

FAIRLIGHT

Fairlight EVO/EVO-M

Installation/Service Manual

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Obtaining Technical Support

Users requiring technical support should contact their local Fairlight distributor.

Information can also be found on the World Wide Web at:

<http://www.fairlightau.com>

Manual Errors and Omission

To help ensure that Fairlight provides the most accurate and comprehensive documentation, please report any errors or omissions to:

documentation@fairlightau.com

Introduction

The Fairlight EVO and EVO-M Audio Mixing and Editing consoles are the latest development in the successful line of CC-1 powered systems.

About this manual

This manual provides information for Fairlight service personnel to maintain and repair EVO Console systems.

System Overview

The EVO system is made up of three interconnecting components:

- EVO Console mixing and editing surface
- CC-1 Audio Processing Engine/PC
- SX20 or SX36 I/O synchronisation box

Equipment supplied

The following list includes all materials supplied with a new EVO Console.

EQUIPMENT SUPPLIED	PART NUMBER	Qty	CHECK LIST
EVO Chassis Assembly	1EVO-1FRAME-DE 1EVO-2FRAME-DE 1EVO-3FRAME-DE 1EVO-3.3FRAME-DE 1EVO-4FRAME-DE 1EVO-5FRAME-DE	1	
EVO Leg Assembly (Left + Right pair)	1EVO-8-LEG 1EVO-0-LEG	1	
Upper Panel Profile Assembly	1EVO-PROFILE-15 1EVO-PROFILE-30	As specified	
EVO XCS Editor Panel Assembly	1EVO-XCS	1	
EVO Fader Panel Assembly	1EVO-FP	As specified	
EVO ILP Assembly	1EVO-ILP	As specified	
EVO Universal Screen	1EVO-SP	Minimum 1	
1EVO-SCR-INFILL1	1EVO-1/3 TFT Screen Infill Panel	As specified	
1EVO-SUB-TB	1EVO-Track Ball Sub	As specified	
1EVO-SUB-VID	1EVO-Video Sub	As specified	
1EVO-SUB-JS	1EVO-Joy Stick Sub	As specified	
1EVO-SUB-MC	1EVO-Monitor Sub	As specified	
1EVO-SUB-AC	1EVO-Automation Sub	As specified	
1EVO-SUB-8-Switch	1EVO-Ancillary Sub	As specified	

1EVO-SUB-IP	1EVO-IntelliPad Sub	As specified	
1EVO-SUB-XLR	1EVO-XLR Connector Sub	As specified	
1EVO-SUB-MP	1EVO-Mouse Sub	As specified	
1EVO-SUB-3x2-BL	1EVO-Blank 3 x 2 Sub	As specified	
1EVO-SUB-2x2-BL	1EVO-Blank 2 x 2 Sub	As specified	
1EVO-SUB-1x2-BL	1EVO-Blank 2 x 1 Sub	As specified	
1EVO-SUB-1x1-BL	1EVO-Blank 1 x 1 Sub	As specified	

Static Precautions

Please take note that all Fairlight manufactured electronic modules are static sensitive and should be handled under anti-static conditions. When working on a system always ensure that you have an anti-static lead connected and that the system is connected to ground through an earth lead.

Never work on the system while powered up unless you are authorized by Fairlight to do so. As a matter of practice always touch the external chassis of the system before opening the front panel. If cards are not handled under anti-static procedures, your machine may sustain damage which could either cause a complete failure or may cause intermittent crashes and subsequent system failure.

When handling cards please ensure that they are placed in anti-static bags when not in the system. For shipment purposes electronic modules should be placed in an anti-static bag and then suitably surrounded with loose packaging materials in a solid card board box. Cards shipped to Fairlight without the correct anti-static packaging will have their warranty voided. If you have any enquiries on this matter please feel free to contact your local Fairlight office or distributor.

Environment

The system is designed to be operated in a clean air-conditioned environment. Generally, an area comfortable for people (20°C - 24°C) should be suitable. The rack mounted units use fans for ventilation. Users may find it desirable to install these units away from the operator/console location.

Make sure that the rack unit has access for cool air to flow through the opening on the front of the CC-1 PC and expel warm air from the back.

As with all computer systems, the EVO Console will operate more reliably if static generating floor coverings are avoided. Ensure that the console is placed on a level surface with sufficient load bearing capacity.

Do not fit the CC-1 PC into a closed environment except where ducted cool air is forced through the Unit. Do not run the unit whilst it is on or near the ground as it will accumulate dust, which may eventually cause a failure.

