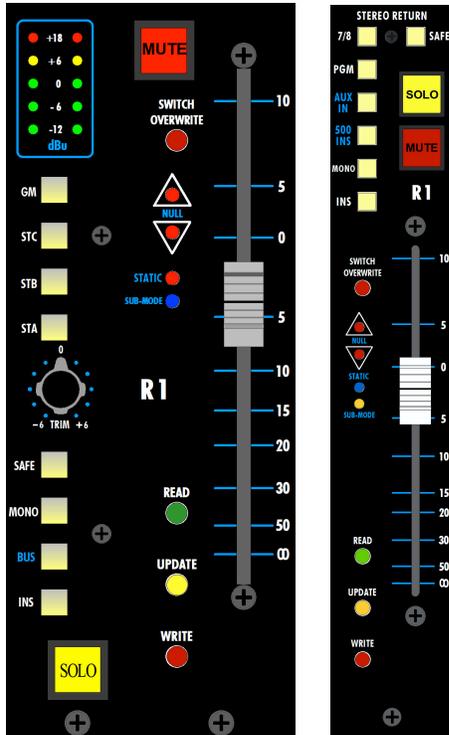


## Original Vision Group Masters



### 17.2.3 Stereo Returns as Group Masters

**AXS 265**      **1608-II and 2448**  
**Stereo Returns 1-6**      **265C Stereo Returns 1-4**



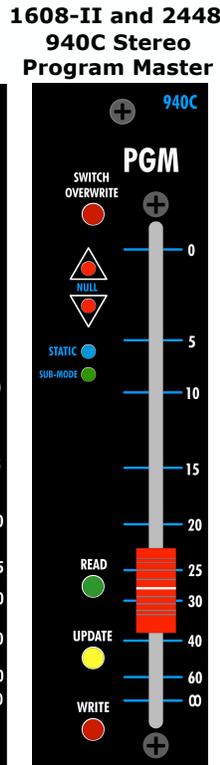
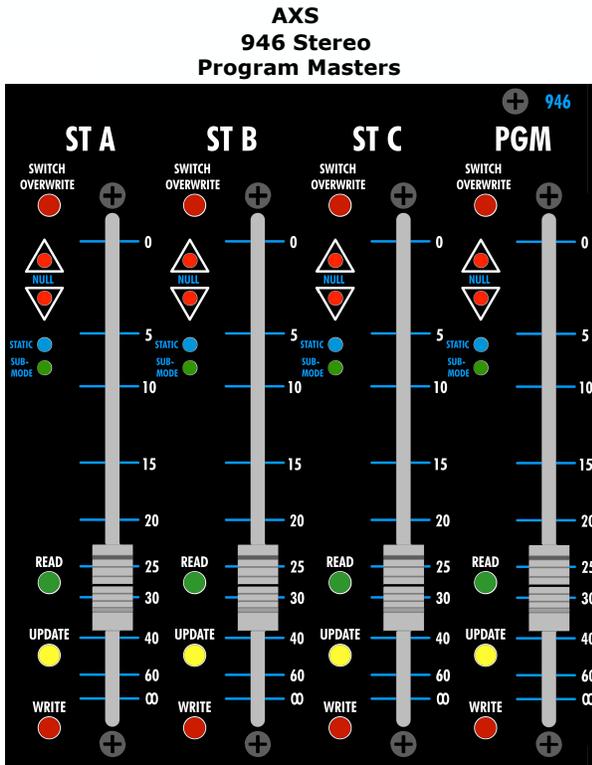
AXS consoles are equipped with six (6) Stereo Returns and 1608-II and 2448 consoles are equipped with four (4) Stereo Returns. The Stereo Returns on all three consoles can be designated as group masters for all faders, including channel faders, Stereo Returns and Program Masters, as well as mutes and inserts on channels and Stereo Returns.

The Stereo Returns are located on the 265 module on AXS consoles and on the 265C modules on 1608-II and 2448 consoles. Vision consoles are not equipped with automated stereo returns.

Stereo Returns can also be designated as group masters, but are typically not used for this purpose during mixing. Using a Stereo Return as group master has the advantage of being able to control inserts, in addition to faders and mutes.

When using a Stereo Return as a group master, it's common to use one that's unused, but any return, including one passing audio, may be used.

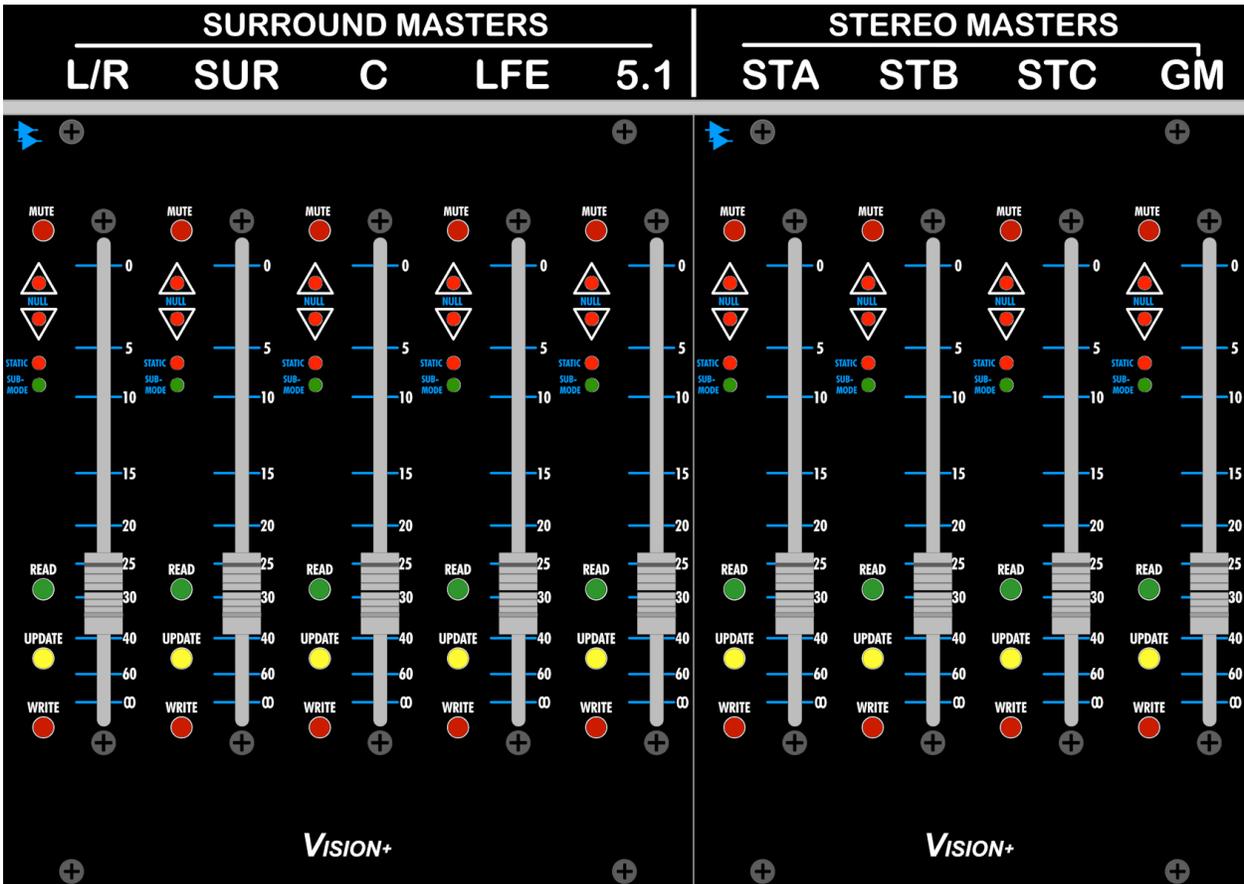
## 17.2.4 Program Masters as Group Masters



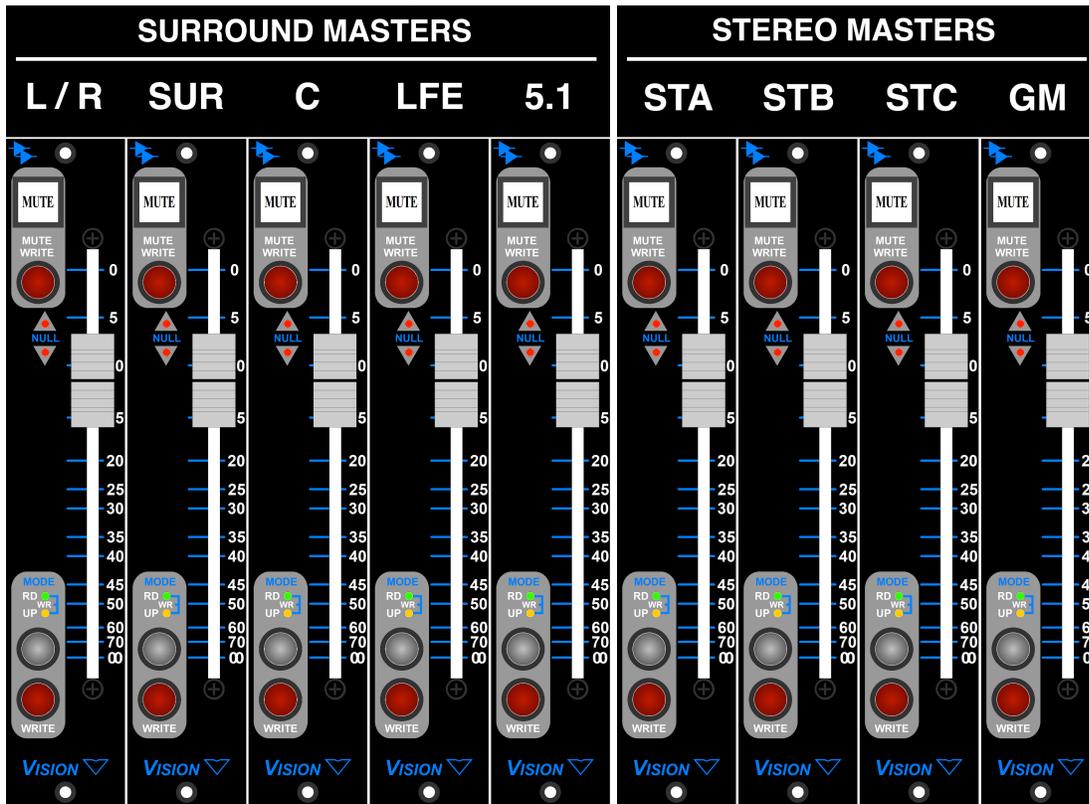
While typically not used for this purpose, Program Master faders on all consoles can be designated as group masters. Unused Program Master faders can be used as extra group masters and will function in the same way. Unlike Group Master faders, using a Program Master as a group master can only control faders. Mute and inserts cannot be controlled from Program Master faders.

Under normal circumstances, it is not typically recommended to use a Program Master that's contributing audio to the mix as a group master.

### Vision+ Program Masters



Original Vision Program Masters



### 17.3 Groups Page

The Groups page supports the creation, modification, and deletion of groups.



The Groups page has columns that display the group Name, Controls, Master, Members, and Notes for each group. Groups can also be color-coded and the columns can be resized by pressing a line between the columns in the header and dragging it to a new position.

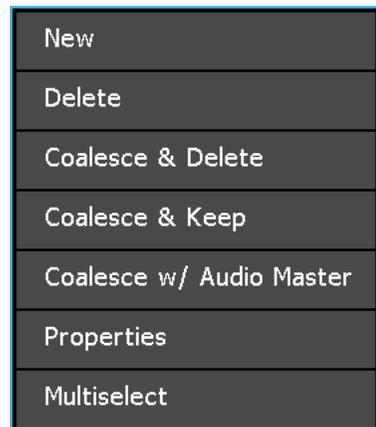
Name	Controls	Master	Members	Notes
Drums	Fader	24 F1	F1: 1-8	This is a good place for notes

## 17.4 Group Menu

The Group menu will open if the screen is pressed in the Groups page.

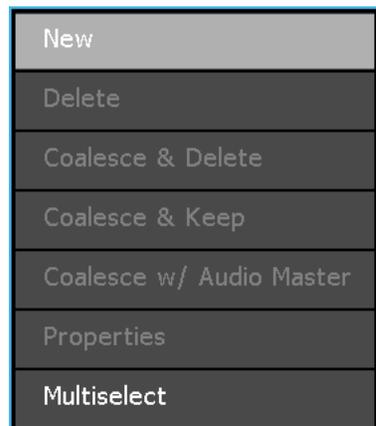
The Group menu provides seven (7) functions:

- **New**: Create a new group
- **Delete**: Deletes the selected group
- **Coalesce & Delete**: Writes group moves to individual channels and deletes the group master moves and group
- **Coalesce & Keep**: Writes group moves to individual channels, deletes the group master moves, and retains the group
- **Coalesce w/ Audio Master**: Writes group moves to individual channels, retains audio master moves, and deletes the group
- **Properties**: Edit the selected group name, notes, and color
- **Multiselect**: Allows multiple groups to be selected for simultaneous editing and deletion

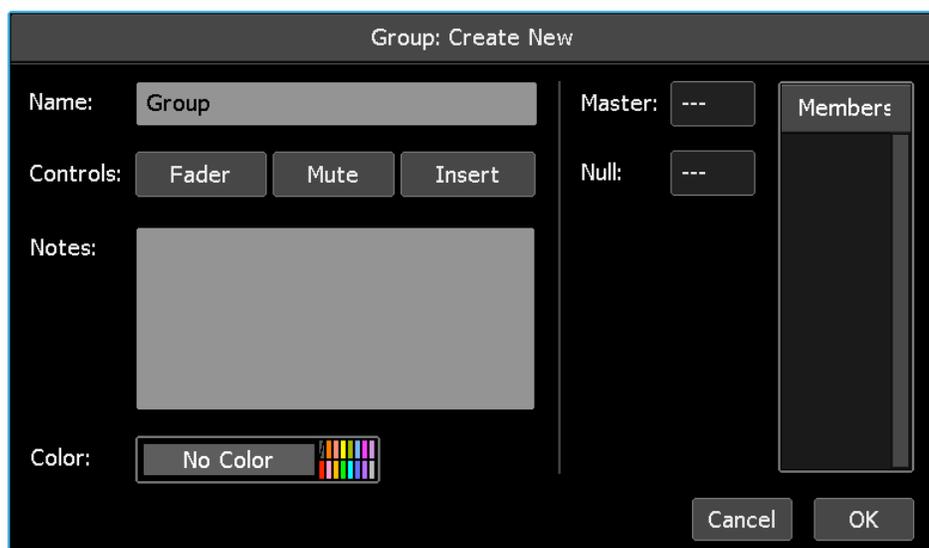


### 17.4.1 Make a New Group

To create a new group, press within the Groups page to open the Group menu. Select "New" to open the "Group: Create New" dialog box.

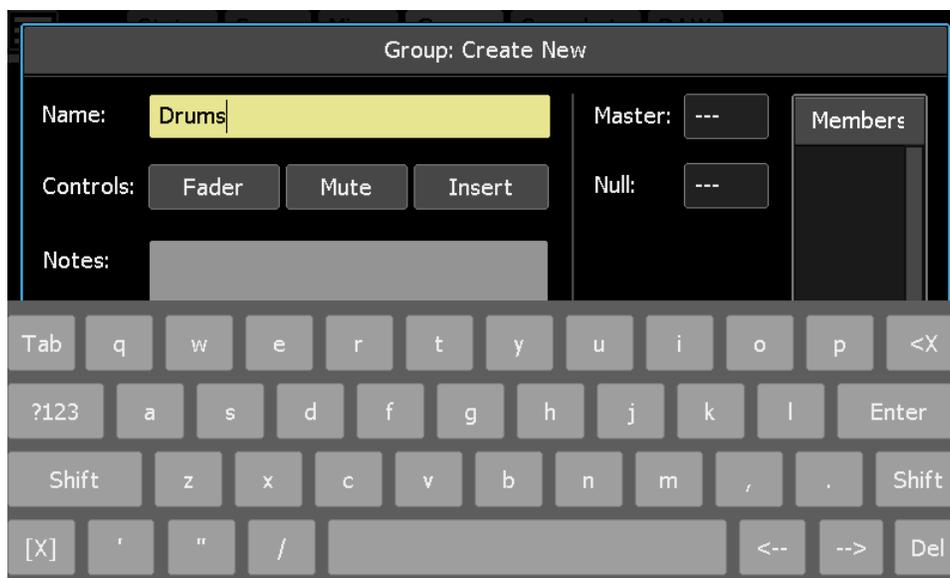


The "Group: Create New" dialog box allows the new group name, controls, notes, and color to be selected.



Press in the "Name" text-entry field to enter the name of the new group. The field will turn yellow and the cursor and keyboard will appear, indicating that the system is ready to accept a new name. Use the backspace (<X) or delete (DEL) keys to erase the default name and the

keyboard to enter the new group name. Press [X] to close the keyboard after the group "Name" has been entered.



The following controls can be selected:

- **Fader:** Large channel faders, Stereo Returns, Group Masters, and Program Master faders
- **Mute:** Fader 1 and 2 inserts (including Stereo Returns)
- **Insert:** Fader 1 and 2 inserts (including Stereo Returns)

Select the "Controls" to be included in the new group by pressing the selectors to select or deselect them. Alternately, touching an actual fader, mute, and/or insert will activate the associated control selectors. None of the controls are selected by default.



Group controls for a Vision and Vision+ consoles are shown in the image to the right.

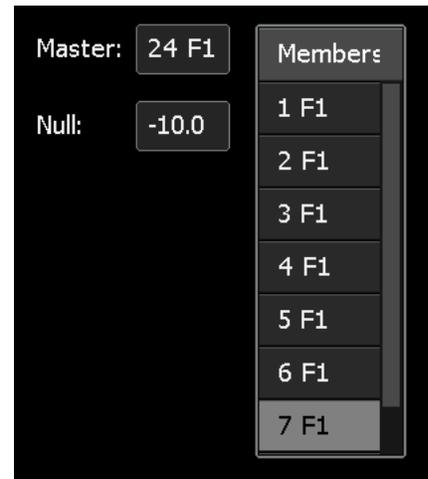


When a new group is created, an individual group for each set of selected controls is created. In other words, if a group is created that includes Fader, Mute, and Insert, a separate group will be created for each set of controls, resulting in three different groups in the Groups page.

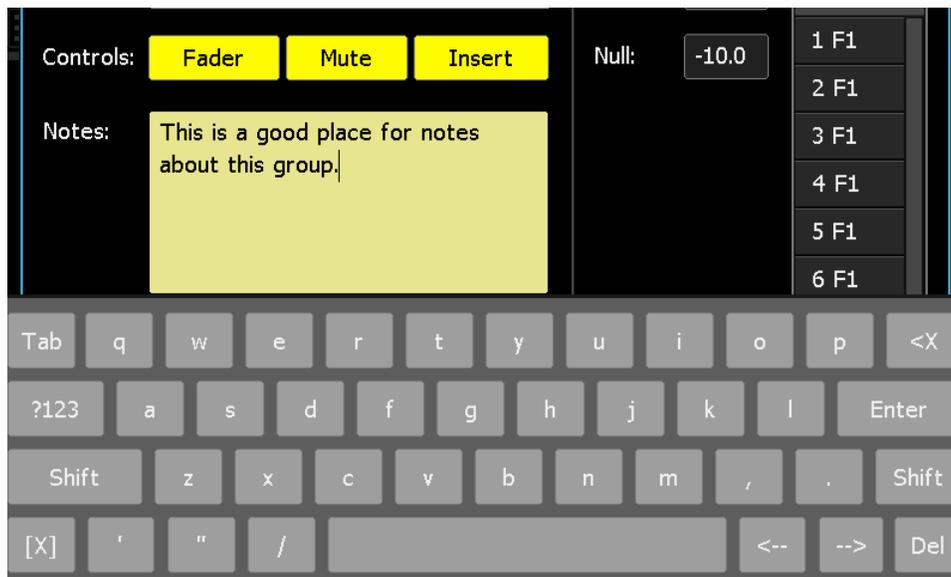
**Assign a Group Master:** The first section with a fader or switch that's touched or actuated will become the group master. On 2448, AXS, and all Vision consoles the FD1 or FD2 LED of the chosen master channel will "shimmer" (blink quickly) to indicate the selected master.

**Assign Group Members:** The next faders and switches that are touched or actuated will be group members. On 2448, AXS, and all Vision consoles the FD1 or FD2 LED of the chosen members will blink normally to indicate selection as a group member. On 1608-II consoles, the NULL Down LED will blink normally (there are no FD1 or FD2 LEDs on 1608-II console). Repeated touching/actuating will toggle the selection for inclusion in the group as long as this dialog box is open. Actuated switches will not change states when being used for group selection and will resume normal function after the group is created. To provide an audio alert, the beeper will sound each time a fader is touched or switch is actuated.

As selections are made, the group master and members appear in the dialog box, along with the group name, the controls included in the group (fader and switches), and the null position of the group master fader.



Press in the "Notes" text-entry field to enter any notes about the new group. The field will turn yellow and the cursor and keyboard will appear, indicating that the system is ready to accept notes. Use the backspace (<X) or delete (DEL) keys as needed. Group "Notes" can be edited anytime after creation. Press [X] to close the keyboard after the group "Notes" have been entered.



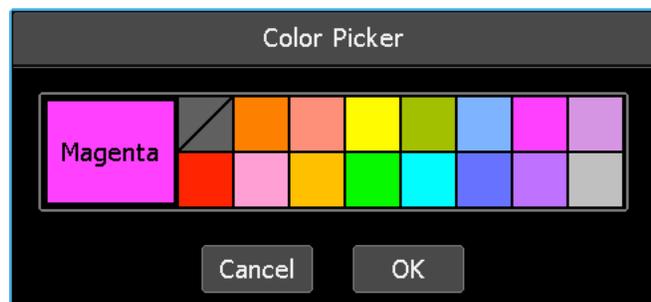
Groups can be color-coded for easy visual organization. To select a color for a group, press the color field to open the color picker.

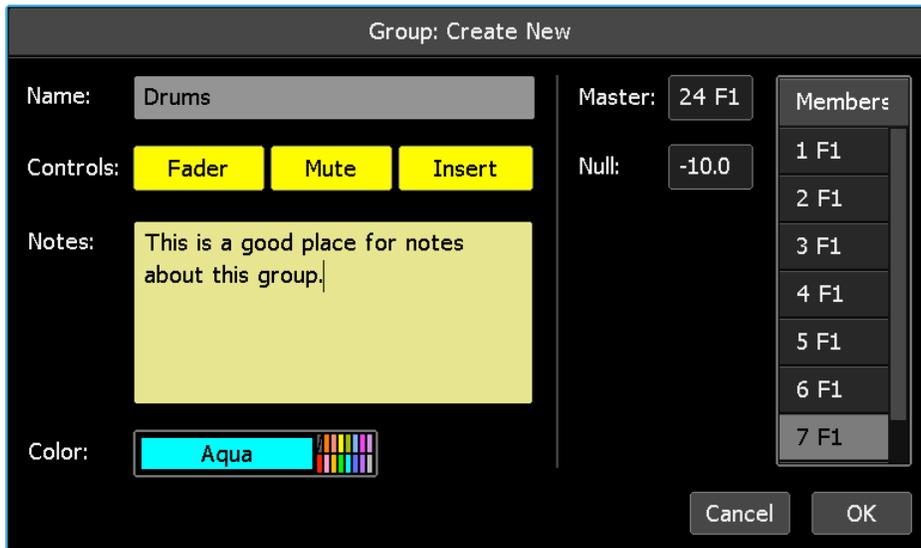


16 colors are available and group color can be edited anytime.

**OK** Press on the desired color to and "OK" to select it for the new group.

**Cancel** Press "Cancel" to cancel.





OK

After the group has been set up, press "OK" to create the new group. This will create a new mix in the mix tree that contains the new group as well as any previous groups and mix data.

Cancel

Press "Cancel" to cancel.

When a new group is created, an individual group for each set of selected controls is created and displayed in the Groups page. The controls included in each group are indicated in the "Members" column in the Groups page and the group master is indicated in the "Master" column.

	Name	Controls	Master	Members	Notes
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-8	This is a good place for notes

*NOTE: It's possible to create a group on an AXS or 2448 console that includes the non-automated upper faders (Fader 2) as group members. The group can be created with these non-automated faders, but the faders (audio levels) will not change when the group master fader is moved.*

## 17.4.2 Delete a Group

To delete a group, press the group to select it in the Groups page.

	Name	Controls	Master	Members	Notes
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-8	This is a good place for notes

Press the selected group to open the Group menu.

Select "Delete" to open the "Group: Delete" dialog box.

New
Delete
Coalesce & Delete
Coalesce & Keep
Coalesce w/ Audio Master
Properties
Multiselect

 Press "OK" to delete the selected group.

 Press "Cancel" to cancel.

Group: Delete

Are you sure that you want to delete this group?

Name	Controls	Master	Members
Drums	Insert	24 F1	F1: 1-8




The deleted group will be removed from the Groups page.

	Name	Controls	Master	Members	Notes
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes

This will create a new mix in the mix tree that does not contain the deleted group.

To delete two or more groups simultaneously refer to section [17.7 Group Multiselect](#).

## 17.5 Coalescing Groups

In general terms, coalescing a group will write all the automated moves applied by the group master to individual channels. The group can be kept, with or without retaining the written moves of the master, or deleted.

### 17.5.1 Coalesce and Delete a Group

“Coalesce & Delete” is useful when you are finished working with a group, but want to keep the moves made by the group members while under group control. This function will write all the automated moves applied by the group master to individual channels and delete the group. Once the group is deleted, the group master and members can be reassigned to other groups.

The “Coalesce & Delete” function will create a new mix with the following attributes:

- The group master's relative moves are written to individual group members
- Deletes the group and all the group master moves

To coalesce and delete a group, press the group to select it in the Groups page.

	Name	Controls	Master	Members	Notes
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-8	This is a good place for notes

Press the selected group to open the Group menu.

New
Delete
Coalesce & Delete
Coalesce & Keep
Coalesce w/ Audio Master
Properties
Multiselect

Select “Coalesce & Delete” to open the “Coalesce & Delete” dialog box.

Press “OK” to coalesce moves to group members & delete the selected group.

Press “Close” to cancel.

Coalesce & Delete

Are you sure that you want to coalesce this group?  
 Master: 24 F1  
 Controls: Insert

The deleted group will be removed from the Groups page.

	Name	Controls	Master	Members	Notes
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes

This will also create a new mix in the mix tree with the coalesced moves, but without the deleted group.

## 17.5.2 Coalesce and Keep a Group

“Coalesce & Keep” is useful when want to keep the moves made by the group members while under group control and "clear" all the moves of the group master, but keep the group intact for further use. This function will write all the automated moves applied by the group master to individual channels and erase the master’s moves. The position of the group master fader will become the new “null” point when the group is coalesced.

The “Coalesce & Keep” function will create a new mix with the following attributes:

- The group master's relative moves are written to individual group members
- The group master’s written moves are erased and a new null point is set
- The group is retained

To coalesce and keep a group, press the group to select it in the Groups page.

	Name	Controls	Master	Members	Notes
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-8	This is a good place for notes

Press the selected group to open the Group menu.

New
Delete
Coalesce & Delete
Coalesce & Keep
Coalesce w/ Audio Master
Properties
Multiselect

Select “Coalesce & Keep” to open the “Coalesce & Keep” group dialog box.

**OK** Press “OK” to coalesce moves to the group members and keep the selected group.

**Close** Press “Close” to cancel.

Coalesce & Keep

Are you sure that you want to coalesce this group?  
Master: 24 F1  
Controls: Insert

Moves will be coalesced to the group members and the group will be retained in the Groups page.

	Name	Controls	Master	Members	Notes
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-8	This is a good place for notes

This will also create a new mix in the mix tree with the coalesced moves and the retained group.

### 17.5.3 Coalesce and Delete a Group with an Audio Master

“Coalesce with Audio Master” is useful when you are finished working with a group, but the moves of the group master need to be retained because the group master is carrying audio (such as the bass drum fader being the group master in a drum group). This function will write all the automated moves applied by the group master to individual channels, retain the group master’s moves, and delete the group.

Selecting “Coalesce w/ Audio Master” will create a new mix with the following attributes:

- The group master’s relative moves are written to individual group members
- The group master’s written moves are retained
- The group is deleted

To coalesce a group with its audio master, press the group to select it in the Groups page.

	Name	Controls	Master	Members	Notes
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-8	This is a good place for notes

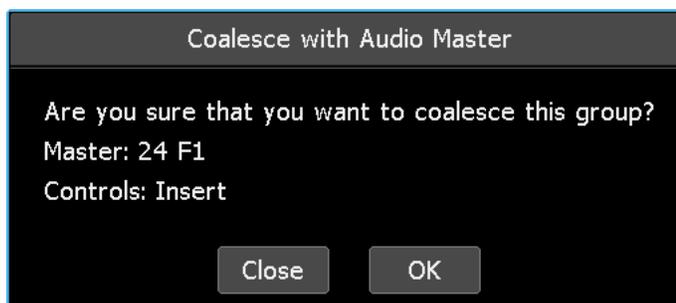
Press the selected group to open the Group menu.

New
Delete
Coalesce & Delete
Coalesce & Keep
Coalesce w/ Audio Master
Properties
Multiselect

Select “Coalesce w/ Audio Master” to open the “Coalesce w/ Audio Master” dialog box.

Press “OK” to coalesce moves to group members, retain the group master moves, and delete the selected group.

Press “Close” to cancel.



Moves will be coalesced to the group members, as well as the audio master, and the group will be deleted.

	Name	Controls	Master	Members	Notes
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes

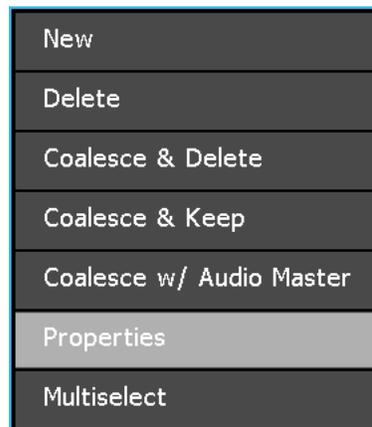
This will also create a new mix in the mix tree with the coalesced moves, but without the deleted group.

## 17.6 Edit Group Properties

A group's members and master can be edited, as well as its name, notes, and color can be via the "Group: Properties" dialog box.

To edit a group, press the group to select it in the Groups page.

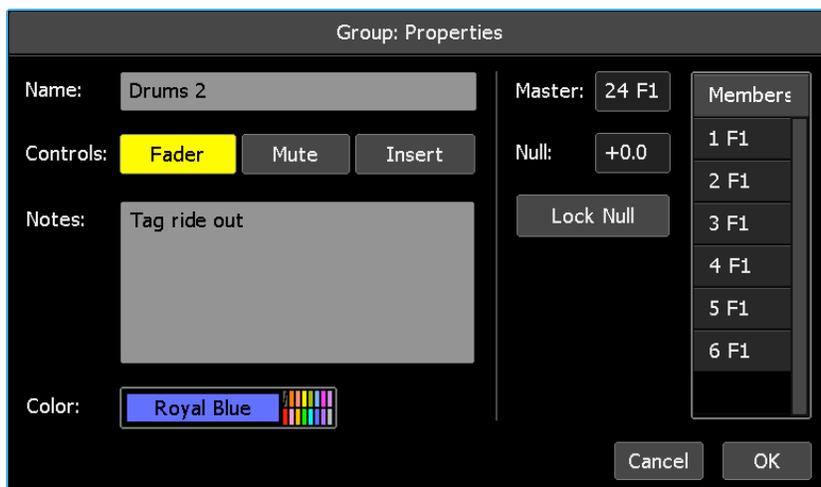
	Name	Controls	Master	Members	Notes
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-8	This is a good place for notes



Press the group to open the Group menu. Select "Properties" and the "Group: Properties" dialog box will open.

Make the desired changes to the group members by touching faders to select or deselect them as group members. If all members have been deselected a new group master can be selected.

The master's null point and the group's name, notes, and/or color can also be edited.



The "Lock Null" and "Unlock Null" function allows the null point (unity level) of group master fader to be changed or locked in place when editing group properties.

**Lock Null** Press "Lock Null" to prevent the existing null point of the group master fader from being accidentally changed.

**Unlock Null** Press "Unlock Null" to allow the existing null point of the group master fader to be changed. Touch the master fader and move it to the new null position.

**OK** Press "OK" to apply changes to the selected group properties.

**Cancel** Press "Cancel" to cancel.

The Groups page will display the edited group properties.

	Name	Controls	Master	Members	Notes
	Drums 2	Fader	24 F1	F1: 1-6	Tag ride out
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-8	This is a good place for notes

To edit the properties of two or more groups simultaneously refer to section [17.7 Group Multiselect](#).

## 17.7 Group Multiselect

Multiselect allows two or more groups to be selected for simultaneous editing, deletion, name change and/or change to a common color.

To select two or more groups, press one of the groups to open the Group menu.

	Name	Controls	Master	Member	Notes
	Guitars	Fader	G1	F1: 21-2	Power chords!
	Guitars	Mute	G1	F1: 21-2	Power chords!
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-8	This is a good place for notes

New
Delete
Coalesce & Delete
Coalesce & Keep
Coalesce w/ Audio Master
Properties
Multiselect

Select "Multiselect" from the menu.



The Multiselect icon will appear in the upper left-hand corner of the Groups page and start blinking to indicating the Multiselect is active.

The screen will return to the Groups page allowing additional groups to be selected.

	Name	Controls	Master	Member	Notes
	Guitars	Fader	G1	F1: 21-2	Power chords!
	Guitars	Mute	G1	F1: 21-2	Power chords!
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-8	This is a good place for notes

Select the additional groups to be deleted or edited.

	Name	Controls	Master	Member	Notes
	Guitars	Fader	G1	F1: 21-2	Power chords!
	Guitars	Mute	G1	F1: 21-2	Power chords!
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-8	This is a good place for notes



Once all the groups have been selected, press the Multiselect icon again to reopen the groups menu.

*NOTE: Pressing and holding a group will select it and activate the Group Multiselect function, allowing immediate selection of additional groups without accessing the Group menu.*

Use the procedures in the following sections to edit or delete the multiple selected groups.

### 17.7.1 Multiple Group Deletion

Use the process outlined in section 17.7 Group Multiselect to select multiple groups to be deleted.

When Multiselect is active the Group menu offers "Delete" and "Properties" as the only Multiselect functions.

To delete the selected groups, select "Delete" to open the "Group: Delete" dialog box.

Press within the Group page to reopen the Group menu. Select "Exit Multiselect" to leave the Multiselect function.

*NOTE: Multiselect does not apply to the "New" Group menu item, although the new group function is still accessible.*

New
Delete
Coalesce & Delete
Coalesce & Keep
Coalesce w/ Audio Master
Properties
Exit Multiselect



Press "OK" to delete the selected groups.



Press "Cancel" to cancel.

Group: Delete

Are you sure that you want to delete these 2 groups?

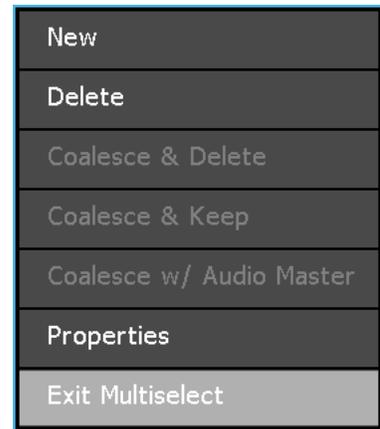
Name	Controls	Master	Members
Guitars PC	Fader	G1	F1: 21-23
Guitars PC	Mute	G1	F1: 21-23

Cancel
OK

The Groups page will display the remaining groups.

	Name	Controls	Master	Members	Notes
	Drums	Fader	24 F1	F1: 1-8	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-8	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-8	This is a good place for notes

This will also create a new mix in the mix tree without the deleted groups.



Press within the Groups page to reopen the Group menu. Select "Exit Multiselect" to leave the Multiselect function.

### 17.7.2 Multiple Group Properties Editing

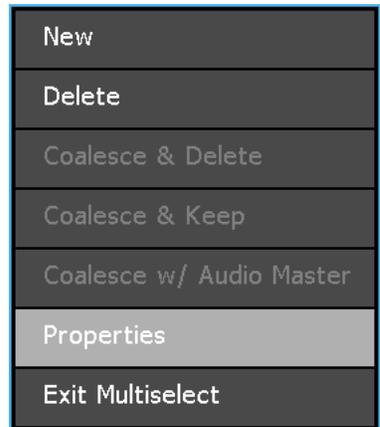
Use the process outlined in section [17.7 Group Multiselect](#) to select multiple groups to be edited.

When Multiselect is active the Group menu offers "Delete" and "Properties" as the only Multiselect functions.

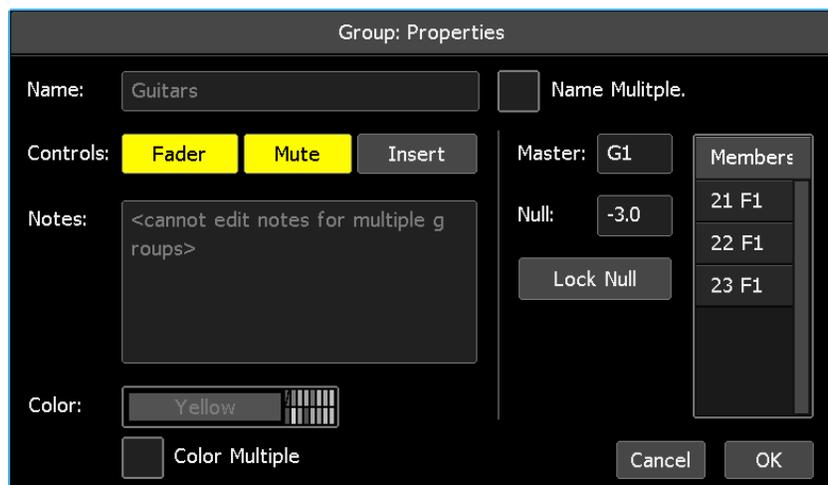
To edit the group make up (master and members) or to apply a common name and/or a common color to the selected groups, select "Properties" to open the "Group: Properties" dialog box.

Press within the Group page to reopen the Group menu. Select "Exit Multiselect" to leave the Multiselect function.

*NOTE: Multiselect does not apply to the "New" Group menu item, although the new group function is still accessible.*



When the "Group: Properties" dialog box opens with Multiselect active, editing of the group members and/or group name, master fader null point, and color is facilitated.



Group members can be edited only in multiple groups with the same master.

Make the desired changes to the group members by pressing faders to select or deselect them as group members. If all members have been deselected a new group master can be selected.

**Lock Null** Press "Lock Null" to prevent the existing null point of the group master fader from being accidentally changed.

**Unlock Null** Press "Unlock Null" to allow the existing null point of the group master fader to be changed. Touch the master fader and move it to the new null position.

To enable name and/or color editing, press the "Name Multiple" and/or "Color Multiple" check boxes to select the desired properties for editing.

Check the "Name Multiple" box to activate the "Name:" entry field.



Enter a common name for the selected groups.

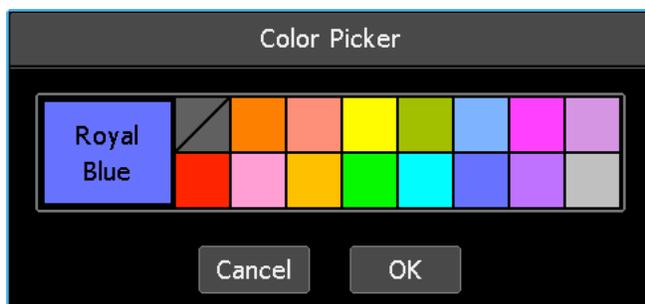
Check the "Color Multiple" box to activate the color picker.



Press a color to assign it to all of the selected groups.

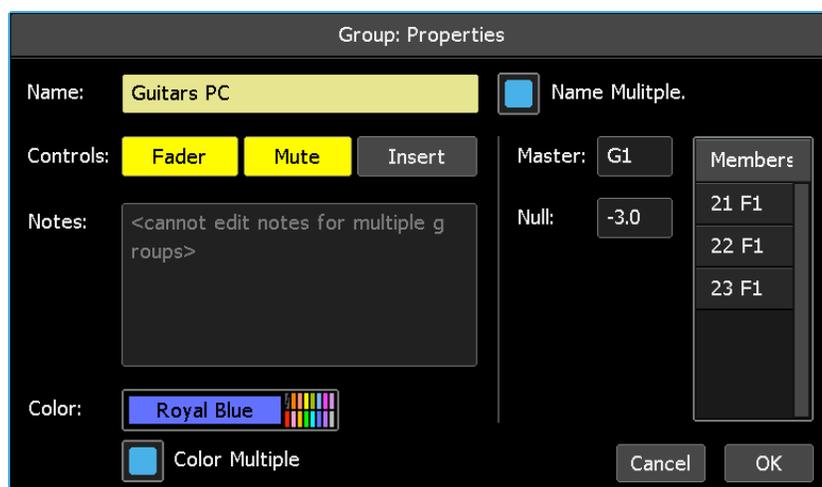
**OK** Press "OK" to select the color and close the color picker.

**Cancel** Press "Cancel" to cancel.



**OK** After the all edits for the selected groups have been set up, press "OK" to apply the changes.

**Cancel** Press "Cancel" to cancel.



The Groups page will display the edited group properties.

