

## CueConsole CueConsole Modular Control Surface

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#### CueConsole User Guide

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# Setup and Installation

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CueConsole™ is a programmable control surface for the Meyer Sound LCS Series™ Matrix3™ audio show control system. It provides physical controls that can be assigned by the user to any Matrix3 function. CueConsole is modular and can be assembled and configured by the user in a number of different ways. Modules include motorized faders, meters, Cue List operation, and expanded single-channel controls for detailed editing.

The philosophy of the design is to provide a system that can be configured by the user. Any number of modules can be combined into a system. The physical placement can be a layout that looks like a conventional large mixing console, or can be optimized to fit a much smaller space and to provide easy access to all controls.

## System Requirements

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Cuestation™ version 4 is required to use CueConsole with Matrix3. You will need CueConsole modules, a Matrix3 system, CueStation 4 software and Virtual LX software.

### Hardware

Hardware required to use CueConsole:

- One or more CueConsole modules.
- A computer to run Virtual LX software.
- A computer to run CueStation 4 client software (can be the same computer running Virtual LX).
- An LX-300 frame with an LX-ELC module.
- Network infrastructure to support connecting the above devices on an Ethernet. Managed switches are required for proper performance of CueConsole modules.

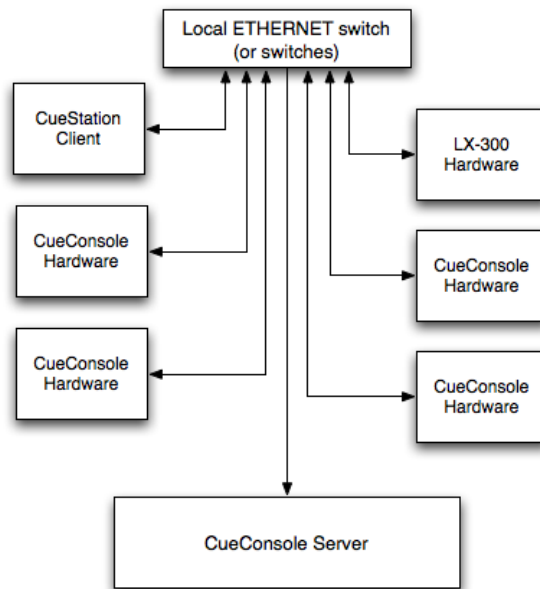
### Software

Software required to use CueConsole:

- CueConsole firmware version 2.1.
- CueStation 4.6.0 client software. This will be run on the CueStation client PC.
- Virtual LX 4.6.0 server software. This will be run on the CueConsole Server computer.
- Version 4.6.0 firmware for all LX-DSP, LX-EXP, and LX-ELC modules in all Matrix3s.

### Connections

CueConsole modules use IEEE 802.3 Ethernet connections. All wiring must comply with the EIA/TIA 568 standard. There are four elements that make up the network used in a Matrix3 / CueConsole system. These are the CueConsole modules, the CueStation client computers, the CueConsole Server computer, and the LX-ELC module in the first LX-300 processor. CueConsole modules connect to the computer running Virtual LX software. In the following diagram, this is listed as the CueConsole Server.



The CueConsole Server running VirtualLX or LXELCD software is connected to the LX-ELC EtherTracks module in the first LX-300. The CueStation client PC and the CueConsole modules all connect to the server, as well.

## Basic Configuration

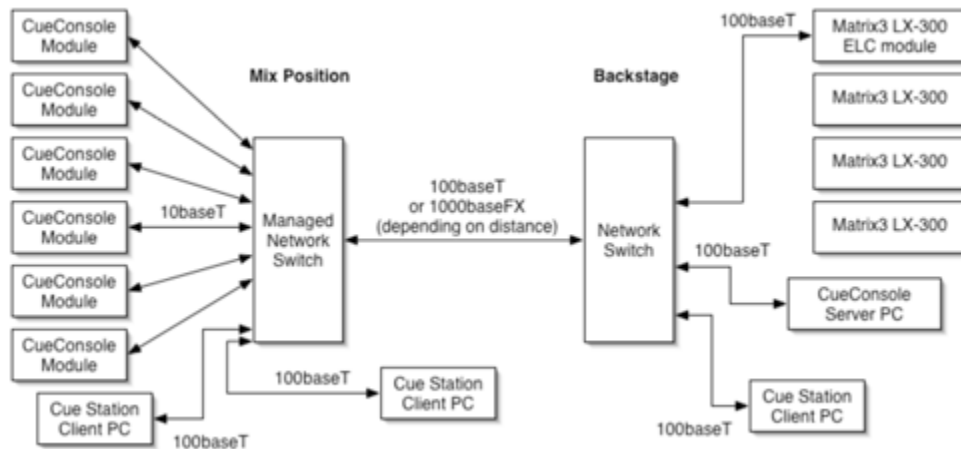
With small systems, the CueStation client and the CueConsole server can be run on the same computer. Large systems should use a dedicated computer for a CueConsole server.

### Network Setup

CueConsole modules each have a static IP address, and can communicate with the CueConsole server through a network switch.

## Typical Configuration

The following is a diagram of the network connections for typical CueConsole setup.



In this example there are three computers running CueStation 4. There are computers for the Mixer and the Sound Designer, and a computer backstage that could be used by the monitor engineer. This is possible because CueStation 4 has been designed to have multiple users on the same system.

## Cabling

In a typical CueConsole setup the following cable connections would be made between the LX-300s and the CueConsole modules.

- Ethernet cable from the local network switch. There is a maximum distance of 100 meters for 100baseT Cat5 UTP. If the distance needed to run is longer, 1000baseFX multimode fiber can be used. A repeater could be used with UTP Cat5 to extend the distance to 200 meters, but this presents a problem with powering the repeater, securing it in an audience area, and the additional signal delay that would be added.
- One or more audio lines. Balanced +26dBu shielded analog signals for PFL and AFL at the console.

As an alternative to these connections, you could put the processor with DSP ID 01 at the Front-Of-House position next to CueConsole and run two Fibre Channel lines from the LX-LNK module in the frame to the rest of the processors backstage. This would provide not only PFL and AFL connections at the CueConsole, but also analog insert points in the system for any external processors.

## Audio Monitoring: PFL and AFL

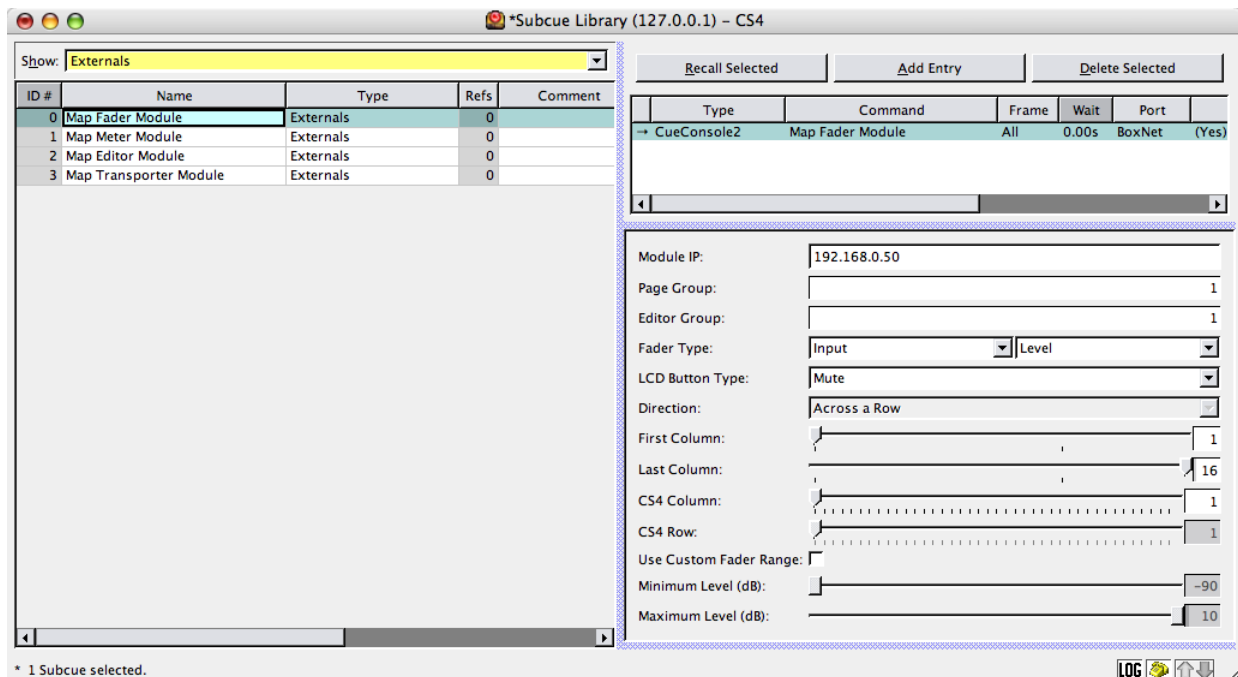
The Transporter and Editor module have headphone amplifiers with two line level inputs. These inputs are transformer balanced and will provide full fidelity reproduction at up to +26 dBu signal levels.