Please Avoid:

- Fitting the CC-1 PC or Console where air circulation will be restricted
- Installing CC-1 PC or Console close to heat source
- Installing in dusty or damp area
- Installing in area subject to vibration
- Installing in area with strong magnetic or electric fields

Tools Required

The following tools are considered the minimum requirement for installation of an EVO console. Additional items may be necessary for on-going maintenance.

- 24mm Ratchet Socket Spanner
- 6mm flat blade screw driver
- #2 pozi-drive screw driver - magnetized
- 4mm hex key
- #2 pozi-drive screw driver
- 5.5mm nut spinner
- 7mm nut spinner

Hardware Installation

Unpacking Console from Shipping Crate

The typical EVO console is shipped in a palletized crate. The unpack sequence is as follows:

- Using a power screwdriver with Phillips #2 bit, unscrew and remove crate lid
- Unscrew and remove front and rear console support bars from the crate
- With adequate manpower available, lift the console chassis clear of the crate
NOTE! Console Chassis can weigh a significant amount! Do Not Attempt to lift a Console Chassis by yourself!
- Remove Console Chassis Leg components from crate

Leg Assembly

The leg assemblies are reasonably simple to assemble.

NB Right leg assembly is shown in the example.

- Place the Leg assembly face *down* on a flat surface
- Remove 4x Pozi #1 screws from locations shown
- Carefully turn the leg assembly over so it is facing *Up*, and remove the Dress Panel
- Locate and align the Leg, Foot, Foot Anchor Plate, and Bolts as shown



- Using a 25mm Socket driver, assemble the Leg, Foot, and Foot Anchor Plate as shown.
NOTE! The long end of the Foot Anchor Plate should be oriented to the *Front* of the assembly.



The resulting Leg Assembly should look similar to below.



Console Chassis Assembly

Attaching the Console Legs to the Console Chassis is not particularly difficult. However, suitable temporary supports will be required for the Console Chassis during this procedure.

NB Right leg assembly is shown in this example.

- Ensure the Console Chassis is located approximately at its desired position in the room, and is stable on its temporary supports.
- Remove the 4x Bolts from the end of the chassis



- Slide the Leg Assembly up and into position. There are 2x Alignment dowels which will hold the Leg Assemblies in correct alignment.
- Using a 25mm socket driver, re-install the 4x 25mm Bolts. These will hold the leg assembly in place.



- When both Leg Assemblies are correctly mounted to the Console Chassis, carefully remove all temporary supports, and place the Console Chassis into final position.



Chassis panel preparation and assembly

The EVO console surface is comprised of a series of Panel Assemblies. Each Panel Assembly commonly consists of

- a lower control panel (XCS, Fader, or Blank)
- an upper control panel or set of subpanels (ILP, Monitor, Automation, Blank, etc)
- and an EVO Touchscreen assembly

held together by a pair of Datum Arms and optional Risers. The basic Panel Assemblies are shipped in position in the Console Chassis, with the Touchscreens shipped separately. It is recommended to mount the Touchscreens to the basic panel assemblies before cabling and permanently installing the Panel Assemblies in the Console chassis.

NOTE: Ensure a clear flat static-safe work surface is available for this procedure!

- Using a 5.5mm nut spinner, undo the long-nuts holding the Console Chassis front Nosing piece in position.
- Lift and remove the Console Chassis front nosing piece clear of the Console chassis.
- Lift the front edge of the basic Panel Assembly, it will hinge up from the rear.
- Firmly grasping the basic Panel Assembly, lift it out and clear of the console chassis. Set the basic Panel Assembly on a suitable flat work surface.
- Mount the Touchscreen to the Basic Panel Assembly, ensuring that the alignment of the leading-edge metalwork is appropriate. Ensure that all Touchscreen cabling is not pinched, bent, or otherwise damaged during this procedure.
- Install 4x Panel Mounting screws to anchor the Touchscreen in position.

Panel installation

- Lift the resulting Panel Assembly clear of the worksurface, and remount it back into the console chassis.
- Ensure the Support frames are in the *Up* position to support the panel Assembly as the panel Assembly is installed.