	Name	Controls	Master	Member	Notes
	Guitars F	Fader	G1	F1: 21-2	Power chords!
	Guitars F	Mute	G1	F1: 21-2	Power chords!
	Drums	Fader	24 F1	F1: 1-6	This is a good place for notes
	Drums	Mute	24 F1	F1: 1-6	This is a good place for notes
	Drums	Insert	24 F1	F1: 1-6	This is a good place for notes

This will also create a new mix in the mix tree that contains the edited groups.

New
Delete
Coalesce & Delete
Coalesce & Keep
Coalesce w/ Audio Master
Properties
Exit Multiselect

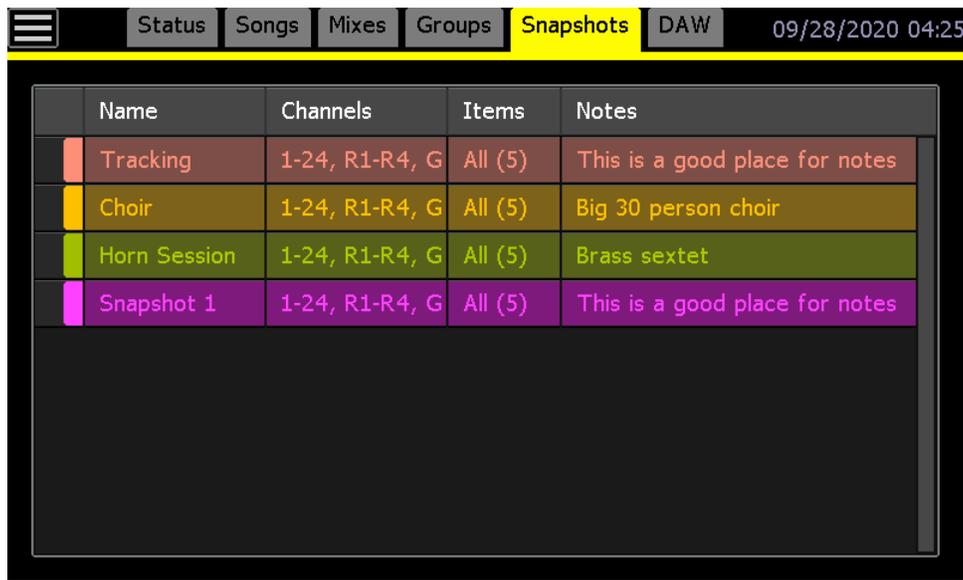
Press within the Groups page to reopen the Group menu. Select "Exit Multiselect" to leave the Multiselect function.

# 18.0 Snapshots

A "snapshot" is a captured static image of the positions of the faders and/or switches on all or a selected set of channels. The Snapshot menu allows the engineer to "take" a "snapshot" of the static positions of the selected controls on selected channels. The snapshots in the list can be "applied" back to the console controls to restore the stored settings. In common practice, snapshots can be very useful for quickly storing and recalling fader and/or switch positions when moving between projects and songs or storing settings for use at a later time. Because automated fader positions can be stored and recalled, snapshots can store/recall basic fader mixes for each song or scene in a project.

## 18.1 Snapshots Page

The Snapshots page supports the creation, modification, and deletion of snapshots.



The Snapshots page has columns that display the snapshot Name, Channels, Items, and Notes for each snapshot. Snapshots can also be color-coded and the columns can be resized by pressing a line between the columns in the header and dragging it to a new position.

	Name	Channels	Items	Notes
■	Tracking	1-24, R1-R4, G	All (5)	This is a good place for notes

Snapshots and the Snapshot menu are accessed using the Snapshots page. Snapshots are stored within the current project file. Snapshots can be exported to the memory-card and imported for use in other projects.

## 18.2 Snapshot Menu

The Snapshot menu will open if the screen is pressed in the Snapshots page.

The Snapshot menu provides seven (7) functions:

- **New...**: Creates a new snapshot of current positions of selected controls
- **Apply...**: Applies an existing snapshot to selected controls
- **Delete...**: Deletes the selected snapshot
- **Export...**: Creates .VSS files of the selected snapshot and stores it on the memory-card
- **Import...**: Imports the selected snapshot files into the current project
- **Properties**: Edit the selected snapshot name, notes, and color
- **Multiselect**: Allows multiple snapshots to be selected for simultaneous deletion, or name, notes, and/or color changes



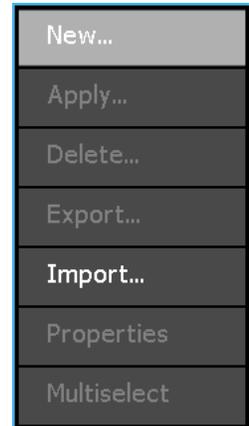
### 18.2.1 Create a New Snapshot

To create a new snapshot, press within the Snapshots page to open the Snapshot menu. If there are no other snapshots in the current project, only the "New..." and "Import..." menu options will be available.

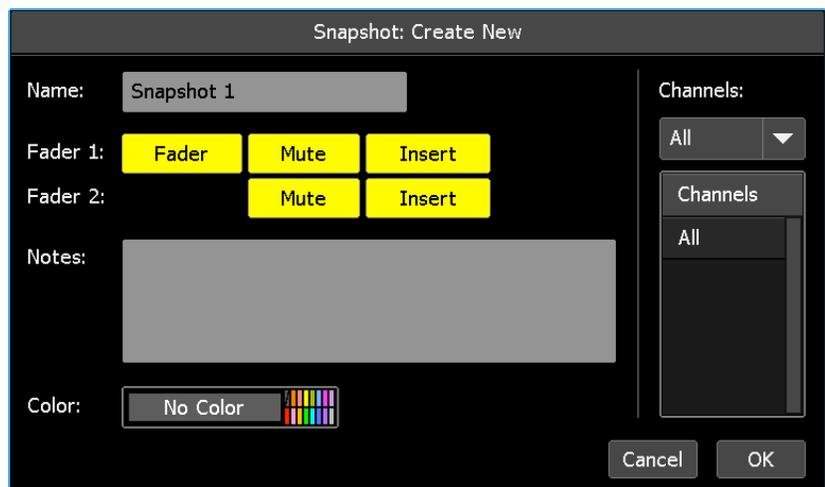
Select "New..." to open the "Snapshot: Create New" dialog box.

The "Snapshot: Create New" dialog box will be populated according the console model specified in "General Configuration" sub-menu. The dialog box for an AXS or 2448 is shown below.

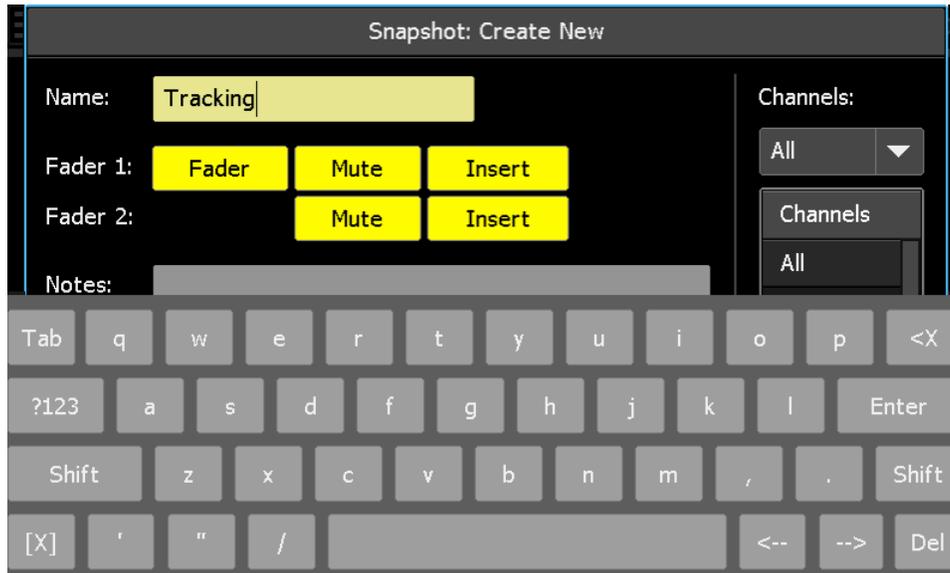
 Pressing the "New Snapshot" button on the Status page will also open the "Snapshot: Create New" dialog box.



The "Snapshot: Create New" dialog box allows the new snapshot name to be entered and the selection of controls and channels to be captured, as well as the entry of notes and color selection.

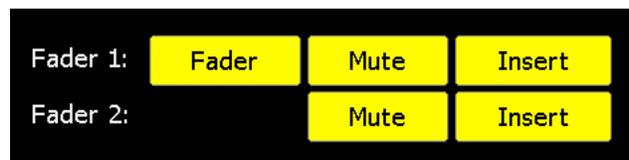


Press in the "Name:" text-entry field to enter the name of the new snapshot. The field will turn yellow and the cursor and keyboard will appear, indicating that the system is ready to accept a new name. Use the backspace (<X) or delete (DEL) keys to erase the default name and the keyboard to enter the new snapshot name. Press [X] to close the keyboard after the snapshot "Name" has been entered.

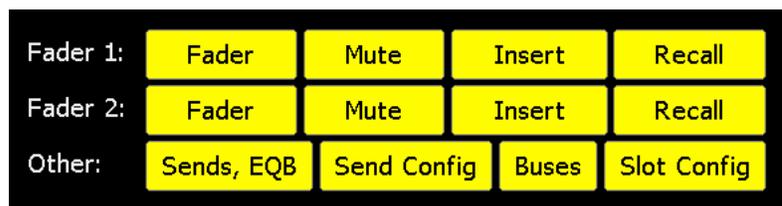


*NOTE: The name given to a snapshot will be displayed in the Snapshots page within the project in which it was created. If a snapshot is exported and then imported into another project, its original snapshot number will be displayed as its name in the Snapshots page of the new project, not the assigned name. The assigned snapshot name is not exported with the snapshot file and is retained only within the original project.*

Select the controls to be included in the new snapshot by pressing the selectors to deselect or select them.



Snapshot controls for all Vision consoles are shown in the image on the right.



Controls can be selected as follows:

- **Fader 1:** 1608-II, 2448, AXS, Vision, and Vision+
  - **Fader:** Channel Fader, Larger Fader, Fader 1, Stereo Return, Group Master, and Program Master automated faders
  - **Mute:** Channel Mute, Larger Fader Mute, Fader 1 Mute
  - **Insert:** Channel Insert, Larger Fader Insert, Fader 1 Insert
  - **Recall:** Recall Settings on Vision consoles (Vision only)
- **Fader 2:** 2448, AXS, Vision, and Vision+ (not 1608-II)
  - **Fader:** Fader 2 automated fader (Vision and Vision+ only)
  - **Mute:** Small Fader Mute and Fader 2 Mute
  - **Insert:** Small Fader Insert and Fader 2 Insert
  - **Recall:** Recall Settings on Vision consoles (Vision and Vision+ only)

- **Other:** Vision and Vision+ Recall Settings
  - **Buses:** Channel output bus assignments
  - **Sends, EQB:** Aux Send ON/off switches and Equalizer Bypass
  - **Send Config:** Aux Send Fader 1/Fader 2 and Pre/Post routing
  - **Slot Config:** DYN to FDR1 and ALT LINE (Vision+ only)

Fader 1 Fader, Mute, & Insert and Fader 2 Mute & Insert are selected by default.

The channels to be included in the snapshot are selected using the “Channels” pull-down menu. The menu choices are:

- **All:** All channels, Stereo Returns, Group Masters, and Program Masters
- **Selected:** A specified subset of channels



If “All” is selected, the Channels window will display “All.”



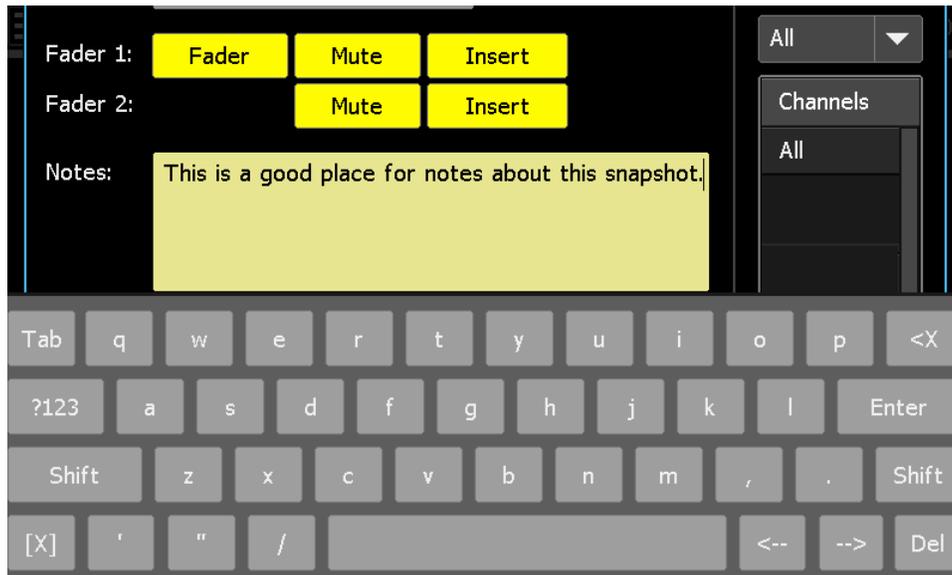
If “Selected” is chosen, the Channels window will display the channels chosen for inclusion in the snapshot.

To select channels, press a fader or actuate a switch in the sections to be captured in the snapshot. Sections can be toggled in and out of the selection as long as the dialog box is open. Actuated switches will not change states when being used for snapshot selection and will resume normal function after the snapshot is captured. To provide an audio alert, the beeper will sound each time a section is selected.

As sections are selected, they will be displayed in the Channels window.



Press in the "Notes" text-entry field to enter any notes about the new snapshot. The field will turn yellow and the cursor and keyboard will appear, indicating that the system is ready to accept notes. Use the backspace (<X) or delete (DEL) keys as needed. Snapshot "Notes" can be edited anytime after creation. Press [X] to close the keyboard after the snapshot "Notes" have been entered.



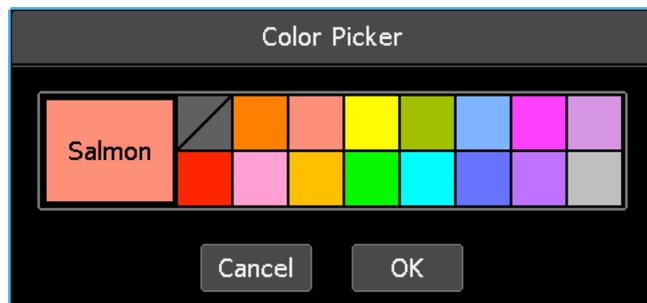
Snapshots can be color-coded for easy visual organization. To select a color for a snapshot, press the color field to open the color picker.



16 colors are available and snapshot color can be edited anytime.

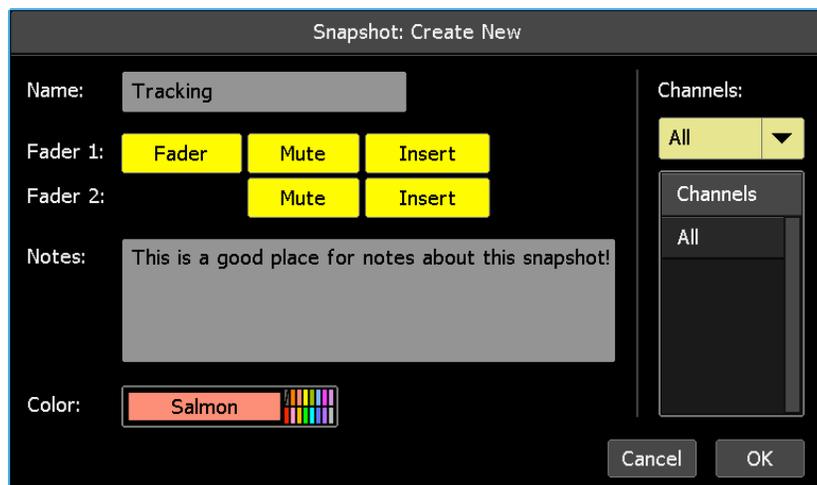
**OK** Press on the desired color to and "OK" to select it for the new snapshot.

**Cancel** Press "Cancel" to cancel.

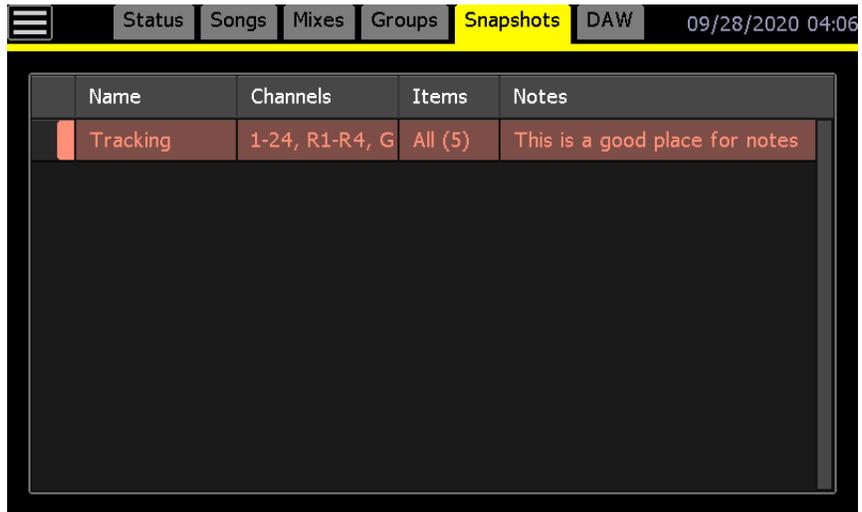


**OK** After the snapshot has been set up, press "OK" to create the new snapshot.

**Cancel** Press "Cancel" to cancel.



The newly created snapshot will be displayed in the Snapshots page along with the other snapshots within the project.



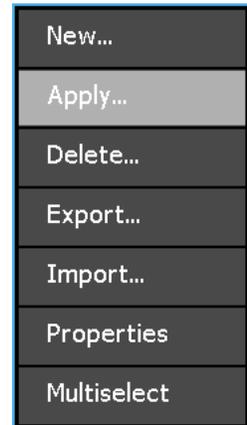
### 18.2.2 Apply a Snapshot

To “apply” the settings stored in a snapshot to the console controls, put the selected channels in **Manual** or **Write** and press the snapshot to select it in the Snapshots page.

Press the snapshot to open the Snapshot menu.

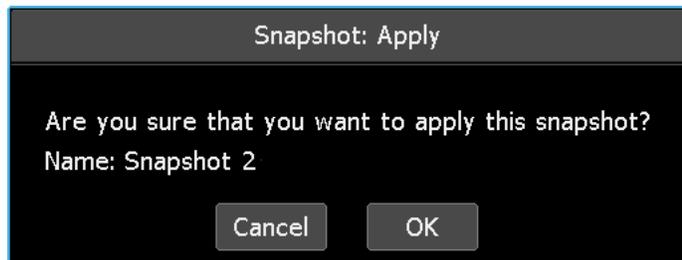
Name	Channels	Items	Notes
Tracking	1-24, R1-R4, G1-PGM	All (5)	This is a good place for notes
Snapshot 2	1-24, R1-R4, G1-PGM	All (5)	

Select “Apply...” to open the “Snapshot: Apply” dialog box.



**OK** Press “OK” to apply the selected snapshot settings to the console controls.

**Cancel** Press “Cancel” to cancel.



*NOTE: Only the settings for the controls in sections that were selected were captured when the snapshot was created. Settings will only be applied to these sections/controls when the snapshot is applied.*

*NOTE: Channels/sections in **Read** or **Update** will return to their written positions when timecode is started after a snapshot is applied without timecode running.*

*NOTE: Applying a snapshot will reset the console controls whose settings are stored in the snapshot. Press **"Recover Positions"** on the Status Page to "undo" the accidental application of snapshots.*

### 18.2.3 Delete a Snapshot

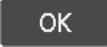
To delete a snapshot, press the snapshot to select it in the Snapshots page.

	Name	Channels	Items	Notes
	Tracking	1-24, R1-R4, G1-PGM	All (5)	This is a good place for not
	Snapshot 2	1-24, R1-R4, G1-PGM	All (5)	

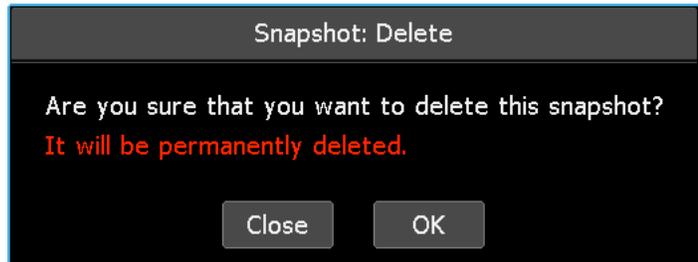
Press the snapshot to open the Snapshot menu.

New...
Apply...
Delete...
Export...
Import...
Properties
Multiselect

Select "Delete..." to open the "Snapshot: Delete" dialog box.

 Press "OK" to delete the selected snapshot.

 Press "Close" to cancel.



The Snapshot page will displayed the remaining snapshots.

	Name	Channels	Items	Notes
	Tracking	1-24, R1-R4, G	All (5)	This is a good place for notes

**WARNING:** *Deleting a snapshot cannot be undone.*

To delete two or more snapshots simultaneously, refer to section [18.2.7 Snapshot Multiselect](#).

### 18.2.4 Export a Snapshot

Snapshots can be exported as a separate .VSS files to the memory-card for use in other projects.

To export a snapshot, press the snapshot to select it in the Snapshots page.

	Name	Channels	Items	Notes
	Tracking	1-24, R1-R4, G1-PGM	All (5)	This is a good place for not
	Snapshot 2	1-24, R1-R4, G1-PGM	All (5)	

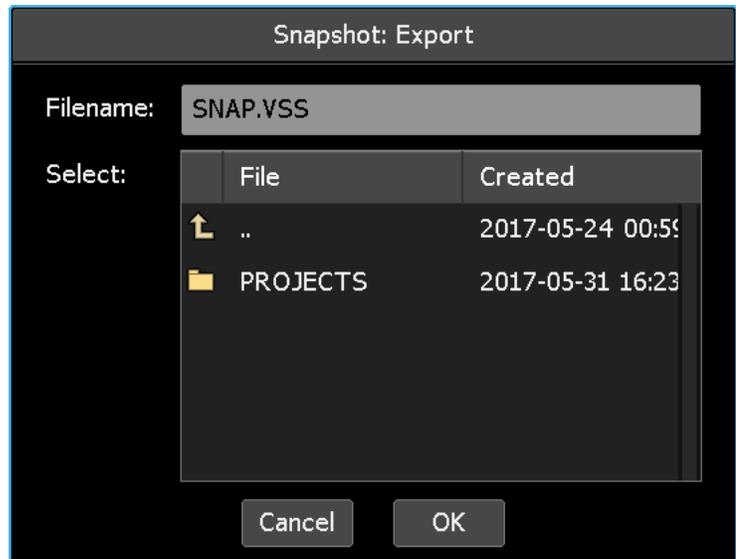
Press the Snapshots page to open the Snapshot menu.



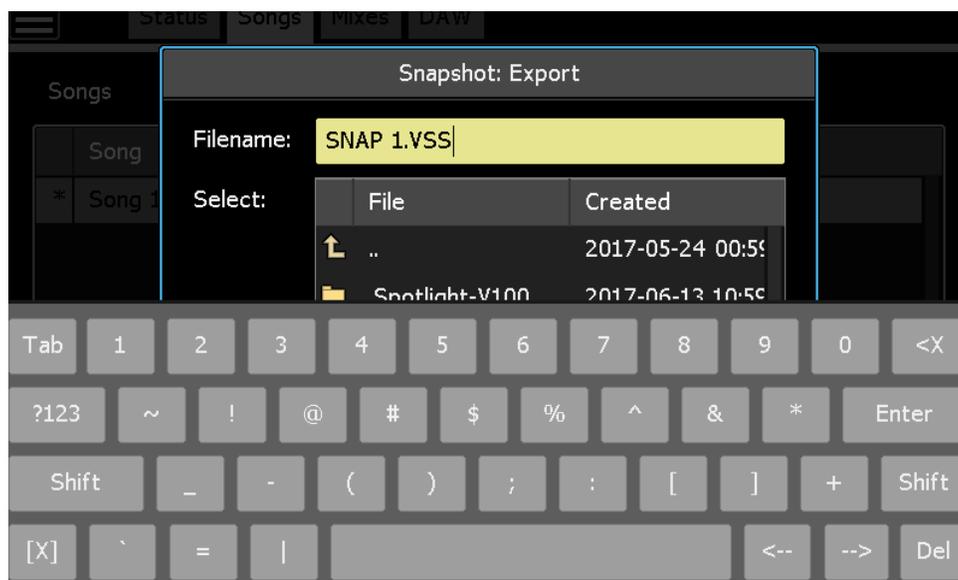
Select "Export..." to open the "Snapshot: Export" dialog box.

The "Snapshot: Export" dialog box allows a location on the memory-card to be selected for the exported snapshot to be saved.

The snapshot file can be named before exporting.



To enter the name of the snapshot file to be exported, press in the "Filename" text-entry field. The field will turn yellow and the cursor and keyboard will appear, indicating that the system is ready to accept a new name. Use the backspace (<X) or delete (DEL) keys to erase the default title name and the keyboard to enter the snapshot filename. Press [X] to close the keyboard after the snapshot "Filename" has been entered.



**OK**

After the storage location and filename has been selected, press "OK" to save the selected snapshot as a file on the memory-card. The snapshot will also be retained in the current project.

**Cancel**

Press "Cancel" to cancel.

### 18.2.5 Import a Snapshot

Snapshot .VSS files from other projects can be imported from the memory-card.

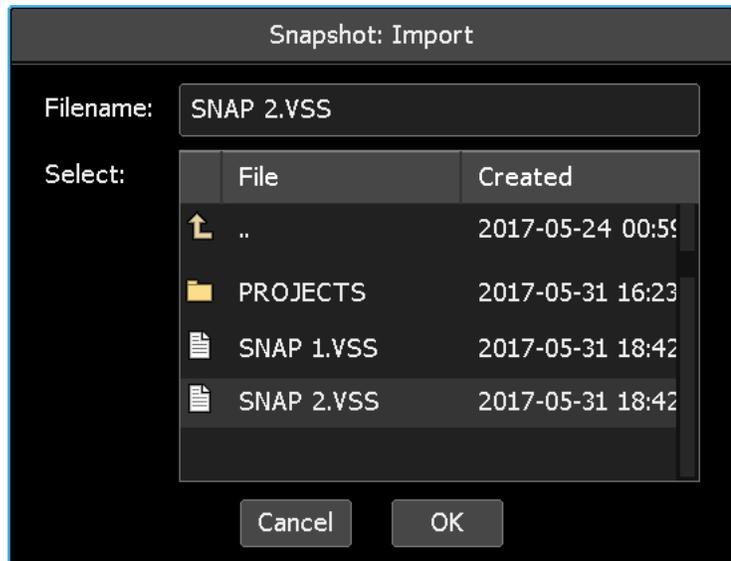
To import a snapshot, press within the Snapshots page to open the Snapshot menu.

	Name	Channels	Items	Notes
	Tracking	1-24, R1-R4, G	All (5)	This is a good place for notes

- New...
- Apply...
- Delete...
- Export...
- Import...
- Properties
- Multiselect

Select "Import..." to open the "Snapshot: Import" dialog box.

The "Snapshot: Import" dialog box allows the snapshot to be imported to be located on the memory-card. Once found, press the file to select it for importing. The name of the selected file will appear in the "Filename" field.



**OK**

After the snapshot file has been selected, press "OK" to import the selected snapshot to the current project. The snapshot will also be retained on the memory-card.

**Cancel**

Press "Cancel" to cancel.

The imported snapshot will appear in the Snapshots page.

	Name	Channels	Items	Notes
	Tracking	1-24, R1-R4, G1-PGM	All (5)	This is a good place for not
	Snapshot 2	1-24, R1-R4, G1-PGM	All (5)	

## 18.2.6 Edit Snapshot Properties

A snapshot's name, notes, and color can be edited via the "Snapshot: Properties" dialog box.

To edit a snapshot, press the snapshot to select it in the snapshots page.

	Name	Channels	Items	Notes
	Tracking	1-24, R1-R4, G1-PGM	All (5)	This is a good place for not
	Snapshot 2	1-24, R1-R4, G1-PGM	All (5)	



Press the snapshot to open the Snapshot menu. Select "Properties" to open the "Snapshot: Properties" dialog box.

Make the desired changes to the snapshot's Name, Notes, and/or Color.

Controls and channels cannot be changed.

Press "OK" to apply changes to the selected snapshot properties.

Press "Cancel" to cancel.

The Snapshots page will display the edited snapshot properties.

	Name	Channels	Items	Notes
	Tracking	1-24, R1-R4, G	All (5)	This is a good place for notes
	Tracking 2	1-24, R1-R4, G	All (5)	Added the sax mic.

## 18.2.7 Snapshot Multiselect

Multiselect allows two or more snapshots to be selected for simultaneous deletion.

To select two or more snapshots, press one of the snapshots to open the Snapshot menu.

	Name	Channels	Items	Notes
	Tracking	1-24, R1-R4, G	All (5)	This is a good place for notes
	Choir	1-24, R1-R4, G	All (5)	Big 30 person choir
	Horn Session	1-24, R1-R4, G	All (5)	Brass sextet
	Snapshot 1	1-24, R1-R4, G	All (5)	This is a good place for notes

New...
Apply...
Delete...
Export...
Import...
Properties
Multiselect

Select "Multiselect" from the menu.



The Multiselect icon will appear in the upper left-hand corner of the Snapshots page and start blinking to indicating the Multiselect is active.

The screen will return to the Snapshots page allowing additional snapshots to be selected.

	Name	Channels	Items	Notes
	Tracking	1-24, R1-R4, G	All (5)	This is a good place for notes
	Choir	1-24, R1-R4, G	All (5)	Big 30 person choir
	Horn Session	1-24, R1-R4, G	All (5)	Brass sextet
	Snapshot 1	1-24, R1-R4, G	All (5)	This is a good place for notes

Select the additional snapshots to be deleted.

	Name	Channels	Items	Notes
	Tracking	1-24, R1-R4, G	All (5)	This is a good place for notes
	Choir	1-24, R1-R4, G	All (5)	Big 30 person choir
	Horn Session	1-24, R1-R4, G	All (5)	Brass sextet
	Snapshot 1	1-24, R1-R4, G	All (5)	This is a good place for notes



Once all the snapshots have been selected, press the Multiselect icon again to reopen the Snapshot menu.

*NOTE: Pressing and holding a snapshot will select it and activate the Snapshot Multiselect function, allowing immediate selection of additional snapshots without accessing the Snapshot menu.*

Use the procedures in the following sections to edit or delete the multiple selected snapshots.

### 18.2.7.1 Multiple Snapshot Deletion

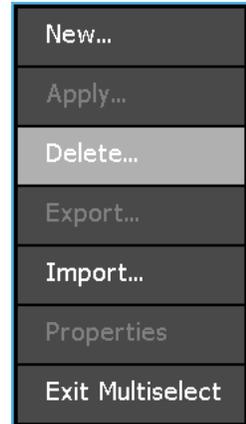
Use the process outlined in section [18.2.7 Snapshot Multiselect](#) to select multiple snapshots to be deleted.

When Multiselect is active, the Snapshot menu offers "Delete..." as the only Multiselect function.

To delete the selected snapshots, select "Delete..." to open the "Snapshot: Delete" dialog box.

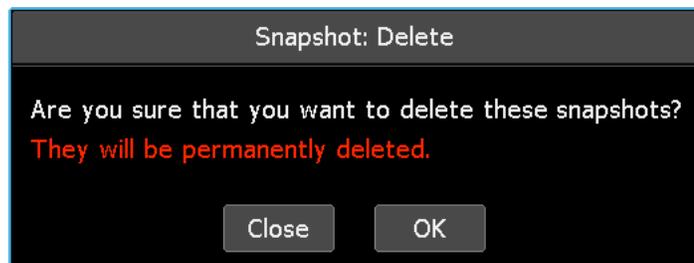
Press within the Snapshot page to reopen the Snapshot menu. Select "Exit Multiselect" to leave the Multiselect function.

*NOTE: Multiselect does not apply to the "New..." or "Import..." Snapshot menu items, although these functions are still accessible.*



**OK** Press "OK" to delete the selected snapshots.

**Close** Press "Close" to cancel.

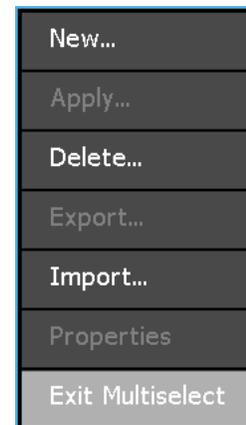


The Snapshots page will display the remaining snapshots.

	Name	Channels	Items	Notes
	Tracking	1-24, R1-R4, G	All (5)	This is a good place for notes
	Horn Session	1-24, R1-R4, G	All (5)	Brass sextet

**WARNING:** Deleting snapshots cannot be undone.

Press within the Snapshots page to reopen the Snapshot menu. Select "Exit Multiselect" to leave the Multiselect function.



# 19.0 DAW Control

*Final Touch Automation*® supports control over several popular Digital Audio Workstation (DAW) programs via Human User Interface (HUI) or Mackie Control protocols over USB/MIDI. This allows the engineer to control many aspects of the DAW using console faders, mutes, solos, ACM, and other console interfaces. A “DAW/Surface Type” that supports specific functions and optimizes the interface has been created for each these DAWs, including a “generic” version that can be adapted for other DAW programs that use Mackie Control. The “DAW/Surface Type” is selected via the “DAW Configuration” dialog box available via the “System” menu. Refer to section [19.6 DAW Configuration](#) for details. The following DAWs are currently supported:

- Generic (Mackie Control)
- Apple: Logic and Logic Pro (Mackie Control)
- Universal Audio: LUNA Recording System (Mackie Control)
- PreSonus: Studio One (Mackie Control)
- Avid: Pro Tools (Mackie HUI)

The following DAW controls can be operated from the console hardware:

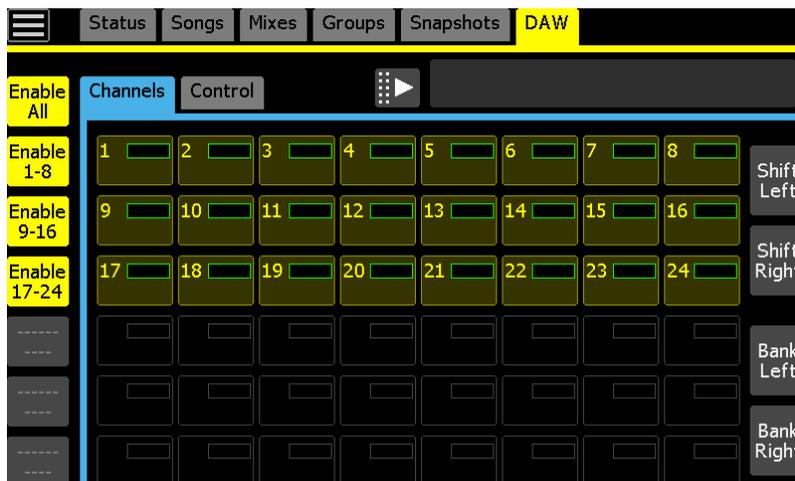
- Fader
- Mute
- Solo
- Track Select
- Record Ready
- Transport Control
- Program Control (pages, save, navigation, etc.)

The DAW can also control console faders and mutes, allowing moves made in the DAW, including DAW automation, to control the console faders and mutes.

*NOTE: DAW control capabilities is dependent on the specific DAW software being used. Not all DAWs provide the same control functions.*

## 19.1 DAW Page

In addition to the physical DAW controls on the faders, the DAW page provides the user interface for DAW control. It contains two (2) tabs, “Channels” and “Control,” that allow access to those aspects of DAW control. The DAW page also provides access to DAW control “Enable” buttons, timecode display, and button to activate the floating transport palette.



*Final Touch Automation*® uses either Human User Interface (HUI) protocols or Mackie Control protocols over MIDI for DAW control. Per the HUI protocol, channels are organized in up to four (4) banks of eight (8) faders, so a maximum of thirty-two (32) channels can have DAW

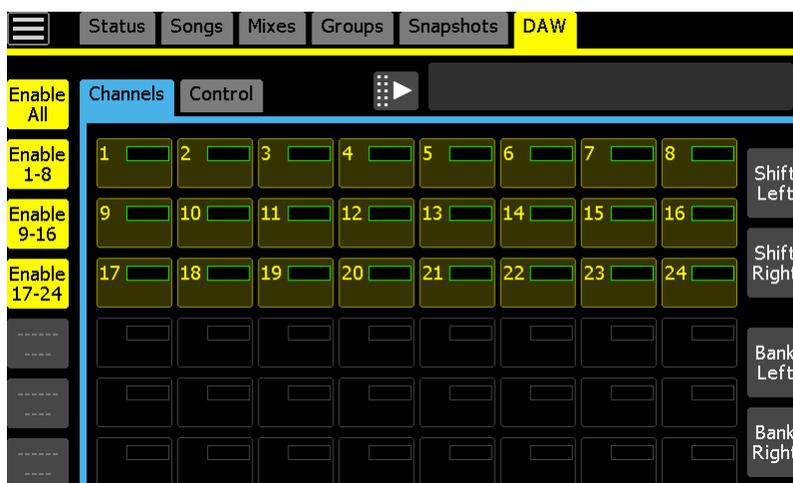
control simultaneously. According to Mackie Control protocols, channels are organized in up to six (6) banks of eight (8) faders, so a maximum of forty-eight (48) channels of simultaneous DAW control is available.

Each set of eight (8) configured channels are controlled by an “Enable” button that activates or deactivates DAW control of those channels. Accordingly, there are “Enable” buttons for up to either four (4) or six (6) banks of eight (8) DAW channels.

*NOTE: The graphic on the previous page shows the DAW Channels tab setup for Mackie Control (6 banks of 8 channels), with twenty-four (24) channels configured in the DAW and enabled in Final Touch Automation®.*

## 19.2 DAW Channels Tab

In addition to the “Enable” buttons for the banks of configured channels, the Channels tab on the DAW page provides status indicators for each individual channel and Shift/Bank Left-Right controls. Individual channels have no control function, but will inherit the track labels from the DAW, will illuminate when active, and turn red when the channel is in record. Each channel also provides a signal meter (audio or MIDI data) that indicates playback of current content on that channel.



### 19.2.1 DAW Enable Buttons

Once the DAW configuration has been completed (see section 19.6 DAW Configuration below), channels must be “enabled” to activate DAW control.

When DAW control is enabled for an 8-channel bank of faders, the module’s faders and mutes will move to match the DAW positions, the unity gain fader audio bypass will be engaged if configured, and faders will track with the DAW moves according to the selected curve. The control of faders and mutes is bi-directional, so moves made on the console or DAW will also be made on the other device. In addition, DAW solo, track select, and record ready can be controlled from the console. Console faders and mutes can be used to write moves in DAW automation. Console automation cannot be written from the DAW.

DAW control can be enabled in two (2) ways:

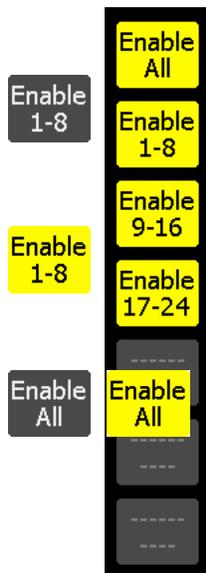
- **DAW Page:** Engage the “Enable” button for each of four (4) or six (6) configured 8-channel banks
- **Fader Modules:** On 2448 and AXS consoles, hold the SEL/DAW button on first fader of each 944 or 944C Fader module configured for DAW control for about two seconds

*NOTE: Console automation controls are not available on the fader when DAW control is enabled.*

### 19.2.1.1 DAW Enable Buttons

Depending on control protocol for the selected type, DAW control can be enabled for four (4) banks (HUI) or six (6) banks (Mackie Control) of eight (8) channels from the DAW page. Each bank of eight channels supported by a pair of 944, 944C, or 1044L 4-channel fader modules or sections of eight individual faders (original Vision). DAW control cannot be enabled on individual channels, only in banks of eight.

The DAW Channels tab has a set of "Enable" buttons that activate DAW control for each bank of eight configured channels. Accordingly, each "enable" button supports one of the four USB based MIDI ports and the eight channels that are mapped to them in the "Configure DAW" dialog box.



The diagram shows a vertical column of buttons. From top to bottom: a grey "Enable All" button, a yellow "Enable 1-8" button, a yellow "Enable 9-16" button, a yellow "Enable 17-24" button, and a grey "Enable All" button. To the left of the buttons are three labels: "Enable 1-8" (grey), "Enable 1-8" (yellow), and "Enable All" (grey). To the right of the buttons are three text blocks: "Enable" buttons are not engaged by default and are grey in color when not engaged. To enable DAW control for a bank of configured channels, press the "Enable" button(s) for each set of faders to be used. The text will turn yellow to indicate the bank is enabled. Press the "Enable All" button to activate or deactivate DAW control for all banks of configured channels.

When a bank of channels is enabled, the "Enable" button and its eight associated channels will turn yellow. In the image to the right, the bank for channels 1-8 is enabled and the banks for channels 9-16 and 17-24 are not.



### 19.2.1.2 DAW Fader Enables



DAW control can be easily enabled using the console hardware, eight channels at a time on 2448 and AXS consoles. On 2448 and AXS consoles, the first fader on each 944 or 944C Fader modules has a dual function SEL/**DAW** button that allows DAW control to be enabled for the four faders on that module and the four on the adjacent fader module.