To use PFL (Pre-Fader Listen) or AFL (After-Fader Listen) functions, an analog connection must be made to the Matrix3s. Analog outputs on an LX-AO8 module can be set in the Configuration window of CueStation to be PFL, AFL, or both (PAFL), in mono or stereo.

## Initial Software Setup

Because CueConsole is completely programmable it is necessary to program all of the functions. This is done from the CueStation application using CueConsole External Subcues. The following section requires a basic understanding of CueStation software and the creation of cues and external subcues.

### Fader Module FAD-16



## Meter Module MET-16

\*Subcue Library (127.0.0.1) - CS4

Show: Externals

| ID # | Name                   | Type      | Refs | Comment |
|------|------------------------|-----------|------|---------|
| 0    | Map Fader Module       | Externals | 0    |         |
| 1    | Map Meter Module       | Externals | 0    |         |
| 2    | Map Editor Module      | Externals | 0    |         |
| 3    | Map Transporter Module | Externals | 0    |         |

Recall Selected   Add Entry   Delete Selected

| Type          | Command          | Frame | Wait  | Port   |       |
|---------------|------------------|-------|-------|--------|-------|
| → CueConsole2 | Map Meter Module | All   | 0.00s | BoxNet | (Yes) |

Module IP: 192.168.0.51

Page Group: 1

Editor Group: 1

Control Type: Input

Input Mute Type: Input Channel On/Off

First Column: 1

Last Column: 16

CS4 Column: 1

Enable EQ Editing: ☐

Meter Mode: Level

Initial Edit Mode: Fader 1

Button Press Edit Mode: Fader 1

Encoder Press Edit Mode: Trim 1

\* 1 External selected.

LOG

## Transporter Module TP

\*Subcue Library (127.0.0.1) - CS4

Show: Externals

| ID # | Name                   | Type      | Refs |  |
|------|------------------------|-----------|------|--|
| 0    | Map Fader Module       | Externals | 0    |  |
| 1    | Map Meter Module       | Externals | 0    |  |
| 2    | Map Editor Module      | Externals | 0    |  |
| 3    | Map Transporter Module | Externals | 0    |  |

Recall Selected   Add Entry   Delete Selected

| Type          | Command                | Frame | Wait  | Port   | Track From |
|---------------|------------------------|-------|-------|--------|------------|
| → CueConsole2 | Map Transporter Module | All   | 0.00s | BoxNet | (Yes)      |

Module IP: 192.168.0.52

Stop Mode: Pressing the Stop Button Sends a 'Master Stop'

Cue List Player #: 1

Cue List Player Page Group: 128

Fader Type: System Trim

LCD Button Type: Mute

Direction: Across a Row

CS4 Column: 1

CS4 Row: 1

Use Custom Fader Range: ☐

Minimum Level (dB): -90

Maximum Level (dB): 10

Fader Page Group: 1

Show Cue List Indices: ☒

Add New Mapping

\* 1 External selected.

LOG



## Editor Module ED

The screenshot shows the \*Subcue Library (127.0.0.1) - CS4 window. The 'Show:' dropdown is set to 'Externals'. The main table lists four modules: Map Fader Module, Map Meter Module, Map Editor Module (highlighted), and Map Transporter Module. The right panel shows the configuration for the selected module, including Module IP, Editor Group, Main Channel, Alt Channel, Left Listen Meter, Right Listen Meter, and Stereo Mode.

| ID # | Name                   | Type      | Refs | Comment |
|------|------------------------|-----------|------|---------|
| 0    | Map Fader Module       | Externals | 0    |         |
| 1    | Map Meter Module       | Externals | 0    |         |
| 2    | Map Editor Module      | Externals | 0    |         |
| 3    | Map Transporter Module | Externals | 0    |         |

| Type          | Command           | Frame | Wait  | Port   |       |
|---------------|-------------------|-------|-------|--------|-------|
| → CueConsole2 | Map Editor Module | All   | 0.00s | BoxNet | (Yes) |

Module IP: 192.168.0.53

Editor Group: 1

Main Channel: Input ☒ Set Index 1

Alt Channel: Output ☒ Set Index 1

Left Listen Meter: Aux Master ☒ Set Index 1

Right Listen Meter: Aux Master ☒ Set Index 2

Stereo Mode: Set to Normal Mode

\* 1 External selected.

Recall the appropriate subcue to map each CueConsole module to its configured controls.



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# System Architecture

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## Module Controls

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The following components are common to all CueConsole modules.

### Power Supply

All modules have an internal power supply that is auto-ranging from 100vac to 250vac, 47Hz to 70Hz.

### Self Test

The module will run a power on self test when switched on. It is fully operational within a few seconds of power being applied. The IP address assigned to the module is displayed, and when diagnostic mode is entered, the firmware version of each internal subsystem is displayed.

The modules can be put into a diagnostic mode on power on. This mode allows testing of all physical control functions, switches, motorized faders, encoders, and LEDs.

### Communication



#### Important

Meyer Sound suggests using the EIA/TIA 568A color code standard for cable wiring.

Communication to the module is via low latency Ethernet using UTP and wired as EIA/TIA 568. The modules also have a vestigial RS-422 connection. The initial design for CueConsole used a 10baseT interface. A revised module main CPU board was done in 2004 that has a 100baseT interface.

The module is able to recover from a disconnect/reconnect of communications or A/C power without requiring operator intervention.

### Port Status LEDs

Second production of CueConsole modules with a 10baseT interface have LEDs next to the Ethernet connector. These show Link Active, Transmit and Receive.

#### Link (Green)

Solid on when online, off when not linked.

#### Transmit (Red)

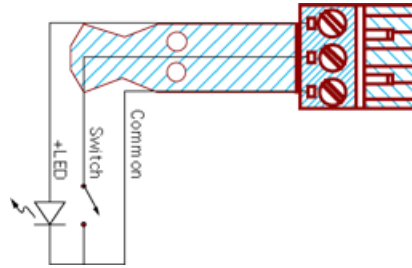
Solid on when not transmitting, or in error condition.

#### Receive (Yellow)

Solid on when not receiving, off when receiving.

### Contact Closure Input

There are a pair of Phoenix connectors on each module that allow for the connection of a passive switch and drive for an LED indicator. The mating connector is a p/n HDR-PHX-3-Plug (Phoenix Contact 177618) Pitch 5.08mm.