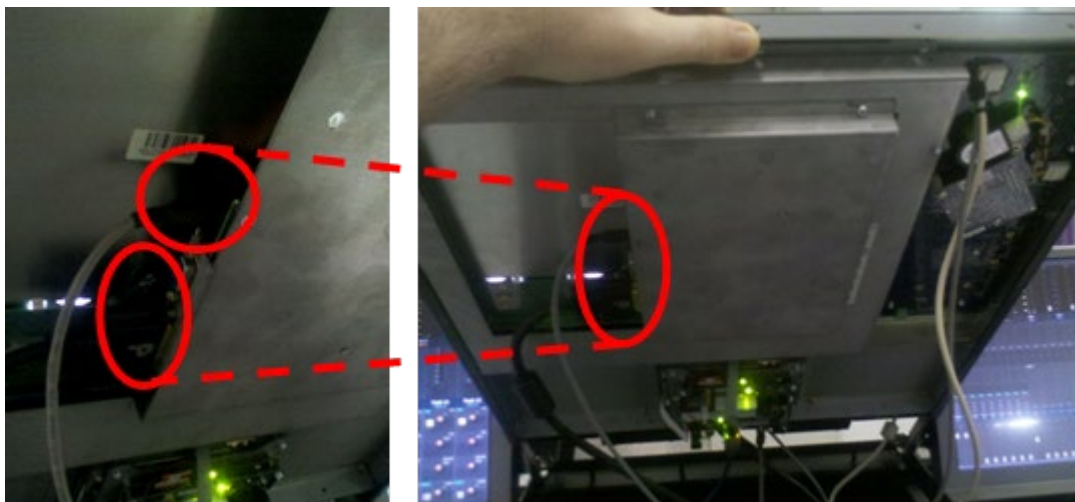
Panel cabling

Each Panel in a panel Assembly requires a Power and Control connection. The majority of EVO panels are powered directly from the Console Chassis, and receive control signals from the Ethernet switch mounted in the console Chassis. Cables are shipped in a dedicated bag, separately from the console chassis.

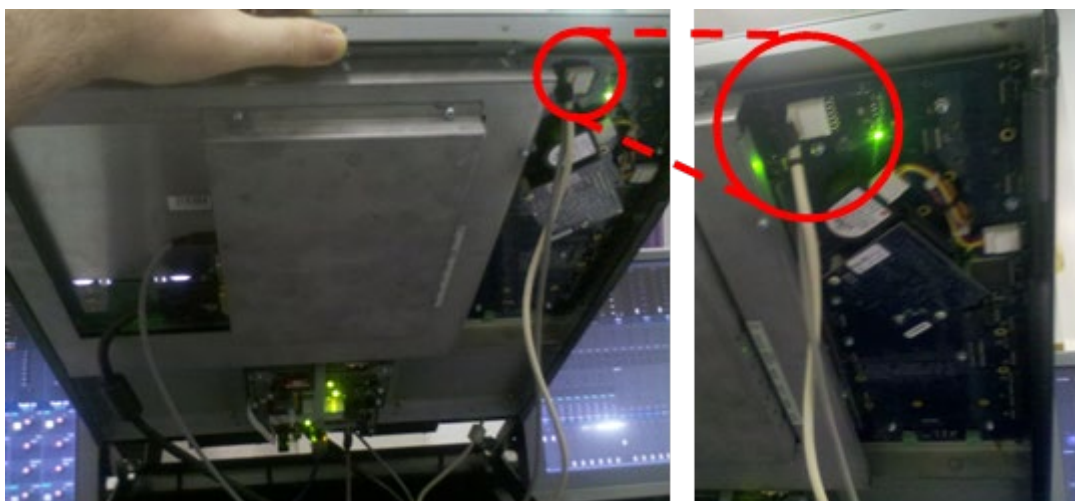
XCS Panels

The XCS editor panel is a specialised panel, with a number of connections to be achieved.

The XCS TFT display requires DC power and DVI-D connection. These are accessible from the left hand side of the panel. The DC power is provided by a barrel connector, and takes power from the nearest Power Distribution Board (PCB3) located in the console chassis. The DVI-D connection will need to be connected via a suitable cabling solution to the Host PC graphics card.