*NOTE: The SEL/**DAW** button does not exist on 1608-II consoles. These console rely on the "Enable" buttons on the DAW page.*

Hold the dual-function SEL/**DAW** button on the first in each group eight channels for about two seconds to enable DAW control for that group of eight channels or eight Vision faders (assuming the associated bank is configured for DAW control). The SEL/**DAW** button on the first fader will illuminate to indicate all the faders on the module/section are in **DAW** control mode. Holding the SEL/**DAW** button a second time will disengage DAW control for the enabled faders.

*NOTE: Depending on the console, the fifth fader in each group of eight faders might also have a blue **DAW** label with the SEL button, but this button will not enable or disable DAW control.*

### 19.2.2 Channel Status Indicators

The Channels tab will display the status of all DAW channels except master faders (if applicable). Individual channels cannot be enabled or disabled, so the channels shown on the DAW page are display indicators only. Touching or pressing them does nothing.



If DAW is enabled, but there are no tracks in the DAW, channels will indicate they are active, but not connected to a track by displaying four dashes "----."



Channels will "inherit" the labels from the tracks in the DAW when a DAW session is open.



Changing the names of the tracks in the DAW will change the labels on the Channels tab.

When the HUI control protocols are used, the first four characters of the track name will be displayed in the channel label. Mackie Control protocols provide up to six characters.



Each channel is equipped with a "level meter" that indicates that audio or MIDI data is currently present on the track. Peaks are indicated in the red area of the meter.



Record enabled channels will turn red.

*NOTE: Channels will only turn red when a DAW type that uses Mackie Control is being used. The "Mackie HUI: Pro Tools" DAW type does not support this function.*

### 19.2.3 Shift and Bank Channels

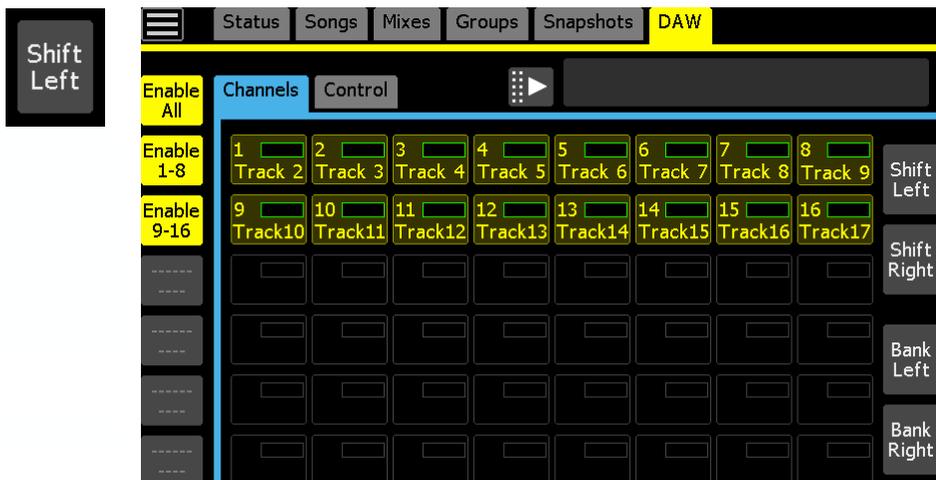
It's common to have more than 32 or 48 audio and/or MIDI tracks recorded in the DAW. To accommodate control of DAW sessions with a large number of tracks, "Shift" and "Bank" functions are included.

### 19.2.3.1 Shift Left and Right



The "Shift" feature allows the engineer to "shift" DAW tracks to configured faders to the left or right, one track at a time.

The channels in the configuration below have been "shifted" left by one.



The channels in the configuration below have been "shifted" right by one.



### 19.2.3.2 Bank Left and Right



The "Bank" function allows DAW tracks to be shifted to the left or right eight tracks at a time. The "Bank" function only works with DAW sessions that contain more tracks that are currently configured/enabled for DAW control.

The channels in the configuration below have been “banked” left by eight.



The channels in the configuration below have been “banked” right by eight.



## 19.3 DAW Control Tab

*Final Touch Automation*<sup>®</sup> supports control of several Digital Audio Workstation (DAW) programs using HUI or Mackie Control over MIDI. To optimize control over each platform, each DAW program is assigned a “DAW/Surface Type,” that when selected, populates the Control tab on the DAW page with a custom set of program and transport controls for that specific DAW.

The following DAW programs (DAW/Surface Types) are currently supported:

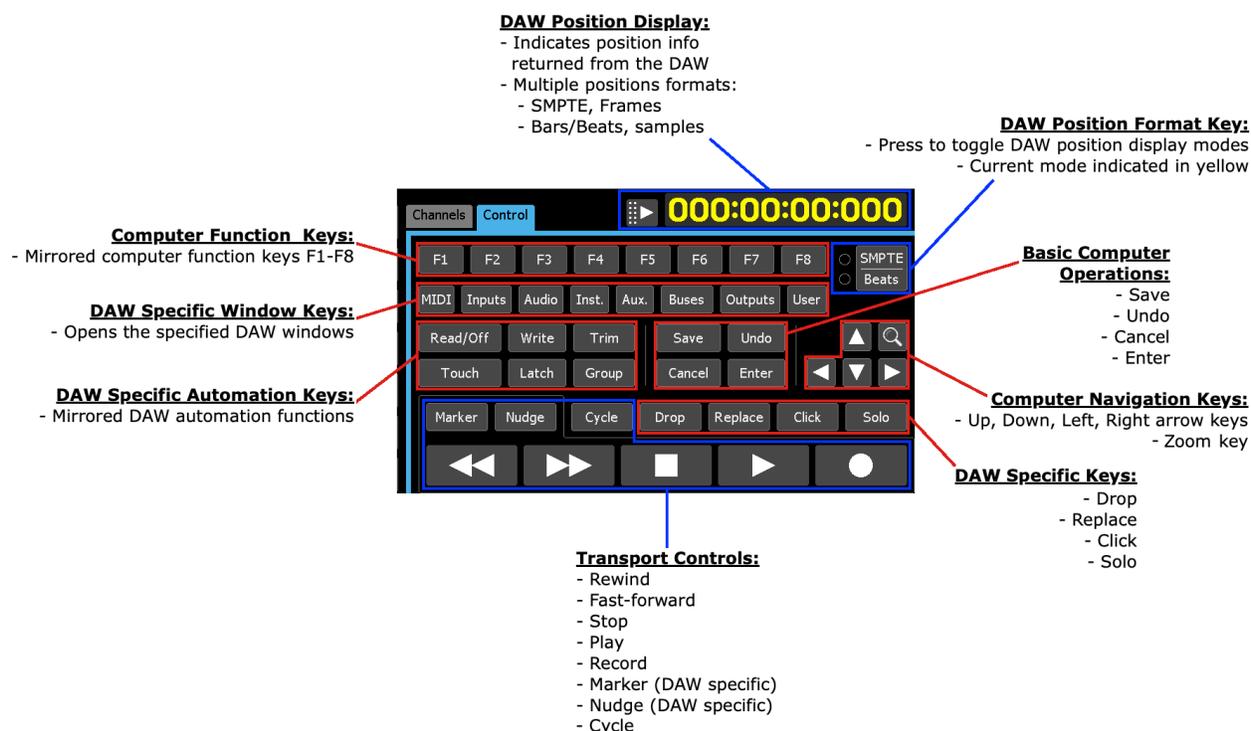
- Mackie Control: Generic
- Mackie Control: Logic
- Mackie Control: LUNA
- Mackie Control: Studio One
- Mackie HUI: Pro Tools

The DAW/Surface Type is selected via the DAW Configuration dialog box via the System menu.

The Control tab for each DAW Type has also been optimized to seamlessly integrate with that specific DAW program with *Final Touch Automation*<sup>®</sup>. Accordingly, a customized set of controls are provided for the selected DAW Type. A set of program buttons, optimized for the selected DAW, provide quick access to frequently used functions that are available via the HUI or Mackie Control protocols. A corresponding set of transport controls and DAW position info

display functions are also included. The combined elements of the DAW Control tab, provide a flexible means of session control right from the console.

As an example, the diagram below outlines the layout of the Mackie Control: Generic DAW Control tab. Program controls are outlined in **red** and transport controls and related functions are outlined in **blue**. The Control tabs for the other DAW Types are organized in similar fashion and should be intuitive for the user.



Depending on the DAW software, control is achieved using either Mackie Control or Mackie HUI control protocols, in both cased over MIDI. All DAW/Surface Types use Mackie Control except Pro Tools, which uses HUI.

### 19.3.1 DAW Program Control

DAW program control is available via the Control tab on the DAW page. As mentioned previously, it contains customized program controls for the selected DAW Type. As with the transport controls, each set of program controls are optimized to seamlessly intergrate the selected DAW with *Final Touch Automation*<sup>®</sup>. This creates a flexible environment for efficient workflows.

Program controls mirror the corresponding functions in the DAW software and computer operating system. As an example, the diagram above outlines program controls of the Mackie Control: Generic DAW Control tab in **red**. The Control tabs for the other DAW Types are organized in similar fashion based on available functions determined by the Mackie Control or HUI protocols. Because these program controls mirror those in the DAW, operation should be intuitive for the user.

DAW program controls are accessible via the Controls tab on the DAW page.

### 19.3.2 DAW Program Keys

The DAW program controls typically fall into the following categories:

- Computer Function Keys: F1-F8; may be programmable in the DAW software
- DAW Specific Window Keys: Opens DAW windows (Mix, Edit, Inputs, Plug-in, etc.)
- DAW Specific Automation Keys: Read, Write, Touch, Trim, etc.
- DAW Specific Functions: Click, Drop, Replace, Solo, etc.
- Basic Computer Operations: Save, Undo, Cancel, Enter
- Computer Navigation Keys: Up, Down, Left, Right arrow keys, Zoom key (useful for selecting tracks and zooming in/out as needed).

The “Save” button will indicate if the saved file is the most current.

- Save** **Save**
- **Save:** Allows changes to the DAW session to be saved:
  - White text indicates the session is unchanged
  - Yellow text indicates unsaved changes in the session
  - Press once to initiate the save function: the text will start blinking
  - Press a second time to save the changes
  - Press “Esc/Cancel” to cancel the save function

### 19.3.3 USB Keyboard

For DAW/Surface Types that use Mackie Control, a connected USB keyboard will mirror corresponding keys and can be used to generate the four modifier key presses that are present on a Mackie Control. This modifier key press feature is not currently available for the Mackie HUI: Pro Tools DAW/Surface Type. Refer to the DAW manual for information on modifier keys.

### 19.3.4 Mackie Control: Generic DAW Control Tab

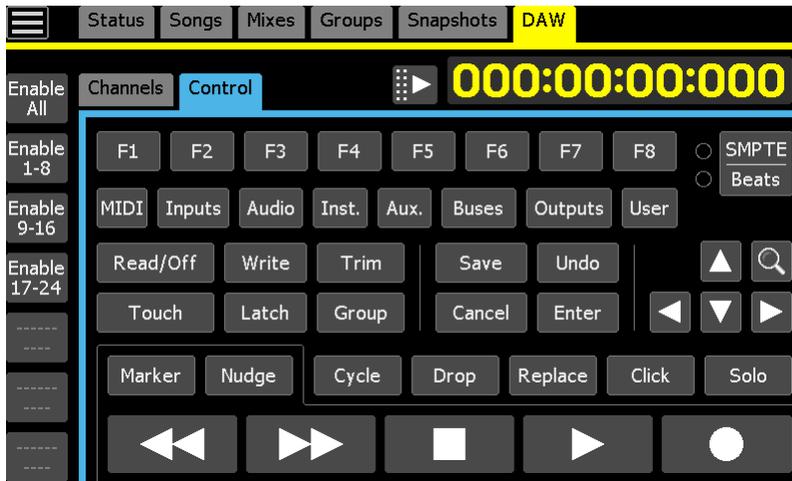
The Mackie Control: Generic Control tab contains controls that are labeled as they are on a Mackie Control Universal Pro control surface. It is intended for use with DAWs that are not explicitly supported by API.



**NOTE:** In some DAWs, the SMPTE/Beats LEDs button toggles between HH:MM:SS:MS (milliseconds) and not actual SMPTE timecode with frames. According the Beats light will turn on and off as the transport is started and stopped, but the SMPTE LED never comes on unless timecode (SMPTE) is selected in the DAW. This is not a bug. In addition, there is no special handling of the timecode for this DAW Type, so timecode may appear to be oddly formatted. The DAW Type in the DAW Configuration dialog box should be set to match the actual DAW in use, where possible, to avoid this.

### 19.3.5 Mackie Control: Logic DAW Control Tab

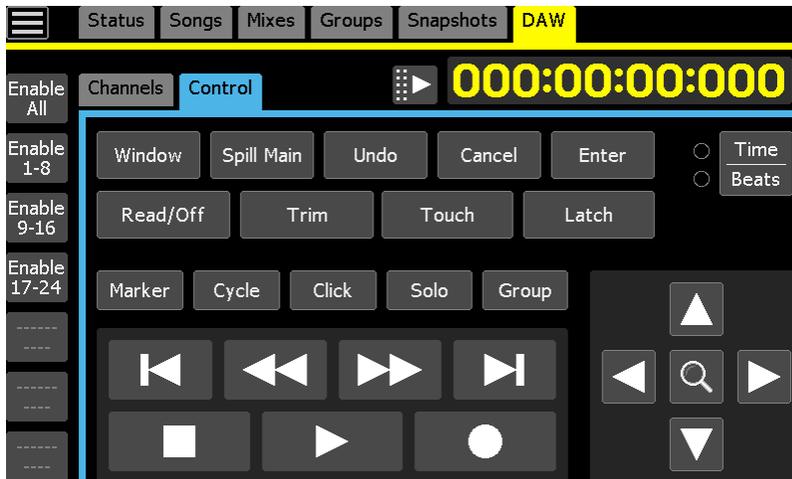
The Mackie Control: Logic Control tab contains controls specific to the integration and operation of Apple Logic and Logic Pro DAW software.



*NOTE: The Mackie Control: Logic DAW Control tab is exactly the same as the Mackie Control: Generic tab. This is due to Logic being highly configurable in regard to how the controls are mapped and because some of the default mappings may not be very useful. It's anticipated that Logic users will set up their own mappings.*

### 19.3.6 Mackie Control: LUNA DAW Control Tab

The Mackie Control: LUNA Control tab contains controls specific to the integration and operation of Universal Audio LUNA Recording System DAW software.



LUNA uses the FFWD and RWD buttons as END and RTZ. To facilitate this function virtual FFWD and RWD buttons have been added to the LUNA DAW Control tab that send repeated jog-wheel commands. Hold either button down for 300ms to start "scrolling" through the audio in the desired direction.

LUNA was specifically designed to support up to six (6) 8-channel control surfaces.

*NOTE: The SFT (Surface Fade Taper) setting in LUNA should match the SFT setting in the Curve menu on the DAW Configuration dialog box.*

### 19.3.7 Mackie Control: Studio One DAW Control Tab

The Mackie Control: Studio One Control tab contains controls specific to the integration and operation of PreSonus Studio One DAW software.



**IMPORTANT NOTE:** When using Studio One, the control surface must be turned on and configured before Studio One software is started. This is because setup information isn't sent after the program has been launched.

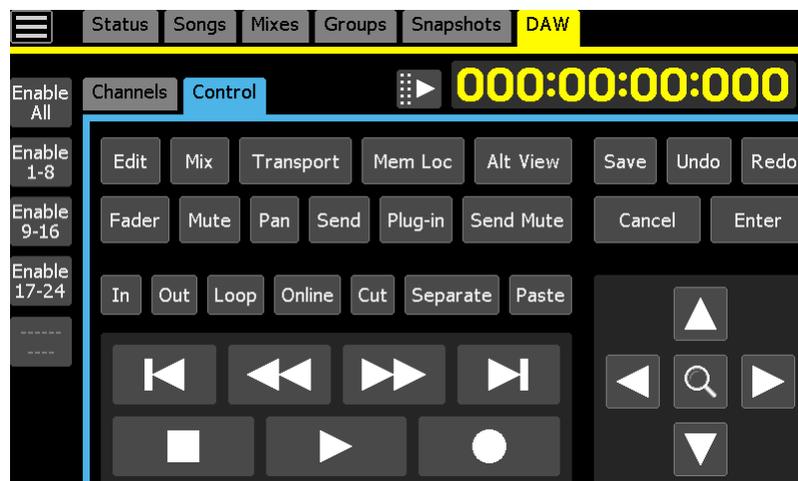
**IMPORTANT NOTE:** Studio One supports up to six (6) control surfaces, so it should be configured for the exact number and type of control surfaces that are connected.

Studio One features a "Flip" button, which causes the faders to temporarily become pans. To avoid sudden audio level disruptions, the "Flip" command will not transmit if any of the banks of 8 are not in bypass mode.

**NOTE:** The fader popups for Studio One currently show the fader's nominal dB position, which has no relation to the dB position in the DAW.

### 19.3.8 Mackie HUI: Pro Tools DAW Control Tab

The Mackie HUI: Pro Tools Control tab contains controls specific to the integration and operation of Avid Pro Tools DAW software.



The Mackie HUI: Pro Tools Control tab contains HUI controls that operate as they do on a Mackie HUI control surface and are labeled for their specific functions in Pro Tools. All Pro Tools meter modes display correctly in the TC display.

*NOTE: This is the only DAW Type that uses the HUI protocols.*

## 19.4 DAW Transport Control

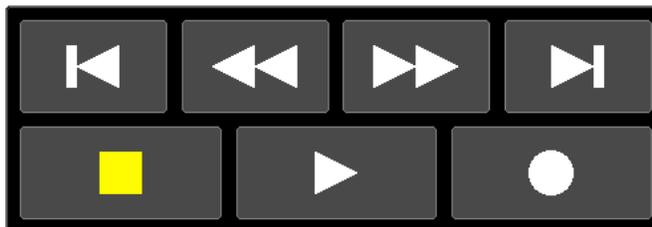
In the same way the Control tabs on the DAW page are customized for the selected DAW Type, the transport controls for each type is similarly optimized with a set of features designed to seamlessly intergrate the selected DAW with *Final Touch Automation*®. This creates a flexible environment for efficient workflow.

DAW transport controls are accessible via the Controls tab on the DAW page or using the floating transport palette, which is available from both tabs on the DAW page. As its name indicates, the floating transport palette can be moved to any location on the touch-screen that provides convenient use.

### 19.4.1 Basic Transport Controls

Transport controls are located at the bottom of the DAW Controls tab. The configuration of the controls are designed to support the selected DAW Type.

When DAW control is enabled, the DAW transport controls become active. When the transport controls come on-line the Stop button will illuminate in yellow.



**Stop:** Stops the transport

- Illuminates in yellow when engaged



**Play:** Starts the transport from the current position

- Hold to engage "record"
- Disengages the "record" mode for all tracks in "record"
- Illuminates in yellow when engaged



**Record:** Engages "record" mode at the current position

- "Play" must be held down to engage "Record"
- All armed tracks (record ready) will drop into record when engaged
- Illuminates in red when engaged



**Scrub Backward (Rewind):** Initiates fast playback in the backward direction (hold to simulate jog-wheel scrolling)



**Scrub Forward (Fast-forward):** Initiates fast playback in the forward direction (hold to simulate jog-wheel scrolling)



**RTZ (Return To Zero):** Locates the playback cursor at the beginning of the project



**End:** Locates the playback cursor at the end of the project

## 19.4.2 Floating Transport Palette

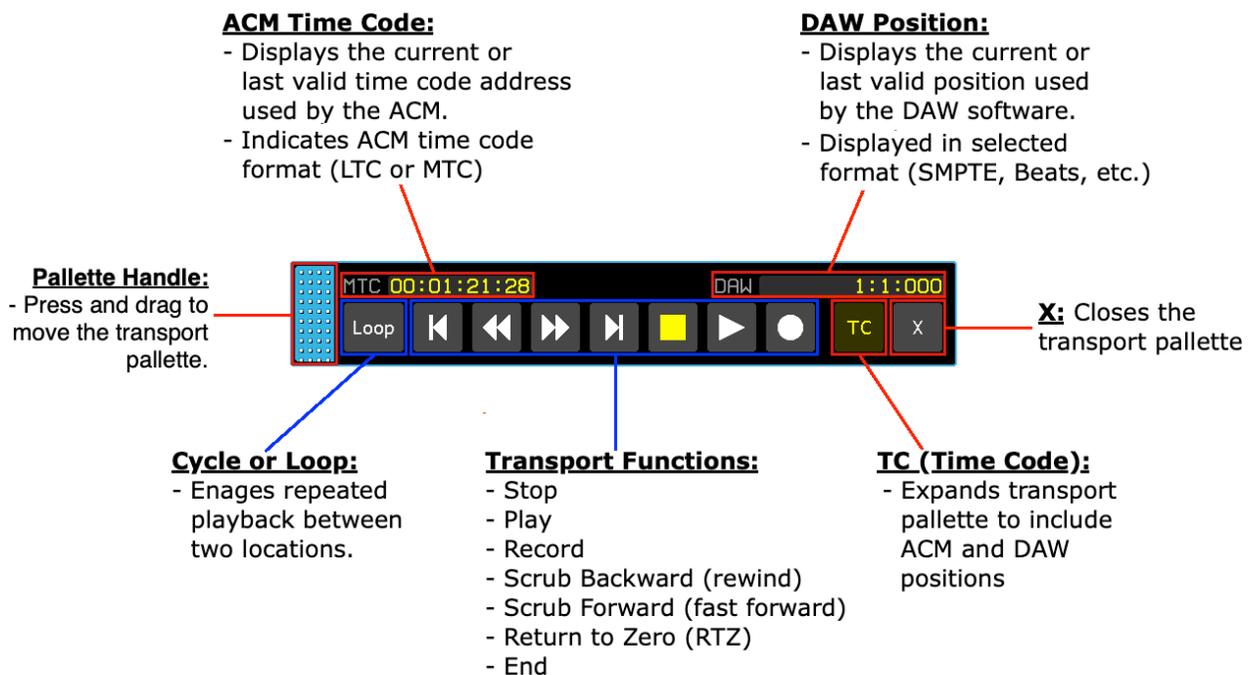


To access the floating transport palette, press the arrow button located to the left of the DAW Position display on either tab. The palette will open and the button will turn yellow.



To close the floating transport palette, press the arrow button again on either tab or the "X" button on the palette.

Transport controls for each DAW Type have been optimized to seamlessly integrate with the selected DAW program. Transport controls may contain buttons for markers, nudging, looping/cycling, and perhaps other functions. As an example, the diagram below outlines the layout of the Mackie HUI: Pro Tools transport palette. The transport palettes for the other DAW Types are organized in similar fashion and should be intuitive for the user.

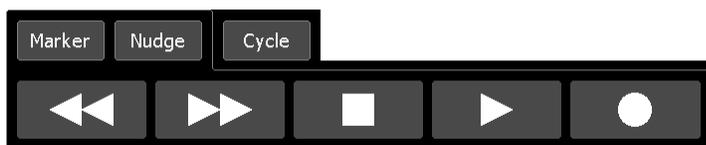


*NOTE: It's not uncommon for the DAW Position display to indicate a different position or format than the timecode position shown in the ACM Timecode display. The ACM Timecode display indicates the current position of the timecode that is used to synchronize the automation system with the DAW. The DAW Position display indicates the position information returned to the automation system from the DAW via the control protocol. Position might be in a different format, such as bars/beats/ticks, or an offset could be applied in the DAW or elsewhere.*

*NOTE: The ACM Timecode display only updates when the transport is in PLAY. The timecode display does not update when shuttling, scrolling, moving between markers, or otherwise changing the transport location from place-to-place.*

### 19.4.3 Mackie Control: Generic Transport Controls

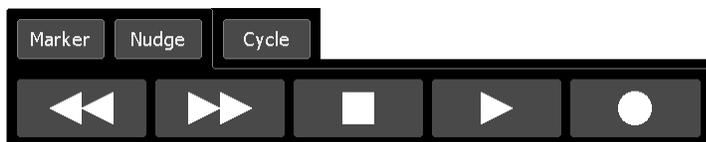
The transport controls for the Mackie Control: Generic DAW Type contains controls that are labeled as they are on a Mackie Control Universal Pro control surface. It is intended for use with DAWs that are not explicitly supported by API.



*NOTE: In some DAWs, the SMPTE/Beats LEDs button toggles between HH:MM:SS:MS (milliseconds) and not actual SMPTE timecode with frames. According the Beats light will turn on and off as the transport is started and stopped, but the SMPTE LED never comes on unless timecode (SMPTE) is selected in the DAW. This is not a bug. In addition, there is no special handling of the timecode for this DAW Type, so timecode may appear to be oddly formatted. The DAW Type in the DAW Configuration dialog box should be set to match the actual DAW in use, where possible, to avoid this.*

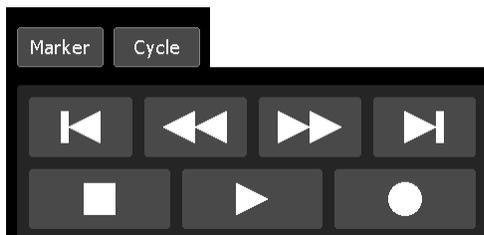
### 19.4.4 Mackie Control: Logic Transport Controls

The transport controls for the Mackie Control: Logic DAW Type contains controls specific to the integration and operation of Apple Logic and Logic Pro DAW software.



### 19.4.5 Mackie Control: LUNA Transport Controls

The transport controls for the Mackie Control: LUNA DAW Type contains controls specific to the integration and operation of Universal Audio LUNA Recording System DAW software.

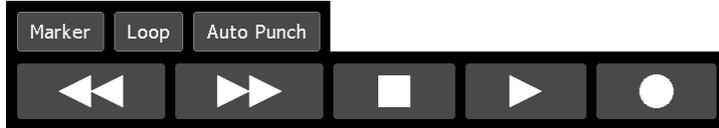




LUNA uses the FFWD and RWD buttons as END and RTZ. To facilitate this function virtual FFWD and RWD buttons have been added to the LUNA DAW Control tab that send repeated jog-wheel commands. Hold either button down for 300ms to start “scrolling” through the audio in the desired direction.

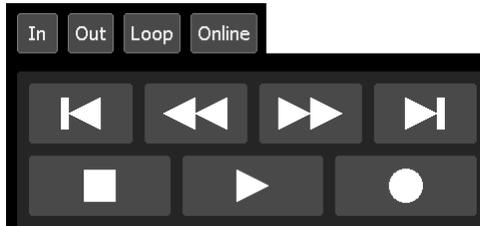
### 19.4.6 Mackie Control: Studio One Transport Controls

The transport controls for the Mackie Control: Studio One DAW Type contains controls specific to the integration and operation of PreSonus Studio One DAW software.



### 19.4.7 Mackie HUI: Pro Tools Transport Controls

The transport controls for the Mackie HUI: Pro Tools DAW Type contains controls specific to the integration and operation of Avid Pro Tools DAW software.



All Pro Tools position modes display correctly in the TC display.

## 19.5 DAW Drive

Automation written in the DAW can operate the console faders and mutes for a limited number of channels. DAW faders should be configured with any of the curves that are not Linear or SFT Off and the fader Bypass is turned “Off.”

## 19.6 DAW Configuration

### 19.6.1 Computer Configuration

A single USB-B port is used to interface the console’s ACM with the DAW computer. This interface carries the MIDI data (8 virtual ports) for DAW control. To configure DAW control, the appropriate number of the eight MIDI ports need to be mapped to the console in 8-channel banks.



When connected and powered up, the "Audio MIDI Setup" in the DAW computer will recognize the API ACM as a "USB MIDI Device." The Audio MIDI Setup needs to be setup for the user's particular computer, DAW application and system.

The DAW control also needs to be mapped to connected MIDI ports within the DAW program. This will likely be accessed via the MIDI Controllers section of the peripherals section of the setup menu. Set the DAW interface type to "HUI" or "Mackie Control" (MCU) as required by the DAW software.

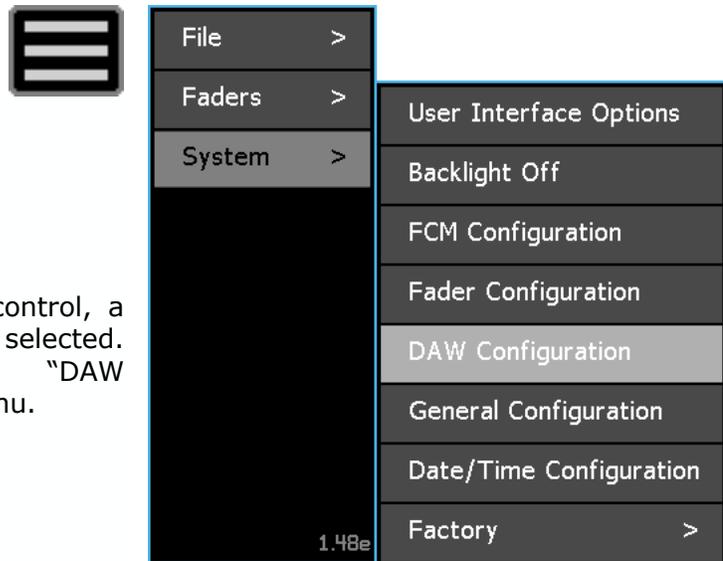
*NOTE: An additional MIDI IN port on a DIN connector serves as a 9<sup>th</sup> MIDI in port that's dedicated for MIDI timecode (MTC). The MIDI IN port is not used for DAW control. A MIDI OUT port is also provided on the back of the ACM, but is not implemented at this time.*

### 19.6.2 ACM Configuration

*Final Touch Automation*® supports control over several popular Digital Audio Workstation (DAW) programs via Human User Interface (HUI) or Mackie Control protocols over USB/MIDI. A "DAW/Surface Type" that supports specific functions and optimizes the interface has been created for each these DAWs, plus a "generic" version that can be adapted for other DAW programs. The "DAW/Surface Type" is selected via the "DAW Configuration" dialog box available via the "System" menu.

The following "DAW/Surface Types" are currently supported:

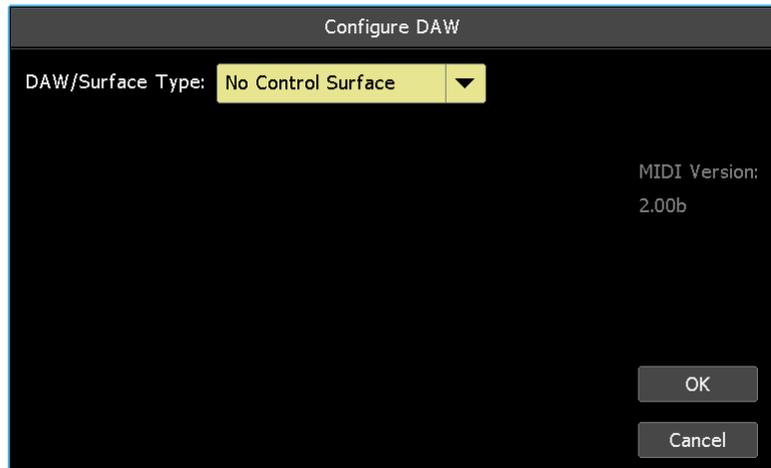
- No Control Surface
- Mackie Control: Generic
- Mackie Control: Logic
- Mackie Control: LUNA
- Mackie Control: Studio One
- Mackie HUI: Pro Tools



To configure the console for DAW control, a "DAW/Surface Type" must first be selected. Open the Main menu and select "DAW Configuration" from the "System" menu.

The "Configure DAW" dialog box will open.

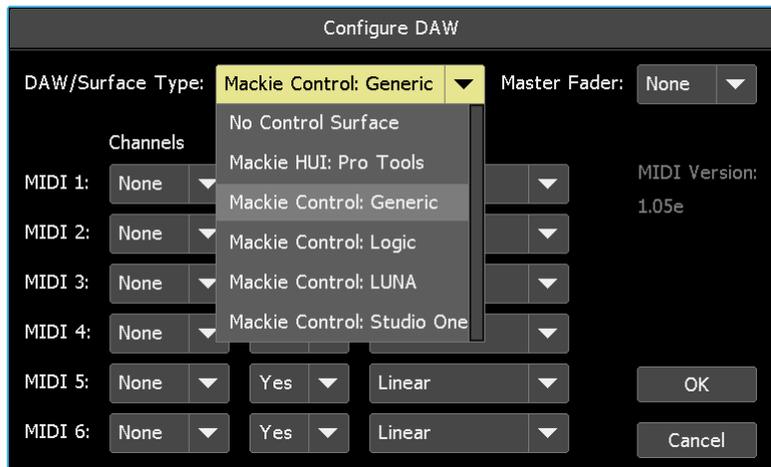
Because the system supports several different DAWs, the "Configure DAW" dialog box will contain a different set of parameters for each DAW Type. The parameters for each type are determined by the selection made in the "DAW/Surface Type:" pull-down menu.



Assign the DAW Type that matches your DAW software to the AMC by selecting the needed type from the "DAW/Surface Type:" pull-down menu.

The following DAW Types are currently available:

- No Control Surface
- Mackie Control: Generic
- Mackie Control: Logic
- Mackie Control: LUNA
- Mackie Control: Studio One
- Mackie HUI: Pro Tools



The selected "DAW/Surface Type" will populate the "Configure DAW" dialog box with the parameters needed to support that specific DAW.

All DAW Types assign channel mapping, fader bypass, and fader curve, parameters in banks of eight (8) channels. DAW Types that use Mackie Control can support up to six (6) banks of eight (8) channels, plus a master fader for a total of 49 channels of control. DAW Types that use Mackie HUI can support up to four (4) banks of eight (8) channels, for a total of 32 channels. HUI does not include support for separate master fader control.

Each bank of eight channels is assigned to a MIDI port and are labeled "MIDI 1" thru "MIDI 6" for DAW Types that use Mackie Control and "MIDI 1" thru "MIDI 4" for DAW Types that use Mackie HUI. Only the "Pro Tools" DAW Type uses the Mackie HUI protocol and is limited to a maximum of 32 channels of simultaneous control. All the others use Mackie Control (MCU) and can provide up to 48 channels of simultaneous control.

Channel mapping and fader bypass are handled in the same manner for all the DAW Types, as outlined in sections [19.6.2.1](#) and [19.6.2.2](#) below. The fader "Curve" may be handled differently from DAW type-to-type in order to match the functionality of each type. The "Curve" options for each DAW Type will be explained individually in the following sections.

**OK** Once the channels, bypass, and curve have been selected for each MIDI port, press "OK" to save the DAW control configuration.

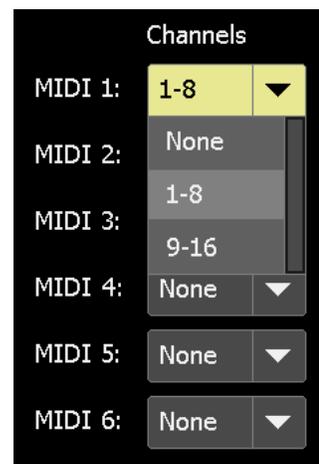
**Cancel** Press "Cancel" to cancel.

### 19.6.2.1 Channel Mapping

Assign up to MIDI ports (1-6) in banks of eight channels using the “Channels” pull-down menu. The number of selections in the menu is determined by the number of input channels installed in the console and the setting on the “General Configuration” dialog box in the “System” menu. On a 32-channel console, the “Channels” menu will include:

- None
- 1-8
- 9-16
- 17-24
- 25-32

Consoles with more than 32 input channels will have additional menu selections of 8-channel banks.



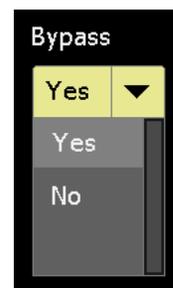
The assignments made for each port will be the settings for channels/tracks affected when DAW control is enabled. Control of channels/tracks can be shifted left or right one channel at a time or eight channels (banks) at a time during use, using the “Shift” and “Bank” buttons on the DAW page.

*CAUTION: Do not assign the same bank of eight channels to more than one MIDI port. System errors will occur as a result.*

### 19.6.2.2 Fader Bypass

The input modules on all consoles, except Vision consoles equipped with original 1068L modules, are equipped with a “unity gain audio bypass” that can be automatically activated when DAW control is enabled. This feature can be configured to be on or off for the banks of eight channels assigned to each MIDI port by selecting “Yes” or “No” from the “Bypass” pull-down menu.

When fader “Bypass” is set to “Yes” and DAW control is enabled, console faders will move to match the position of DAW faders and the console audio is routed through a unity gain bypass for the assigned input modules (8-channel groupings). The DAW enabled console faders and DAW faders will track with each other as long as DAW control is enabled. As faders move, the level of the console channel audio will remain unaffected by the fader moves and mutes because the console fader is bypassed at unity gain.



*NOTE: Vision consoles equipped with original 1068L modules are not equipped with fader bypass. Original Vision consoles with 1068L V2 modules are equipped with Fader Bypass on both channel faders.*

This feature allows audio from the DAW to be routed through console channels and routed to the program buses while using the same channel faders to control the DAW levels feeding those channels. This facilitates automated DAW mixes to be summed on the console while playing back DAW automation.

*NOTE: A unity gain fader bypass is also provided for the fader in the Small Fader audio path (FD2) on AXS and 2448 consoles for when the small faders are used for routing automated DAW returns to the mix. This function is activated on a console-wide basis by engaging the master **0dB SM** button in the center section of the console. Small faders on AXS and 2448 consoles are not automated.*

*NOTE: A unity gain fader bypass is provided for the channel fader on 1608-II consoles for when the channel is used for routing automated DAW returns to the mix. This function is can be enabled on a console-wide basis by engaging the master **0dB BYP** button in the console center section.*

*NOTE: When the unity gain bypass is engaged, the channel mute on the channel does not reflect the DAW mute. The DAW mute is shown only on the fader module DAW Mute button. When unity gain bypass is NOT enabled, then the audio mute does reflect the DAW mute. This allows the DAW automation to control the analog console levels, both fader and mute.*

### 19.6.2.3 Fader Curve

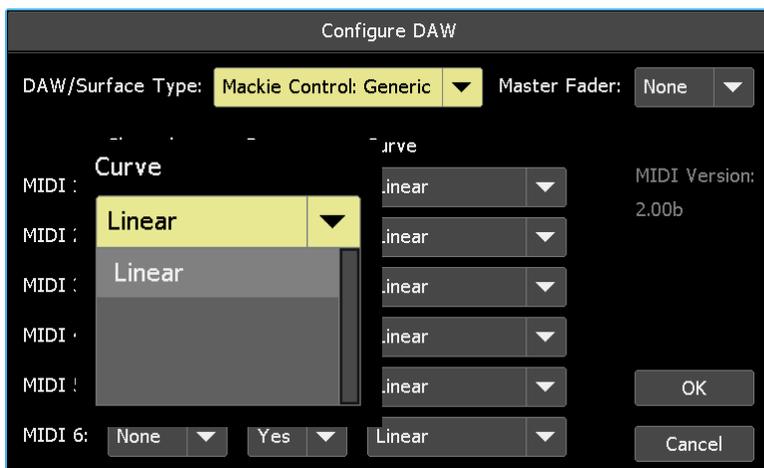
The scale of fader tracking for DAW control can be selected using the “Curve” pull-down menu. Different DAW Types have specific “Curve” menu options need to support the corresponding DAW. The “Curve” for each bank of eight channels assigned to each MIDI port is selected using the “Curve” pull-down menu. The “Curve” options for each type will be explained individually in the following sections.

### 19.6.2.4 Master Fader

For DAW Types that use Mackie Control, any of the console’s Group Master faders to be assigned to be the master DAW fader. The Mackie HUI: Pro Tools DAW Type does not support this function.



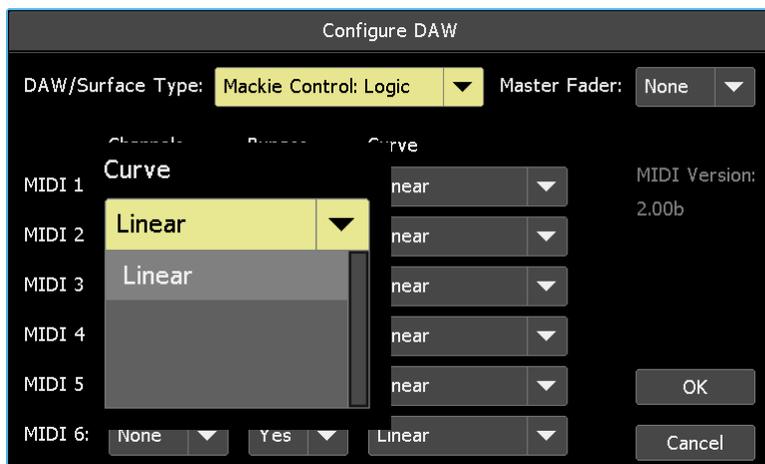
### 19.6.3 Mackie Control: Generic DAW Configuration



“Linear” is the only option for fader “Curve” for the “Mackie Control: Generic” DAW Type.