### ID (IP Address)

Each module maintains an IP address setting in non-volatile memory. The IP address can be set during power up of the module using the controls on the module. To set the IP address you enter the setup mode, select the address and use a rotary encoder to edit the address. The IP address will be retained for at least six months with the power disconnected.

CueStation 4 supports Module Address Aliases that allow remapping of a module assignment in a project without requiring changing the IP address set in the module. All modules require a unique IP address.

### Control Feel

The feel of the control is how the operator matches a physical action, such as turning a knob, with the resultant change of the parameter. Controls on all modules are programmed to match the same feel as a similar analog control.

### Control Resolution

Most of the controls are limited to integer values and do not exceed what is typical for an analog control. Gain is in 1dB steps and Frequency in 1Hz steps. If a higher resolution value is needed it can be entered using CueStation client. The controls do not round the values but will increment them by the unit of resolution as specified.

## System Wide Controls

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### Console Lock

The control surface can be locked/unlocked by using the Lock Console button on the Transporter module. This can also be done with a user defined subcue (Lock Console). When the control surface is locked, all LCD buttons light up with yellow backgrounds and all controls are disabled from transmitting. When the control surface is unlocked, the controls return to the correct position.

## Peak Hold Threshold

The threshold for Peak Hold is set globally using an External Subcue (Set Clip Indicator Parameters). The top LCD button on a Meter module flashes a red background to indicate a peak event. The duration of the indicator is set with an external subcue and can vary from a few milliseconds to being held until reset. You can reset the flashing peak indicator by pressing the flashing LCD button on the Meters module, or by using the Clear-Peak button on the Editor module.

## Edit Select Group

Modules that have Edit Select buttons can be assigned to an Edit Select group. When an Edit Select button is pressed on a module, only Editor modules that are members of that Edit Select Group will be set to that channel. The control of Clear Peak Hold, PFL/AFL HOLD and Clear All PFL/AFL functions can only be done from an Editor assigned to the modules Edit Select Group, from the CueStation CueConsole window in CueStation 4.

Edit Select Groups are defined in the channel mapping.

## Edit Select Interaction with Editor

The Edit select button on a module reflects the active channel on the Editor for the modules Edit group. Pressing it puts that channel on the active view (Main or Alternate) of the Editor that is assigned to that Edit group.

If you switch the active view on the Editor, the Edit Select button(s) change to reflect the channel that is selected in that view on the Editor.

If the GUI has been set to track the Editor, then the GUI changes. If the GUI has been set to track the Edit Select buttons, then it will change only when an Edit Select button has been pressed.

Since the Editor can only display one channel actively - Stereo mode notwithstanding - only one Edit Select button will be lit in association with an Editor assigned to that Edit group.

If more than one Editor is assigned to a module channel, then pressing the Edit Select button on the channel will light the button and will bring up that channel on the current selected views on the Editor modules.

If the “Enable EQ Editing” box has been checked in the “Map Meter Module” subcue, pressing the Edit Select button on the meter module will change the mode of the CC2-M16 Meter Module to allow control of the processing window for the selected channel.

## Page Select Group

Fader and Meter modules can be assigned to a Page Select group. This allows the channels displayed on groups of modules to be quickly changed with a single command sent to the page group.

## PFL/AFL Range

Modules that have PFL / AFL buttons can be assigned to route the selected signal to the PFL/AFL outputs defined for a PFL / AFL Range. This range will typically be the same as an Edit Select Group. This will allow the simultaneous use of multiple control surfaces at independent mix positions to monitor different sections of the mix. PFL / AFL ranges can overlap and share modules or sections of modules.

PFL / AFL Ranges are defined in the Mixer Configuration or with a user defined subcue.

## Solo-In-Place

When Solo-In-Place is active, only those channel strips on MetersPlus and Faders modules that are selected will display a backlight on their LCD buttons. All other channel strips will have a dark back-light. Note that this is only for those types of channel strips that are affected by the S-I-P that has been invoked. For example, if you S-I-P an input, then all other input channel strips will be dark, but this will not affect output channel strips. Likewise, if you S-I-P and output, only other output strips will be affected, it will not change the backlight display of any inputs or aux sends. The data displayed by the LCD button is not affected. Nor are the states of any other buttons (Mute, Isolate, PFL, AFL, Edit Select, Dyn, etc.)

## Solo-Safe

When Solo-In-Place is active on an input it is desirable to keep effects returns from muting so that all effects routings can be auditioned at the same time as the input. Any input defined in CueStation has being “Solo-Safe” will show a Red Solo-In-Place LED when selected on the Editor Module. To set an input to be Solo-Safe using an Editor Module, the following ITW buttons need to be pressed at the same time: S-I-P, SIP Clear, and SIP Enable.

## View

The Editor and Faders modules have a button labeled View. This button will recall a user defined display in CueStation. This is done by using a Client Control subcue that has been mapped to the View button. The display will include window positions across multiple monitors and specific page views within those windows.

# PFL and AFL Logic

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## Hold

PFL can have multiple selections active at the same time.

If the HOLD function is active (on the Editor Module and in the Console window) then multiple PFL selections can be made. These will mix together and feed the PFL physical output according to the PFL / AFL range that has been defined for those controls. To de-select a PFL, you must either press that PFL button again to toggle it off, or you must press the Clear All PFL/AFL button on the Editor. HOLD active is the default state.

If the HOLD function is not active, then you can only select one PFL at a time. Pressing a PFL button will automatically de-select the previously selected PFL. The HOLD state can be set by a user defined subcue. (note that PFL can be set by a user defined subcue)

## Pan

PFL is MONO if only one PFL selection is made.

If a single PFL button is pressed, then the feed to the physical PFL output(s) is treated as a mono source and fed equally to left and right.

PFL uses the Pan setting if more than one PFL selection has been made.

If more than one PFL button has been pressed, then the feeds to the physical PFL outputs use the settings of the PAN controls on each selected channel regardless of the bus assignments on those channels.

## Order

AFL has priority over PFL.

If there are inputs active to PFL and an AFL button is pressed, then the PAFL physical output is only the single selected AFL.

When the AFL button is released, then the PAFL physical output returns to the selected PFL(s).

AFL is exclusive.