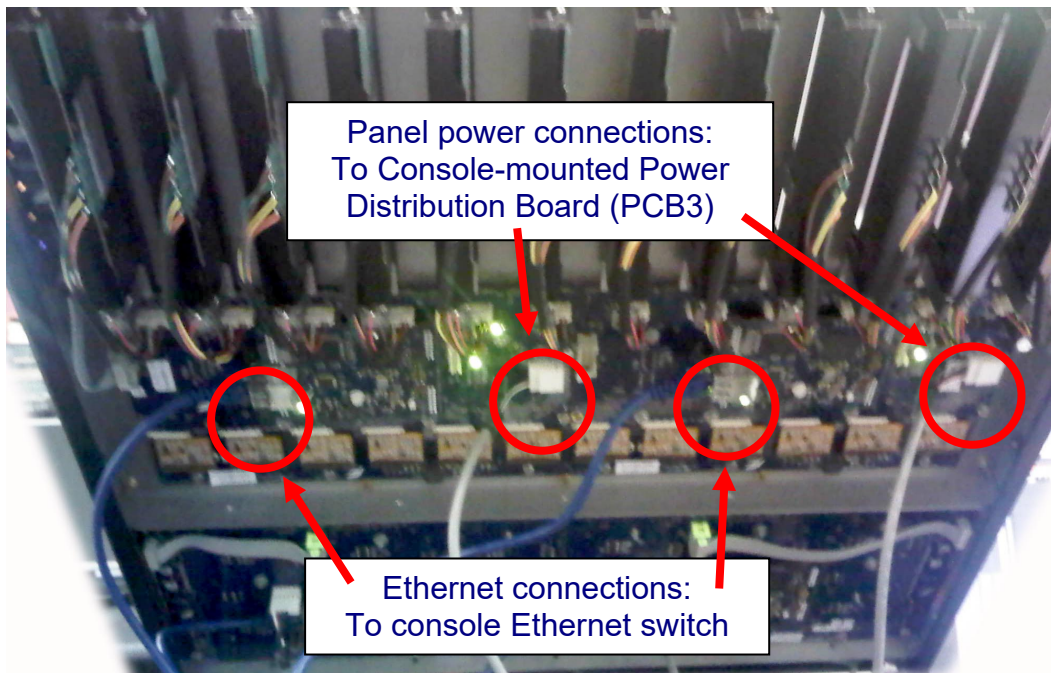


The XCS panel sends and received commands, and receives panel power via a single USB/Power cable. This connects to the XCS on the right hand side. The 10-way power connection should be connected to the nearest PDB3 unit, mounted in the console chassis. The USB-A connection will need to be connected via a suitable USB cabling solution to the Host PC.

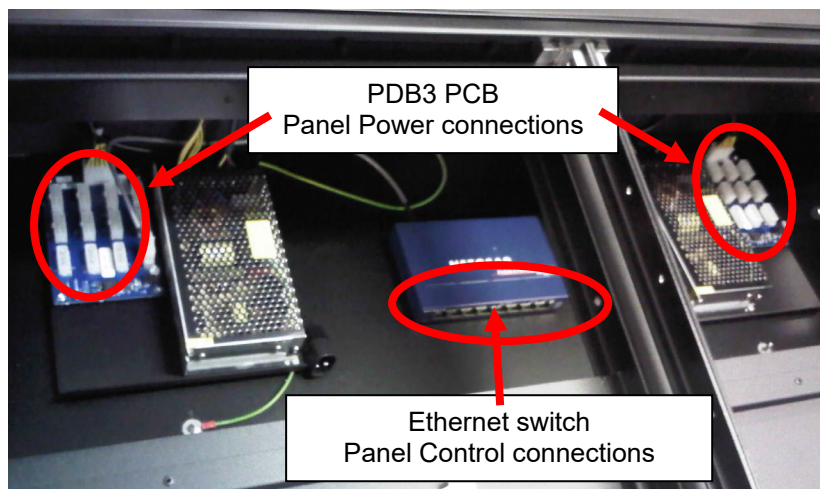


Fader Panels

Each 12 channel Fader panel is equipped with 2x 6 channel fader PCBs. Each PCB requires dedicated Power and Ethernet cabling. Connect the Power and Ethernet cables to the panel as shown.