Linear: No taper: non-audio taper tracking

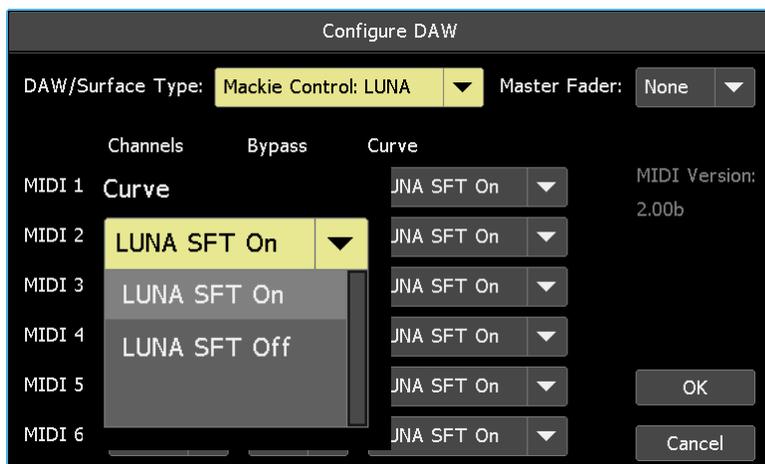
### 19.6.4 Mackie Control: Logic DAW Configuration



“Linear” is the only option for fader “Curve” for the “Mackie Control: Logic” DAW Type.

Linear: No taper: non-audio taper tracking

### 19.6.5 Mackie Control: LUNA DAW Configuration



“LUNA SFT On” and “LUNA SFT Off” are the only options for fader “Curve” for the “Mackie Control: LUNA” DAW Type.

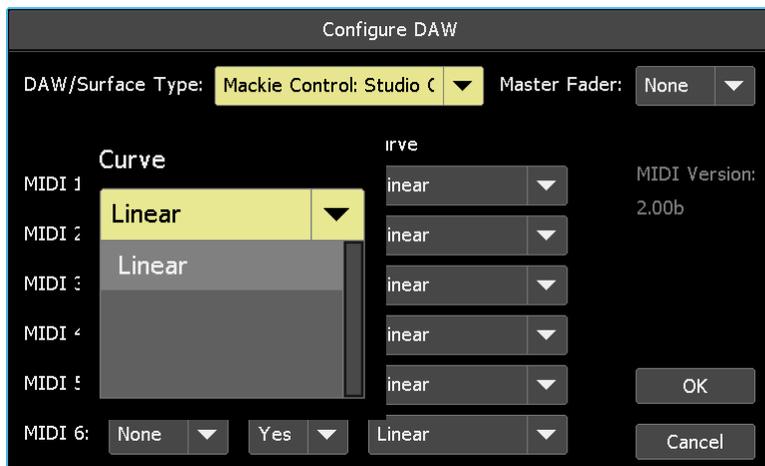
LUNA “SFT” stands for “Surface Fader Taper.”

LUNA SFT On: When “LUNA SFT On” (linear) is selected in the “Curve” menu, the applied curve attempts to directly mirror the on-screen position of the DAW fader with position of the physical faders. The dB values on the fader escutcheon are meaningless in this mode. The fader touch popups will attempt to report the DAW’s idea of dB position, assuming the DAW sends that information to the control surface. Differences in dB values will not be shown in the fader popups.

LUNA SFT Off: When “LUNA SFT Off” is selected in the “Curve” menu, the applied curve attempts to match the on-screen DAW dB position to a dB position on the console faders. When “LUNA SFT On” is selected in the “Curve” menu, differences in dB values will be shown in the fader popups. This applies only to the LUNA DAW Type.

The SFT setting in LUNA software should match the SFT setting in the ACM.

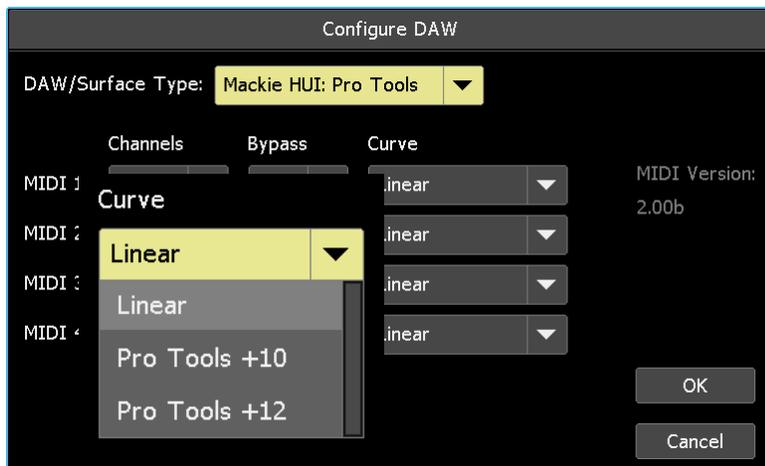
### 19.6.6 Mackie Control: Studio One DAW Configuration



“Linear” is the only option for fader “Curve” for the “Mackie Control: Studio One” DAW Type.

Linear: No taper: non-audio taper tracking

### 19.6.7 Mackie HUI: Pro Tools DAW Configuration



“Linear,” “Pro Tools +10,” and “Pro Tools +12” are the only options for fader “Curve” for the “Mackie HUI: Pro Tools” DAW Type.

When “Pro Tools +12” or “Pro Tools +10” is selected in the “Curve” menu, the applied curve attempts to match the dB values in the latest version of Pro Tools.

Linear: No taper: non-audio taper tracking

Pro Tools +10: When “Pro Tools +10” is selected in the “Curve” menu, direct mapping is applied, however, the Pro Tools faders cannot be commanded above +10 by the physical faders.

Pro Tools +12: When “Pro Tools +12” is selected in the “Curve” menu, a -2dB offset is applied so the console can command the Pro Tools faders all the way to the top.

Differences in dB values will be shown in the fader popups.

## 19.7 Fader DAW Controls

### 19.7.1 DAW Fader Enables



DAW control can be easily enabled using the console hardware, eight channels at a time on 2448 and AXS consoles. The first fader on each 944 or 944C Fader modules has a dual function SEL/**DAW** button that allows DAW control to be enabled for the four faders on that module and the four on the adjacent fader module.

*NOTE: The SEL/**DAW** button does not exist on 1608-II or original Vision consoles. These console rely on the "Enable" buttons on the DAW page.*

Hold the dual-function SEL/**DAW** button on the first in each group of eight channels for about two seconds to enable DAW control for that group of eight channels or eight Vision faders (assuming the associated bank is configured for DAW control). The SEL/**DAW** button on the first fader will illuminate to indicate all the faders on the module/section are in **DAW** control mode. Holding the SEL/**DAW** button a second time will disengage DAW control for the enabled faders.

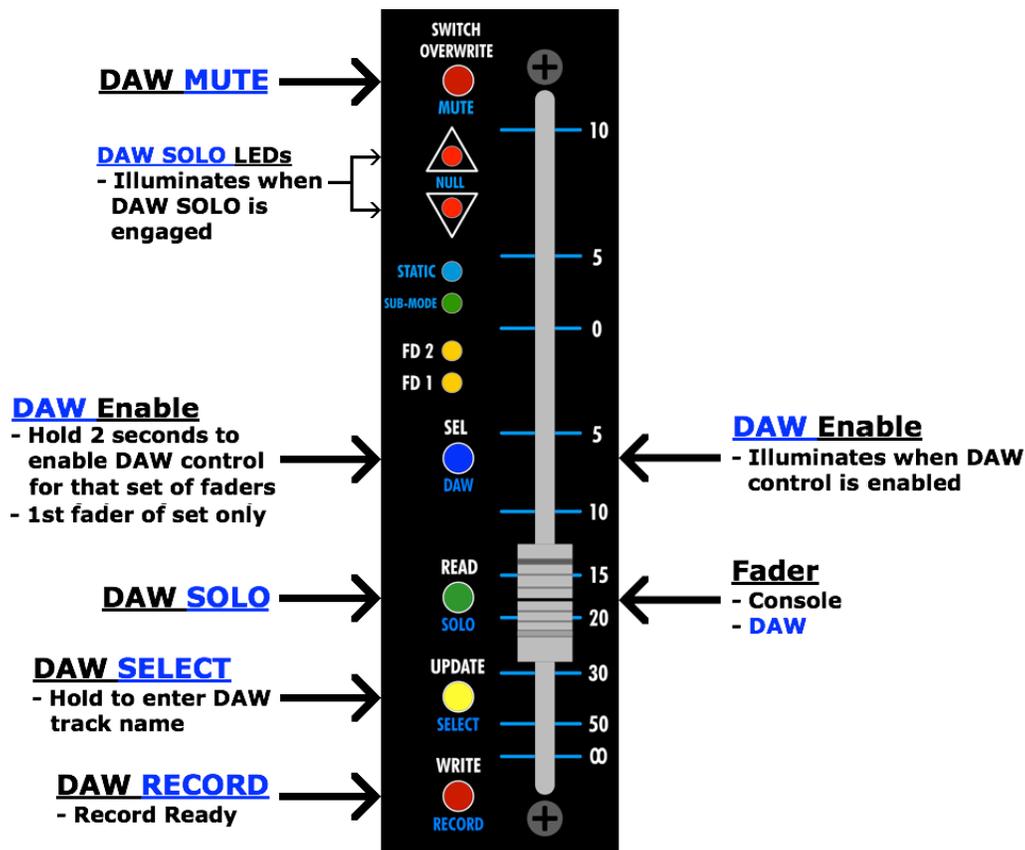
*NOTE: Depending on the console, the fifth fader in each group of eight faders might also have a blue **DAW** label with the SEL button, but this button will not enable or disable DAW control.*

### 19.7.2 DAW Fader Controls

Console fader controls are mapped to the DAW as follows:

<b>Console</b>	=	<b>DAW</b>
Fader	=	<b>Fader</b>
SWITCH OVERWRITE	=	<b>MUTE</b>
READ	=	<b>SOLO</b>
UPDATE	=	Track " <b>SELECT</b> " (hold to enter track name in DAW)
WRITE	=	Track <b>RECORD</b> Ready
<b>NULL</b> LEDs	=	Indicates a soloed DAW track when both are illuminated

The DAW controls on channel faders are shown in the diagram below (except Vision).



Console faders are mapped directly to the configured DAW faders, but mute, solo, track select, and record ready functions must be operated from alternate console fader controls. For solos, this is because the console solo system uses a logic system that is separate from the automation system. Therefore it is necessary to "borrow" buttons to mute, solo, select, or arm a DAW track for recording (record ready).

The SEL, SWITCH OVERWRITE, READ, UPDATE, and WRITE buttons are dual function buttons and perform different operations depending if the DAW control is enabled or not. In normal operation, they change the automation mode of the fader. When DAW control is enabled, these buttons change function. SWITCH OVERWRITE becomes **MUTE**, READ becomes **SOLO**, UPDATE becomes track **SELECT**, and WRITE becomes **RECORD** ready for the assigned DAW tracks. Holding the UPDATE button for about 2 seconds will open the track name entry field in the DAW. The up and down **NULL** indicators will change function and illuminate to show a soloed DAW track when DAW control is enabled. All of these controls resume normal function when DAW control is disabled.

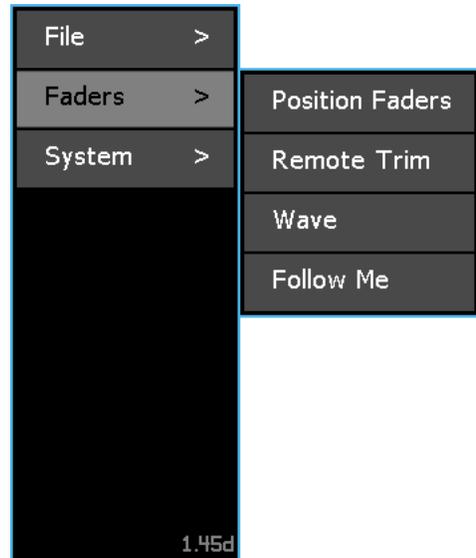
*NOTE: Automation controls are not available when DAW control is engaged.*

## 20.0 Fader Menu

The Fader menu provides several additional fader functions that enhance the operation of the *Final Touch Automation*® system:

- **Position Faders:** Allows specified faders to be set to a specific level
- **Remote Trim:** Allows assignment of a temporary master fader to apply level offsets to the mix events of one or more faders
- **Wave:** Demo mode where faders will move up and down according to the selected waveform, speed, and period
- **Follow Me:** Demo mode where when any fader is moved, all other faders will follow in unison

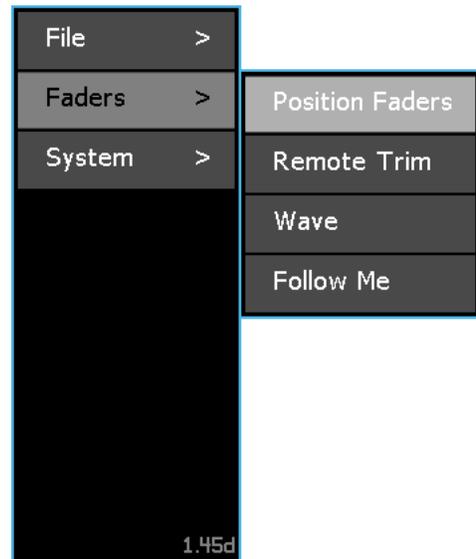
*NOTE: Demo functions are intended for demonstration purposes only and are not useful during normal production.*



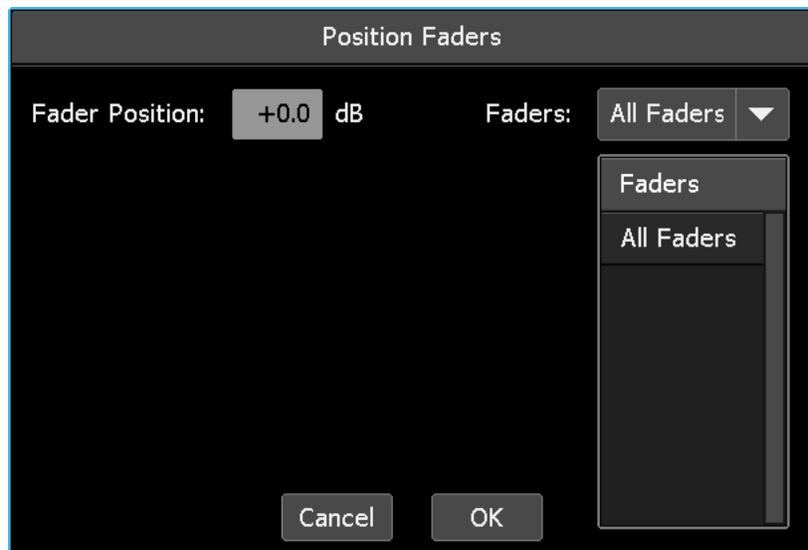
### 20.1 Position Faders

The "Position Faders" function will set a specified set of faders to a specific level.

To initiate the "Position Faders" function, open the Main menu and select "Position Faders" from the "Faders" menu. The "Position Faders" dialog box will open.



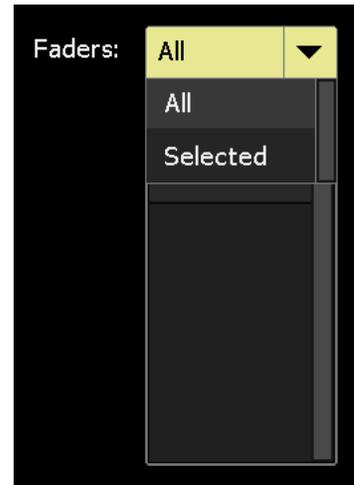
The "Position Faders" dialog box allows a specific fader position to be selected and applied to all faders or a specified set of faders.



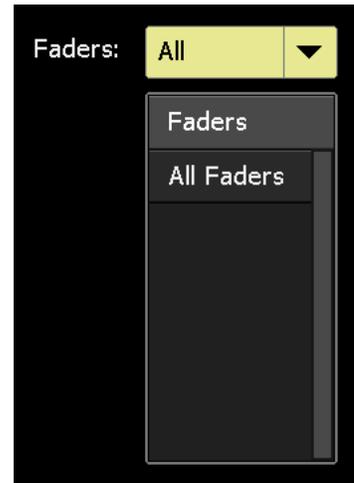
Select the faders to be positioned using the “Faders” pull-down menu. The menu choices are:

**All:** All channels, Stereo Returns, Group Masters, and Program Masters

**Selected:** A specified subset of faders



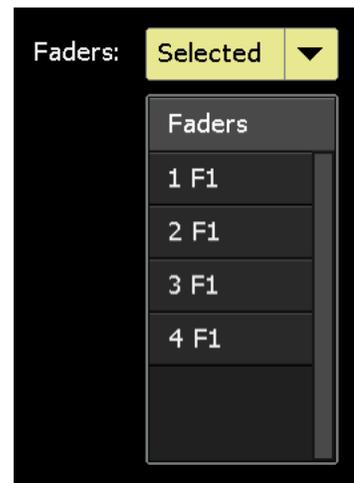
If “All” is selected, the Faders window will display “All Faders.”



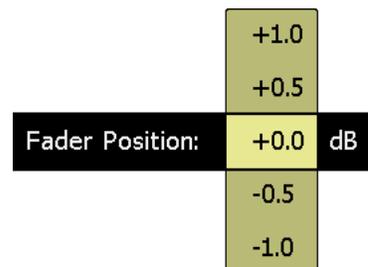
If “Selected” is chosen, the Faders window will display the faders that will be set to the specified position.

To select faders, touch the faders on channels to be positioned. Faders can be toggled in and out of the selection as long as the dialog box is open. To provide an audio alert, the beeper will sound each time a fader is selected.

As faders are selected, they will be displayed in the Faders window.



Press in the “Fader Position” field to activate its entry-field and enter the desired fader position in dB (decibels). Drag to scroll to the desired value.



OK

Once all the desired faders and specified fader position have been selected, press "OK" to move the selected faders to the specified position.

**WARNING:** Previous fader positions will be lost when the new positions are applied and this action cannot be undone.

Cancel

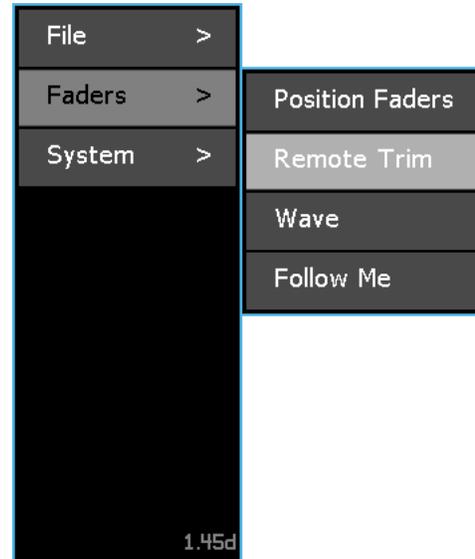
Press "Cancel" to cancel.

## 20.2 Remote Trim

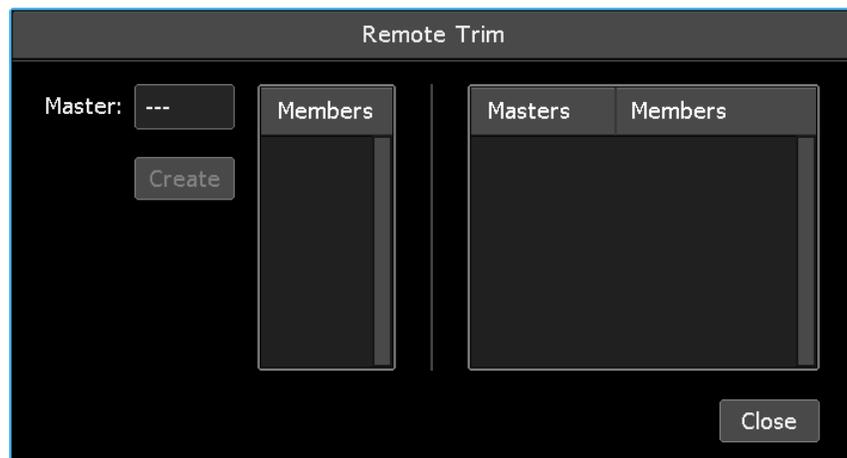
The "Remote Trim" function uses a separate, temporarily assigned "Remote Trim" group, with a master fader that can apply offset "trims" to existing fader moves on one or more member faders.



To initiate the Remote Trim function, open the Main menu and select "Remote Trim" from the Faders menu. The "Remote Trim" dialog box will open.



The Remote Trim dialog box allows a fader to be selected as the master and other faders to be selected as the members of a temporary Remote Trim group.



**Assign a Remote Trim Group Master:** The first fader that's touched will become the master of the temporary Remote Trim group. The fader LED of the chosen master will "shimmer" (blink quickly) to indicate the selected master.

**Assign the Remote Trim Group Members:** The next faders that are touched will become the members of the temporary Remote Trim group. The fader LED of the chosen members will blink normally to indicate selection as a group member.

*NOTE: Remote Trim can be applied to both faders on Vison consoles (Fader 1 and/or Fader 2).*

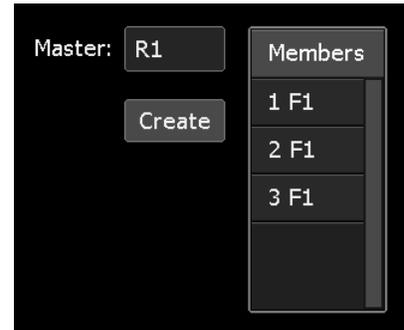
*NOTE: On 1608-II consoles, the NULL Down LED will shimmer or blink normally as selections are made (there are no FD1 or FD2 LEDs on 1608-II console).*

Touching and retouching will toggle the faders for inclusion in the group as long as this dialog box is open. To provide an audio alert, the beeper will sound each time a fader is touched.

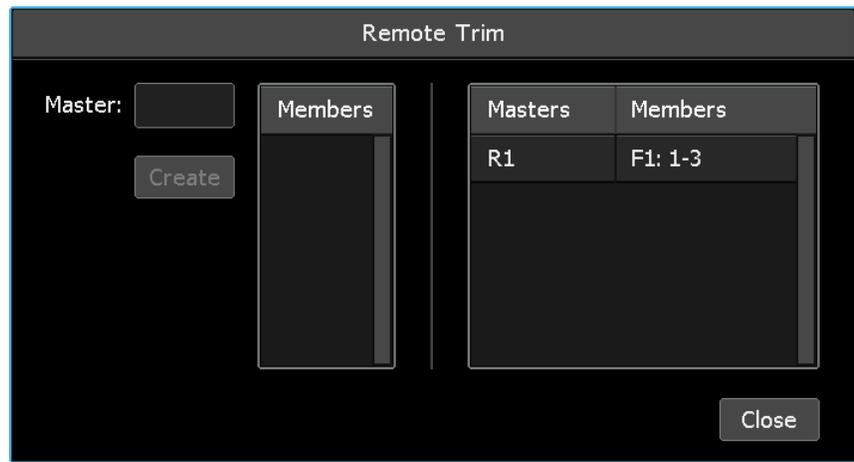
As selections are made, the Remote Trim group master and members will appear in the dialog box and the "Create" button will become active.

**Create** After the Remote Trim group has been set up, press "Create" to create the temporary Remote Trim group.

**Close** Press "Close" to cancel.

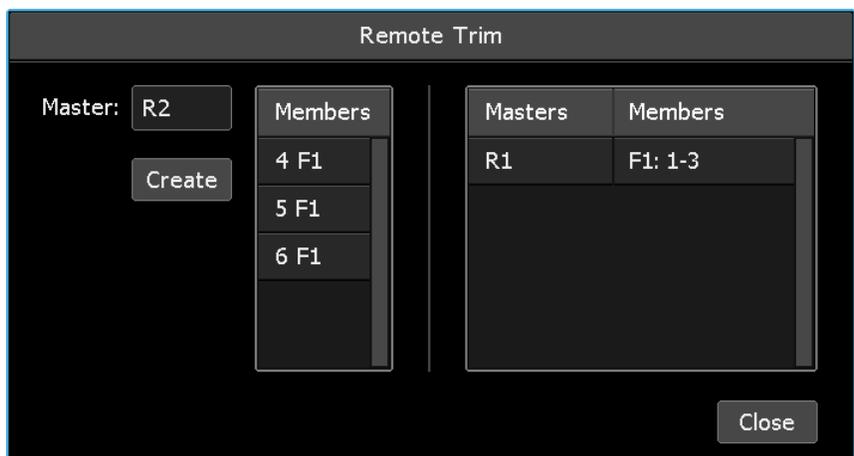


The Remote Trim dialog box will display the new Remote Trim group.



Remote Trim masters have a range of +/-6dB and will be centered in the middle of fader travel. When in Remote Trim, masters do not correlate to the dB markings on the fader. Pressing the UPDATE button on the master will cause the trim master to re-center.

Multiple Remote Trim groups can be created and used simultaneously using the procedures above.



The resulting Remote Trim groups will be displayed in the Remote Trim dialog box.

Masters	Members
R1	F1: 1-3
R2	F1: 4-6

Remote Trim operates when the master is in one of two modes: REHEARSE and WRITE. REHEARSE mode is the default.

*NOTE: On a 1608-II, 2448, AXS, or Vision+ console, REHEARSE mode is indicated by the READ, UPDATE, and WRITE LEDs all being off. On an original Vision or Legacy+, REHEARSE mode is indicated by the RD and UP LEDs on the fader both being off.*

Moving the Remote Trim master up or down in REHEARSE mode will move the Remote Trim group member faders by a corresponding amount. If timecode is running, member faders will playback their pre-existing moves, with the trim master offset added in. No moves are recorded in REHEARSE mode.

WRITE mode causes the offset of the Remote Trim master fader to be written directly to the member faders, as an offset to their pre-existing moves. The offset provided by the Remote Trim master fader when timecode is stopped will be applied across entire timecode range of the current mix pass. This offset will only be written if WRITE mode is active when timecode stops. Only the offset level provided by the "Remote Trim" master at the moment timecode is stopped is applied. Moves made to the "Remote Trim" master are not written.

Enter WRITE mode on the Remote Trim master by pressing its WRITE button.

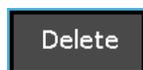
*NOTE: On a 1608-II, 2448, AXS, or Vision+ console, WRITE mode is indicated by the illumination of the WRITE LED. On an original Vision or Legacy+, the RD and UP LEDs will illuminate to indicate WRITE mode.*

*NOTE: This behavior differs from groups, where moves of the master are written to the master, and later coalesced to the members.*

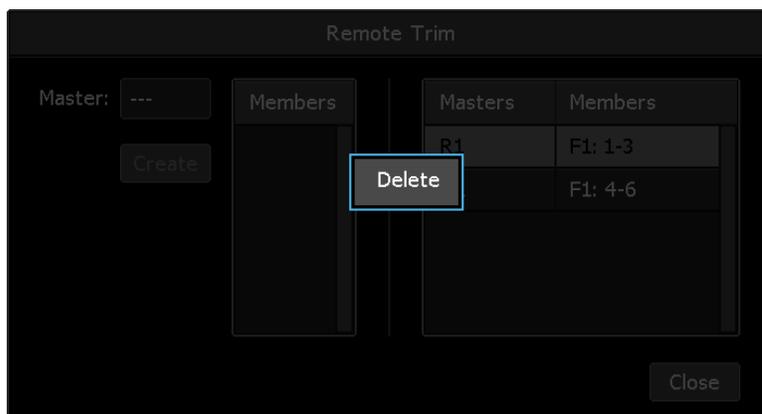
Remote Trim members will have the master's offset applied to their existing fader moves, regardless of what mode the members are in.

Remote Trim masters will automatically be deleted after their moves are written, returning the "Remote Trim" master fader to normal operation.

A Remote Trim group can also be deleted by pressing the group to be deleted in the Remote Trim dialog box. This will bring up the "Delete" button.



Press the "Delete" button to delete the selected Remote Trim group.



### 20.2.1 Using Remote Trim

1. Create a Remote Trim master, with associated members, as per the previous section.
2. Make sure the Remote Trim master is in REHEARSE mode. Center the master fader by pressing the UPDATE button.
3. Start timecode.
4. Move the master fader to trim the member faders until you arrive at the desired offset amount
5. Stop timecode and repeat step 4 as many times as necessary.
6. When you are ready to write trim moves to the members, place the Remote Trim master in WRITE mode by pressing the WRITE button.
7. Start timecode, and place the master fader at the offset arrived at earlier or leave it in place from the last REHEARSE mode pass.
8. Stop timecode. Trim moves will be written to the members when timecode stops. The Remote Trim master will be deleted, returning it to normal operation.

You may cancel WRITE mode at any time before stopping timecode by:

1. Pressing the WRITE button again to exit WRITE mode;  
**OR**
2. Pressing the Kill Mix button on the ACM control panel.

## 20.3 Wave Demo

The "Wave" demo function will automatically move the faders according to the settings made to the following parameters:

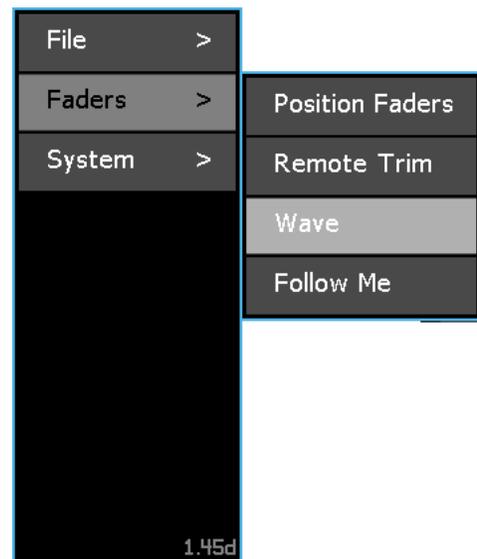
- **Type**: Selects the pattern for the "Wave" demo function: Wave or Together
- **Waveform**: Sine, triangle, and square waveforms
- **Speed**: The frequency of the demo waveform
- **Period**: The wavelength of the demo pattern

### 20.3.1 Start the Wave Demo



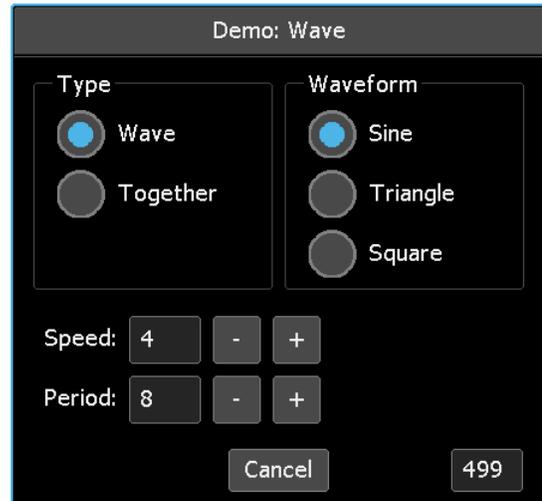
To initiate the "Wave" demo function, open the Main menu and select "Wave" from the "Demo" menu.

The fader movement will start using the default settings and the "Demo: Wave" dialog box will open.



The "Demo: Wave" dialog box allows changes to be made to the demo Type, Waveform, Speed, and Period of the fader movement to be changed.

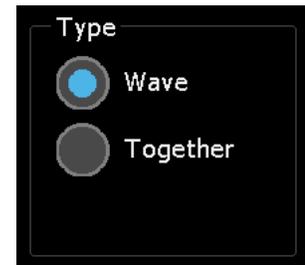
A cycle counter and "Cancel" button are also included. Press "Cancel" to end the running demonstration..



The demo "Type" can be changed by pressing the "Type" radio buttons:

- **Wave:** Faders move up and down individually to create the selected waveform across all of the console channels
- **Together:** Faders move up and down together to track the selected waveform

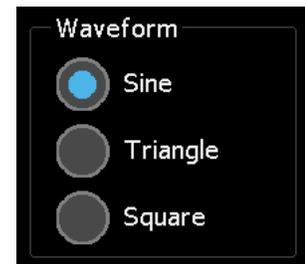
"Wave" is selected by default.



The shape of the fader movement can be changed by pressing the "Waveform" radio buttons.

- **Sine:** Sinusoidal waveform
- **Triangle:** Triangle waveform
- **Square:** Square waveform

"Sine" is selected by default.



Changing the "Speed" will alter the frequency of the fader movement. Pressing the "+" or "-" button will increase or decrease the rate of motion. A "Speed" of 1 to 8 can be selected and "4" is the default.



Changing the "Period" will alter the wavelength of the fader movement. Pressing the "+" or "-" button will increase or decrease the length of the demo pattern waveform. A "Period" of 2 to 64 can be selected and "8" is the default.

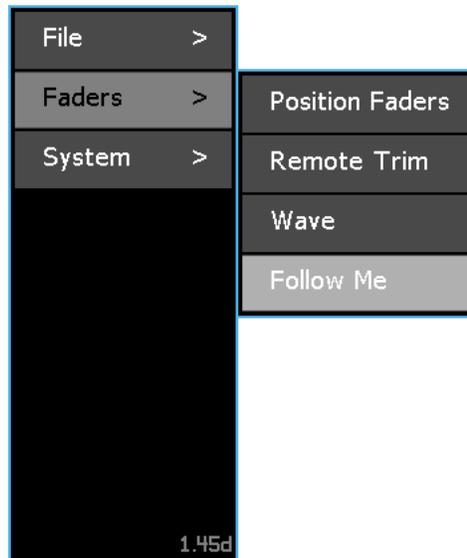
**499** If not stopped by the engineer, the "Wave" demo will time-out after a total of 500 fader cycles and the demo will end. This will help protect the faders from moving continuously over a long period of time accidentally. A cycle counter is provided to count down the number of cycles.

**Cancel** Press "Cancel" to end the demonstration.

## 20.4 Follow Me Demo

When the "Follow Me" demo function is active, when any fader is moved, all other faders will follow in unison.

### 20.4.1 Start the Follow Me Demo

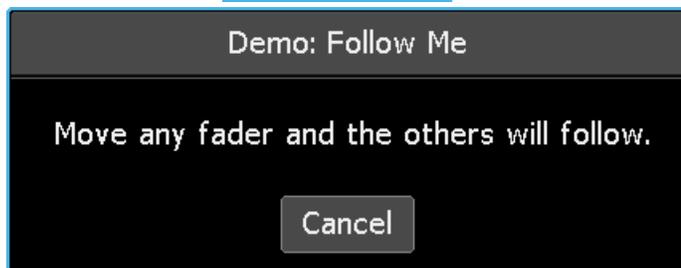


To initiate the "Follow Me" demo function, open the Main menu and select "Follow Me" from the "Demo" menu.

All faders will snap to the same position and the "Demo: Follow Me" dialog box will open.

The "Demo: Follow Me" dialog box provides instructions on using the "Follow Me" demo mode and a "cancel" button to exit the demo.

**Cancel** Press "Cancel" to end the demonstration.

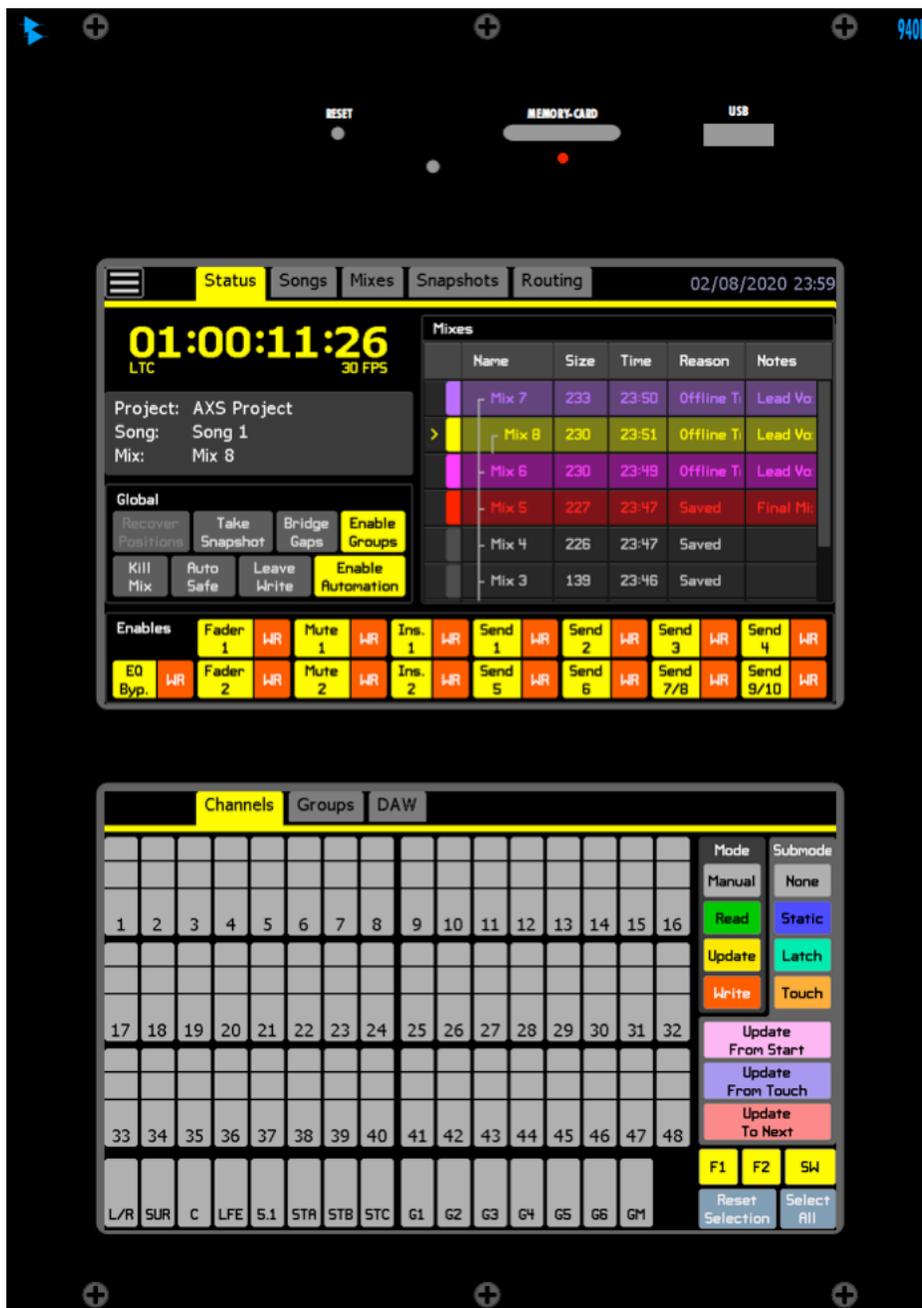


# 21.0 Vision and Vision+ Consoles

Because of greater capabilities and channel counts, all Vision consoles are uniquely equipped in regard to *Final Touch Automation*® system components and software. These differences are noted throughout the manual and are summarized here.

## 21.1 Vision 940L ACM

To accommodate greater capabilities and channel counts, the Automation Control Module (ACM) for Vision consoles is equipped with two touch-screen controllers.



Each screen has a unique tab bars to support the functions each contain.



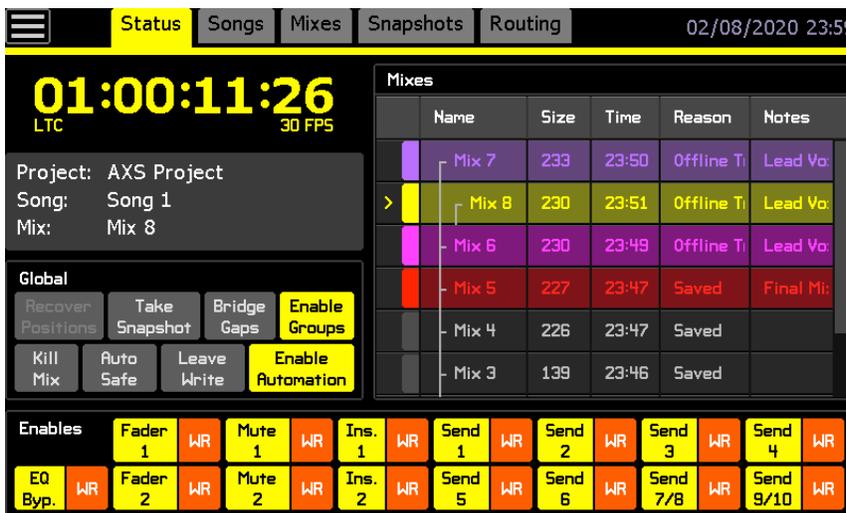
- **Main Menu:** File management, demonstration mode, and system configuration
- **Main Screen Tabs:** File management, demo modes, and system configuration
  - Status: Primary page for project information, global controls, and enables
  - Songs: Directory and tools for songs within a project
  - Mixes: Directory and tools for mixes within a song
  - Snapshots: Directory and tools for snapshots within a project
  - Routing: Control page for setting Vision Recall Settings



- **2<sup>nd</sup> Screen Tabs:** Group and recall settings pages
  - Channels: Control page for applying modes and submodes to channels
  - Groups: Directory and tools for groups within a mix
  - DAW: "Enables," "Shift," and "Bank" buttons and transport for DAW control

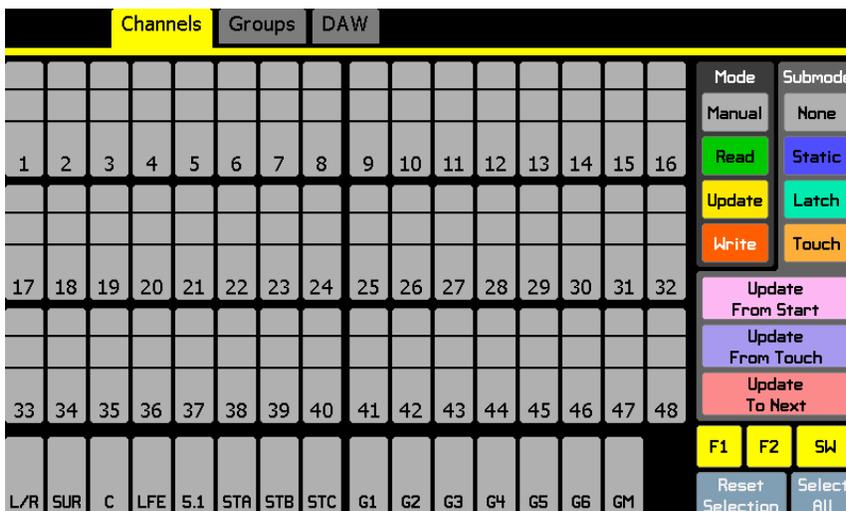
*Note: Tabs can be moved from screen-to-screen by pressing and holding the tab to be moved.*

### 21.1.1 Vision Status Page



*NOTE: Vision consoles have additional function enables that support Aux Send On/off, DYN to FDR 1, and EQ Bypass. DAW enables are also available from the Vision Status page.*

### 21.1.2 Vision Channels Page

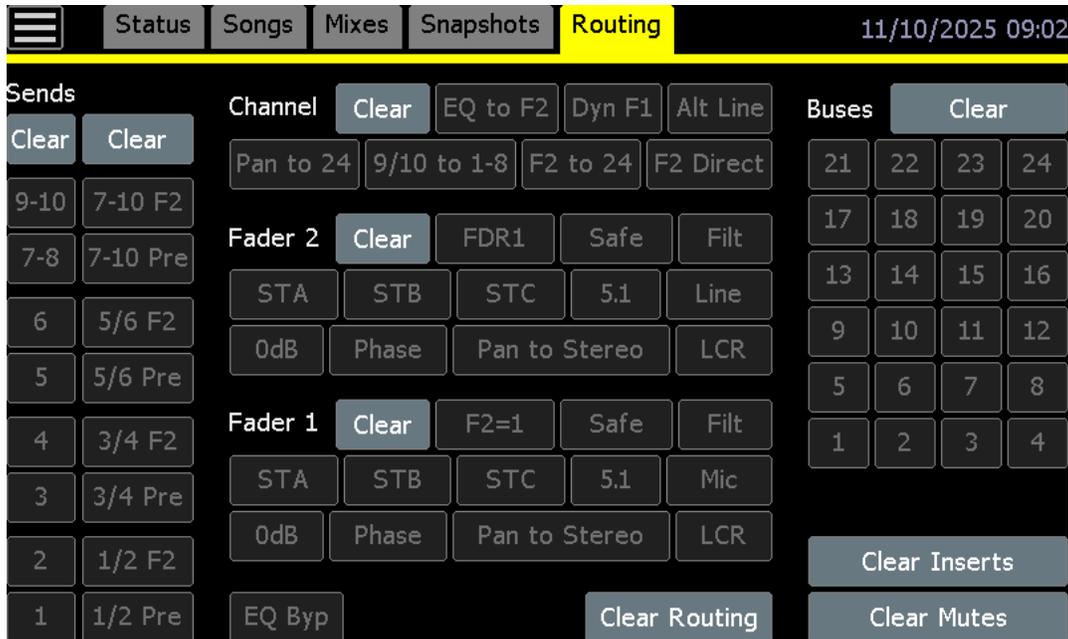


## 21.2 Vision+ Routing and Snapshots

Vision+ consoles provide recallable routing that can be included in snapshots.