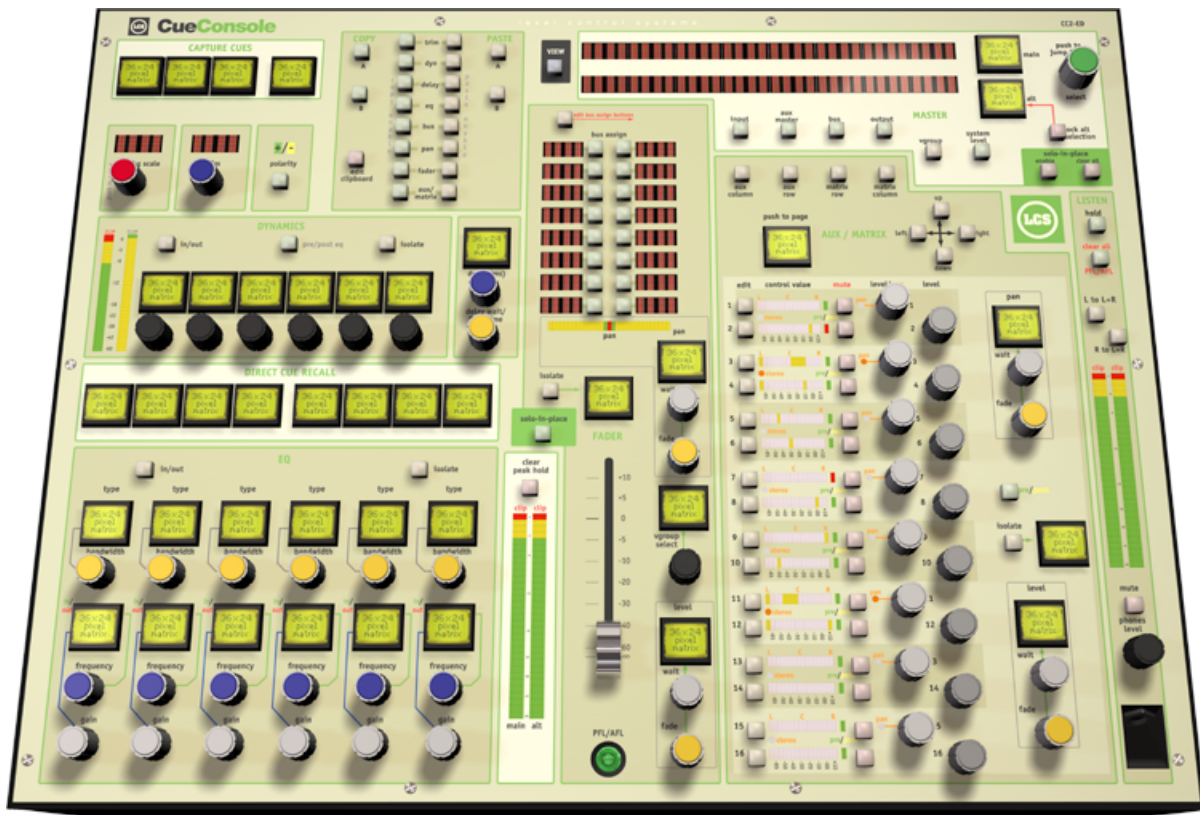
There is no 'Hold' function for AFL. When AFL for a mono output is selected, the previous selection is automatically de-selected. When AFL for a stereo output is selected, both left and right of that output are automatically selected. This action de-selects the previous AFL selection.

There are two AFL channels available. AFL1 is independent of AFL2.

# Editor Module (CC2-ED)

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The Editor Module is designed to allow access to a full range of controls for each channel strip in the Matrix3 system. The channel to be edited can be selected by using the “Edit Select” buttons on the Faders and Meters modules, by an external subcue, or by using the “Select” knob on the upper right corner of the Editor panel. When an Editor is assigned to a channel that does not have all of the control points shown on the Editor, those controls not in use will be dark. For example, the EQ, Delay, and Dynamics sections (and others too) will be dark when a Bus Level is selected.



## Module Sections

The Editor controls are grouped into sections by function. These sections are:

### Capture Cues

Four LCD Buttons (Screen-keys) that provide the user controls for the three capture modes plus UNDO. The functions are defined by external subcues and are Capture, Capture Differences, Update, and Undo.

## Analog Scale

The control and display used to set the A/D scale of an Analog Input, or to set the D/A scale of an Analog Output. Making a change to an Ai8 or Ao8 module results in a 10dB step. The control is an encoder with a push switch. This switch must be pressed while the control is turned in order to change the value. This is a safety interlock to prevent inadvertent level changes.

## Trim

The control and display for the Trim parameter.

## Polarity

The control and display for the signal polarity.

## Clipboard

The controls for selecting Clipboard A or B, for selecting which sections of the Editor Module will be copied or pasted, and to put the Editor Module into a mode that uses the displays to show the contents of the selected clipboard and allow editing of that data. The Editor will time-out of Edit Clipboard mode if no controls are altered within a user defined time.

The Aux/Matrix buttons interact with the Aux/Matrix mode buttons when pasting. Only the mode type being displayed will be pasted. When copied, all valid modes will be captured, those these will vary depending on the Editor Mode selected. Editor modes are; Input, Aux Master, Bus, and Output. The matching Aux/Matrix modes are; Aux Column, Aux Row, Matrix Row, and Matrix Column. It is possible to display a non matching Aux/Matrix mode when pasting to an Editor Mode.

## Dynamics

Metering and controls for the Dynamics parameters.

## Delay

Control of the Delay section for inputs and outputs. This includes the Delay Time and the new automation parameters of wait and fade for the delay value. Pressing the LCD button toggles the function of the bottom encoder between delay wait time and delay fade time.

## Direct Cue Recall

These are the eight (8) LCD Buttons (Screen-keys) that are mapped to user assigned cues. One of the intended applications is to be able to send control messages to external effects devices that are patched in the signal chain. The background color and intensity of the LCD button is set by the subcue that maps the user assigned cue to the button.

## EQ

The controls for the EQ parameters. If a band is not enabled, then those controls are dark. If there are more than 6 bands of EQ on a channel, only the first 6 will be shown on the editor.

## View

The View button is a user programmable control that can be assigned to execute a Cue or a Subcue. The intended use is to recall a Client Control Subcue that will set the necessary window views on the operators screen to run a show at the touch of a single button. This is especially useful during production programming where you may need to quickly switch back and forth between editing screens and running a scene. The View button has a blue LED.

## Meter

The Meter section contains two 40 element LED level meters and an ITW button. The button is used to clear any and all Peak Hold displays on the CueConsole MetersPlus modules assigned to the same Edit Group(s) as this editor module. The level meter shows the levels for the current Editor mode. When the Editor mode is showing a



single (mono) channel, then the left level display will be for the MAIN selection, and the right level display will be for the ALTERNATE selection. When the Editor mode is showing a stereo channel, then the level displays are for Left and Right.

## Fader, Bus Assigns, and Pan

The fader section includes the Bus displays and assign buttons, the Pan control and display, a motorized fader, the channel “Solo-In-Place” button, LCD Buttons for Channel Label and fader value, Automation of Fader wait and fade times Pan center, wait and fade times, Fader VGroup assignments, and a button for channel isolate-from-automation.

Use the two LED's in the center (numbers 8 & 9 if you start counting with 1) as the center. This will create a bright spot to “bump” the indication when the pan is centered. The control value LEDs are just a coarse indicator. When you press the edit select button, you get the numeric level in the LCD button to the right.

### Pan Display:

Since there are 16 LEDs across in the bargraph, use the center two to show pan centered. This will give a “bump” in the light level and help signify that the pan is centered.

## Aux/Matrix

The Aux / Matrix section includes mode buttons, navigation buttons to page up/down and left/right, 16 control value displays, 16 edit buttons, 17 mute buttons, pre/post button, Isolate-From-Automation button, 8 pan and 8 stereo LED mode indicators, plus LCD buttons to show the column/row range selected, the Pan wait and fade time for Stereo Aux sends, the level wait and fade times for Aux sends and Matrix cross points, and the Matrix Cross point delay.

## Select

The Select section is used to select the channel to be edited. The main Editor setup subcue is used to define the range of the select knob so that you do not have to dial through all possible channels to make a selection. The channel can also be selected directly using the “Edit Select” buttons on the modules, and by a Subcue. The controls include six buttons for main Editor mode, two LCD-buttons to select between the Main and Alternate channels to be edited, a button to lock the Alternate selection, an encoder to manually make a channel selection, and two line alpha/numeric display to show the channel numbers and names. When the Select encoder is pushed, it is a shortcut to the first channel in the selected main Editor mode. When the Clipboard section “Edit Clipboard” button is active, the display will show that the Editor is editing a clipboard and not affecting a channel.

The channel display shows “\*\*” on the left side when scrolling to a new selection. This is to indicate that the control values on the surface are not updated while you are changing channels.

The Console window strip numbers show in the first three characters of the display, followed by a colon and then a space. Next is the channel label. At the right most side of the display, (reading from left to right), are the processor id, the module position, and the connector number. This would be in the form xx-y-zz where xx is the module id (01 to 32), yy is the module slot letter (caps), and zz is the connector number (01 to 16). The delimiters are “-”.