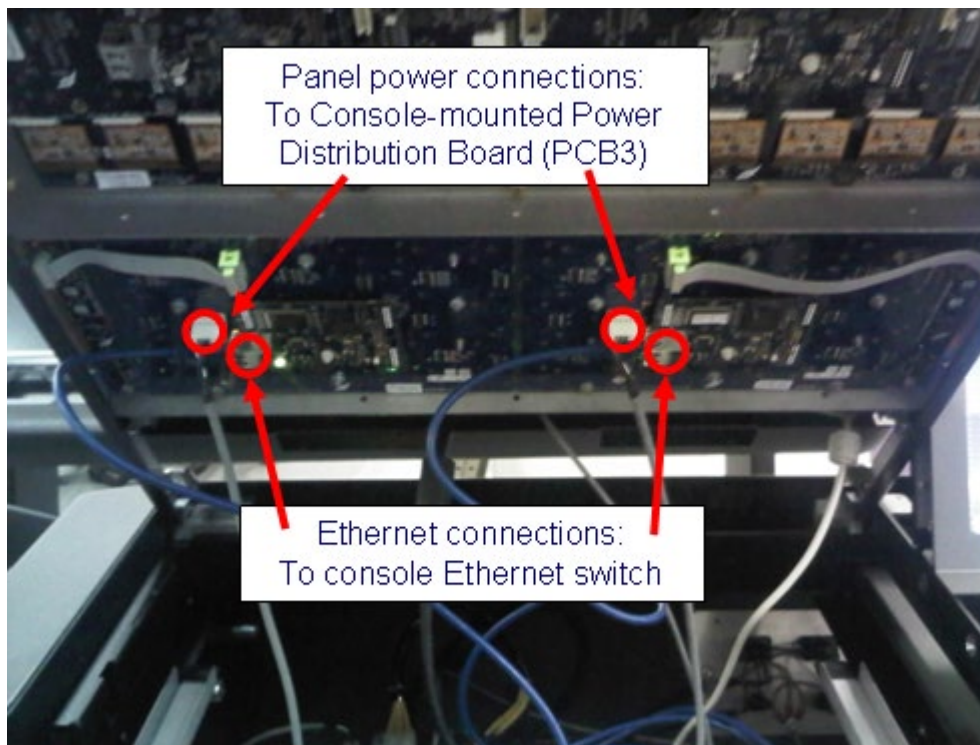


Connect the Power cables to the nearest PDB3 unit, mounted in the console chassis.

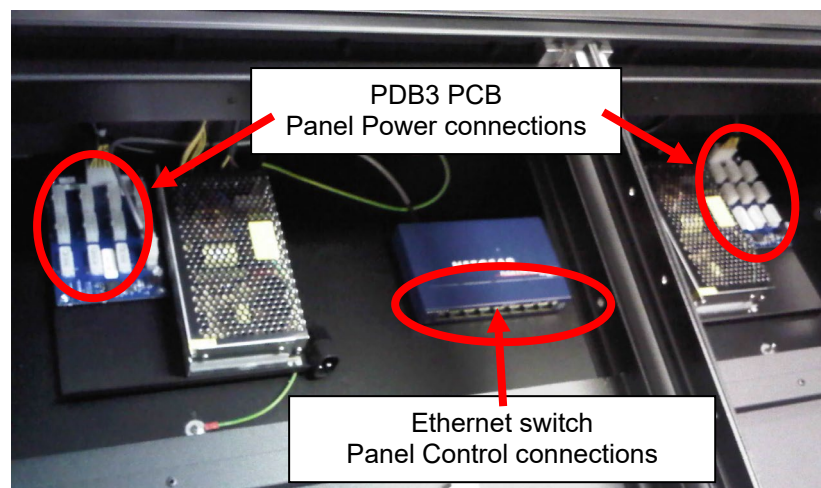


ILP Panels

Each 12 channel ILP panel is equipped with 2x 6 channel ILP PCBs. Each PCB requires dedicated Power and Ethernet cabling. Connect the Power and Ethernet cables to the panel as shown.

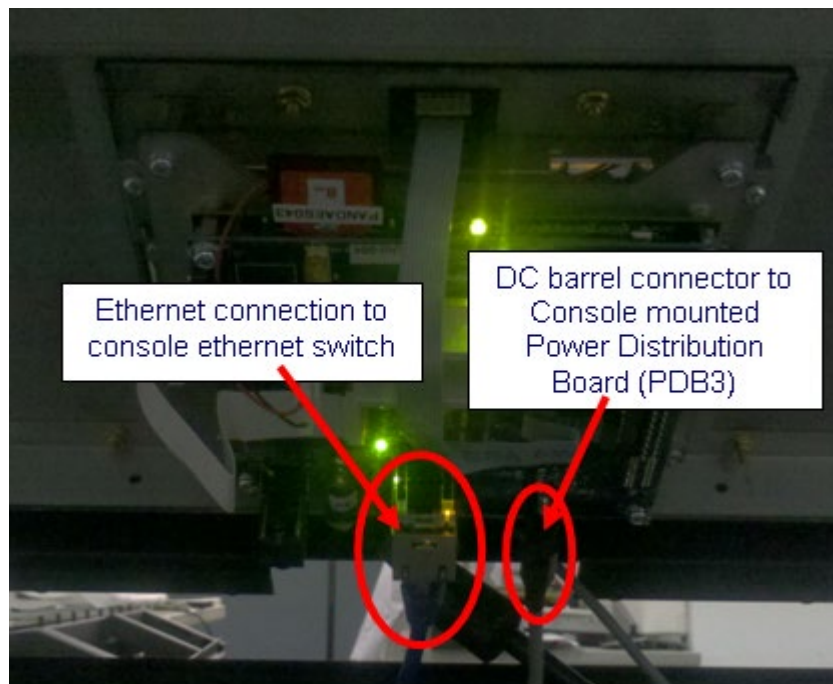


Connect the Power cables to the nearest PDB3 unit, mounted in the console chassis.