### 21.2.1 Vision+ V3 Routing Page

The Vision+ V3 Routing page duplicates the function of hardware assignment panels that controls the input, output, and internal routing for the console's channels.



Assignments made on this page will apply to all channel selected on the Channels page.

Refer to the Vision+ User's Manual for operational details.

### 21.2.2 Vision V2 Routing Page

The Vision V2 Routing page duplicates the function of hardware assignment panels that controls the input, output, and internal routing for the console's channels.

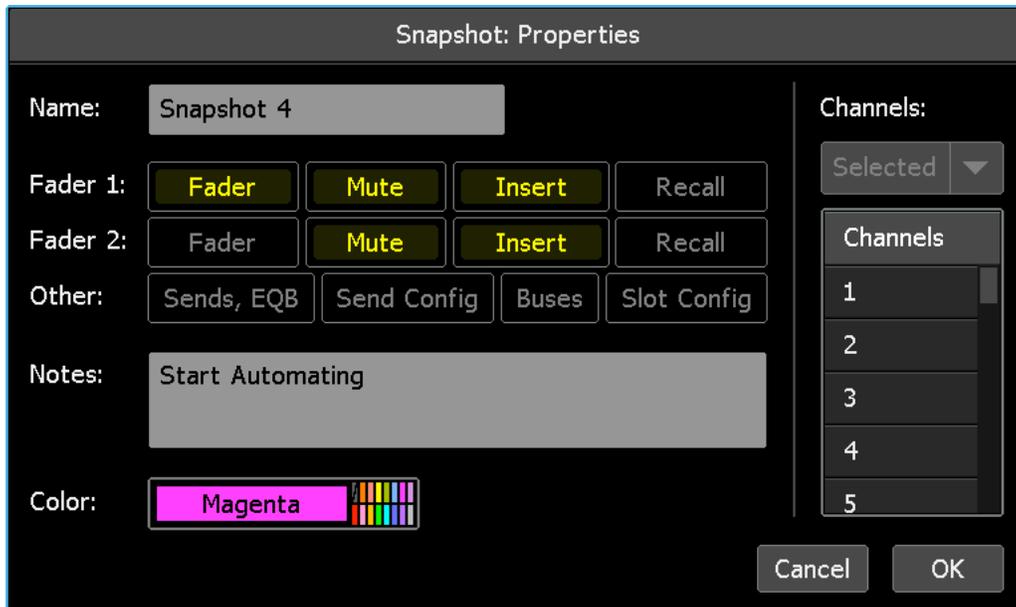


Assignments made on this page will apply to all channel selected on the Channels page.

Refer to the Vision+ User's Manual for operational details.

### 21.2.3 Vision and Vision+ Snapshot Properties Dialog Box

The Vision "Snapshots: Create New" and "Snapshots: Properties" dialog boxes includes the input, output, and internal routing for the console channels.



Snapshot properties for Vision+ consoles include:

- **Name:** Snapshot name
- **Fader 1 Controls:** Fader position, Mute, Insert, Recall controls (routing etc.)
- **Fader 2 Controls:** Fader position, Mute, Insert, Recall controls (routing etc.)
- **Other Controls:**
  - **Sends, EQB:** Send ON/off and EQ Bypass switches
  - **Send Config:** Pre or post, Fader 1 or Fader 2
  - **Buses:** Program bus and multitrack bus assignments
  - **Slot Config:** Dyn to FDR 1 and ALT LINE switches
- **Notes:** Snapshot notes
- **Color:** Snapshot color
- **Channels:** Channels selected for the snapshot (All or Selected)

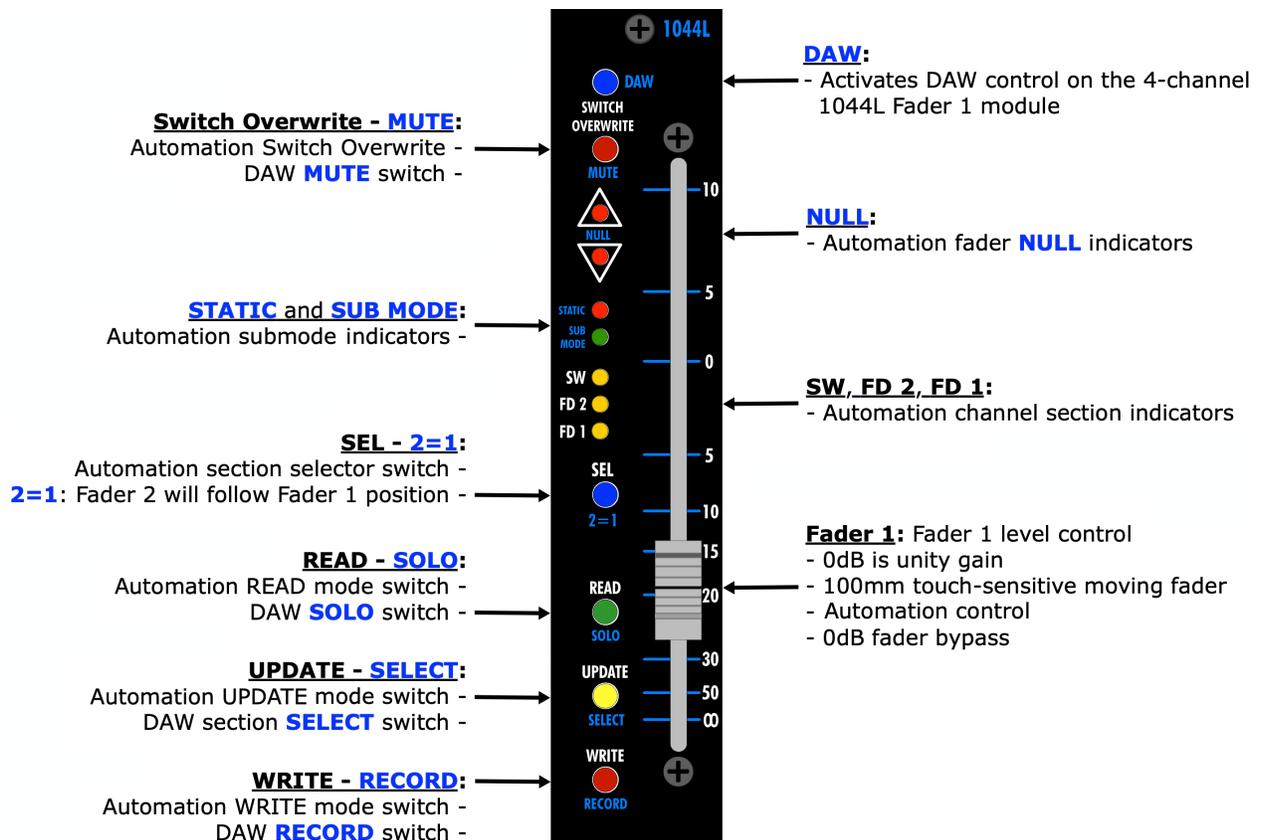
## 21.3 Vision+ and Original Vision Automated Faders

*Final Touch Automation*® faders installed in Vision and Vision+ consoles are configured differently than other *Final Touch Automation*® faders.

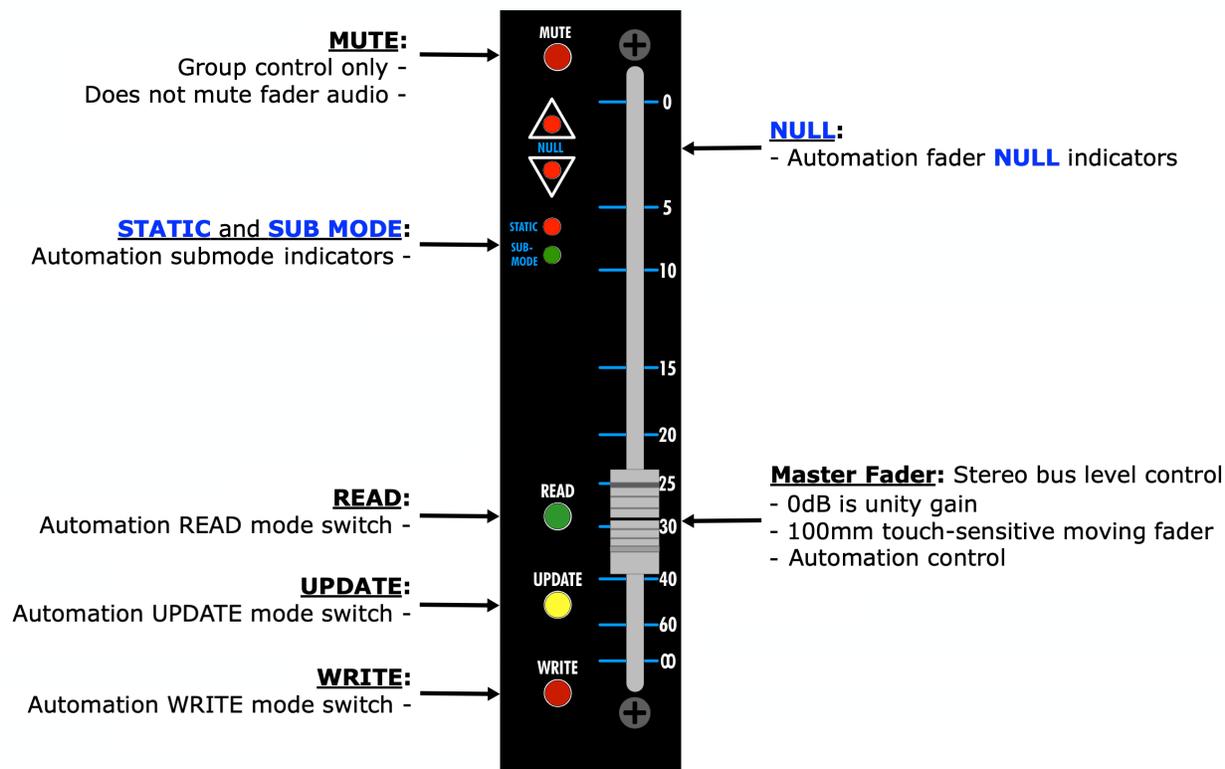
Channels on all Vision consoles are equipped with two automatable channel faders: Fader 1 and Fader 2. The Fader 1 audio path is supported individual fader packs and the Fader 2 is built into the 1068L, 1068L V2, or 1068L V3 channel modules.

Fader configuration vary between the original Vision and Vision+ consoles. The configurations for channel faders, program master faders, and group master faders are detailed as follows:

### 21.3.1 Vision+ 1044L Channel Fader Automation Controls

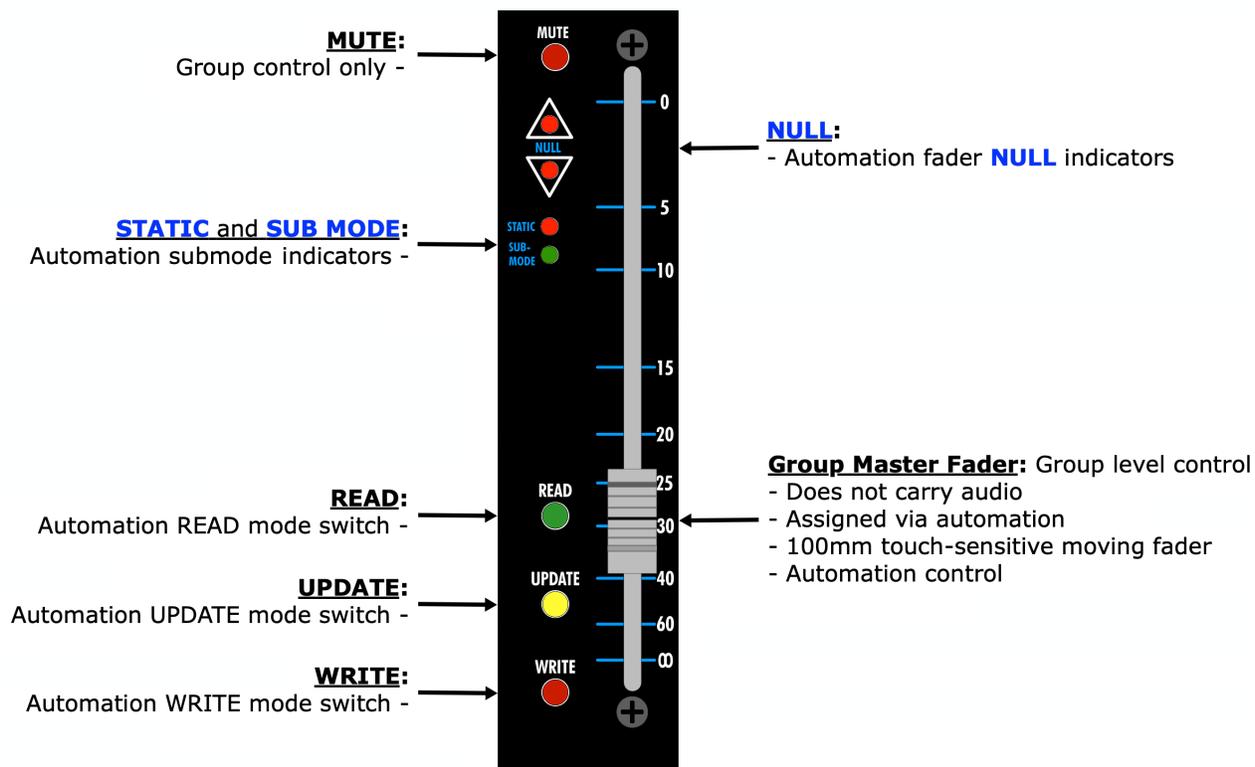


### 21.3.2 Vision+ Program Master Fader Automation Controls

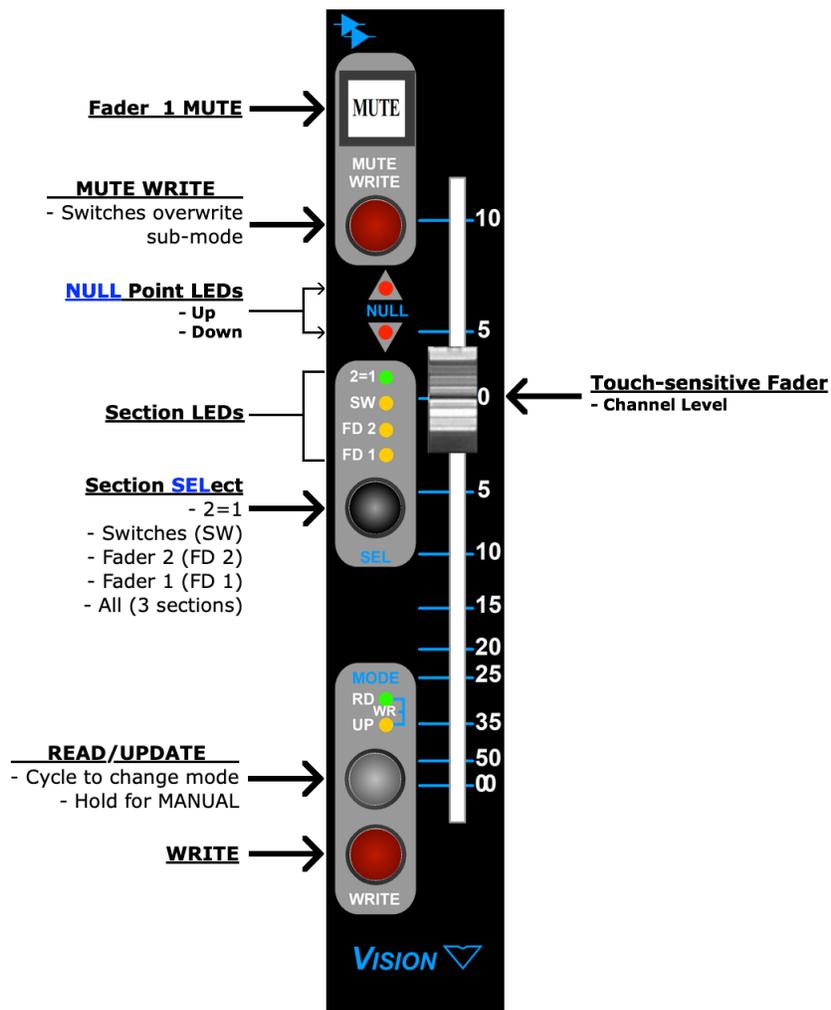


*NOTE: The program master faders on Vision consoles are equipped with a MUTE switch. However, program masters do not have a mute function, so the MUTE switch on program masters does NOT cut the output from the master. It can however be used to mute group members with the program master is used as a group master.*

### 21.3.3 Vision+ Group Master Fader Automation Controls

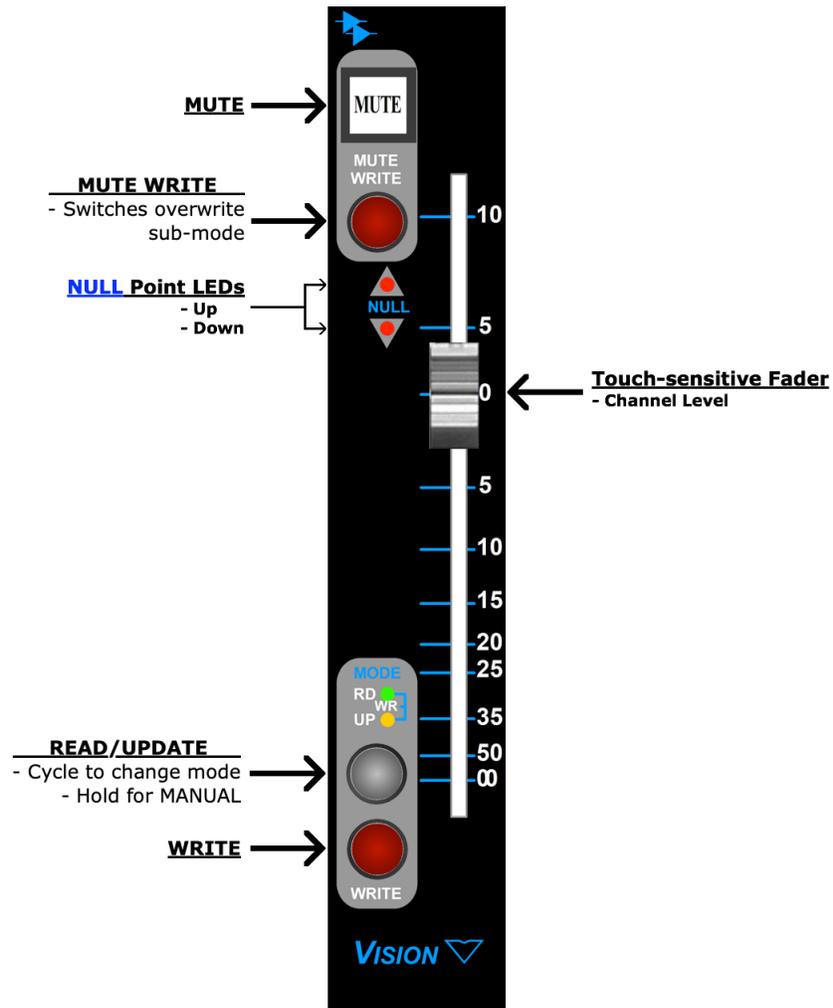


### 21.3.4 Original Vision Channel Fader Automation Controls



*NOTE: The program master faders on Vision consoles are equipped with a MUTE switch. However, program masters do not have a mute function, so the MUTE switch on program masters does NOT cut the output from the master. It can however be used to mute group members with the program master is used as a group master.*

### 21.3.5 Original Vision Group and Program Master Automation Controls



## 22.0 Application Guides

This section is intended to provide step-by-step tutorials for working with projects, songs/mixes, groups, snapshots, and other aspects of the *Final Touch Automation*® system. Each application guide assumes the engineer has basic knowledge of system navigation, automation concepts, and file management. Detailed information and procedures for these areas are provided in their respective sections of this manual.

### 22.1 Working With Projects

*Refer to sections [7.6 Projects and Project Manager](#) and [7.7 Project Manager Menu](#) for detailed information.*

#### 22.1.1 Create a New Project

To create a new project folder and project file, perform the following procedure:

1. Open the Main menu and select "Manage Projects" from the "File" sub-menu. The Project Manager window will open.
2. Press the "New Project" button or press in the Project Manager window to open the Project Manager menu and select "New...". The "New Project" dialog box will open.
3. Press the "Title:" text-entry field and enter a name for the new project folder using the pop-up keyboard or external keyboard.
4. Press the "Filename:" text-entry field and enter a name for the new project file using the pop-up keyboard or external keyboard.
5. Press the "Timecode:" pull-down menu and select a frame-rate for the new project.
6. Press the "Basis:" pull-down menu and select the basis (positions or mix data) for the initial mix in the new project.
7. Press the "Notes:" text-entry field and enter any notes about the project.
8. Press a color to assign it to the new project.
9. Press "OK" to create the new project folder and project file and store them on the memory-card. The new project will become the current project.

#### 22.1.2 Open an Existing Project

To open an existing project, perform the following procedure:

1. Open the Main menu and select "Manage Projects" from the "File" sub-menu. The Project Manager window will open. The window will display the projects found on the memory card.

*NOTE: If the memory card has changed, press the "Refresh List" button to load the projects from the card into to the Project Manager list.*

2. Press in the project to be opened in the Project Manager list to select it and open the Project Manager menu.
3. Select "Open" to make the selected project the open project. The selected project will become the current project and its songs, mixes, groups, and snapshots will be loaded and made available for immediate use.

### 22.1.3 Open a Recent Project

To open a recently used project, perform the following procedure:

1. Open the Main menu and select "Open Recent Project" from the "File" sub-menu. A submenu list of recently used projects will open.
2. Press in the desired project in the submenu list to reopened it.
3. The selected project will become the current project and its songs, mixes, groups, and snapshots will be loaded and made available for immediate use.

### 22.1.4 Clear the Recent Project List

To clear the list of recently used projects, perform the following procedure:

1. Open the Main menu and select "Open Recent Project" from the "File" sub-menu. A submenu list of recently used projects will open.
2. Press "Clear List" in the submenu.
3. The list of recently used projects will be deleted.

### 22.1.5 Close the Current Project

To close the currently open project, perform the following procedure:

1. Open the Main menu and select "Close Project" from the "File" sub-menu and the current project will close.  
**OR**
2. Open an existing project or create a new one.

### 22.1.6 Delete a Project

To delete a project from the memory card, perform the following procedure:

1. Open the Main menu and select "Manage Projects" from the "File" sub-menu. The Project Manager window will open.
2. Press the project to be deleted to select it and open the Project Manager menu.
3. Select "Delete..." from the Project Manager menu and the "Project: Delete" dialog box will open.
4. Press "OK" to delete the selected project and remove it from the memory card.

**CAUTION:** *Deleting a project cannot be undone.*

**NOTE:** *Projects can also be deleted by using a card reader with an external computer and deleting one or more project folders/files directly from the card.*

### 22.1.7 Delete Multiple Projects

To delete multiple projects from the currently open project simultaneously, perform the following procedure:

1. Open the Main menu and select "Manage Projects" from the "File" sub-menu. The Project Manager window will open.
2. Press one of the projects to be deleted to select it and open the Project Manager menu.
3. Select "Multiselect" and the yellow 3-bar Multiselect icon will appear and start flashing.
4. Press the other projects to be deleted to select them on the Project Manager list.
5. Press the Multiselect icon to reopen the Project Manager menu.
6. Select "Delete..." from the Project Manager menu and the "Project: Delete" dialog box will open.
7. Press "OK" to delete the selected songs and remove them from the currently open project.

*NOTE: Pressing and holding a project will select it and activate the Project Manager Multiselect function, allowing immediate selection of additional projects without accessing the Project Manager menu.*

**CAUTION:** *Deleting projects cannot be undone.*

### **22.1.8 Edit a Project's Properties**

To change a project's name, notes, and/or color, perform the following procedure:

1. Open the Main menu and select "Manage Projects" from the "File" sub-menu. The Project Manager window will open.
2. Press the project to be edited to select it and open the Project Manager menu.
3. Select "Properties..." from the Project Manager menu and the "Project Properties" dialog box will open.
4. Press the "Name:" text-entry field and enter changes to the project's name using the pop-up keyboard or external keyboard.
5. Press the "Notes:" text-entry field and enter changes to the project's notes.
6. Press a color in the "Color:" picker to change the project's color.
7. Press "OK" to apply the entered edits the project's properties.

## 22.2 Working With Songs

Refer to section [15.0 Songs](#) for detailed information.

### 22.2.1 Create a New Song

To create a new song within the currently open project, perform the following procedure:

1. Press the Songs tab to open the Songs page.
2. Press within the Songs page to open the Song menu.
3. Select "New..." from the Song menu and the "Song: Create New" dialog box will open.
4. Press the "Name:" text-entry field and enter a name for the new song using the pop-up keyboard or external keyboard.
5. Press the "Basis:" pull-down menu and select the basis (positions or mix data) for the initial mix in the new song.
6. Press the "Notes:" text-entry field and enter any notes about the song.
7. Press a color in the "Color:" picker to select a color for the song.
8. Press "OK" to create the new song within the currently open project. This song will become the current song and its initial mix will be loaded in the mix tree on the Mixes page.

### 22.2.2 Make an Existing Song Current

To make an existing song the current song, perform the following procedure:

1. Press the Songs tab to open the Songs page.
2. Press the song to be made current to select it and open the Song menu.
3. Select "Make Current" from the Song menu and the selected song will become the current song. An arrow will appear next to the song in the Songs page to indicate it is now the current song. The song's mix tree will be loaded and displayed on the Mixes page.

### 22.2.3 Delete a Song

To delete a song from the currently open project, perform the following procedure:

1. Press the Songs tab to open the Songs page.
2. Press the song to be deleted to select it and open the Song menu.
3. Select "Delete..." from the Song menu and the "Song: Delete" dialog box will open.
4. Press "OK" to delete the selected song and remove it from the currently open project.

**CAUTION:** *Deleting a song cannot be undone.*

#### 22.2.4 Delete Multiple Songs

To delete multiple songs from the currently open project simultaneously, perform the following procedure:

1. Press the Songs tab to open the Songs page.
2. Press one of the songs to be deleted to select it and open the Song menu.
3. Select "Multiselect" and the yellow 3-bar Multiselect icon will appear and start flashing.
4. Press the other songs to be deleted to select them on the Songs page.
5. Press the Multiselect icon to reopen the Song menu.
6. Select "Delete..." from the Song menu and the "Song: Delete" dialog box will open.
7. Press "OK" to delete the selected songs and remove them from the currently open project.

*NOTE: Pressing and holding a song will select it and activate the Song Multiselect function, allowing immediate selection of additional songs without accessing the Song menu.*

**CAUTION:** *Deleting songs cannot be undone.*

#### 22.2.5 Edit a Song's Properties

To change a song's color, perform the following procedure:

1. Press the Songs tab to open the Songs page.
2. Press the song to be edited to select it and open the Song menu.
3. Select "Properties..." from the Song menu and the "Song: Properties" dialog box will open.
4. Press a color in the "Color:" picker to change the song's color.
5. Press "OK" to apply the entered edits the song's properties.

#### 22.2.6 Change the Color of Multiple Songs

To change the color of multiple songs simultaneously, perform the following procedure:

1. Press the Songs tab to open the Songs page.
2. Press one of the songs to be edited to select it and open the Song menu.
3. Select "Multiselect" and the yellow 3-bar Multiselect icon will appear and start flashing.
4. Press the other songs to be edited to select them on the Songs page.
5. Press the Multiselect icon to reopen the Song menu.
6. Select "Properties..." from the Song menu and the "Song: Properties" dialog box will open.

7. Press a color in the "Color:" picker to select a new color.
8. Press "OK" to apply the new color to the selected songs.

*NOTE: Pressing and holding a song will select it and activate the Song Multiselect function, allowing immediate selection of additional songs without accessing the Song menu.*

## 22.3 Working With Mixes

Refer to sections [8.0 Automation Concepts](#), [9.0 Function Enables](#), [10.0 Timecode and Synchronization](#), [12.0 Automation Modes](#), and [16.0 Mixes](#) for detailed information.

### Create a New Mix

A new mix is created every time one of the following occurs:

- A new project is created
- A new song is created
- A mix pass with new moves is completed
- A new group is created or deleted
- A duplicate mix is created
- An offline trim is performed

#### 22.3.1 Starting a New Mix From Scratch

There are two ways to create a new automated mix from scratch using the *Final Touch Automation*® system, perform the following procedure:

1. Press the Status tab to open the Status page.
2. Enable timecode by pressing "Enable Automation" on the Status page if it is not already engaged.
3. Selects all channels/sections by pressing "F1&2" and "Select All."
4. Put all channels/sections in **Manual** mode by pressing the MANUAL mode button.
5. Create a preliminary mix on the console and work up to the point where automated moves are needed.
6. After a good starting mix for automation has been established, create a new project or song using "Current Positions" as the "Basis." (Use the procedures outlined above.) This method will result in a new song with a new mix tree that contains an initial mix using the preliminary mixes established fader and switch positions. The resulting new song and initial mix will be the current song and current mix within the open project.
7. Use this initial mix as the foundation (Basis) for writing automated moves to faders and switches.
8. Put all channels in **Read** or **Update** to play back the initial mix positions.

If no changes are written to automation, the initial positions from the initial mix will be used throughout the mix and in subsequent mixes. If changes are written, they will be played back at the timecode locations at which they were recorded when in **Read** or **Update**. If playback is started at before any recorded moves, the initial positions will be replayed by the automation system and held until the first recorded move is played back.

#### 22.3.2 Add Moves to an Initial Mix

To write moves to faders and switches, perform the following procedure:

Status Page:

1. Press the Status tab to open the Status page.
2. Select the channel(s)/section(s) (Fader1, Fader2 or both) to be changed and engage **Update** or **Write** to record your moves at the proper time:

- Channel/section and mode/submode selections can be changed at any time, even while timecode is running.
- Pressing **Update** plays back the mix: changes are only written when faders are touched and/or switches are engaged/disengaged.
- **Write** will overwrite previously written automation moves, but **Update** or **Static** must be engaged to enter **Write** from the Status page.
- Switch between modes and use submodes as needed.
- Engage **Read** to play back written moves.

## **OR**

Individual Faders/Channels:

1. Press SEL on the channel faders to select Fader 1 (FD1), Fader 2 (FD2), or both (input channels only).
2. Pressing the READ or UPDATE buttons on the fader will assign the mode for the selected sections. **Update** plays back the mix: changes are only written when faders are touched and/or switches are engaged/disengaged.
3. Pressing the WRITE button allows automation to be “punched-in” directly from **Read** or **Update**. **Write** will overwrite previously written automation moves.
4. Use the **SWITCH OVERWRITE** when it is desired to write changes to mutes and other switches without changing the fader data.

Each time timecode is stopped after new moves have been recorded, a new mix will be saved to the mix tree. This mix will become the “current mix” and will serve as a starting point for subsequent automation moves.

It might be helpful to engage “Auto Safe” on the Status page so all channels 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.

Pressing **KILL MIX** before timecode is stopped will “kill” the current mix pass, discard any recorded moves, and prevent a new mix from being created in the mix tree.

As all the moves for a set of controls (faders and/or switches) have been completed, it might be helpful to disengage the Write Enables (WR) on the Status page for that set of controls to help prevent accidental changes.

### **22.3.3 Playback and Print a Completed Mix**

To playback and print a completed mix, perform the following procedure:

1. Press the Status tab to open the Status page.
2. Press “F1&2” followed by “Select All” to select all channels and sections (FD1 & F2)
3. Press the **Read** mode button to put all channels and sections in **Read** mode.
4. Disengage the Write Enables (WR) on the Status page for that set of controls to help prevent accidental changes.

Playback timecode and the automation system will replay the written moves at the proper timecode locations.

### 22.3.4 Make an Existing Mix Current

To make an existing mix the current mix, perform the following procedure:

1. Press the Mixes tab to open the Mixes page.
2. Press the mix to be made current to select it and open the Mix menu.
3. Select "Make Current" from the Mix menu and the selected mix will become the current mix. An *a* will appear next to the mix in the mix tree to indicate it is now the current mix.

### 22.3.5 Duplicate a Mix

To duplicate a mix in the mix tree, perform the following procedure:

1. Press the Mixes tab to open the Mixes page.
2. Press the mix to be duplicated to select it and open the Mix menu.
3. Select "Duplicate Mix" from the Mix menu and the "Duplicate Mix" dialog box will open.
4. Press "OK" to duplicate the selected mix. A copy of the selected mix will be created and added to the mix tree for the current song. This mix will become the current mix.

### 22.3.6 Delete a Mix

To delete a mix from the current song and project, perform the following procedure:

1. Press the Mixes tab to open the Mixes page.
2. Press the mix to be deleted to select it and open the Mix menu.
3. Select "Delete" from the Mix menu and the "Mix: Delete" dialog box will open.
4. Press "OK" to delete the selected mix and remove it from the current song and project.

**CAUTION:** *Deleting a mix cannot be undone.*

### 22.3.7 Delete Multiple Mixes

To delete multiple mixes from the currently open song simultaneously, perform the following procedure:

1. Press the Mixes tab to open the Mixes page.
2. Press one of the mixes to be deleted to select it and open the Mix menu.
3. Select "Multiselect" and the yellow 3-bar Multiselect icon will appear and start flashing.
4. Press the other mixes to be deleted to select them on the Mixes page.
5. Press the Multiselect icon to reopen the Mix menu.
6. Select "Delete" from the Mix menu and the "Mix: Delete" dialog box will open.
7. Press "OK" to delete the selected mixes and remove them from the currently open song.

*NOTE: Pressing and holding a mix will select it and activate the Mix Multiselect function, allowing immediate selection of additional mixes without accessing the Mix menu.*

**CAUTION:** *Deleting multiple mixes cannot be undone.*

### **22.3.8 Clear Mix Events**

To use the Clear Mix Events function to erase previously written fader moves and switch actuations, perform the following procedure:

1. Press the Mixes tab to open the Mixes page.
2. Press the mix with mix events to be cleared to select it and open the Mix menu.
3. Select "Clear Events" from the Mix menu and the "Mix: Clear Events" dialog box will open.
4. Select "All" if mix events are to be cleared on all channels or select "Selected" to select the a subset of specific channels by touching their faders.
5. Press "All TC" to clear mix events from all timecode locations or select "TC Range" to select a timecode window to be cleared.
6. If a timecode window is to be used, press the hour, minute, second and frame menus to set the "From TC" and "To TC" timecode locations. These locations will determine the defined "timecode window" in which mix events will be cleared.
7. Press the control buttons to select the mix events to be cleared (Fader, Mute, Insert, Switches).
8. Press "OK" to create a new mix with cleared mix events on the selected channel(s) during the selected timecode range. This new mix will be added to the mix tree for the current song and project. This mix will become the current mix.

### **22.3.9 Trim Fader Moves Offline**

To use the Offline Trim function to offset previously written fader moves, perform the following procedure:

1. Press the Mixes tab to open the Mixes page.
2. Press the mix with fader moves to be trimmed to select it and open the Mix menu.
3. Select "Offline Trim" from the Mix menu and the "Offline Trim" dialog box will open.
4. Press the console fader(s) to be trimmed.
5. Press the "Amount" menu and select the amount of gain or attenuation that will be applied.
6. Press the "Fade In/Out" menu and select the number of frames (time) it takes for the fader to move at data transition points when the trim is applied to a timecode window.
7. Press "All TC" to apply the trim to all timecode locations or disengage "All TC" to select a timecode window for the trim.

8. If a timecode window is to be used, press the hour, minute, second and frame menus to set the "From TC" and "To TC" timecode locations. These locations will determine the defined "timecode window" in which the Offline Trim will be applied.
9. Press "OK" to create a new mix with the Offline Trim amount applied to the selected fader(s) during the selected timecode range. This new mix will be added to the mix tree for the current song and project. This mix will become the current mix.

### **22.3.10 Trim Fader Moves with Remote Trim**

1. Create a Remote Trim master, with associated members, as per the previous section.
2. Make sure the Remote Trim master is in REHEARSE mode. Center the master fader by pressing the UPDATE button.
3. Start timecode.
4. Move the master fader to trim the member faders until you arrive at the desired offset amount.
5. Stop timecode and repeat step 4 as many times as necessary.
6. When you are ready to write trim moves to the members, place the Remote Trim master in WRITE mode by pressing the WRITE button.
7. Start timecode, and place the master fader at the offset arrived at earlier or leave it in place from the last REHEARSE mode pass.
8. Stop timecode. Trim moves will be written to the members when timecode stops. The Remote Trim master will be deleted, returning it to normal operation.

You may cancel WRITE mode at any time before stopping timecode by:

1. Pressing the WRITE button again to exit WRITE mode;  
**OR**
2. Pressing the Kill Mix button on the ACM control panel.

### **22.3.11 Copy/Swap Mix Events**

To use the Copy/Swap Mix Events function to copy or swap fader moves and switch actuations between channels, perform the following procedure:

1. Press the Mixes tab to open the Mixes page.
2. Press the mix with mix events to be copied or swapped to select it and open the Mix menu.
3. Select "Copy/Swap Mix Events" from the Mix menu and the "Copy or Swap Mix Events" dialog box will open.
4. Press the "Copy" or "Swap" button to select the desired function.
5. Select the "Copy" or "Swap" channel where the mix events will original by touching in the channel field and scrolling as needed.
6. Select the "Copy To" or "Swap With" channel where the mix event will be moved by touching in the channel field and scrolling as needed.

7. Press "All TC" to copy or swap mix events across all timecode locations or select "TC Range" to select a timecode window to be copied or swapped.
8. If a timecode window is to be used, press the hour, minute, second and frame menus to set the "From TC" and "To TC" timecode locations. These locations will determine the defined "timecode window" in which mix events will be copied or swapped.
9. Press the "Connect All" button to all mix events (Fader, Mute, Insert, Switches) to be copied or swapped between channels or press the individual control icons on the first channel to connect them to the desired controls on the second channel to create a custom map. Press the "Clear All" button as needed.
10. Press "OK" to create a new mix with copied or swapped mix events between the selected channel(s) during the selected timecode range. This new mix will be added to the mix tree for the current song and project. This mix will become the current mix.