## Solo-In-Place Master

These are the master controls for the CueConsole behavior for Solo-In-Place. When enabled, Solo-In-Place can be invoked. When not enabled Solo-In-Place function is locked out on the CueConsole surface and cannot be invoked. The Clear All button will flash red whenever any Solo-In-Place button has been pressed on CueConsole or on screen. Pressing the Clear All button will clear all instances of Solo-In-Place whether on screen or on the CueConsole surface.

## Listen

The Listen section is for control of the headphone monitoring function. The Hold button toggles between the PFL/AFL Hold mode (Green LED on) and the PFL/AFL Exclusive mode. When in Hold mode, pressing additional PFL or AFL buttons will add them without clearing the currently pressed buttons. When Hold is off (Exclusive mode enabled), Pressing a PFL/AFL button will first clear any other PFL/AFL buttons that are engaged. You can still press more than one PFL/AFL button as long as you do it at the same time. The Clear All button clears all PFL/AFL selections.

For the L to L+R and R to L+R buttons: If both buttons are off, then you have normal stereo monitoring. If only the L to L+R button is pressed, then you have only the left signal being sent to both headphones. If only the R to L+R button is pressed, then you have only the right signal being sent to both headphones. If both buttons are ON, then

you have mono monitoring AND the signal levels for the Left source and the right source are reduced -3dB so that you don't have an amplitude bump.

The Mute button mutes the audio signal to the front and rear panel headphone jacks.

The meters in the Headphone section reflect the signal level from the designated analog output of the system that has been configured to feed the PFL/AFL headphone amp.

## Editor and Aux/Matrix Modes

---

There are logical connections between the Editor mode and the Aux / Matrix mode. These are not hard-coded and it is possible for the operator to select an Aux / Matrix mode independently of the main Editor mode. The controls are arranged so that the most likely to be needed Aux / Matrix mode is aligned under the main Editor mode. These pairings are:

**Table 1. Editor Mode vs Aux/Matrix Mode**

| Main Editor Mode | Aux/Matrix Mode  |
|------------------|--|
| Input            | Aux Column: All the aux sends for that input channel             |
| Aux Master       | Aux Row: Aux sends from all input channels to that aux send      |
| Bus              | Matrix Row: Matrix cross-points for that bus to each output      |
| Output           | Matrix Column: Matrix cross-points for that output from each bus |

## Clipboard Section Details

---

The Editor has two local clipboards that allow the user to copy and paste eight sections. The sections available to the clipboard are:

- Trim
- Dynamics
- Delay
- EQ
- Bus Assign
- Pan
- Fader
- Aux/Matrix

The clipboards are labeled A and B.

The Edit Clipboard function will put the Editor Module into a mode that uses the displays to show the contents of the selected clipboard and allow editing of that data. When in this mode, the Edit Clipboard LED will flash Red. The Copy A and Copy B buttons are used to select the clipboard being edited. The selected clipboard button will flash green while the other will be dark.

### Copy and Paste

Pressing the Copy button performs a Copy function on the Editor.

Dark means that it is not possible to copy ñ no categories have been selected with the Copy Enable buttons.

Green means that it is possible to copy.

Pressing the Paste button is the Paste Action on the Editor.

Dark means that it is not possible to paste.

When there is data in the clipboard for the selected Paste Enable buttons it will light up yellow.

Yellow means that pressing the button will Paste the selected categories.

If a category is not available to paste, then the enable button for that category is dark.

When Edit Clipboard is Active (it is flashing Red):

Flashing Green Copy A or Copy B button means that the Editor Surface is Editing that Clipboard. The clipboard that is not selected is dark. Pressing a Copy button selects that clipboard for editing. You do not copy to clipboard when in Edit Clipboard mode.

## Copy and Paste Enable Buttons

When Edit Clipboard is NOT active: Dark means that neither copy clipboards have data in them, green means that the clipboard has data for that category.

When in Edit Clipboard mode, ALL categories are active, since they will all have data.



### Note

The state of an enable button (selected or not) should be retained so that when you return to a console mode, or to a channel where that is possible, it will display. So if you have EQ enabled to copy, you dial up a channel that does not have any EQ, the copy button goes dark. If you then go to a channel that has EQ, it goes green.

The Aux/Matrix buttons interact with the Aux/Matrix mode buttons when pasting. Only the mode type being displayed will be pasted. When copied, all valid modes will be captured, those these will vary depending on the Editor Mode selected.

Editor modes are; Input, Aux Master, Bus, and Output. The matching Aux/Matrix modes are; Aux Column, Aux Row, Matrix Row, and Matrix Column. It is possible to display a non matching Aux/Matrix mode when pasting to an Editor Mode.

## Select Section Details

---

The Select section has six buttons to quickly select the range of the Select knob so that you do not have to scroll though the entire range. These are the “Select Range” buttons. If an Edit select button is pressed on the surface, then the associated editor will switch to that channel even if it is not in the range chosen by the select range switches. The use of the Edit select button will change the selected Select Range button. i.e. If you have selected the Output Edit range button so that the Select knob is scrolling the outputs, and you press an Input Edit select button, the Select Range button for Input will light and the one for Output will go dark.

### Select Range Buttons

#### Input

All Console Window inputs.

#### Aux Master

All Aux Masters.

#### Bus Level

Bus Level (Master for Matrix Row).

#### Output

All Output Masters (Master for Matrix Column).

#### VGroups

All VGroup faders.

#### System

The Automated System Level is on the motor fader, the Manual System Level is on the Trim.

## Aux/Matrix Section Details

---

There is a relationship between the Select buttons for the Editor and the controls in the AUX/Matrix section. There are default selections that are made, but you can also change this selection.

**Inputs:** Aux Column

**Aux Master:** Aux Row

**Bus:** Matrix Row

**Output:** Matrix Column

So when Input is selected, the Aux/Matrix section automatically selects Aux Column.

In VGroup and System select, the main select buttons should flash and the Aux/Matrix section should default to dark.

Once you have made a selection, it should be persistent, so that the next time you return to the primary mode, the Aux Matrix selection is the last one you made when in that section.

### Aux Column

When the Select mode is Input, the Aux / Matrix section is Aux sends the default condition and the Aux Column button lights yellow. (Pressing the other buttons on this row will be described later.) The page LCD button will page Aux sends as will the UP and Down buttons. The Left and Right buttons are dark. The page LCD button shows the range of Aux sends displayed below.

The Edit buttons are radio selects (only one at a time active) and choose the Aux Send to be displayed in detail on the right side of the Aux/Matrix section. You can toggle all Edit buttons off. You can not select an Aux that does not exist in the configuration.

The bar-graph is a moving dot display that shows the level of the Aux send graphically. When an Aux is mono, this is a level indication. When an Aux is stereo, the top/odd graph shows Pan, and the lower/even shows level.

The Pre/Post LED is a bi-color that shows Pre or Post setting. Pre is Green.

The Stereo LED light for Stereo Aux sends and indicate which bar-graph represents pan, and which control is pan.

The Grey capped encoders are for the odd channels and become Pan when the Aux send is configured as stereo. The Stereo LED next to the encoder lights orange.

The Black capped encoders are for the even channels and will always be levels.

### Right Side

The details you can control on the right side of the Aux/Matrix section are (from the bottom up):

- Wait and Fade times for the selected Aux.
- Isolate for the Aux Send (not supported yet in firmware).

The LCD button shows the Aux name and the level. Pressing it Mutes that Aux send and the background turns RED (normal state for the button is green.)

Pre/Post selection ITW button selects Pre fader send or Post fader send for the selected Aux send. Green is Pre-fader. Yellow is Post-fader. (If the LED isn't bi-color, then Green is Pre-fader, and Dark is Post-fader.)