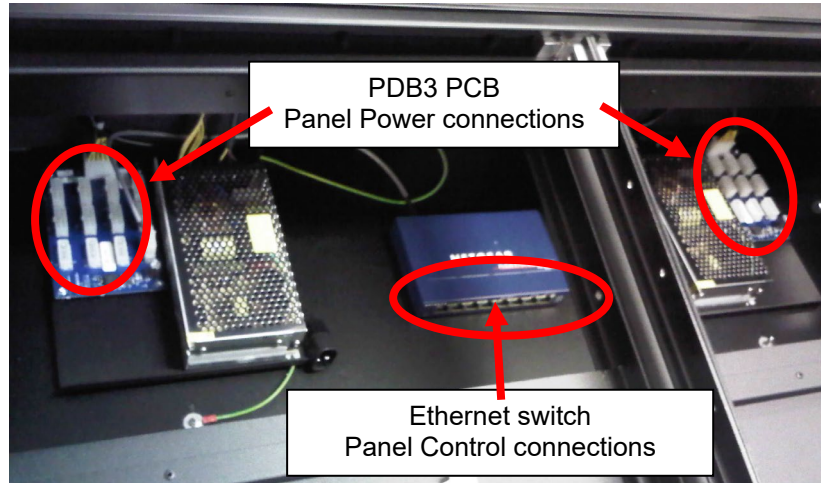


Intellipad Subpanel

Each Intellipad PCB requires dedicated Power and Ethernet cabling. Connect the Power and Ethernet cables to the panel as shown.

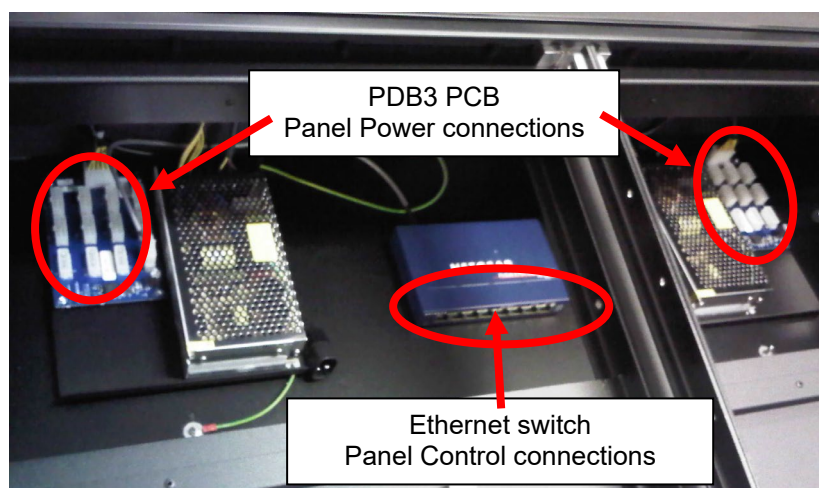
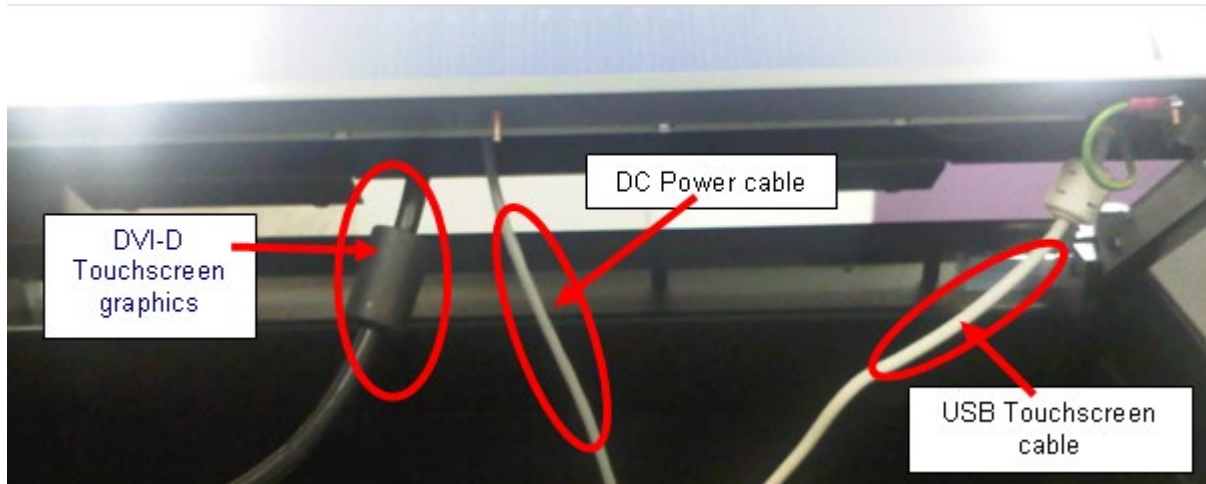


Connect the Power cables to the nearest PDB3 unit, mounted in the console chassis.