### **22.3.12 Copy/Swap Mix Events of Multiple Mixes**

To use the Copy/Swap Mix Events function to copy or swap fader moves and switch actuations between channels on multiple mixes, perform the following procedure:

1. Press the Mixes tab to open the Mixes page.
2. Press one of the mixes with mix events to be copied or swapped to select it and open the Mix menu.
3. Select "Multiselect" and the yellow 3-bar Multiselect icon will appear and start flashing.
4. Press the other mixes with mix events to be copied or swapped to select them on the Mixes page.
5. Press the Multiselect icon to reopen the Mix menu.
6. Select "Copy/Swap Mix Events" from the Mix menu and the "Copy or Swap Mix Events" dialog box will open.
7. Press the "Copy" or "Swap" button to select the desired function.
8. Select the "Copy" or "Swap" channel where the mix events will original by touching in the channel field and scrolling as needed.
9. Select the "Copy To" or "Swap With" channel where the mix events will be moved by touching in the channel field and scrolling as needed.
10. Press "All TC" to copy or swap mix events across all timecode locations or select "TC Range" to select a timecode window to be copied or swapped.
11. If a timecode window is to be used, press the hour, minute, second and frame menus to set the "From TC" and "To TC" timecode locations. These locations will determine the defined "timecode window" in which mix events will be copied or swapped.
12. Press the "Connect All" button to all mix events (Fader, Mute, Insert, Switches) to be copied or swapped between channels or press the individual control icons on the first channel to connect them to the desired controls on the second channel to create a custom map. Press the "Clear All" button as needed.
13. Press "OK" to create new mixes with copied or swapped mix events between the selected channel(s) during the selected timecode range. The resulting mixes will be added to the mix tree for the current song.

### **22.3.13 Export a Mix**

To export an existing mix as a separate .VMX file on the memory-card, perform the following procedure:

1. Press the Mixes tab to open the Mixes page.
2. Press the mix to be exported to select it and open the Mix menu.
3. Select "Export..." from the Mix menu and the "Mix: Export" dialog box will open.
4. Press in the "Filename:" text-entry field and enter a name for the exported mix file using the pop-up keyboard or external keyboard.
5. Press in the directory to navigate to a location to store the exported mix file.
6. Press "OK" to export the selected mix file to the memory-card.

### **22.3.14 Import a Mix**

To import a .VMX mix file from the memory-card into the current project and song, perform the following procedure:

1. Press the Mixes tab to open the Mixes page.
2. Press within the Mixes page to open the Mix menu.
3. Select "Import..." from the Mix menu and the "Mix: Import" dialog box will open.
4. Press in the directory to navigate to locate and select the mix file to be imported.
5. Press "OK" to import the selected mix file into the currently open project and song. The imported mix will not be made current automatically when the import is complete.

### **22.3.15 Edit a Mix's Properties**

To enter or change a mix's name, notes, and/or color, perform the following procedure:

1. Press the Mixes tab to open the Mixes page.
2. Press the mix to be edited to select it and open the Mix menu.
3. Select "Properties" from the Mix menu and the "Mix: Properties" dialog box will open.
4. Press the "Name:" text-entry field and enter changes to the mix's name using the pop-up keyboard or external keyboard.
5. Press the "Notes:" text-entry field and enter changes to the mix's notes.
6. Press a color in the "Color:" picker to change the mix's color.
7. Press "OK" to apply the entered edits the selected mix's properties.

### 22.3.16 Change the Name or Color of Multiple Mixes

To assign a common name with consecutive numbers and/or a common color to multiple mixes, perform the following procedure:

1. Press the Mixes tab to open the Mixes page.
2. Press one of the mixes to be edited to select it and open the Mix menu.
3. Select "Multiselect" and the yellow 3-bar Multiselect icon will appear and start flashing.
4. Press the other mixes to be edited to select them on the Mixes page.
5. Press the Multiselect icon to reopen the Mix menu.
6. Select "Properties" from the Mix menu and the "Mix: Properties" dialog box will open.
7. To assign a common name with consecutive numbers, check the "Name x Mixes." checkbox. This will activate the "Name:" text-entry field.
8. Press the "Name:" text-entry field and enter a common name for the selected mixes using the pop-up keyboard or external keyboard.
9. Press the "First Number:" text-entry field and enter the starting number for the renamed mixes.
10. Press a color in the "Color:" picker to select a new color.
11. Press "OK" to apply the common name with numbers and the chosen color to the selected mixes.

*NOTE: Pressing and holding a mix will select it and activate the Mix Multiselect function, allowing immediate selection of additional mixes without accessing the Mix menu.*

## 22.4 Working With Groups

Refer to section [17.0 Groups](#) for detailed information.

### 22.4.1 Create a New Group

To create a new group and mix from the current mix, perform the following procedure:

1. Press the Groups tab to open the Groups page.
2. Press within the Groups page to open the Group menu.
3. Select "New" from the Group menu and the "Group: Create New" dialog box will open.
4. Press in the "Name:" text-entry field and enter a name for the new group using the pop-up keyboard or external keyboard.
5. Press in the buttons in the "Controls:" section to select the control groups to be created (Fader, Mute, Insert).
6. Select a group master and members using the console hardware. The first touched fader or actuated switch will become the group master. The beeper will emit an audio alert when the master is selected.
7. Select group members by touching faders and/or actuating automation switches. Selection of group members will be acknowledged by the beeper.
8. Press in the "Notes:" text-entry field and enter any notes about the group.
9. Press the "Color:" field to open the "Color Picker." Select a color and press "OK."
10. Once the group has been set up, press "OK." A new group for each set of selected controls will be created within a new mix. This mix will be added to the current song's mix tree and will become the current mix.

### 22.4.2 Delete a Group

To delete a group from the current mix, perform the following procedure:

1. Press the Groups tab to open the Groups page.
2. Press the group to be deleted to select it and open the Group menu.
3. Select "Delete" from the Group menu and the "Group: Delete" dialog box will open.
4. Press "OK" to delete the selected group and create a new mix without the deleted group. This mix will be added to the current song's mix tree become the current mix.

### 22.4.3 Delete Multiple Groups

To delete multiple groups from the current mix simultaneously, perform the following procedure:

1. Press the Groups tab to open the Groups page.
2. Press one of the groups to be deleted to select it and open the Group menu.
3. Select "Multiselect" and the yellow 3-bar Multiselect icon will appear and start flashing.

4. Press the other groups to be deleted to select them on the Groups page.
5. Press the Multiselect icon to reopen the Group menu.
6. Select "Delete" from the Group menu and the "Group: Delete" dialog box will open.
7. Press "OK" to delete the selected groups and create a new mix without the deleted groups. This mix will be added to the current song's mix tree become the current mix.

*NOTE: Pressing and holding a group will select it and activate the Group Multiselect function, allowing immediate selection of additional groups without accessing the Group menu.*

#### **22.4.4 Coalesce and Delete a Group**

To write the moves of a group master to its individual members (coalesce) and delete the group, perform the following procedure:

1. Press the Groups tab to open the Groups page.
2. Press the group to be coalesced and deleted to select it and open the Group menu.
3. Select "Coalesce & Delete" from the Group menu and the "Coalesce & Delete" dialog box will open.
4. Press "OK" to coalesce and delete the selected group. This will create a new mix with the group master's moves written to individual members and without the deleted group. This mix will be added to the current song's mix tree become the current mix.

#### **22.4.5 Coalesce and Keep a Group**

To write the moves of a group master to its individual members (coalesce) and keep the group intact, perform the following procedure:

1. Press the Groups tab to open the Mixes page.
2. Press the group to be coalesced and deleted to select it and open the Group menu.
3. Select "Coalesce & Keep" from the Group menu and the "Coalesce & Keep" dialog box will open.
4. Press "OK" to coalesce and keep the selected group. This will create a new mix with the group master's moves written to individual members. The coalesced group will be retained, but the master's previously written moves will be erased and the fader will be nulled. This mix will be added to the current song's mix tree become the current mix.

#### **22.4.6 Coalesce and Delete a Group with an Audio Master**

To write the moves of a group master to its individual members (coalesce), retain the written moves of the group master (audio master), and delete the group, perform the following procedure:

1. Press the Groups tab to open the Mixes page.
2. Press the group to be coalesced with the audio master to select it and open the Group menu.

3. Select "Coalesce w/ Audio Master" from the Group menu and the "Coalesce with Audio Master" dialog box will open.
4. Press "OK" to coalesce and delete the selected group. This will create a new mix with the group master's moves written to individual members. The group will be deleted, but the group master's moves will be retained. This mix will be added to the current song's mix tree become the current mix.

#### **22.4.7 Edit a Group's Properties**

To enter or change a group's name, notes, and/or color, perform the following procedure:

1. Press the Groups tab to open the Groups page.
2. Press the group to be edited to select it and open the Group menu.
3. Select "Properties" from the Group menu and the "Group: Properties" dialog box will open.
4. Press the "Name:" text-entry field and enter changes to the group's name using the pop-up keyboard or external keyboard.
5. Press the "Notes:" text-entry field and enter changes to the group's notes.
6. Press the "Color:" field to open the "Color Picker." Select a color and press "OK."
7. Press "OK" to apply the entered edits the selected group's properties.

#### **22.4.8 Change the Name or Color of Multiple Groups**

To assign a common name and/or a common color to multiple groups, perform the following procedure:

1. Press the Groups tab to open the Groups page.
2. Press one of the groups to be edited to select it and open the Group menu.
3. Select "Multiselect" and the yellow 3-bar Multiselect icon will appear and start flashing.
4. Press the other groups to be edited to select them on the Groups page.
5. Press the Multiselect icon to reopen the Group menu.
6. Select "Properties" from the Group menu and the "Group: Properties" dialog box will open.
7. To assign a common name, check the "Name Multiple." checkbox. This will activate the "Name:" text-entry field.
8. Press the "Name:" text-entry field and enter a common name for the selected groups using the pop-up keyboard or external keyboard.
9. Press the "Color:" field to open the "Color Picker." Select a color and press "OK."
10. Press "OK" to apply the common name and the chosen color to all of the selected groups.

*NOTE: Pressing and holding a group will select it and activate the Group Multiselect function, allowing immediate selection of additional groups without accessing the Group menu.*

## 22.5 Working With Snapshots

Refer to section [18.0 Snapshots](#) for detailed information.

### 22.5.1 Create a New Snapshot

To create a new snapshot within the currently open project, perform the following procedure:

1. Press the Snapshots tab to open the Snapshots page.
2. Press within the Snapshots page to open the Snapshot menu.
3. Select "New..." from the Snapshot menu and the "Snapshots: Create New" dialog box will open.
4. Press in the "Name:" text-entry field and enter a name for the new snapshot using the pop-up keyboard or external keyboard.
5. Press in the buttons in the "Fader 1:" and "Fader 2" sections to select the controls to be captured in the new snapshot.
6. Press "All" to select all "Channels:" (channels/sections) to be captured in the new snapshot or press "Selected" to select specific "Channels:" (channels/sections) using the console hardware.
7. If "Selected" is engaged, press the fader and/or actuate switches to select the channels/sections to be captured in the new snapshot. The beeper will emit an audio alert as sections are selected.
8. Press in the "Notes:" text-entry field and enter any notes about the snapshot.
9. Press the "Color:" field to open the "Color Picker." Select a color and press "OK."
10. Press "OK" to create the new snapshot within the currently open project.

### 22.5.2 Apply an Existing Snapshot

To apply an existing snapshot to the current song, perform the following procedure:

1. Put selected channels/sections in **Manual** or **Write**.
2. Press the Snapshots tab to open the Snapshots page.
3. Press the snapshot to be applied to select it and open the Snapshot menu.
4. Select "Apply..." from the Snapshot menu and the "Snapshot: Apply" dialog box will open.
5. Press "OK" to apply the control settings stored in the selected snapshot to the console hardware.

*NOTE: Applying a snapshot will reset the console controls whose settings are stored in the snapshot. Press "**Recover Positions**" on the Status Page to "undo" the accidental application of snapshots.*

*NOTE: Channels/sections in **Read** or **Update** will return to their written positions when timecode is started after a snapshot is applied without timecode running.*

### 22.5.3 Delete a Snapshot

To delete an existing snapshot from the currently open project, perform the following procedure:

1. Press the Snapshots tab to open the Snapshots page.
2. Press the snapshot to be deleted to select it and open the Snapshot menu.
3. Select "Delete..." from the Snapshot menu and the "Snapshot: Delete" dialog box will open.
4. Press "OK" to delete the selected snapshot from the open project.

**CAUTION:** *Deleting a snapshot cannot be undone.*

### 22.5.4 Delete Multiple Snapshots

To delete multiple snapshots from the current project simultaneously, perform the following procedure:

1. Press the Snapshots tab to open the Snapshots page.
2. Press one of the snapshots to be deleted to select it and open the Snapshot menu.
3. Select "Multiselect" and the yellow 3-bar Multiselect icon will appear and start flashing.
4. Press the other snapshots to be deleted to select them on the Snapshots page.
5. Press the Multiselect icon to reopen the Snapshot menu.
6. Select "Delete" from the Snapshot menu and the "Snapshot: Delete" dialog box will open.
7. Press "OK" to delete the selected snapshots from the current project.

*NOTE: Pressing and holding a snapshot will select it and activate the Snapshot Multiselect function, allowing immediate selection of additional snapshots without accessing the Snapshot menu.*

**CAUTION:** *Deleting multiple snapshots cannot be undone.*

### 22.5.5 Export a Snapshot

To export an existing snapshot as a separate .VSS file on the memory-card, perform the following procedure:

1. Press the Snapshots tab to open the Snapshots page.
2. Press the snapshot to be exported to select it and open the Snapshot menu.
3. Select "Export..." from the Snapshot menu and the "Snapshot: Export" dialog box will open.
4. Press in the "Filename:" text-entry field and enter a name for the exported snapshot using the pop-up keyboard or external keyboard.
5. Press in the directory to navigate to a location to store the exported snapshot file.
6. Press "OK" to export the selected snapshot to the memory-card.

### **22.5.6 Import a Snapshot**

To import a .VSS snapshot file from the memory-card into the current project, perform the following procedure:

1. Press the Snapshots tab to open the Snapshots page.
2. Press within the Snapshots page to open the Snapshot menu.
3. Select "Import..." from the Snapshot menu and the "Snapshot: Import" dialog box will open.
4. Press in the directory to navigate to locate and select the snapshot file to be imported.
5. Press "OK" to import the selected snapshot into the currently open project. The imported snapshot will not be applied automatically when the import is complete.

### **22.5.7 Edit a Snapshot's Properties**

To change a snapshot's name, notes, and/or color, perform the following procedure:

1. Press the Snapshots tab to open the Snapshots page.
2. Press the snapshot to be edited to select it and open the Snapshot menu.
3. Select "Properties" from the Snapshot menu and the "Snapshot: Properties" dialog box will open.
4. Press the "Name:" text-entry field and enter changes to the snapshot's name using the pop-up keyboard or external keyboard.
5. Press the "Notes:" text-entry field and enter changes to the snapshot's notes.
6. Press a color in the "Color:" picker to change the snapshot's color.
7. Press "OK" to apply the entered edits to the snapshot's properties.

## 22.6 Working With DAW Control

Refer to section [19.0 DAW Control](#) for detailed information.

The steps that follow assume DAW control has been configured as follows:

- The USB-B cable carrying Mackie Control or HUI MIDI data is connected to the DAW computer
- The DAW interface, computer, and software are properly configured for DAW control via Mackie Control or HUI
- The ACM is properly configured for DAW control (See Section 19.6 DAW Configuration)

To enable DAW control, perform the following procedures:

1. Press the DAW tab to open the DAW page. The Channels tab will open by default, displaying several rows of channels and controls for mapping functions. The track names from the open DAW session will be inherited by the channel labels on the DAW page. The level meter in the channels will display audio and data.
2. Press the "Enable" buttons for each "bank" of 8 channels needed for DAW control and DAW control will immediately engage. The configured console faders and mutes will change to match the track faders and mutes in the DAW. Press the "Enable" buttons a second time to exit DAW control.

### **OR**

Hold the SEL/**DAW** button on the first fader of a section of faders for about two seconds to put that section of channels in DAW mode. Holding the SEL/**DAW** button a second time will exit DAW control.

3. Use the "Shift Left" and "Shift Right" buttons to shift the DAW tracks being controlled to the left or right one track at a time.
4. Use the "Bank Left" and "Bank Right" buttons to shift the DAW tracks being controlled left or right eight tracks at a time.
5. Press the Controls tab to open the DAW Controls page. Use the DAW specific transport and program controls to manage primary DAW operations from the console.
6. Use the following console fader controls to control the DAW tracks:

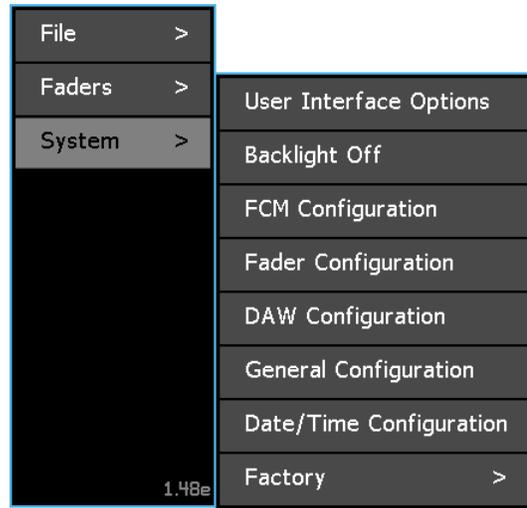
<b>Console</b>	=	<b>DAW</b>
Fader	=	<b>Fader</b>
SWITCH OVERWRITE	=	<b>MUTE</b>
READ	=	<b>SOLO</b>
UPDATE	=	Track " <b>SELECT</b> " (hold to enter track name in DAW)
WRITE	=	Track <b>RECORD</b> Ready
<b>NULL</b> LEDs	=	Indicates a soloed DAW track when both are illuminated

## 23.0 System Configuration

The System menu provides several user accessible functions that support system configuration, synchronization, calibration, firmware updates, and DAW control. Most of these functions will be needed for the initial setup of the *Final Touch Automation*® system after installation, assuming DAW control is to be included.

These functions also support ongoing system maintenance and updates. These functions can be accessed via the sub-menus of the System menu:

- **User Interface Options:** Settings for fader level popups, touch cursor, sticky mix colors, and channel grid actions
- **Backlight Off:** Display backlight on/off control
- **FCM Configuration:** Fader Control Module firmware and fader calibration
- **Fader Configuration:** Fader firmware and calibration
- **DAW Configuration:** USB MIDI port console setup for DAW control
- **General Configuration:** Number of channels and synchronization
- **Date/Time Configuration:** System date and time setup
- **Factory:** Sub-menus for factory settings and diagnostics



### 23.1 Automation Interfacing

*Final Touch Automation*® supports the interfacing of the automation system with external devices such as DAWs, multitrack tape machines, video, and any other timecode sources. Support for external display of the touch-screen is also provided.

1608-II and 2448 consoles equipped with *Final Touch Automation*® are fitted with a rear panel interface. *Final Touch Automation*® interfacing for AXS and all Vision consoles is handled as part of the console's interface looming.

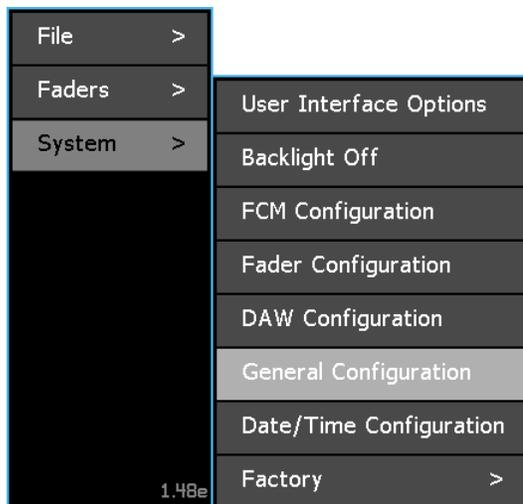
The ACM is equipped with the following hardware interfaces:

- **USB-B Port:** For DAW control over MIDI (HUI) and MIDI timecode synchronization
  - Connect to DAW host computer or interface
- **MIDI IN:** Standard DIN connector for MIDI timecode synchronization (9<sup>th</sup> port)
  - Connect to DAW host computer or interface if MIDI timecode port is needed
- **MIDI OUT:** Currently not implemented
- **SMPT E LTC IN:** 3-pin female XLR connector, balanced, line-level audio input for longitudinal SMPTE timecode (LTC) synchronization
  - Connect to an analog LTC source such as a DAW, tape machine, or other media
- **HDMI Port:** HDMI out for connection to an external monitor for enlarged touch-screen display
  - Connect to an external video display
- **NETWORK Port:** Network connection for system date and time (possible future features)
- **Automation Expansion Ports:** Automation data ports for console expanders equipped with *Final Touch Automation*®.

## 23.2 General Configuration

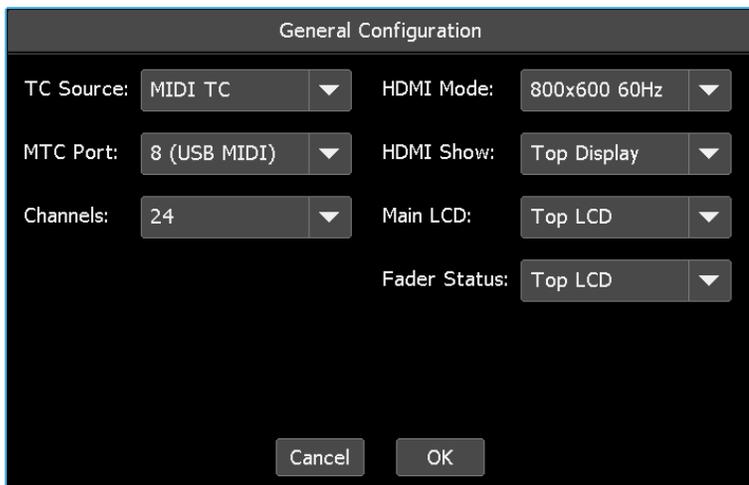
The “General Configuration” dialog box allows several basic *Final Touch Automation*® parameters to be setup. Most of these parameters are set when the console is installed or expanded and are not typically accessed during normal production. These parameters include the following selections:

- **TC Source:** Timecode source for synchronization
- **MTC Port:** MIDI port where MIDI timecode will be received
- **Channels:** Number of channels installed in the console
- **HDMI Mode:** Display resolution
- **HDMI Show:** LCD to be routed to HDMI output: top or bottom (Vision & Vision+ only)
- **Main LCD:** Main LCD display: top or bottom (Vision & Vision+ only)
- **Fader Status:** LCD display where fader status will be displayed (Vision & Vision+ only)



To access the “General Configuration” dialog box, open the Main menu and select “General Configuration” from the “System” sub-menu.

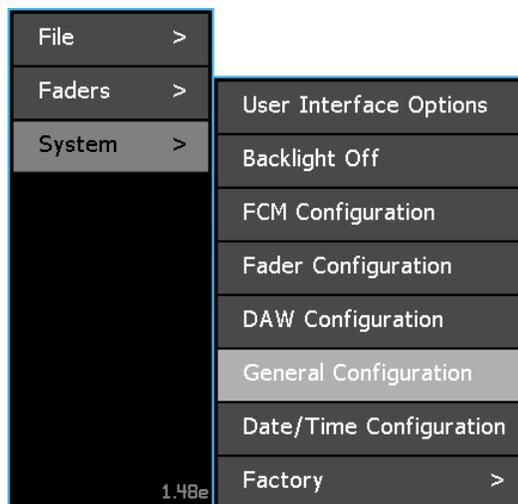
The “General Configuration” dialog box will open.



The “General Configuration” dialog box allows access to the use accessible system parameters.

### 23.2.1 Set the Number of Console Channels

The number of automated input channels must be specified for proper system operation.



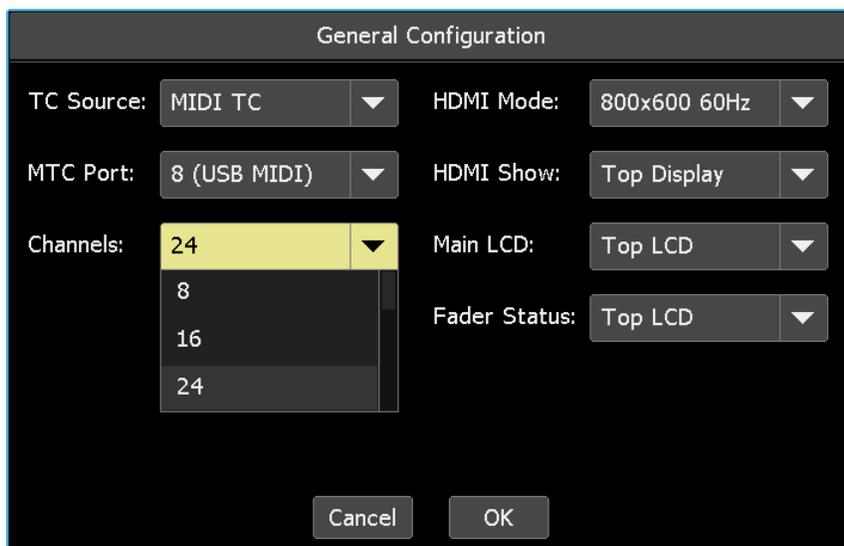
To set the number of input channels installed in the console, open the Main menu and select the "General Configuration" sub-menu from the "System" sub-menu.

The "General Configuration" dialog box will open.

Select the number of channels installed in the console from the "Channels" pull-down menu.

The menu choices for the number of channels are:

- 8
- 16
- 24
- 32
- 40
- 48
- 56
- 64
- 72
- 80
- 88
- 96

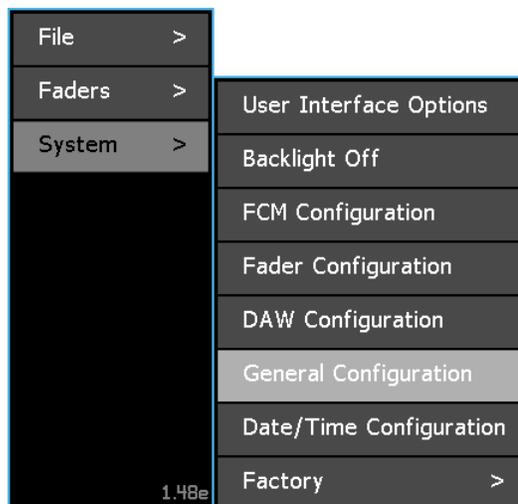


**OK** Once the number of channels has been selected, press "OK" to save the number of channels.

**Cancel** Press "Cancel" to cancel.

### 23.2.2 Select a Timecode Source

A timecode source must be specified for synchronization of the *Final Touch Automation*® system with the media to be mixed.

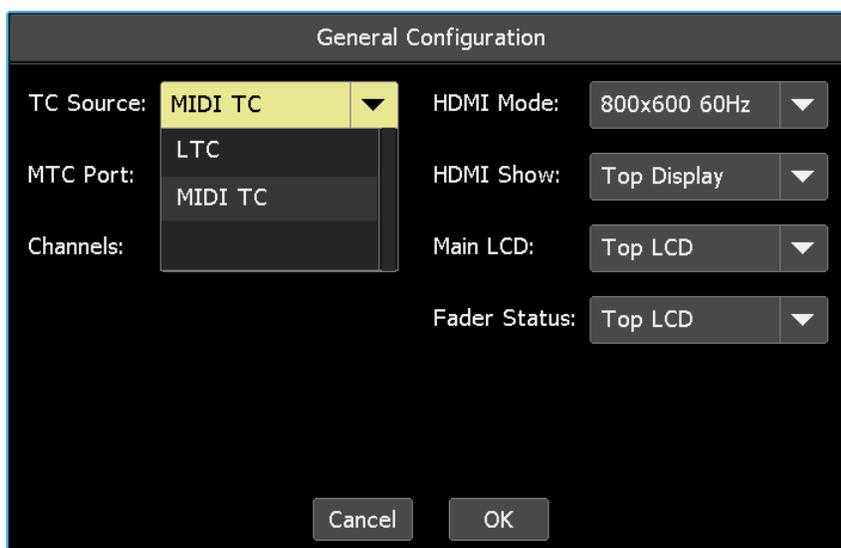


To select the timecode source, open the Main menu and select the "General Configuration" sub-menu from the "System" sub-menu.

The "General Configuration" dialog box will open.

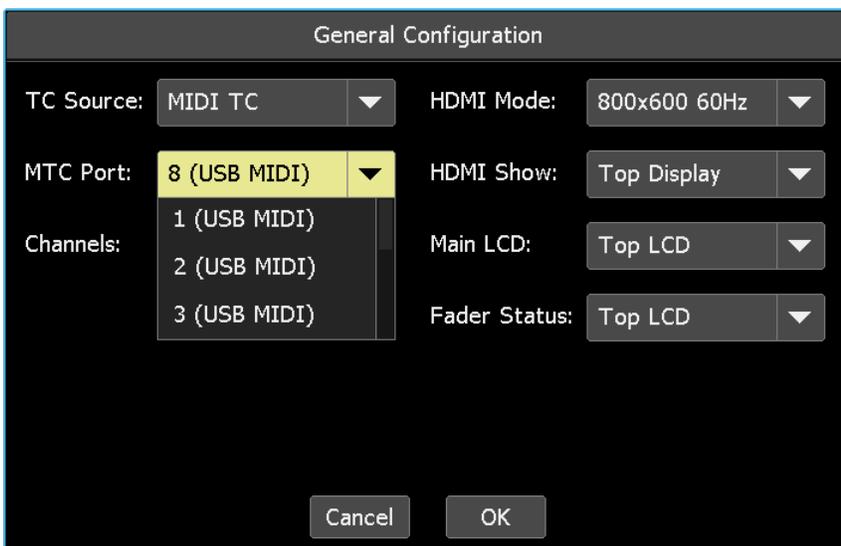
Select the desired timecode source from the "TC Source" pull-down menu. The menu choices are as follows:

- **LTC**: SMPTE Longitudinal timecode
- **MIDI TC**: (MTC) MIDI timecode



If MIDI TC is selected, incoming MIDI timecode will be received on the selected MTC Port.

MTC is received at the selected USB-B MIDI port or MIDI IN port.



If LTC is selected, the incoming SMPTE timecode will be received at the SMPTE LTC XLR interface connector.

**OK**

Once the TC Source and MTC Port (if MIDI TC is selected as the TC Source) have been selected, press "OK" to save the selected timecode source.

**Cancel**

Press "Cancel" to cancel.

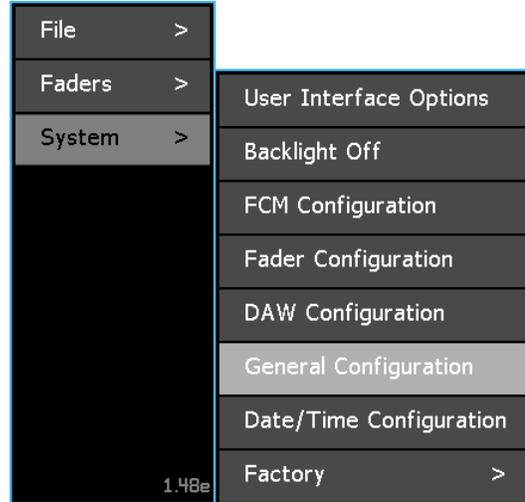
### 23.2.3 Set the HDMI Output Resolution

The HDMI output supports the use of an external display monitor. The resolution of the HDMI output can be changed to adapt to a variety of monitors.



To set the resolution of the HDMI output, open the Main menu and select the "General Configuration" sub-menu from the "System" sub-menu.

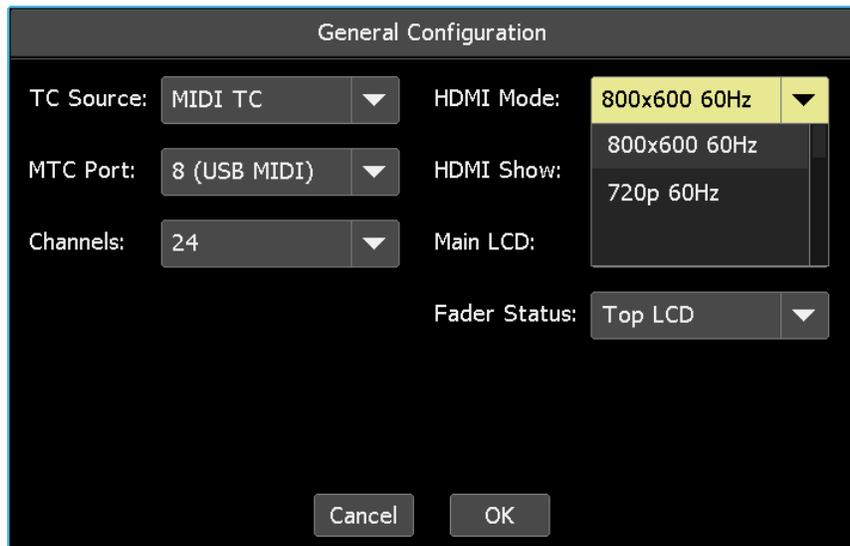
The "General Configuration" dialog box will open.



Select the HDMI output resolution from the "HDMI Mode" pull-down menu.

The menu choices for the HDMI output resolution are:

- 800x600 60Hz
- 720p 60Hz



**OK**

Once the resolution for HDMI output has been selected, press "OK" to save the setting.

**Cancel**

Press "Cancel" to cancel.

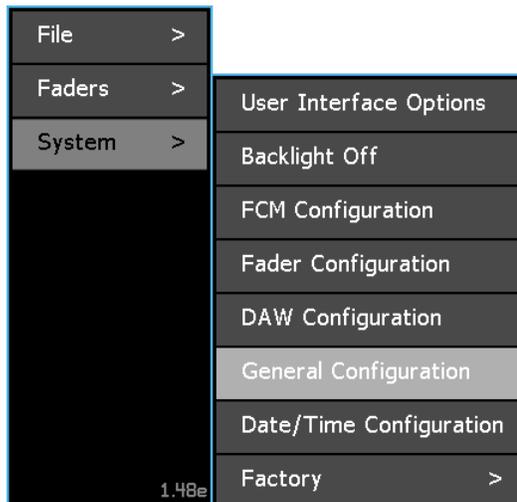
### 23.2.4 Set the HDMI Output Source (*Vision and Vision+ Consoles Only*)

All Vision consoles are equipped with two 940L LCD touch-screen panels to help display all the resources for these larger systems. Only one display can feed the HDMI output, so a LCD must be designated as the HDMI source.



To set the source of the HDMI output, open the Main menu and select the "General Configuration" sub-menu from the "System" sub-menu.

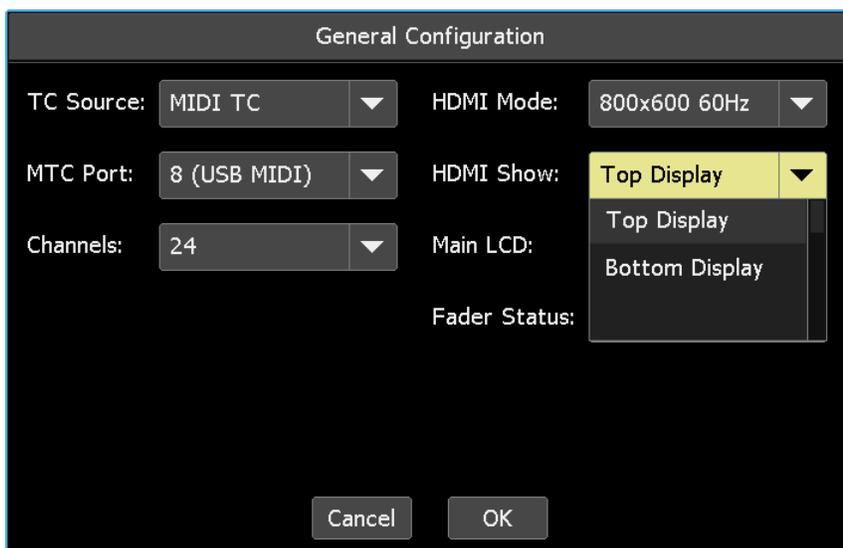
The "General Configuration" dialog box will open.



Select the HDMI output source from the "HDMI Show" pull-down menu.

The menu choices for the HDMI output source are:

- Top Display
- Bottom Display



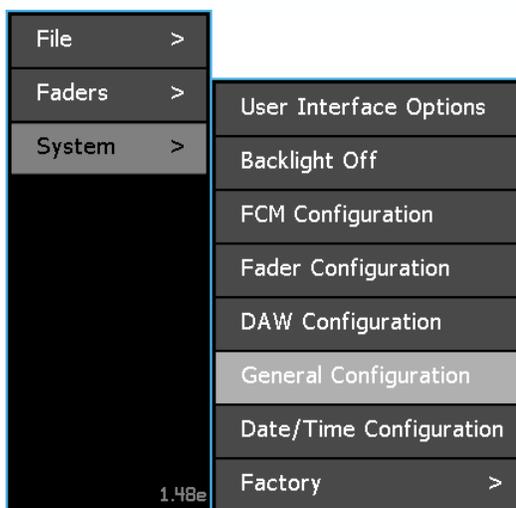
**OK** Once the resolution for HDMI output has been selected, press "OK" to save the setting.

**Cancel** Press "Cancel" to cancel.

*NOTE: The feature applies only to Vision and Vision+ consoles with two LCD displays. This feature does not apply to 1608-II, 2448, or AXS consoles.*

### 23.2.5 Select the Main LCD Display (*Vision and Vision+ Consoles Only*)

All Vision consoles are equipped with two 940L LCD touch-screen panels to help display all the resources for these larger systems. One LCD must be designated as the “Main Display.”



To select the Main LCD display, open the Main menu and select the “General Configuration” sub-menu from the “System” sub-menu.

The “General Configuration” dialog box will open.

Select the Main LCD display from the “Main LCD” pull-down menu.

The menu choices for the HDMI output source are:

- Top LCD
- Bottom LCD



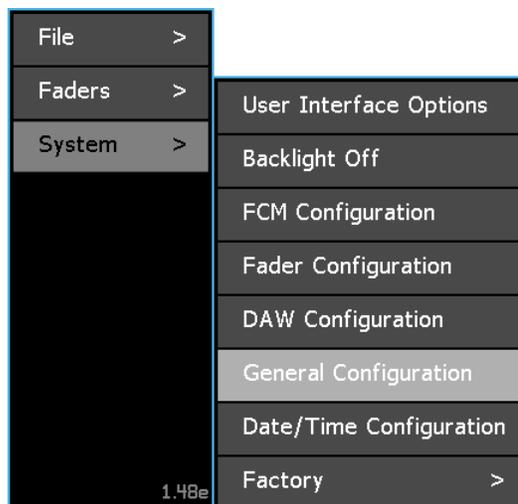
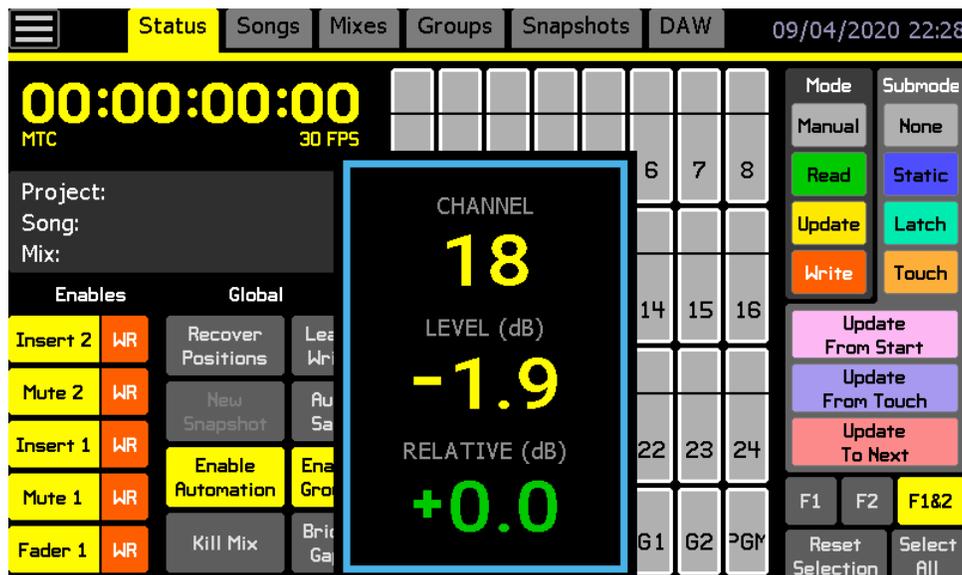
**OK** Once the Main LCD display has been selected, press “OK” to save the setting.

**Cancel** Press “Cancel” to cancel.

*NOTE: The feature applies only to Vision and Vision+ consoles with two LCD displays. This feature does not apply to 1608-II, 2448, or AXS consoles.*

### 23.2.6 Select the Fader Status Display (*Vision Consoles Only*)

When a fader is touched, its status is displayed on the LCD. All Vision consoles are equipped with two 940L LCD touch-screen panels to help display all the resources for these larger systems. One LCD must be selected to display fader status information.



To select the LCD that will display fader status when faders are touched, open the Main menu and select the "General Configuration" sub-menu from the "System" sub-menu.

The "General Configuration" dialog box will open.



Select the LCD to display fader status from the "Fader Status" pull-down menu.

The menu choices for the Fader Status display are:

- Top LCD
- Bottom LCD

OK

Once the LCD that will display fader status has been selected, press "OK" to save the setting.

Cancel

Press "Cancel" to cancel.