If it is a Stereo Aux, then the top LCD button shows Pan Wait and Fade times. The encoders under that LCD set Wait and Fade values for the aux pan.

#### Note:

The three LCD buttons and two ITW switches are dark unless an Aux has the EDIT button pressed.

### Aux Row

When the Aux Row section is pressed, it lights yellow.

The LCD button shows the Aux Row that is associated with the fader (if your primary selection is Aux row) or with the last selected Aux Edit button (if your primary selection is Input). Or a default of Aux row 1 if you are in Bus or Output and have not previously selected an Aux row.

The LCD button will show the Aux Row selected and the range of sends.

Pressing the LCD button will page the 16 encoders through the channels as will L and R.

Pressing UP and DN will select the Aux Row.

## **Matrix Row**

When Matrix Row is selected, you see the Matrix Row.

LCD button shows the bus number and the output range.

Left/Right/Up/Down buttons page Left/Right/Up/Down, respectively.

## **Matrix Column**

When Matrix Column is selected, you see the Matrix Column.

LCD button shows output number and the range of busses.

F5 to F7 buttons page Left/Right/Up/Down.

When the AUX/Matrix selection is not aligned with the Fader the background color of the LCD is changed to yellow. It is green if it matches the primary selection.

When an Aux is Stereo, the Mute button next to the encoder used for Pan stays dark, but centers the Pan when pressed.

## **Pan Section Details**

---

Center LED is Green and lit whenever the pan control is valid. (So when you are looking at System Level or VGroup, the pan display is dark)

When the pan value is exactly 0.00, you have the single LEDs that are adjacent left and right to the center lit red.

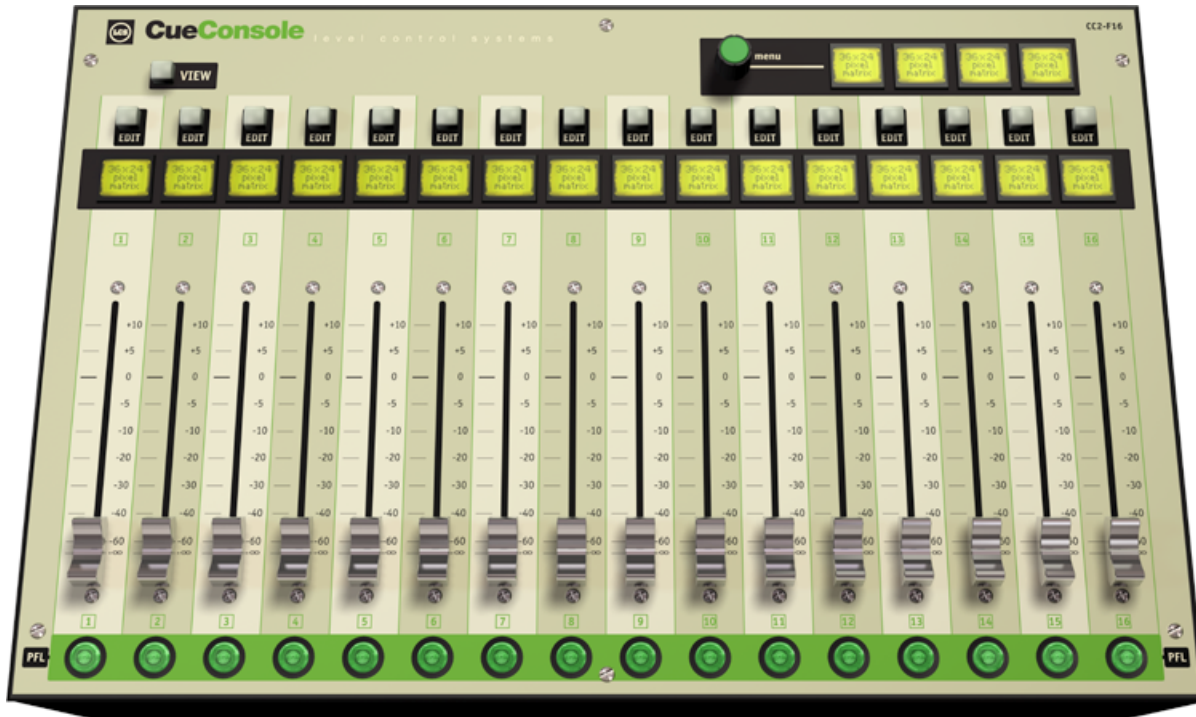
If the pan value moves off exact center, but within the LED tolerance that would not require a complete step, then the reds go dark.

Continued movement will move a yellow dot to show the value.



# Fader Module (CC2-F16)

Module Sections 23



## Module Sections

### Fader Modes

The Fader module supports mixed modes. Individual faders on a module can be assigned by a user subcue and mapped to any control point. The initially supported control points are:

- Input Levels
- Input Trims
- Input Aux Send Levels
- Input Delay
- Input Pan
- VGroup Levels
- VGroup Trims
- Bus Levels
- Bus Trims
- Output Levels
- Output Trims
- Output Delay
- Aux Output Levels
- Aux Output Trims
- Aux Output Delay

- System Level
- System Trim
- Matrix Bus Levels (Matrix Row)
- Matrix Output Levels (Matrix Column)
- Matrix Cross-point Delay

## Navigation

The Navigation section contains an encoder with a switch and four LCD buttons. The function for the encoder is set by the configuration and by a user subcue. The primary reason for including this knob was for flexibility in minimal deployments with the design idea being the ability to display a list of operations on one or more of the Navigation LCD buttons. In a large configuration this control would be mapped to a control point. The push-switch on the encoder should be mapped independently of the rotary encoder.

The function of the four LCD buttons is set by the configuration and by a user subcue. The buttons can be mapped to any user subcue. The default functions for the buttons in a large deployment would be to page the surface.

## Edit Buttons

The Edit buttons have bi-color LEDs. In a minimal deployment these are available to use as level meters, with the intensity and color of the LED showing the dB level. The button function is available to execute a user defined subcue, either exclusive of the EDIT function, or inclusive of that function. The configuration of each switch and LED is set by a user subcue.

## PFL/AFL Buttons

There are 16 momentary buttons with Green LEDs that are used for PFL/AFL. (see PFL/AFL logic elsewhere in this document.)

## LCD Buttons

There are 16 momentary buttons LCD buttons, one above each fader. These are used to display the signal name, the control type and the control value. The first line of text is the control label as shown in CueStation and set by a user defined subcue. The second line of text is the control type. The third line is the control value.

Pushing the LCD button normally toggles the channel in and out of Mute. When a channel is muted, the background color of the LCD button is Red.

The background color for the non-muted condition can be set by a user defined subcue. Choices are Green, Yellow, and Red. The default color for Input Levels is Green. The default color for anything else is Yellow.



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# Meter Module (CC2-M16)

---

|                        |           |
|------------------------|-----------|
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---

The MetersPlus module provides 16 identical channels that contain a meter, two encoders, and seven switches. All switches have fixed functions when pressed. One encoder is used to select a menu of parameters to be controlled by the second encoder.



## Meter Modes

---

The MetersPlus module supports mixed modes. Individual meters can be assigned by a user subcue and mapped to a number of signal points. The supported points are:

- Input Levels
- Output Levels
- Aux Output Levels
- Input Compression
- Output Compression
- Aux Output Compression

## Module Sections

---

### Navigation

While there are no dedicated controls on the MetersPlus to page the module, it can be coupled to a Fader module so that the Navigation controls on the fader also control the MetersPlus. This is implemented via Page Groups.

### Label/Peak LCD Button

The top LCD button on a channel strip is used to display the channel name and the value for the channel fader. The background color is set by the control type normally, but if a Peak event has been detected on that channel the background color is flashed between the type color and Red. The threshold for the peak event trigger is set by a

subcue. The duration of the flashing peak indicator is set with the threshold and can range from 1 second to infinity (does not stop flashing until cleared.) To clear the peak indicator, you can either press the Label/Peak LCD button, or you can use the “Clear Peak Hold” button on the Editor module.