Touchscreens

Each EVO Touchscreen requires 12VDC power connection and DVI-D signal connection. These cables are captive to the Touchscreen units. The 12VDC Power cable can connect directly to the nearest PDB3 PCB located within the Console Chassis, as shown.



The DVI-D signal connection will likely require additional cabling or extension in order to connect to the Host PC. It is expected that in most EVO installations, the EVO Console and Host PC may be separated by many metres. As such, supply and configuration of the DVI-D cabling system is left to the end user to match to their particular requirements. For recommendations and known distance limits, please see your local Fairlight representative.

The optional Touchpanels are 3M USB devices. To enable their use, the touchpanels must be connected via USB directly to the Host PC.

Final Assembly and Initial Configuration

- Lower Panel Support Frames and Panels down into position
- Turn on *Only* Primary (Timeline) Monitor #1
- Start Host PC, and configure as required
- Shutdown Host PC
- Turn on *Second* (FMC/Mixer) Monitor #2
- Start Host PC, and configure as required
- Shutdown Host PC
- Turn on *Third* (XCS display) Monitor #3
- Start Host PC, and configure as required
- Shutdown Host PC
- Repeat for all additional Touchscreens (Optional)
- Re-install Front Nosing

Software Configuration

Configuring Fairlight Setup Utility

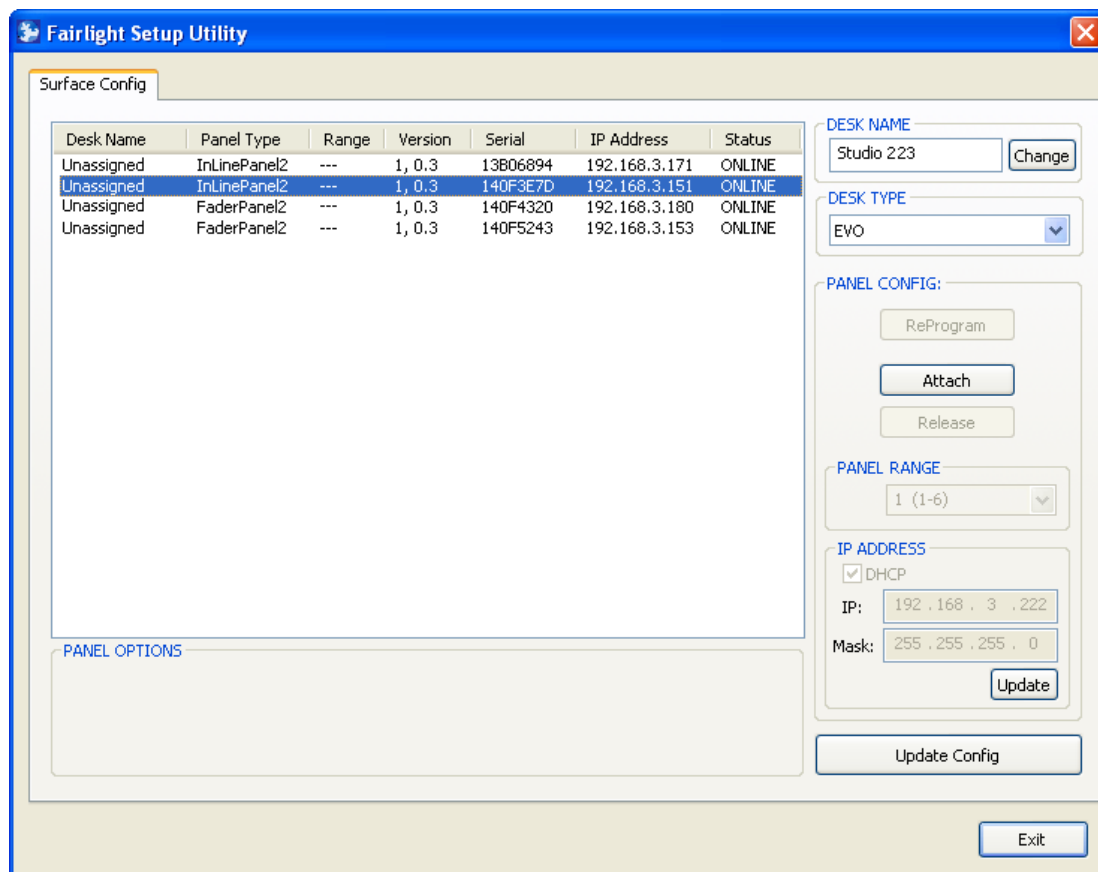
Detection and Configuration of Panels

ILP2 and FP2 panels connect to Ethernet inside your console. Your computer is also on that Ethernet. Our task is to “attach” your panels to your computer.

The term “desk” is used to denote the computer which will attach the panels.