*NOTE: The feature applies only to Vision and Vision+ consoles with two LCD displays. This feature does not apply to 1608-II, 2448, or AXS consoles.*

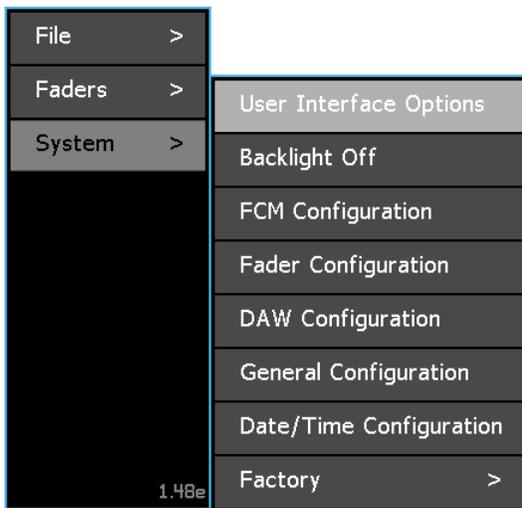
### 23.3 User Interface Options

There are five (5) "User Interface Options" that determine the behavior of several aspects of the *Final Touch Automation*® system. These ON/off options include:

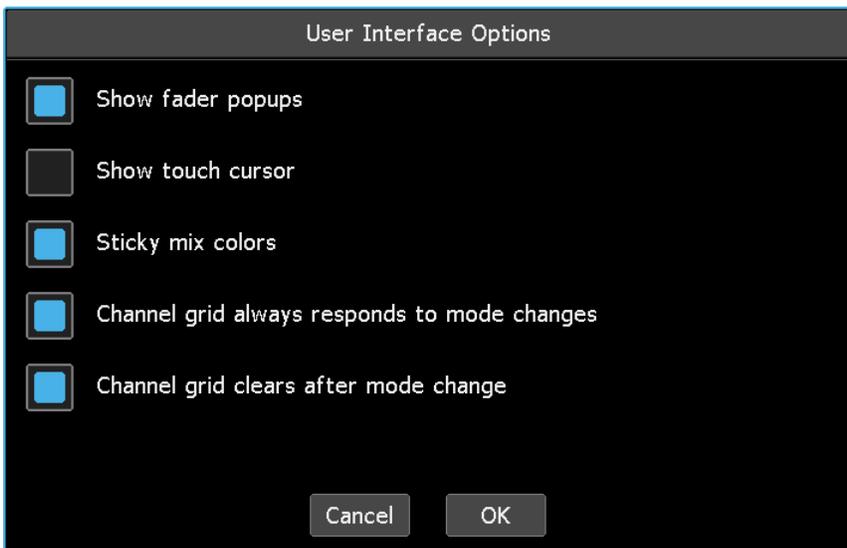
- **Fader Popups:** Fader level display popups when faders are touched
- **Touch Cursor:** On-screen cursor
- **Sticky Mix Colors:** Mixes inherit the color of the current mix
- **Channel Grid Always Responds to Mode Changes:** If no channels are selected in the channel grid, all channels will change mode or submode whenever the mode or submode is changed
- **Channel Grid Clears After Mode Change:** Channel selections will clear after mode or submode assignments



To set User Interface Options, open the Main menu and select "User Interface Options" from the "System" sub-menu.



The "User Interface Options" dialog box will open.



Press the check boxes to enable or disable each option as desired.

All "User Interface Options" are enabled by default except "Show Touch Cursor."

**OK** Once the options are set as needed, press "OK" to apply and save the settings.

**Cancel** Press "Cancel" to cancel.

### 23.3.1 Show Fader Popups

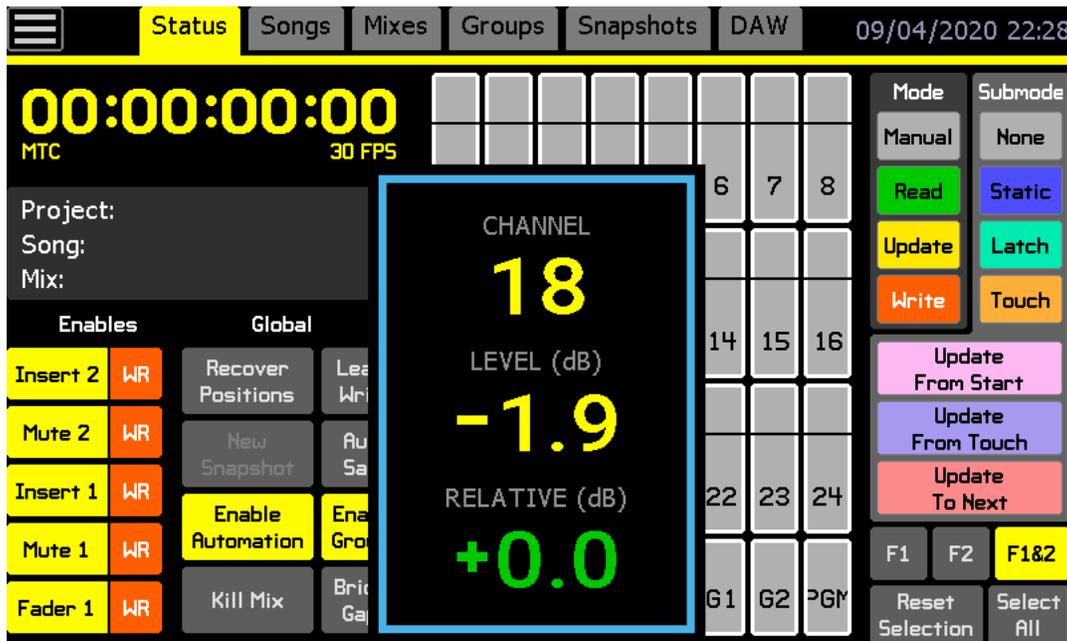
When one to three faders are touched, the level status of each fader is displayed on the touch-screen. The faders are shown in the order they are touched. "Show Fader Popups" is enabled by default.



Show fader popups

With "Show Fader Popups" enabled, a popup dialog box will appear on the screen when a fader is touched

When disabled, these popups will not appear.



Fader popup displays show the channel number, current level, and relative level change.

### 23.3.2 Show Touch Cursor

The "Toggle Touch Cursor" turns a cross-hair cursor on the touch-screen ON and off. The cursor will show the current touch position. This is very useful in an instructional setting when the touch-screen is displayed on an external screen. It can also help new users understand where the system is registering touch with their unique finger shape and positioning. "Show Touch Cursor" is not enabled by default.

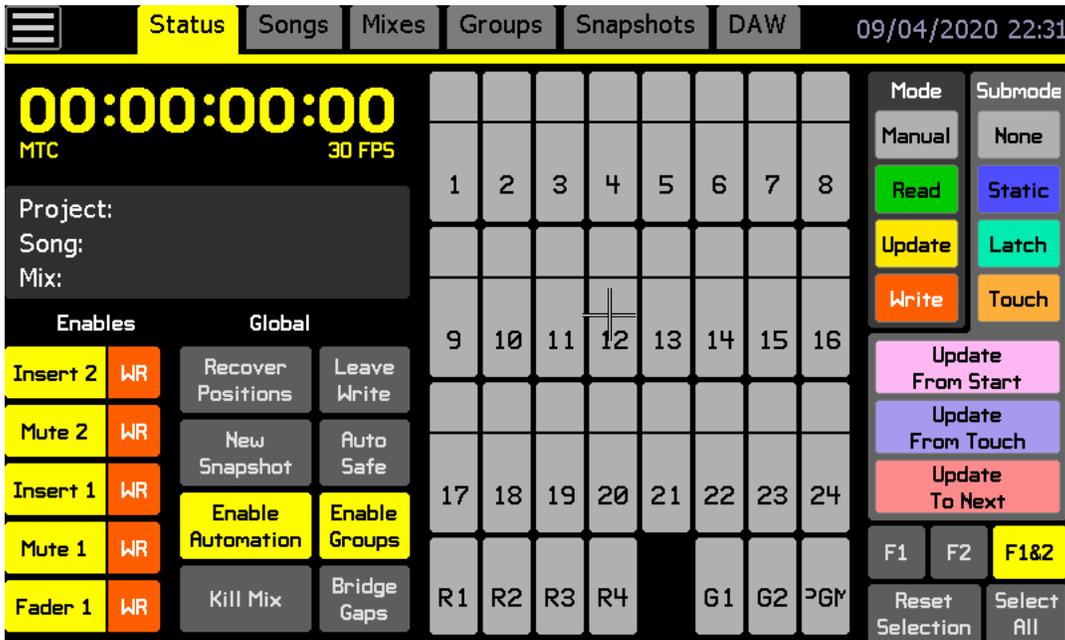


Show touch cursor

With "Show Touch Cursor" enabled, the last place the screen was touched will display a small cross-hair.

When disabled, the cursor will not appear.

The "touch cursor" is on channel 12 in the image below.



### 23.3.3 Sticky Mix Color

"Sticky Mix Colors" allows the selected color of the current mix to be assigned to newly generated mixes. "Sticky Mix Colors" is enabled by default.



With "Sticky Mix Colors" enabled, new mixes to inherit the color of the current mix.

When disabled, the newly generated mix will have no color assigned.

### 23.3.4 Channel Grid Always Responds To Mode Changes

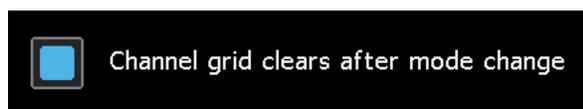
"Channel grid always responds to mode changes" causes all channels to respond to mode or submode changes, whenever all channels are deselected. On Vision and Vision+ consoles it will also affect the Routing page. "Channel grid always responds to mode changes" is enabled by default.



With "Channel grid always responds to mode changes" enabled, all channels will change to match mode or submode changes whenever all channels are deselected.

### 23.3.5 Channel Grid Clears After Mode Change

"Channel grid clears after mode change" causes the channel selections to clear after the mode or submode have changed *AND* a new channel is selected. This allows for quick selection of a new set of channels after a mode or submode change. "Channel grid clears after mode change" is enabled by default.



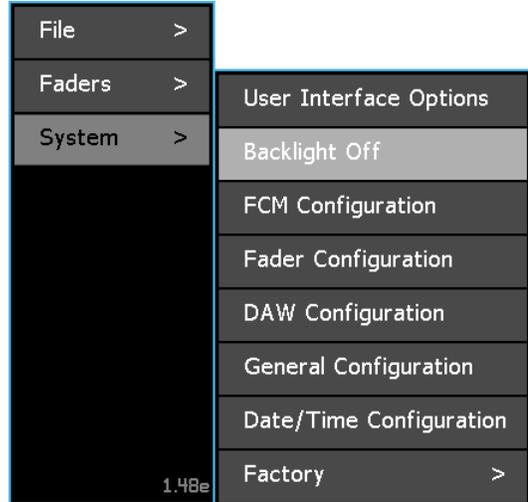
With "Channel grid clears after mode change" enabled, selected channels will clear after mode/submode changes and new channel selection.

### 23.3.6 Display Backlight On/Off

The touchscreen display backlight can be toggled on or off as needed.



To toggle the display backlight on or off, open the Main menu and select "Backlight Off" from the "System" sub-menu.

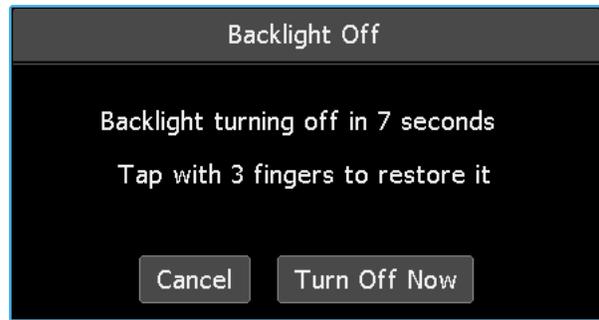


The "Backlight Off" dialog box will open.

If the backlight is on and the "Backlight Off" dialog box is opened, the backlight will automatically turn off seven seconds after opening.



Press "Turn Off Now" to immediately turn off the display backlight.



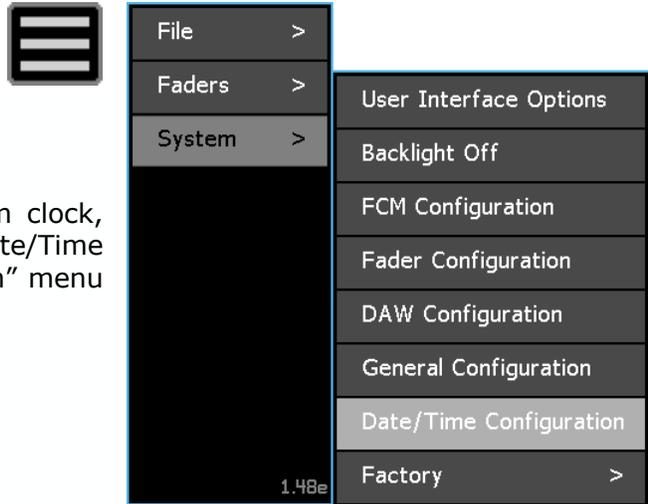
If the backlight is off, tap the "Backlight Off" dialog box with three fingers to turn it back on.



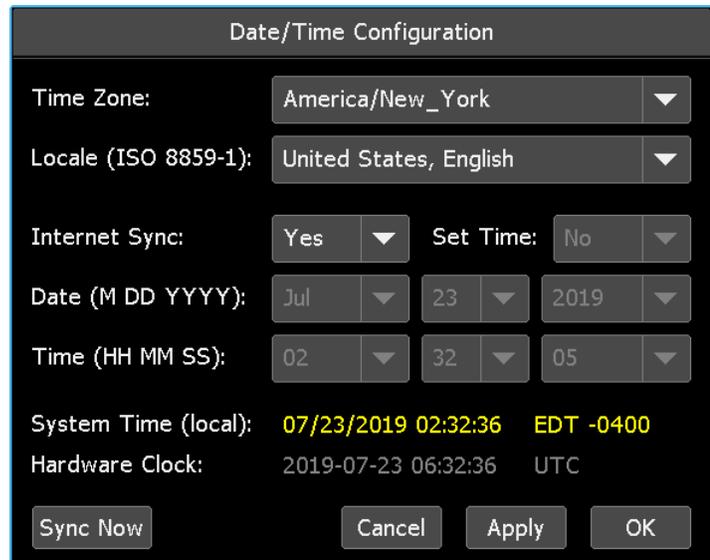
Press "Cancel" to cancel.

## 23.4 Configure Date and Time

Upon creation all files generated during the operation of the *Final Touch Automation*<sup>®</sup> system are time-stamped based on the system clock. The system clock date and time can be set automatically if the NETWORK port is connected to an active network or manually if an internet connection is not available. The time zone and locale/language of the studio must be specified for proper operation in either mode.



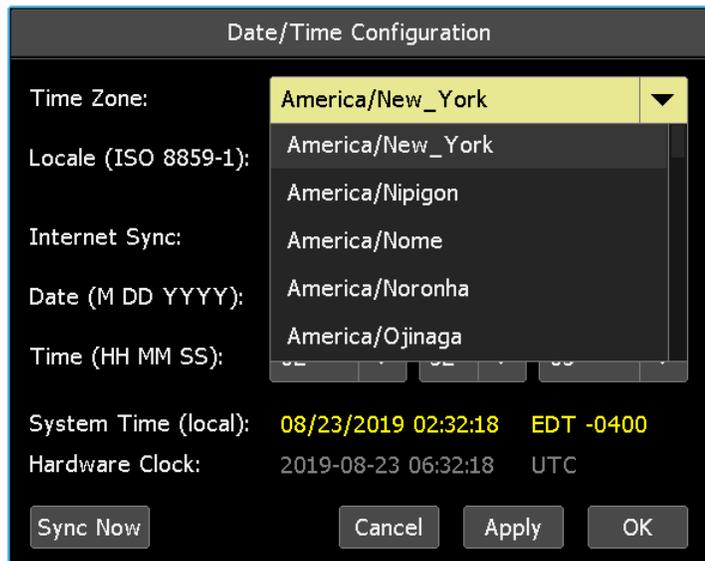
To configure date and time of the system clock, open the Main menu and select the "Date/Time Configuration" sub-menu from the "System" menu item.



The "Date/Time Configuration" dialog box will open.

Select the studio's Time Zone from the "Time Zone" pull-down menu.

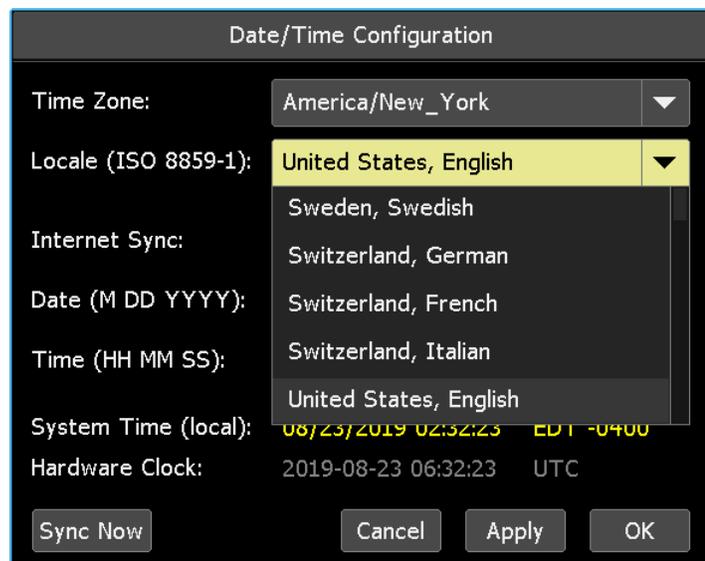
The menu choices provide selections for time zones world-wide.



Select the studio's locale and language from the "Locale" pull-down menu.

The "Locale" selection will determine the format of the date and time display.

The menu choices provide multiple choices.

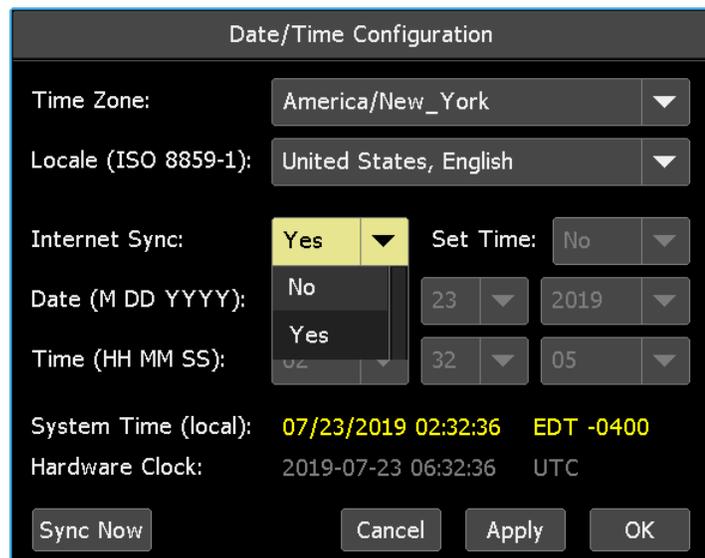


If an internet connection is available, it's suggested that the date and time are set automatically using the "Internet Sync" function.

Select the internet time sync setting from the "Internet Sync" pull-down menu.

Select "Yes" to automatically set the date and time from the internet connection.

If "No" is selected, the date and time should be set manually.

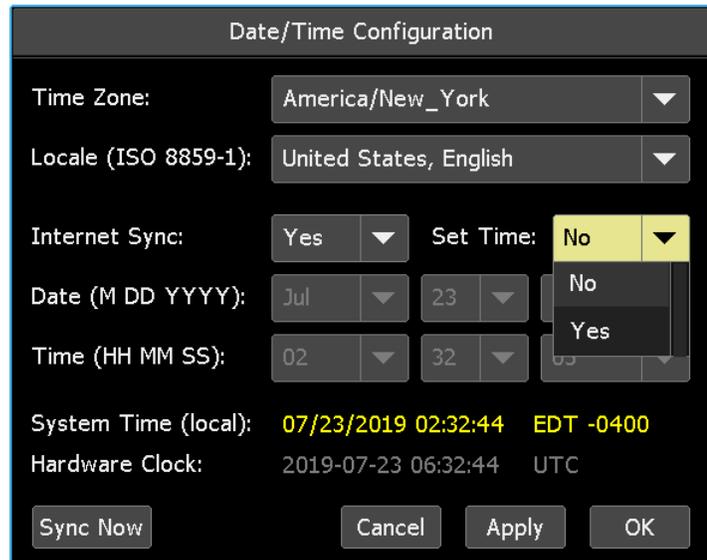


In the absence of an internet connection, the date and time can be set manually.

Select the manual date and time setting from the "Set Time" pull-down menu.

Select "Yes" to manually set the date and time using the "Date" and "Time" pull-down menus.

When Set Time is set to "Yes," it will override the sync to internet time, so if Internet Sync is set to "Yes," Time Set should be set to "No."



When Set Time is set to "Yes," the Date (M DD YYYY) and Time (HH MM SS) pull-down menus become active so the month, day, year and hour, minute, and second can be set.

-  Press "Sync Now" to synchronize the System Time (local) with the Hardware Clock.
-  Once the Date/Time settings have been selected, press "Apply" to save the settings without closing the dialog box.
-  Press "OK" to save the settings and close the dialog box.
-  Press "Cancel" to cancel.

## 23.5 DAW Configuration

### 23.5.1 Computer Configuration

A single USB-B port is used to interface the console's ACM with the DAW computer. This interface carries the MIDI data (8 virtual ports) for DAW control. To configure DAW control, the appropriate number of the eight MIDI ports need to be mapped to the console in 8-channel banks.



When connected and powered up, the "Audio MIDI Setup" in the DAW computer will recognize the API ACM as a "USB MIDI Device." The Audio MIDI Setup needs to be setup for the user's particular computer, DAW application and system.

The DAW control also needs to be mapped to connected MIDI ports within the DAW program. This will likely be accessed via the MIDI Controllers section of the peripherals section of the setup menu. Set the DAW interface type to "HUI" or "Mackie Control" (MCU) as required by the DAW software.

*NOTE: An additional MIDI IN port on a DIN connector serves as a 9<sup>th</sup> MIDI in port that's dedicated for MIDI timecode (MTC). The MIDI IN port is not used for DAW control.*

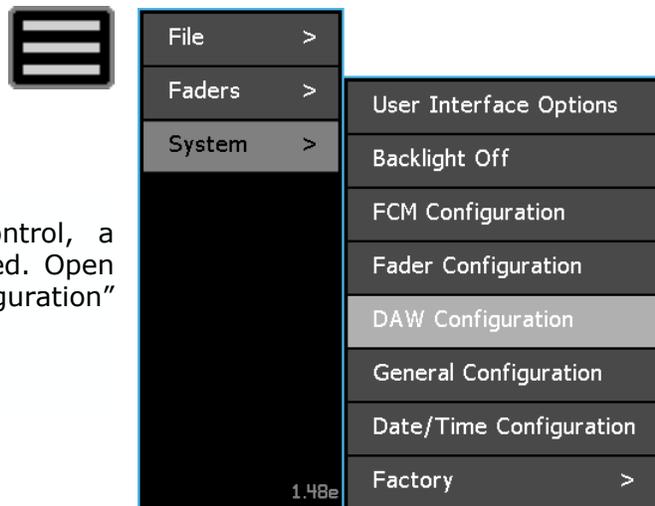
A MIDI OUT port is also provided on the back of the ACM, but is not implemented at this time.

### 23.5.2 ACM Configuration

Final Touch Automation® supports control over several popular Digital Audio Workstation (DAW) programs via Human User Interface (HUI) or Mackie Control protocols over USB/MIDI. A "DAW/Surface Type" that supports specific functions and optimizes the interface has been created for each these DAWs, plus a "generic" version that can be adapted for other DAW programs. The "DAW/Surface Type" is selected via the "DAW Configuration" dialog box available via the "System" menu.

The following "DAW/Surface Types" are currently supported:

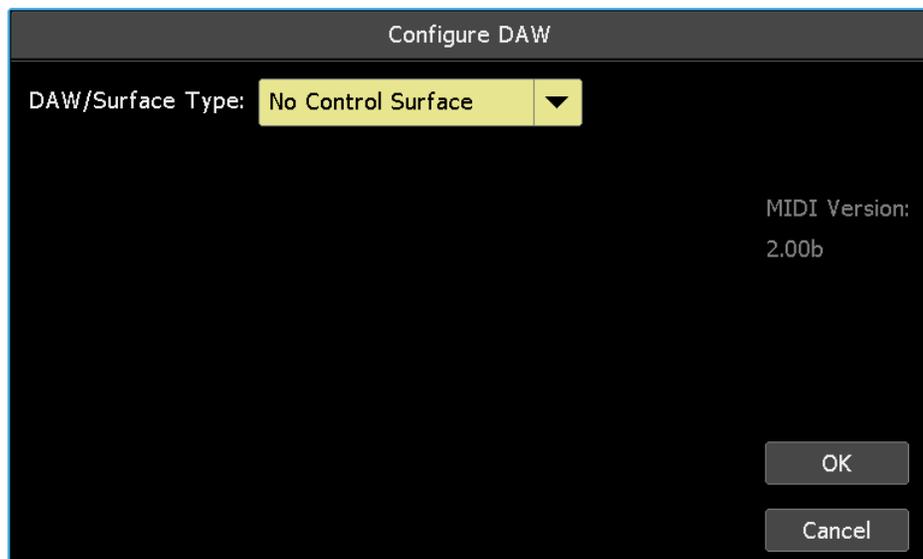
- No Control Surface
- Mackie Control: Generic
- Mackie Control: Logic
- Mackie Control: LUNA
- Mackie Control: Studio One
- Mackie HUI: Pro Tools



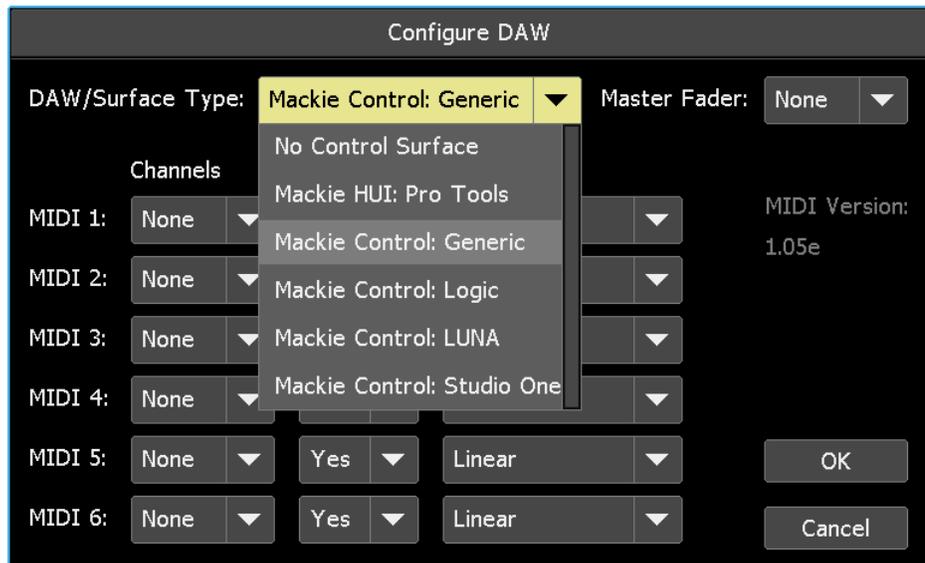
To configure the console for DAW control, a "DAW/Surface Type" must first be selected. Open the Main menu and select "DAW Configuration" from the "System" menu.

The "Configure DAW" dialog box will open.

Because the system supports several different DAWs, the "Configure DAW" dialog box will contain a different set of parameters for each DAW Type. The parameters for each type are determined by the selection made in the "DAW/Surface Type:" pull-down menu.



Assign the DAW Type that matches your DAW software to the AMC by selecting the needed type from the "DAW/Surface Type:" pull-down menu.



The following DAW Types are currently available:

- No Control Surface
- Mackie Control: Generic
- Mackie Control: Logic
- Mackie Control: LUNA
- Mackie Control: Studio One
- Mackie HUI: Pro Tools

The selected "DAW/Surface Type" will populate the "Configure DAW" dialog box with the parameters needed to support that specific DAW.

All DAW Types assign channel mapping, fader bypass, and fader curve, parameters in banks of eight (8) channels. DAW Types that use Mackie Control can support up to six (6) banks of eight (8) channels, plus a master fader for a total of 49 channels of control. DAW Types that use Mackie HUI can support up to four (4) banks of eight (8) channels, for a total of 32 channels. HUI does not include support for separate master fader control.

Each bank of eight channels is assigned to a MIDI port and are labeled "MIDI 1" thru "MIDI 6" for DAW Types that use Mackie Control and "MIDI 1" thru "MIDI 4" for DAW Types that use Mackie HUI. Only the "Pro Tools" DAW Type uses the Mackie HUI protocol and is limited to a maximum of 32 channels of simultaneous control. All the others use Mackie Control (MCU) and can provide up to 48 channels of simultaneous control.

Channel mapping and fader bypass are handled in the same manner for all the DAW Types, as outlined in section 19.5.3 and 19.5.4 below. The fader "Curve" may be handled differently from DAW type-to-type in order to match the functionality of each type. The "Curve" options for each DAW Type will be explained individually in the following sections.

**OK** Once the channels, bypass, and curve have been selected for each MIDI port, press "OK" to save the DAW control configuration.

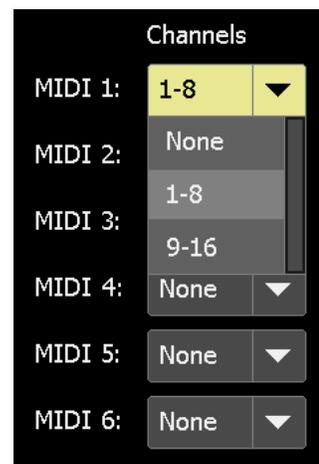
**Cancel** Press "Cancel" to cancel.

### 23.5.2.1 Channel Mapping

Assign up to MIDI ports (1-6) in banks of eight channels using the “Channels” pull-down menu. The number of selections in the menu is determined by the number of input channels installed in the console and the setting on the “General Configuration” dialog box in the “System” menu. On a 32-channel console, the “Channels” menu will include:

- None
- 1-8
- 9-16
- 17-24
- 25-32

Consoles with more than 32 input channels will have additional menu selections of 8-channel banks.



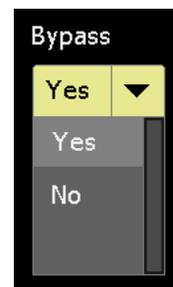
The assignments made for each port will be the settings for channels/tracks affected when DAW control is enabled. Control of channels/tracks can be shifted left or right one channel at a time or eight channels (banks) at a time during use, using the “Shift” and “Bank” buttons on the DAW page.

*CAUTION: Do not assign the same bank of eight channels to more than one MIDI port. System errors will occur as a result.*

### 23.5.2.2 Fader Bypass

The input modules on 2448 and AXS consoles are equipped with a “unity gain audio bypass” that can be automatically activated when DAW control is enabled. This feature can be configured to be on or off for the banks of eight channels assigned to each MIDI port by selecting “Yes” or “No” from the “Bypass” pull-down menu.

When fader “Bypass” is set to “Yes” and DAW control is enabled, console faders will move to match the position of DAW faders and the console audio is routed through a unity gain bypass for the assigned input modules (8-channel groupings). The DAW enabled console faders and DAW faders will track with each other as long as DAW control is enabled. As faders move, the level of the console channel audio will remain unaffected by the fader moves and mutes because the console fader is bypassed at unity gain.



*NOTE: Vision consoles equipped with original 1068L modules are not equipped with fader bypass. Original Vision consoles equipped with 1068L V2 modules have fader bypass on Fade 1 and Fader 2.*

This feature allows audio from the DAW to be routed through console channels and routed to the program buses while using the same channel faders to control the DAW levels feeding those channels. This facilitates automated DAW mixes to be summed on the console while playing back DAW automation.

*NOTE: A unity gain fader bypass is also provided for the fader in the Small Fader audio path (FD2) on AXS and 2448 consoles for when the small faders are used for routing automated DAW returns to the mix. This function is activated on a console-wide basis by engaging the master **0dB SM** button in the center section of the console. Small faders on AXS and 2448 consoles are not automated.*

*NOTE: A unity gain fader bypass is provided for the channel fader on 1608-II consoles for when the channel is used for routing automated DAW returns*

to the mix. This function is can be enabled on a console-wide basis by engaging the master **0dB BYP** button in the console center section.

*NOTE: When the unity gain bypass is engaged, the channel mute on the channel does not reflect the DAW mute. The DAW mute is shown only on the fader module DAW Mute button. When unity gain bypass is NOT enabled, then the audio mute does reflect the DAW mute. This allows the DAW automation to control the analog console levels, both fader and mute.*

### 23.5.2.3 Fader Curve

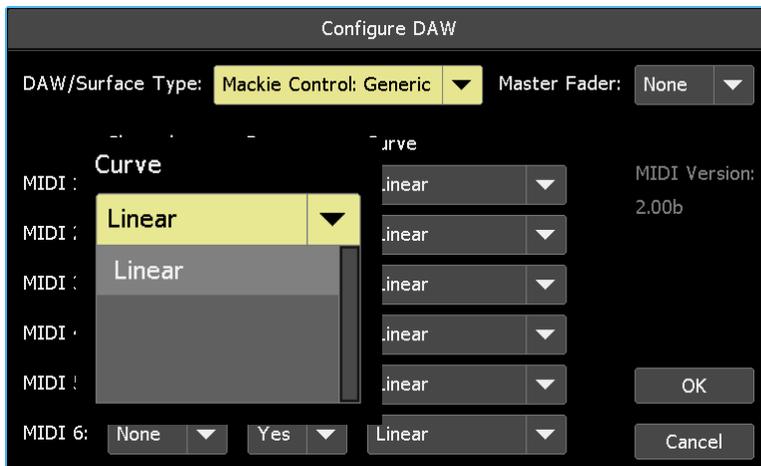
The scale of fader tracking for DAW control can be selected using the “Curve” pull-down menu. Different DAW Types have specific “Curve” menu options need to support the corresponding DAW. The “Curve” for each bank of eight channels assigned to each MIDI port is selected using the “Curve” pull-down menu. The “Curve” options for each Type will be explained individually in the following sections.

### 23.5.2.4 Master Fader

For DAW Types that use Mackie Control, any of the console’s Group Master faders to be assigned to be the master DAW fader. The Mackie HUI: Pro Tools DAW Type does not support this function.



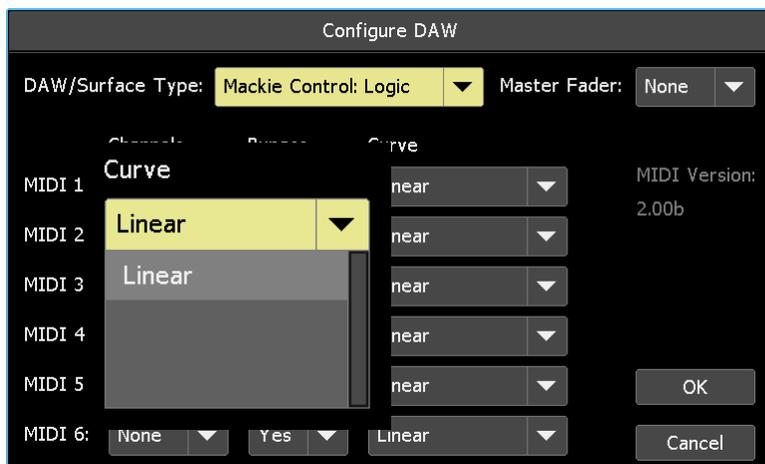
### 23.5.3 Mackie Control: Generic DAW Configuration



“Linear” is the only option for fader “Curve” for the “Mackie Control: Generic” DAW Type.

Linear: No taper: non-audio taper tracking

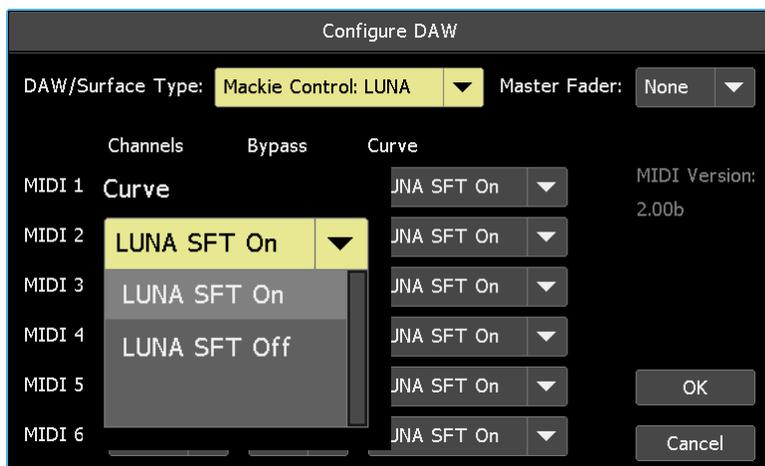
### 23.5.4 Mackie Control: Logic DAW Configuration



“Linear” is the only option for fader “Curve” for the “Mackie Control: Logic” DAW Type.

Linear: No taper: non-audio taper tracking

### 23.5.5 Mackie Control: LUNA DAW Configuration



“LUNA SFT On” and “LUNA SFT Off” are the only options for fader “Curve” for the “Mackie Control: LUNA” DAW Type.

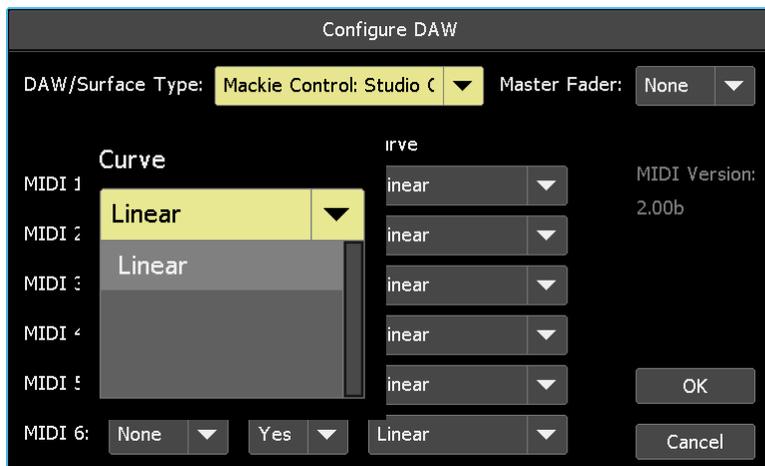
LUNA “SFT” stands for “Surface Fader Taper.”

LUNA SFT Off: When “LUNA SFT Off” (linear) is selected in the “Curve” menu, the applied curve attempts to directly mirror the on-screen position of the DAW fader with position of the physical faders. The dB values on the fader escutcheon are meaningless in this mode. The fader touch popups will attempt to report the DAW’s idea of dB position, assuming the DAW sends that information to the control surface. Differences in dB values will not be shown in the fader popups.

LUNA SFT On: When “LUNA SFT On” is selected in the “Curve” menu, the applied curve attempts to match the on-screen DAW dB position to a dB position on the console faders. When “LUNA SFT On” is selected in the “Curve” menu, differences in dB values will be shown in the fader popups. This applies only to the LUNA DAW Type.

The SFT setting in LUNA software should match the SFT setting in the ACM.

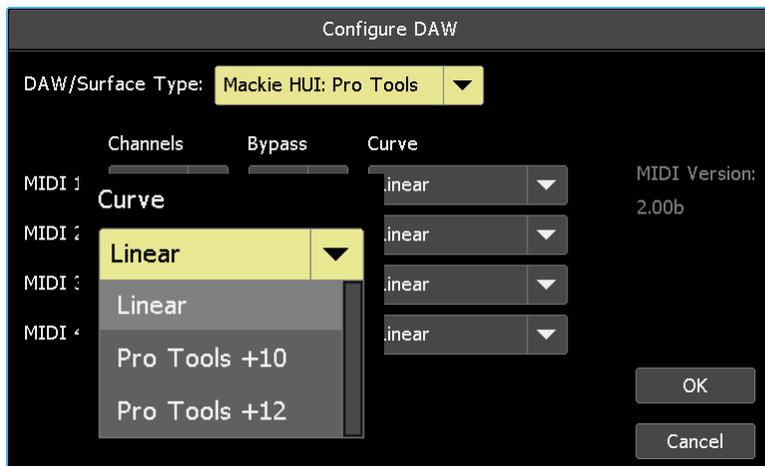
### 23.5.6 Mackie Control: Studio One DAW Configuration



“Linear” is the only option for fader “Curve” for the “Mackie Control: Studio One” DAW Type.

Linear: No taper: non-audio taper tracking

### 23.5.7 Mackie HUI: Pro Tools DAW Configuration



“Linear,” “Pro Tools +10,” and “Pro Tools +12” are the only options for fader “Curve” for the “Mackie HUI: Pro Tools” DAW Type.

When “Pro Tools +12” or “Pro Tools +10” is selected in the “Curve” menu, the applied curve attempts to match the dB values in the latest version of Pro Tools.

Linear: No taper: non-audio taper tracking

Pro Tools +10: When “Pro Tools +10” is selected in the “Curve” menu, direct mapping is applied, however, the Pro Tools faders cannot be commanded above +10 by the physical faders.

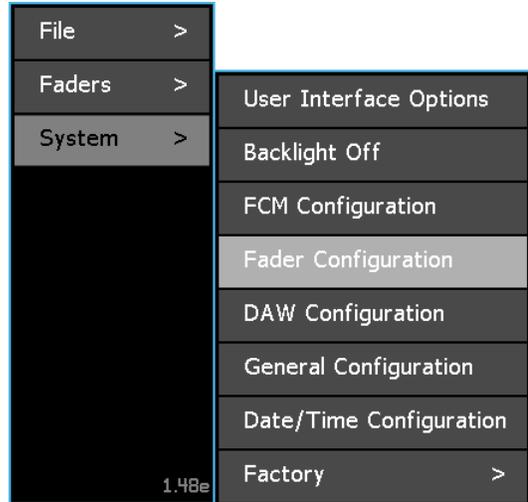
Pro Tools +12: When “Pro Tools +12” is selected in the “Curve” menu, a -2dB offset is applied so the console can command the Pro Tools faders all the way to the top.