The background color is also used to display the state of PFL for the channel. The normal background color is dim green. When PFL is active, the background color becomes bright green.

## Level Meter

The channel Level Meter normally displays the signal level. The display is a bar graph with the lower section green, a middle yellow section, and a Red LED at the top to indicate 0dBfs and clipping. Clipping is when metering indicates 0dBfs for more than four consecutive poll periods.

The DYN button sets the mode of the meter. For the first release there will be three modes – Level, Dynamics, and Level plus Dynamics. In Level mode, the display shows only the signal level and the DYN button is dark. The button is momentary and pressing it will cycle through the modes.

If the DYN button (Dynamics) is pressed to select Level for the channel, the display will show the signal level as defined in the Meter Scale table following. The DYN button will be dark in this mode.

If the DYN button (Dynamics) is pressed to select Dynamics for the channel, the display will show the amount of compression. The display is an inverted bar graph that starts at the top and grows downward as the amount of compression increases. The topmost LED is green when the signal is –3dB below threshold. The next down is red and lights once signal threshold has been reached. The DYN button will be yellow in this mode.

If the DYN button is pressed to select Dynamics plus Level for the channel, the display will show the level in standard form, but the compressor will be displayed as a moving yellow dot with a 2 second persistence. The green –3dB below threshold, and red threshold indications will not be used in this mode. The DYN button will be green in this mode.

## Mute and Isolate Buttons

These controls match the functions in CueStation. When the Mute button is active, no audio is passed. When the Isolate button is active, the channel will not be affected by automation.

## VGroup/Parameter LCD Buttons

The second LCD button shows the Virtual Groups assigned to that channel, the parameter for data knob, and the current data value for that parameter.

The first line of text always displays the two VGroup assignments in the form nn//xx . If no VGroup is assigned to the channel, the background color is Green. If a channel is assigned to a VGroup, the background color turns Yellow. If an assigned VGroup is muted, the background turns Red.

The second line of text shows the parameter name (see Menu Knob for a list of the parameter names.)

Pushing this LCD button jumps the data entry menu to a preset choice (menu shortcut no. 1). Menu shortcut no. 1 is programmable with a user subcue.

## Parameters Menu

The menu of parameters that can be edited:

- VGroup 1 Assign
- VGroup 2 Assign
- Fader
- Trim
- Pan
- Delay
- Aux Send
- Aux Pan

Pushing the menu knob activates the switch. The switch jumps to a preset choice that is independent of the second LCD button choice (menu shortcut no. 2). Menu shortcut no. 2 is programmable in the mixer configuration window as well as by a user subcue.

### Data Knob

Edits the data selected by the Menu knob. The value is displayed in the VG/Menu LCD button. The smallest incremental change should default to 1 db. The smallest incremental change value is set by a user programmable subcue. The control will always round to the next value for this smallest value. e.g. If the LCD is displaying 1.6dB and the smallest incremental change value is set to .5, then moving the encoder knob clockwise will round up to 2.0, and the next step will be 2.5, etc. Moving the encoder knob counter-clockwise will round down to 1.5, and the next step will be 1.0, then 0.5 etc.



#### **Important**

Rounding will be different for Compressor Ratio.



# Transporter Module (CC2-TP)

Module Sections 29

The Transporter module is designed to show the active cue name and number, the standby cue name and number, provide controls to execute the standby cue (GO), select and position the cue list, and to directly execute and update assigned cues. The Transporter module also includes controls and displays for the overall operation of the system. These global controls include Included are two buttons labeled 'A' and 'B'.



## Module Sections

### CueConsole Status Button

There is an LED pushbutton that is labeled “CueConsole Status”. The bi-color LED is used to display the status of both the server and the network connection to the module. As long as the server is running correctly, this LED will display Green. If there is a communication fault, the LED will latch RED for 2 seconds. If communication resumes, the LED will return to green. If communication remains down, the LED flashes RED. The LED will be dark if there has not been a connection since power up.

If there is more than one communication fault per unit time, then the LED will display Yellow until the error event rate returns to acceptable.

Pressing the button will cause a log entry to be generated that lists all modules and details about those modules (firmware version, IP address, and other info that is useful).

### Active Cue Display

This is the upper line of the text display, and always shows the Active Cue.

### Standby Cue Display

This is the second (bottom line) display. Default bottom line display is the Standby Cue (Cue-On-Deck) and the Standby button will be light green. It will display the Cue List if the Cue List selection button directly to the right has been selected.

### Menu Knob: Standby Cue/Cue List

If the Standby Cue button is pressed, the bottom text line shows the current Standby Cue and the button will be lit Green.

Rotating the Menu encoder will scroll through the cues in the active cue list. Pressing the encoder will jump the selection to the end of the list. (since we already have a button to jump to the top of the list.)

If the “Cue List” button is pressed, the bottom text line shows the current selected Cue List and the button will be lit yellow.

Rotating the Menu encoder will scroll through the available Cue Lists; however, it will not change the active Cue List. You must press the encoder to change the cue list. To quickly go back to the current list all you need to do is toggle out of Cue List and then back in. This can be done by pressing the Standby Cue button and then pressing the Cue List button.

The Active Cue List has the prefix “Active” in the display. When you press the encoder to set the displayed Cue List as the Active Cue List, the mode automatically changes to Standby Cue and the Standby Cue button lights green.

## **Standby Cue Button**

Pressing the Standby Cue button at any time will change the bottom text line to show the Standby Cue. Standby Cue is exclusive with Cue List.

## **Cue List Button**

Pressing the Cue List Button at any time changes the bottom line to show the current selected Cue List. Cue List is exclusive with Standby Cue.

## **Direct Cue Recall Buttons**

LCD Buttons that can be mapped to execute a Cue recall or a Subcue recall.

## **Update Cue Buttons**

When the update Enable button is active, these buttons are active and light up yellow. When update is not enabled, these buttons will be dark. The update button can be mapped to recall any Cue or Subcue. The intended use is to be assigned to an update cue subcue to update the contents of the adjacent Direct Cue Recall LCD button.

## **Enable Update**

When update is enabled by a subcue or by pressing the Enable button, the switch will light up red and the Update buttons will light up yellow. When update is not enabled, the button will be dark.

## **Phones**

Controls headphone output volume.

## **"A" Button**

Reserved for "Track-From-Top". When this button is pressed, all control points will be updated to reflect the state of the mixer, as if all cues before the current cue-on-deck had been recalled in order.

## **"B" Button**

“Preview” (Deaf mode). When implemented, this will put the entire CueConsole surface “offline” and will show the control positions for the Standby Cue. The Preview button must be held in place. If released the CueConsole will revert to active.

## **Fader LCD Button**

Push to switch to Manual System Level in default mode. This button can be mapped to alternative behavior.

## **Log Alert Button**

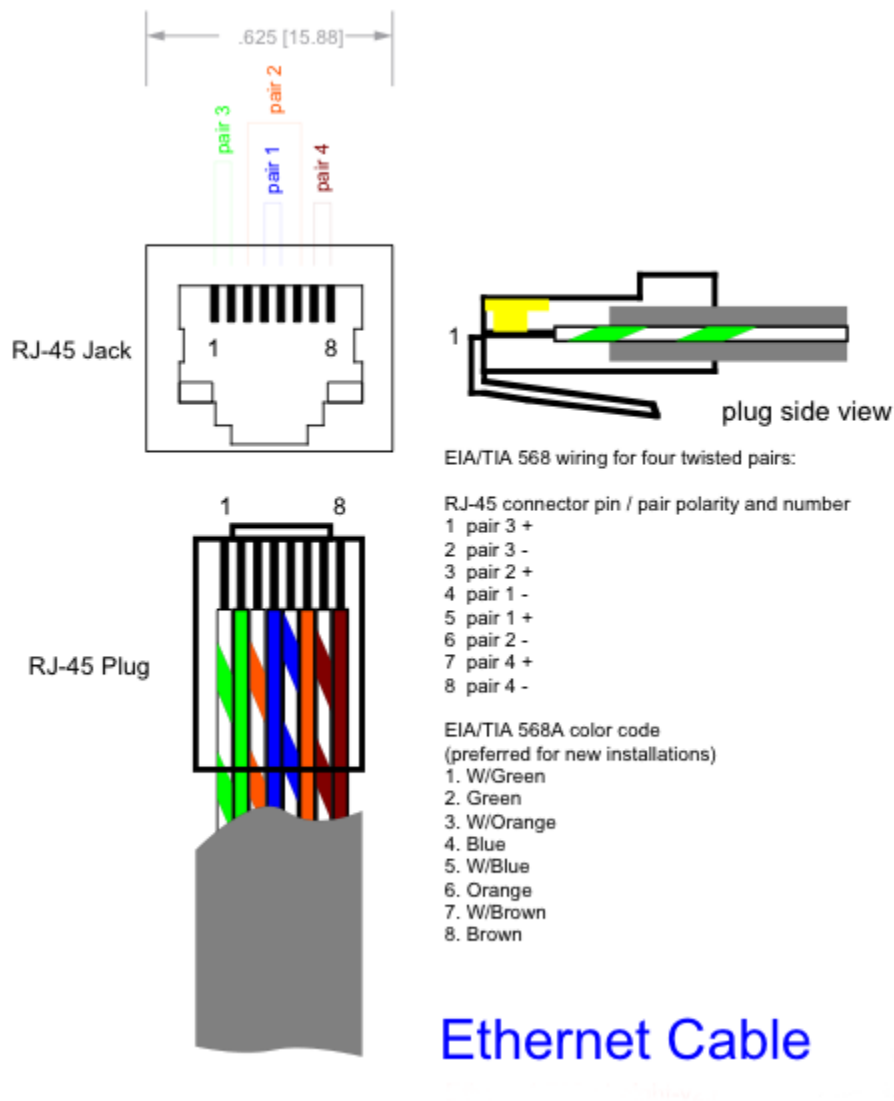
Latches on to display a notice to the operator to look at the log window. Pressing the button will cause the log window to be displayed, and reset the alert.

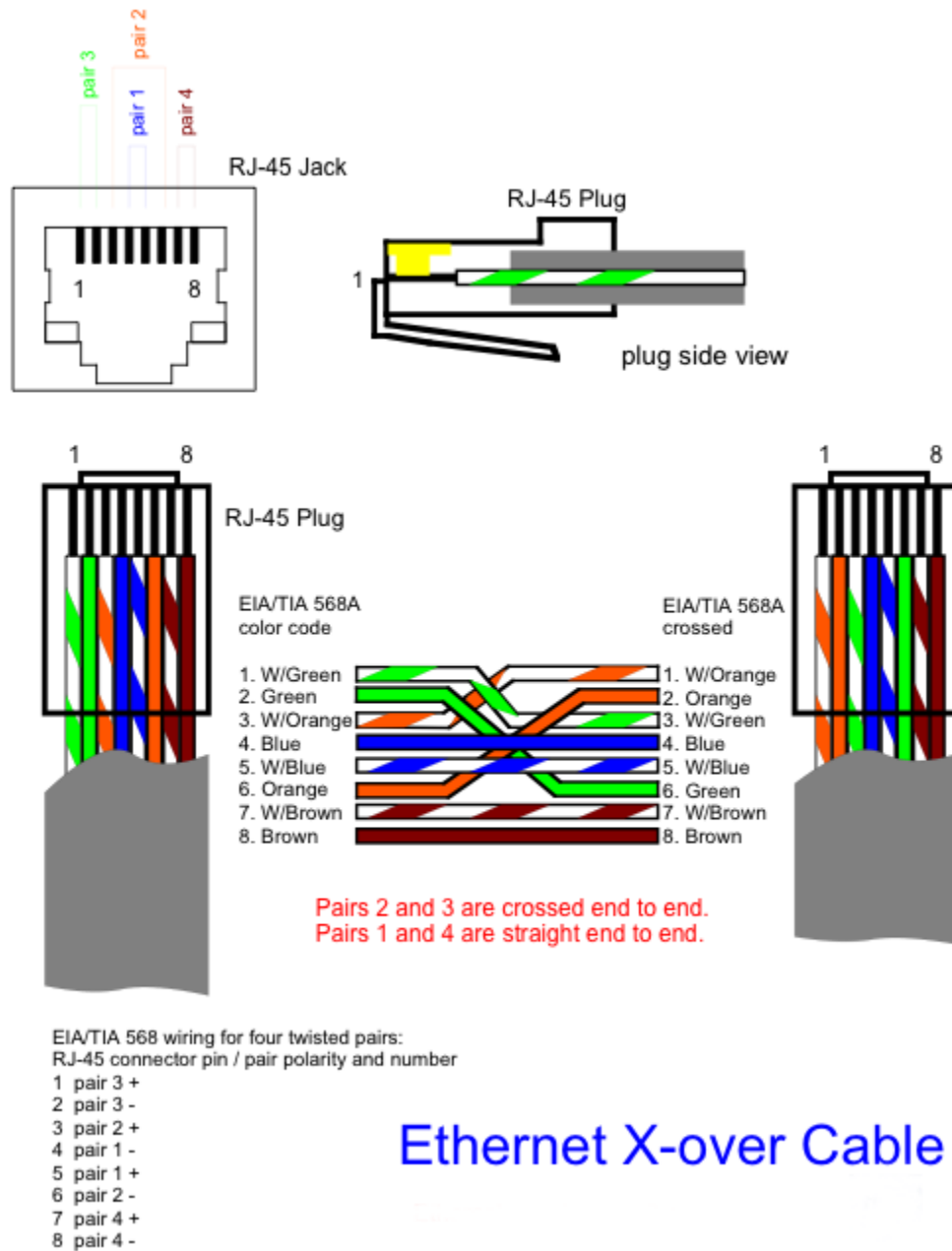
# Appendices

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## Cables

CueConsole modules use IEEE 802.3 Ethernet connections. All wiring must comply with the EIA/TIA 568 standard. Meyer Sound suggests using the EIA/TIA 568A color code standard for wiring CAT5 cables, as shown below. All network wiring must support the IEEE 802.3 standard. All connectors are wired to the EIA/TIA 568 standard.





## Fader Calibration

This section applies to the CC2-F16, CC2-TP, and CC2-ED with firmware version 1.35.

1. Disconnect the module from the network, or un-map the module.
2. Press the LCD button labeled "PRESS FOR CONFIG".
3. Align all faders to  $-\text{inf}$ .
4. Press the LCD button labeled "SET TO  $-\text{INF}$  &PRESS".
5. Align all faders to  $+10$ .
6. Press the LCD button labeled "SET TO  $+10\text{Db}$  &PRESS".

Faders will automatically move to  $-\text{inf}$ , the up to  $+10$  and then to zero (unity).



## Fader Scale Details

---

This table describes the relationship between level, in dB, and fader location, in millimeters.

**Table 2. Control Resolution**

| Level (dB) | Distance (mm) |
|------------|---------------|
| +10        | 100           |
| +5         | 88            |
| 0          | 76            |
| -5         | 64            |
| -10        | 52            |
| -20        | 40            |
| -30        | 28            |
| -40        | 16            |
| -60        | 4             |
| off        | 0             |







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