Differences in dB values will be shown in the fader popups.

## 24.0 Fader Configuration

The "Fader Configuration" dialog box facilitates several functions:

- Displays information about each fader
- Fader selection tools
- Reset stuck faders
- Fader calibration
- Fader firmware updates



To configure faders, open the Main menu and select "Fader Configuration" from the "System" sub-menu.

The "Fader Configuration" dialog box will open.

### 24.1 Fader Configuration Dialog Box

The "Fader Configuration" dialog box facilitates several functions:

- Displays information and status for each fader
- Fader selection and menu tools
- Reset stuck faders
- Fader calibration
- Firmware updates
- Error indication



The "Fader Configuration" dialog box contains a fader grid that provides information about each fader and the means to select one or more fader for configuration.

☰	Fader	FCM	App	Boot	dB Offset	Status
	1	1	0.10d	0.06b	0.15	0369 OK
	2	1	0.10d	0.06b	-0.08	0369 OK
	3	1	0.10d	0.06b	0.08	0369 OK
	4	1	0.10d	0.06b	-0.08	0369 OK
	5	1	0.10d	0.06b	-0.12	0369 OK
	6	1	0.10d	0.06b	-0.20	0369 OK
	7	1	0.10d	0.06b	-0.20	0369 OK
	8	1	0.10d	0.06b	-0.08	0369 OK

The fader grid provides the following information for each fader:

- Fader number (or fader name if it has one)
- FCM (Fader Control Module) port number
- Application firmware version
- Boot firmware version
- dB Offset\*
- Fader status including PCB number

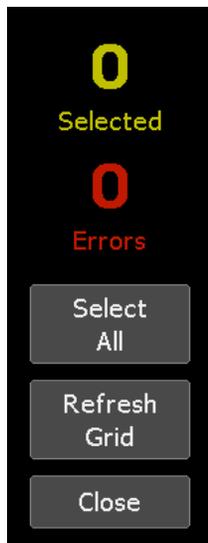
*\*NOTE: A dB offset is applied at the factory to account for fader tolerance.*

The following conditions are indicated for each fader in the "Status" column:

- **PCB:** PCB board version
- **OK:** Everything is normal
- **No FCM:** No FCM on this port: No faders in this block of 8
- **No Fader:** No fader is responding on this FCM port
- **Cal Needed:** The fader requires calibration
- **Stuck:** The software circuit-breaker has tripped and the fader has gone offline

*NOTE: The version of the "Fader Configuration" dialog for Vision and Vision+ consoles only has the Fader and FCM columns and only supports fader calibration. The Vision version of this dialog box is titled "Fader Calibration."*

The "Fader Configuration" dialog box also contains a set of tools that provide fader information and fader grid functions.



**Selected:** Indicates the number of faders currently selected

**Errors:** Indicates the number of errors found

**Select All:** Selects/deselects all faders

**Refresh Grid:** Updates the information and status for all faders.

**Close:** Closes the "Fader Configuration" dialog box

### 24.1.1 Fader Selection

To select faders for configuration, touch one or more faders (touch and drag) to highlight them.

Faders 1-3 are selected in the image to the right.

Fader Configuration

	Fader	FCM	App	Boot	dB Offset	Status
	1	1	0.10d	0.06b	0.00	0369 OK
	2	1	0.10d	0.06b	0.00	0369 OK
	3	1	0.10d	0.06b	0.00	0369 OK
	4	1	0.10d	0.06b	0.00	0369 OK
	5	1	0.10d	0.06b	0.00	0369 OK
	6	1	0.10d	0.06b	0.00	0369 OK
	7	1	0.10d	0.06b	0.00	0369 OK
	8	1	0.10d	0.06b	0.00	0369 OK

**3**  
Selected

**0**  
Errors

Reset Selection

Refresh Grid

Close

### 24.1.2 Fader Configuration Menu



Once the needed faders have been selected, press the Fader Configuration menu button to open the Fader Configuration menu. Select the needed function.

Reset Stuck Fader

---

Calibrate Fader

---

Update Fader Firmware

The Fader Configuration menu facilitates the following functions for the faders selected in the fader grid:

- **Reset Stuck Faders:** Resets stuck faders
- **Calibrate Fader:** Starts the calibration routine
- **Update Fader Firmware:** Opens the Fader Firmware dialog box

## 24.2 Reset Stuck Faders

While rare, it's possible for conditions to exist where a fader goes offline due to its software circuit-breaker being tripped. When this happens, faders get "stuck" and remain that way until they are reset.

When the software circuit-breaker is tripped, the fader will flash its LEDs, but only for a short period of time before it goes offline.

To reset stuck faders, select the faders that have gone offline in the fader grid and open the Fader Configuration menu.

Reset Stuck Fader

---

Calibrate Fader

---

Update Fader Firmware

The "Reset Stuck Fader" menu item illuminates only when one or more of the selected faders have gone offline and are "stuck." Select "Reset Stuck Fader" to reset any stuck faders in the group of selected faders.

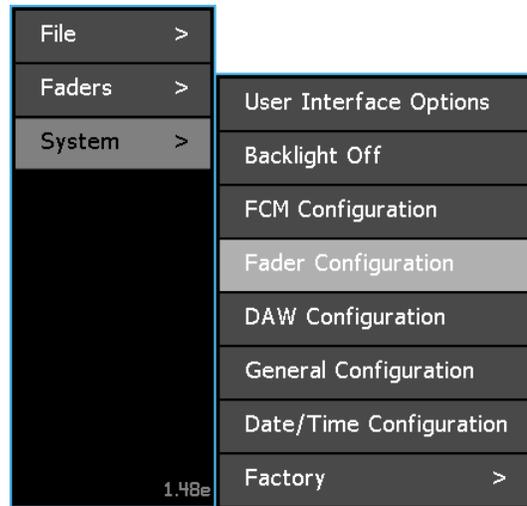
## 24.3 Fader Calibration

To maintain proper fader tracking of the written mix events, the fader calibration routine should be run periodically. This routine should also be run after firmware updates have been loaded, after fader maintenance, and after the console has not be powered for a substantial period of time.

There are two ways to calibrate faders. The "Fader Configuration" dialog box allows all faders or a subset of individual faders to be selected for calibration. Alternately, faders can be calibrated from the "FCM Configuration" dialog box in groups of eight.

*NOTE: Not available on original Vision and early AXS consoles.*

### 24.3.1 Fader Calibration Via Fader Configuration



To calibrate faders using the Fader Configuration dialog box, open the Main menu and select "Fader Configuration" from the "System" sub-menu.

The "Fader Configuration" dialog box will open.



To calibrate individual faders or a subset of faders, touch one or more faders in the fader grid.



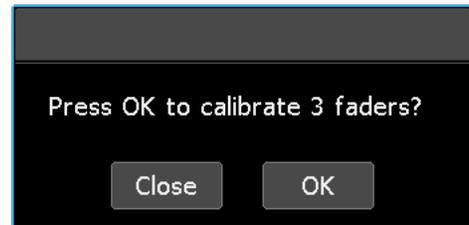
Once the needed faders have been selected, press the Fader Configuration menu button to open the Fader Configuration menu.

Select "Calibrate Fader." A confirmation box will open.



**OK** Press "OK" to start the calibration routine for the selected fader.

**Close** Press "Close" to cancel.



Fader calibration is done in sections of eight (8) faders, with each section corresponding to an eight channel Fader Control Module (FCM). Each fader within each section of selected faders will perform its calibration routine individually and in order, starting with the first fader for each FCM. While performing its calibration, each fader will move according to a preprogrammed pattern and its blue **SEL** button will flash. When finished, the fader will resume normal operation.

*IMPORTANT NOTE: Calibration includes the calibration of the fader touch circuit. It is important that nothing touches the faders during this process.*

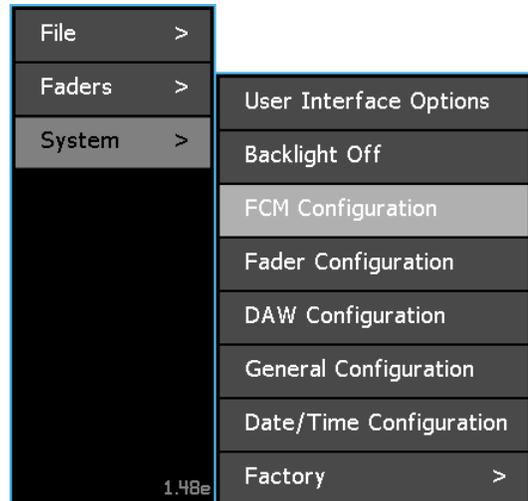
### 24.3.2 Fader Calibration Via FCM Configuration

The "FCM Configuration" dialog box facilitates Fader Control Module (FCM) firmware updates, but also allows sections of eight (8) faders to be calibrated.

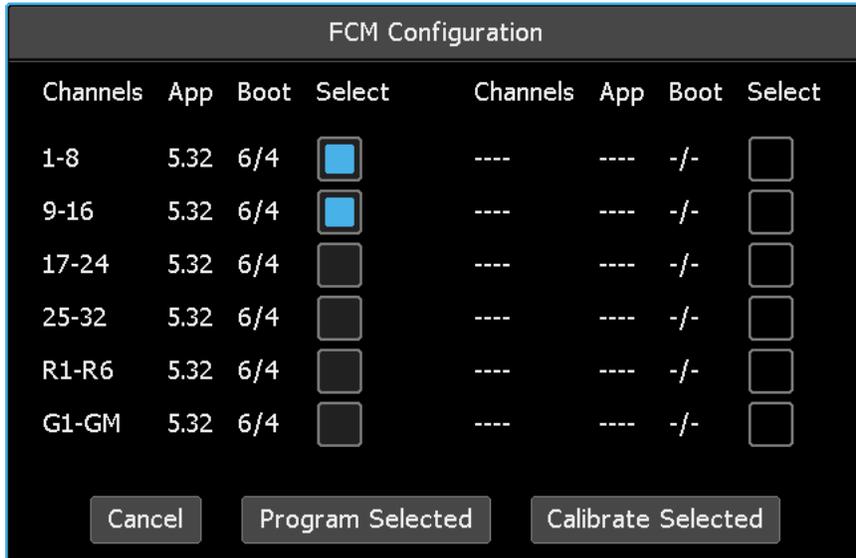


To calibrate faders from the "FCM Configuration" dialog box, open the Main menu and select "FCM Configuration" from the "System" sub-menu.

The "FCM Configuration" dialog box will open.



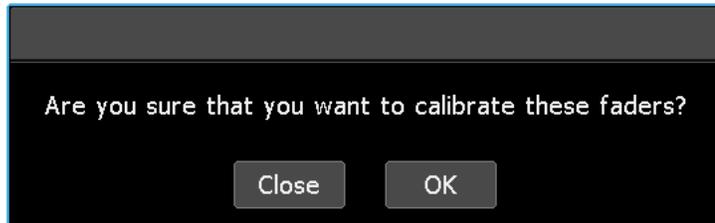
Press the "Select" buttons to select each FCM (set of 8 faders) to be calibrated.



**Calibrate Selected**

The FCMs for channels 1-8 and 9-16 are selected in image above. Press "Calibrate Selected" to prepare the system to calibrate the faders connected to the selected FCMs.

A dialog box will appear asking for confirmation to calibrate faders.



**OK**

Press "OK" to initiate the calibration routine for the selected faders.

**Close**

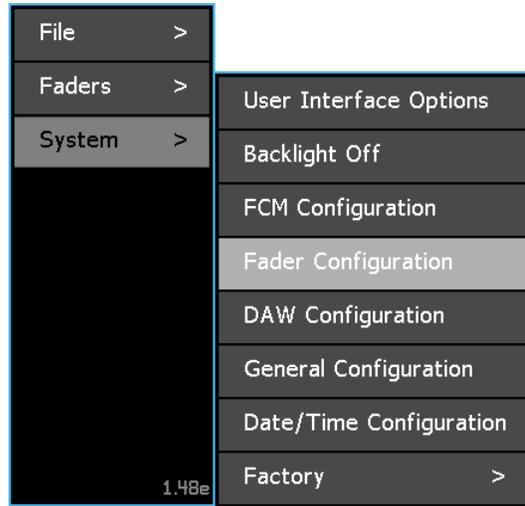
Press "Close" to cancel.

Fader calibration is done in sections of eight (8) faders, with each section corresponding to an eight channel Fader Control Module (FCM). Each fader within each section of selected faders will perform its calibration routine individually and in order, starting with the first fader for each FCM. While performing its calibration, each fader will move according to a preprogrammed pattern and its blue **SEL** button will flash. When calibration is finished, faders will resume normal operation.

*IMPORTANT NOTE: Calibration includes the calibration of the fader touch circuit. It is important that nothing touches the faders during this process.*

*NOTE: Vision consoles show different indications during calibration.*

## 24.4 Fader Firmware Updates



To update fader firmware, open the Main menu and select "Fader Configuration" from the "System" sub-menu.

The "Fader Configuration" dialog box will open.



To update firmware on individual faders or a subset of faders, touch one or more faders in the fader grid.



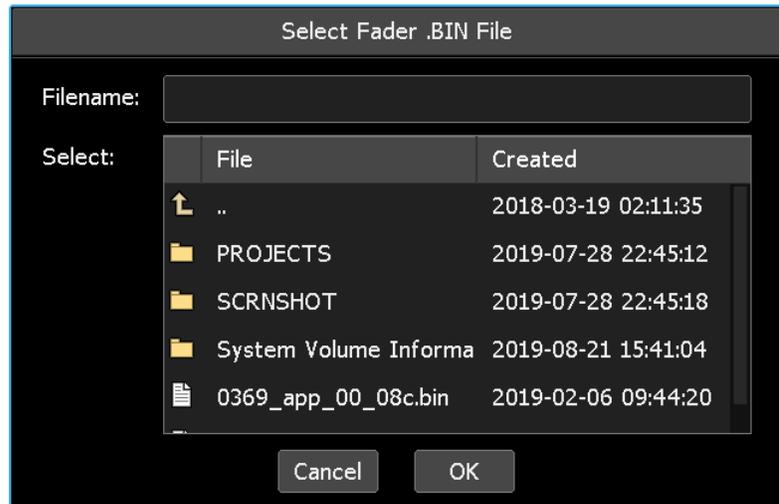
Once the needed faders have been selected, press the Fader Configuration menu button to open the Fader Configuration menu.



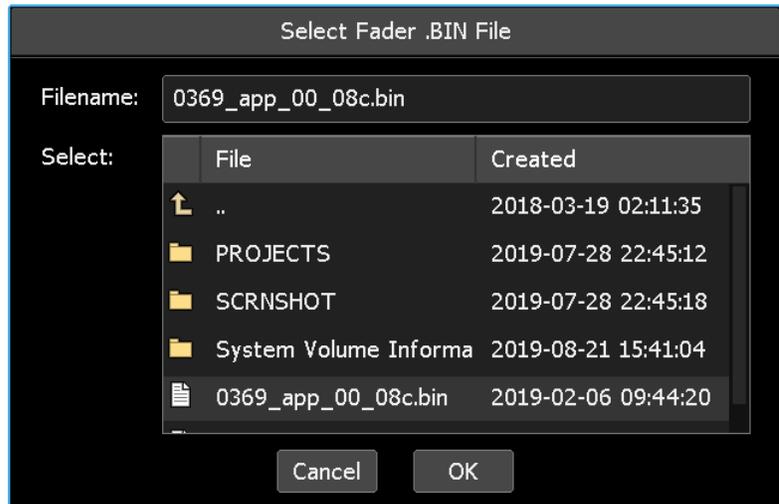
Select "Update Fader Firmware." The "Select Fader .BIN File" dialog box will open.

The "Select Fader .BIN File" dialog box allows the updated firmware file (0369... .bin) to be located on the memory-card.

*NOTE: Fader firmware files always start with "0369..."*



Once located, press the firmware file to select it. The name of the selected file will appear in the "Filename" field.



**OK** After the firmware file has been selected, press "OK" to start the fader update process.

**Cancel** Press "Cancel" to cancel.

Once the update process begins, it should not be interrupted until the update has been completed. Once complete, the faders will resume normal operation. However, any time the firmware has been updated, a fader calibration should be completed.

*NOTE: The fader application should be loaded before the fader bootloader.*

## 25.0 Firmware Updates

There are six (6) primary firmware files that support the *Final Touch Automation*<sup>®</sup> system:

- **axsbXXXXx.bin**: Automation Control Module (ACM) boot file
- **axsXXXXXx.img**: Automation Control Module (ACM) application
- **0368 app XX XXx.elf**: Fader Control Module (FCM) application
- **0368 fpga XX XXx.mcs**: Fader Control Module (FCM) boot file
- **0369 app XX XXx.bin**: Fader application
- **0369 boot XX XXx.bin**: Fader boot file

Xx= version numbers

From time-to-time API may release ACM, FCM, and fader firmware updates that contain bug fixes and perhaps new features. *Final Touch Automation*<sup>®</sup> owners can find firmware updates at <https://service.apiaudio.com/finaltouch>. A card reader should be used to transfer any updated firmware files from an external computer to a memory-card.

*NOTE: Refer to the "Firmware Update Quick Reference Guide" in the appendix 1 for a quick step-by-step update procedure.*

### 25.1 ACM Firmware Updates

The ACM boot and application files are automatically loaded when the following occurs:

- A memory-card is inserted that contains the AXS boot and application files (.bin and .img)
- AXS inhibit files have been deleted from the inserted memory-card (.inh)
- The system is powered-up or reset

#### 25.1.1 Inhibit Files

"Inhibit" (.inh) files are used to prevent the system from automatically reloading firmware every time the system is powered up or rebooted (**RESET**). There are two (2) inhibit files: one to prevent the boot file from updating and one to prevent the application image file from updating.

Every time new firmware is successfully loading onto the console ACM, an "inhibit" file is written to the memory-card. When the system is powered up or rebooted (**RESET**), the ACM searches the root directory of the memory-card for inhibit files. If the inhibit files are found, the system boots normally using the firmware currently installed in the ACM. If these inhibit files (.inh) are not found, but the boot and application files are, the ACM will automatically start the update process using the firmware files found on the memory-card. Accordingly, the inhibit files on the memory-card must be removed from previously used memory-cards before firmware updates can be accomplished.

#### 25.1.2 Update the ACM

To update the ACM boot file and application, perform the following procedure:

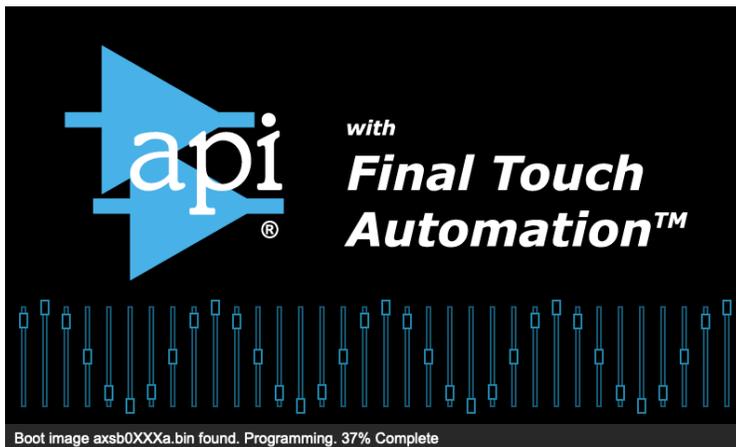
1. Download the updated firmware files from API on an external computer.
2. Transfer the files from the computer to a memory-card using a card reader.
3. Delete the inhibit (.inh) files from the memory-card if it's been used previously for updates.
4. Insert the memory-card in the MEMORY-CARD slot in the ACM.

5. Power-up or reboot (RESET) the ACM. The ACM will start the update process, reprogramming the ACM with the boot and application files found on the memory-card. When the firmware has successfully loaded the ACM will write new inhibit files on the memory-card.

The following series of screenshots illustrate the ACM processes while new firmware is being loaded.



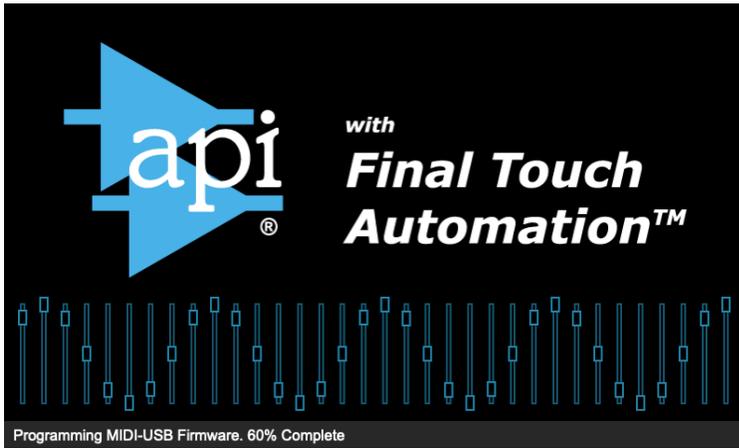
When the ACM reboots, if the boot inhibit file is not found on the memory-card, the ACM will be reprogrammed using the boot file (.bin) on the memory-card.



The ACM will be updated with the new boot file (.bin) first.



After the boot image has loaded, the update process will pause and engineer will be prompted to reboot the system. Press the RESET button on the ACM or power cycle the system to reboot the ACM using the new boot file.



After rebooting, if the application inhibit file is not found on the memory-card, the ACM be will be reprogrammed starting with the MIDI-USB firmware.



Once the update process begins, it should not be interrupted until the update has been completed.



After the MIDI-USB firmware update, the ACM will be reprogrammed with the application file (.img) found on the memory-card.



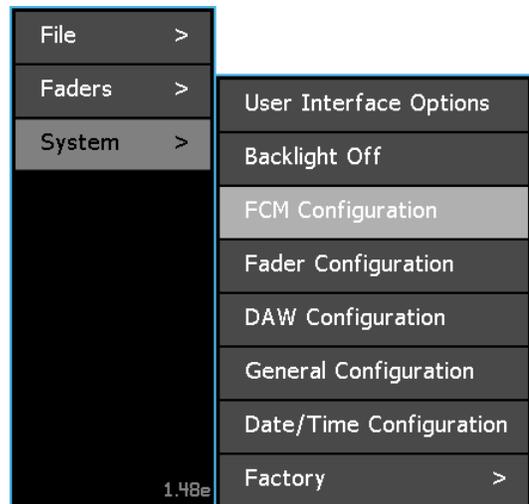
Once the ACM has been updated with the new application file (.img), it will load the new program.



Once the program loads, the ACM will start the new program and resume normal operation.

## 25.2 FCM Firmware Updates

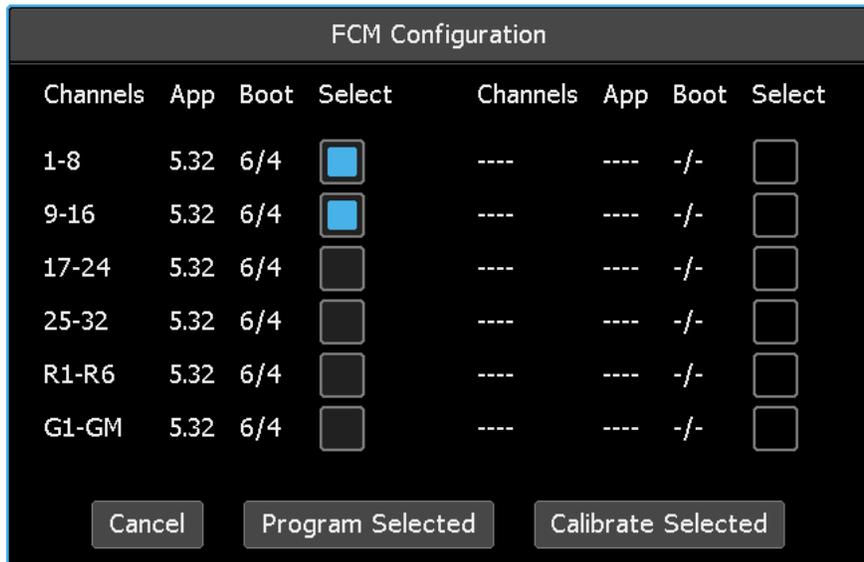
The “FCM Configuration” dialog box facilitates Fader Control Module (FCM) firmware updates. Each FCM supports eight (8) faders.



To update FCM firmware, open the Main menu and select “FCM Configuration” from the “System” sub-menu.

The “FCM Configuration” dialog box will open.

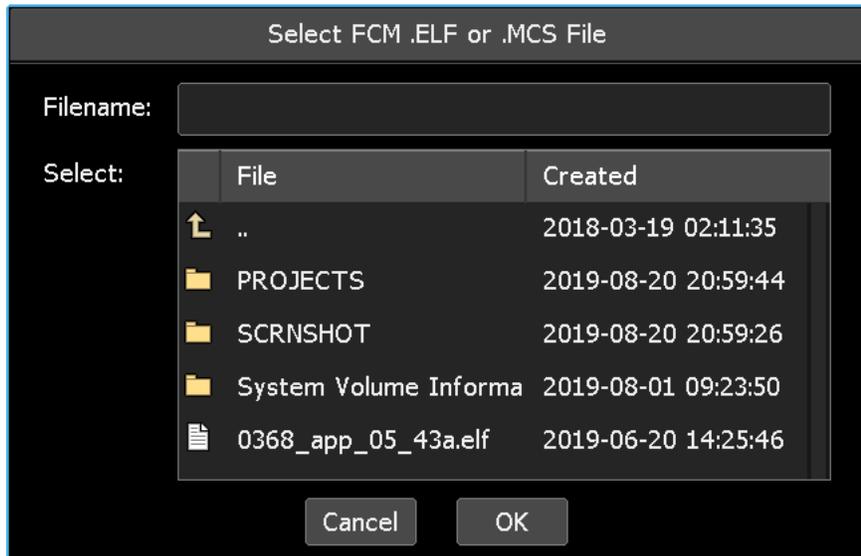
Press the "Select" button to select each FCM to be programmed.



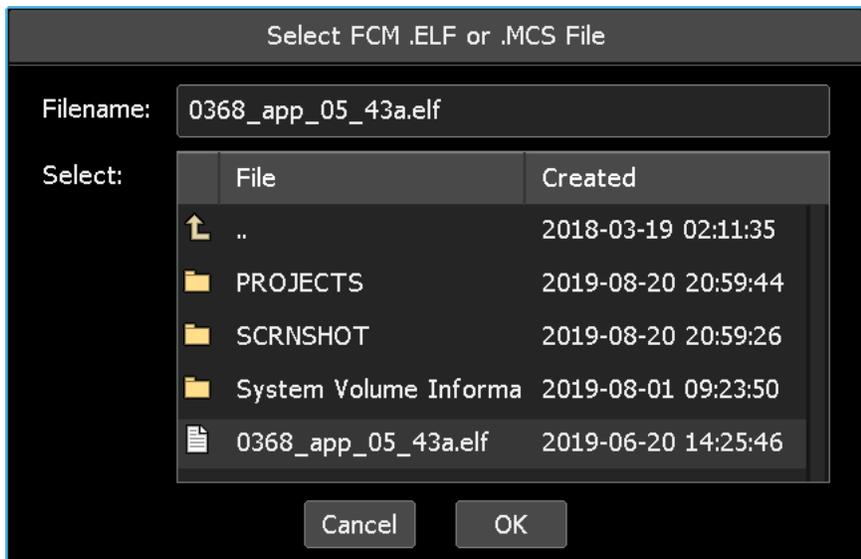
**Program Selected**

Press "Program Selected" to open then "Select FCM .ELF or .MCS File" dialog box.

The "Select FCM .ELF or .MCS File" dialog box allows the updated firmware file (0368... .elf) to be located on the memory-card.



Once located, press the firmware file to select it. The name of the selected file will appear in the "Filename" field.



OK

After the firmware file has been selected, press "OK" to start the FCM update process.

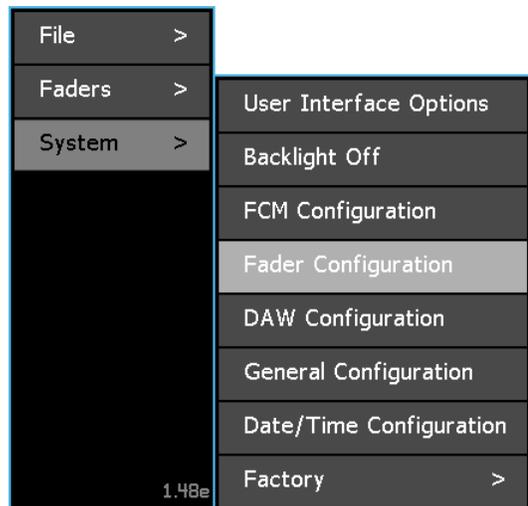
Cancel

Press "Cancel" to cancel.

Once the update process begins, it should not be interrupted until the update has been completed. Once complete, the console will resume normal operation. However, any time the firmware has been updated, a fader calibration should be completed.

*NOTE: The fader application (.ELF) should be loaded before the fader bootloader (.MCS).*

## 25.3 Fader Firmware Updates



To update fader firmware, open the Main menu and select "Fader Configuration" from the "System" sub-menu.

The "Fader Configuration" dialog box will open.



To update firmware on individual faders or a subset of faders, touch one or more faders in the fader grid.



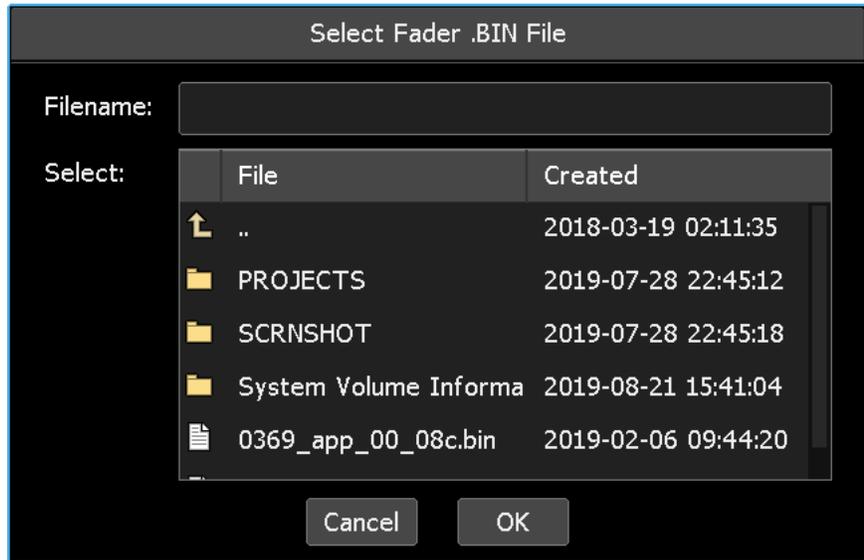
Once the needed faders have been selected, press the Fader Configuration menu button to open the Fader Configuration menu.



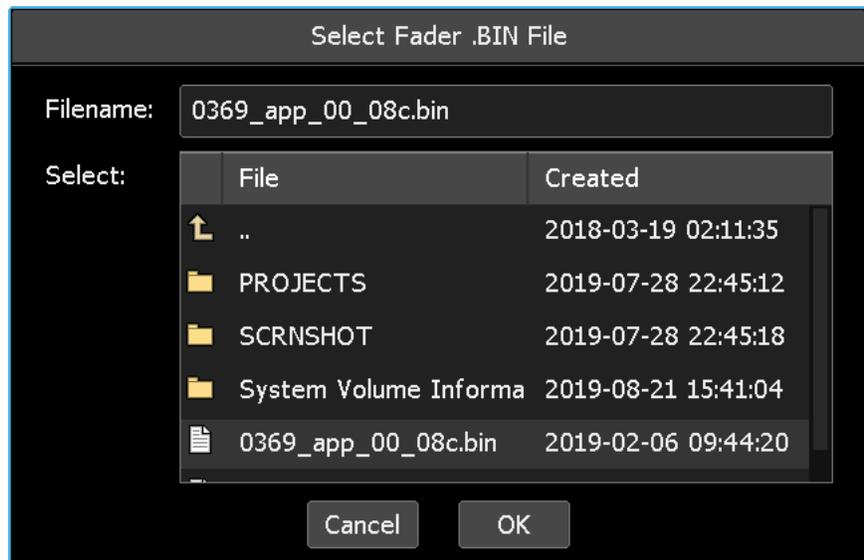
Select "Update Fader Firmware." The "Select Fader .BIN File" dialog box will open.

*NOTE: The fader application should be loaded before the fader bootloader.*

The "Select Fader .BIN File" dialog box allows the updated firmware file (0369... .bin) to be located on the memory-card.



Once located, press the firmware file to select it. The name of the selected file will appear in the "Filename" field.



**NOTE:** To be clear, make sure the proper files are loaded in the proper order. Load 0369 app XX XXx.bin: fader application file first, followed by the 0369 boot XX XXx.bin: fader boot file.

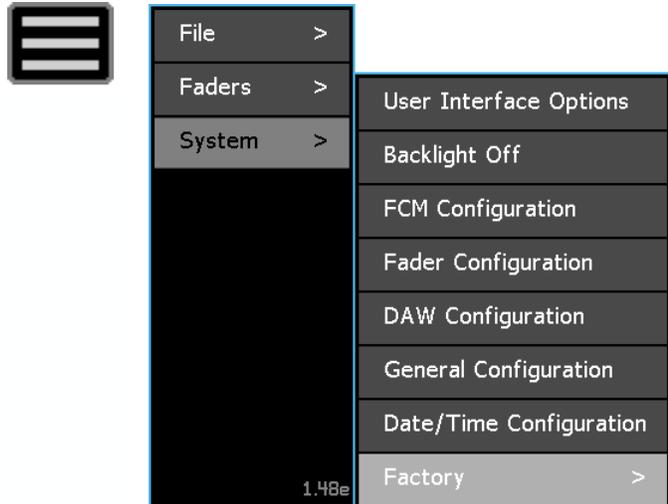
**OK** After the firmware file has been selected, press "OK" to start the fader update process.

**Cancel** Press "Cancel" to cancel.

Once the update process begins, it should not be interrupted until the update has been completed. Once complete, the faders will resume normal operation. However, any time the firmware has been updated, a fader calibration should be completed.

## 26.0 Factory Settings and Diagnostics

Primary automation configuration parameters such as console type and number of buses are set by an API engineer at the factory before delivery and are not user accessible. The Factory sub-menu supports these parameters and provides diagnostic test utilities used to assess system status and performance. These utilities should be used only by qualified maintenance personnel and are therefore locked-out.



# Appendix

## A.1 Firmware Update Quick Reference Guide v4.0

1. Using the table below, identify and verify the versions of the Fader Control Modules (FCM) installed in your console.

CONSOLE	FCM VERSION
1608, 1608-II, 2448, AXS (2019 or newer)	950-0368
Legacy AXS (2017-2018)	950-0357
Vision	950-0354

2. Write down the versions of the applications and boot loader (boot) for the ACM and FCM firmware currently installed in your console.
  - a. The ACM boot and application are displayed at the bottom of the touch screen when the system boots when powered up or after the RESET button has been pressed.
  - b. Select the menu in the top left corner, select SYSTEM, and select FCM CONFIGURATION. There you should see the number of FCMs present in your system based on your console size. The current BOOT and APP version for each FCM is also listed.
  - c. The guide found at this link will provide additional details:  
<https://service.apiaudio.com/documents/Final-Touch-Automation-Version-Check-Instructions.pdf>).
3. Write down the serial number for your console (if possible)
4. Go to the *Final Touch Automation*® page in the service area of the API website: <https://service.apiaudio.com/finaltouch> and request the latest versions of the appropriate firmware for the hardware you have.
5. Download the files from the link provided to you by the API Service Department and copy them to the memory card from the console. Make sure that there are no older versions of these files present.
6. Delete the programming "inhibit files" "axs.inh" and "axsb.inh" from the memory card if present. When present on the memory card, these inhibit files prevent the ACM from automatically updating.

*NOTE: Upon startup, the ACM first looks to update firmware using the files stored on the memory-card. The "inhibit" files (.inh) are used to suppress this function if stored on the memory-card. If these files are not present, the processor will automatically update itself from the files on the memory-card.*

When finished there should be only these 6 files in the root of the memory card. A PROJECTS folder is likely also present and ok to stay.

- **axsbXXXXx.bin**: Automation Control Module (ACM) boot file
- **axsXXXXXx.img**: Automation Control Module (ACM) application
- **0368 app XX XXx.elf**: Fader Control Module (FCM) application\*
- **0368 fpga XX XXx.mcs**: Fader Control Module (FCM) boot file\*
- **0369 app XX XXx.bin**: Fader application
- **0369 boot XX XXx.bin**: Fader boot file

\*The 0368 FCM files indicated above are for 1608, 1608-II, 2448, and AXS consoles built after 2019.

7. IMPORTANT: Be sure that the downloaded FCM firmware versions and update procedures match the hardware you have. The latest version of the ACM can display the FCM version

numbers. If the exact FCM versions cannot be verified, please contact the API Service Department before proceeding with the system update.

**WARNING:** *It is vital that the properly matched file versions and update procedures are used when updating FCM firmware! The FCMs installed in older consoles require specific firmware versions and update methods. Failure to follow the necessary protocols for your hardware can lead to system damage.*

### **1608, 1608-II, 2448 and AXS Consoles (2019 or newer)**

1. Install the ACM boot loader and application files by inserting the memory card into the console ACM. Power on the console (or press the recessed RESET button on the ACM panel). The system will automatically find the new ACM boot file and install it. You can follow along the progress at the bottom of the ACM screen. When complete, you will be asked to RESET the system again. Press the RESET button on the ACM panel.
2. The system will now automatically find and update the ACM application file. This takes somewhat longer than the ACM boot update. You can again follow along the progress at the bottom of the ACM screen. Once the ACM has completed updating, the main status page will appear in the display.
3. Install the proper FCM application file. On the touch screen, select the menu in the top left corner, select SYSTEM, and select FCM CONFIGURATION. There you should see the number of FCMs present in your system based on your console size. The current BOOT and APP version for each FCM is also listed.
4. Select all of the FCMs in your system and choose PROGRAM SELECTED. A dialog box opens to select the proper .elf application file to program the FCMs.
5. Select the **0368 app XX XXx.elf** application file. You should get a message in green text confirming your selection. Press OK and the FCMs will update.
6. Install the proper FCM boot loader (boot) file.
7. Select all of the FCMs in your system and choose PROGRAM SELECTED. A dialog box opens to select the proper .mcs application file to program the FCMs. Select the **0368 fpga XX XXx.mcs** application file. You should get a message in green text confirming your selection. Press OK and the FCMs will update.
8. Install the proper fader application files. On the touch screen, select the menu in the top left corner, select SYSTEM, and select FADER CONFIGURATION. Select all of the faders in your system.
9. Select UPDATE FADER FIRMWARE. A dialog box opens to select the proper .bin application file to program the faders. Select the **0369 app XX XXx.bin** file. You should get a message in green text confirming your selection. Press OK and the faders will update.
10. Install the proper fader boot files. On the touch screen, select the menu in the top left corner, select SYSTEM, and select FADER CONFIGURATION. Select all of the faders in your system. Select UPDATE FADER FIRMWARE. A dialog box opens to select the proper .bin application file to program the faders. Select the **0369 boot XX XXx.bin** file. You should get a message in green text confirming your selection. Press OK and the faders will update.

### **Legacy AXS Consoles (2017-2018)**

The FCM files for Legacy AXS consoles built before 2019 start with 0357 and requires a specialized firmware set and update procedure. Please contact the API Service Department for assistance. <https://service.apiaudio.com/support>.

## Vision Consoles with *Final Touch Automation*® with FCM App Versions v5.40 to latest

1. Install the ACM boot loader and application files. Insert the memory card into the console ACM. Power on the console (or press the recessed RESET button on the ACM panel). The system will automatically find the new ACM boot file and install it. You can follow along the progress at the bottom of the ACM screen. When complete, you will be asked to RESET the system again. Press the RESET button on the ACM panel.
2. The system will now automatically find and update the ACM application file. This takes somewhat longer than the ACM boot update. You can again follow along the progress at the bottom of the ACM screen. Once the ACM has completed updating, the main status page will appear in the display.
3. Install the proper FCM application file. On the touch screen, select the menu in the top left corner, select SYSTEM, and select FCM CONFIGURATION. There you should see the number of FCMs present in your system based on your console size. The current BOOT and APP version for each FCM is also listed.
4. Select all of the FCMs in your system and choose PROGRAM SELECTED. A dialog box opens to select the proper .elf application file to program the FCMs.

***NOTE:** If from some reason the FCMs don't start blinking while ACM load and run programming routine, or if you see the message that prevents you from programming, you should force the FCM's into the programming mode and this is the procedure:*

- a. Remove the knee panel and locate restart tester switch on the FCM.*
  - b. Press the switch while you are holding channel 1 MUTE button*
  - c. Repeat this procedure for the rest of the FCM's: press the restart tester switch while holding the MUTE button on channels 9, 17, 25, 33, and so on*
5. Select the **0354 app XX XXx.elf** application file. You should get a message in green text confirming your selection. Press OK and the FCMs will update.

***NOTE:** The FCM boot loader cannot be field updated via the ACM. Use of the Xilinx programmer and Impact is required to update the boot loader in a 950-0354.*



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