In the simplest situation there are no other computers or panels on your network. Let’s deal with that first. After physically connecting the panels and powering them up, but before starting the audio software, run the application found at **Fairlight → Dream II → Dream II Utils → Fairlight Setup Utility**, which will make the connections for you.

In this illustrated example, there are two ILP panels and two Fader panels on your network, ready to be attached.



The window shows all the devices on your network. Thus far, they are all unassigned.

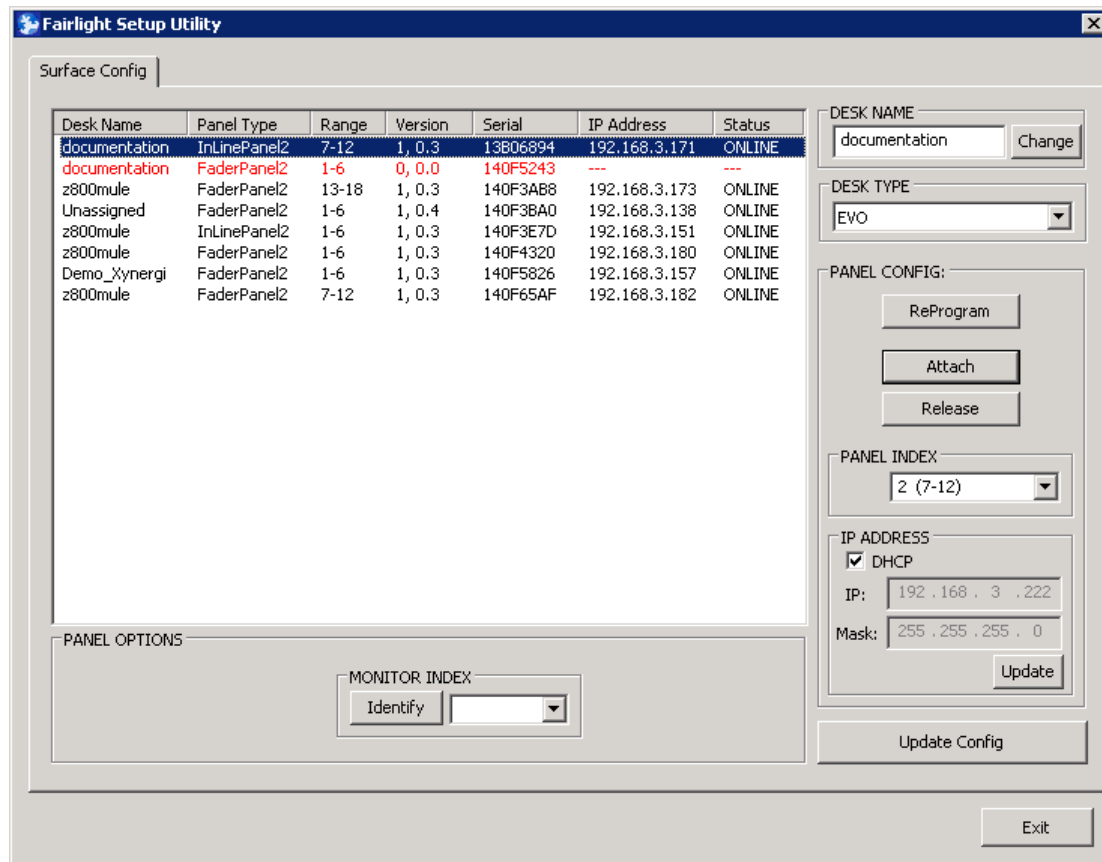
- Step 1 Click one of the devices to select it.
One row of buttons on the device will flash.
- Step 2 Click the **Attach** button.
- Step 3 Select the **panel range**.

Each panel controls 6 channels. Your first panel of either type (ILP or Faders) should take the range 1 – 6, the next one should take 7 – 12, and so on.

Step 4 When you have attached all the panels, click Update Config.

Setting Monitors

Each ILP2 panel will have a screen immediately above. We need to tell the system which screen should service which ILP2. This is also done in the Fairlight Setup Utility, as shown below.



Selecting an InLinePanel that is attached to your system will cause the Monitor Index group to display in the lower part of the window.

Use the drop list to choose one of the monitors, which will associate it with the selected ILP. This must be done for each ILP attached to your system.

IP Addresses

Networks are complex things. One of the most important aspects of running them is to ensure that every device your network can see is distinguished from every other. This is done using IP addresses –each device IP address must be different from all the others on your network.

Fairlight has designed the new panels to sort out IP addresses automatically in most cases, but your network setup might require special attention. Here is how the panels work.

When an unassigned panel is first exposed to your network, it is set to look for a DHCP server. This means it can be given an IP address automatically, one that is guaranteed not to clash with any other on the network.

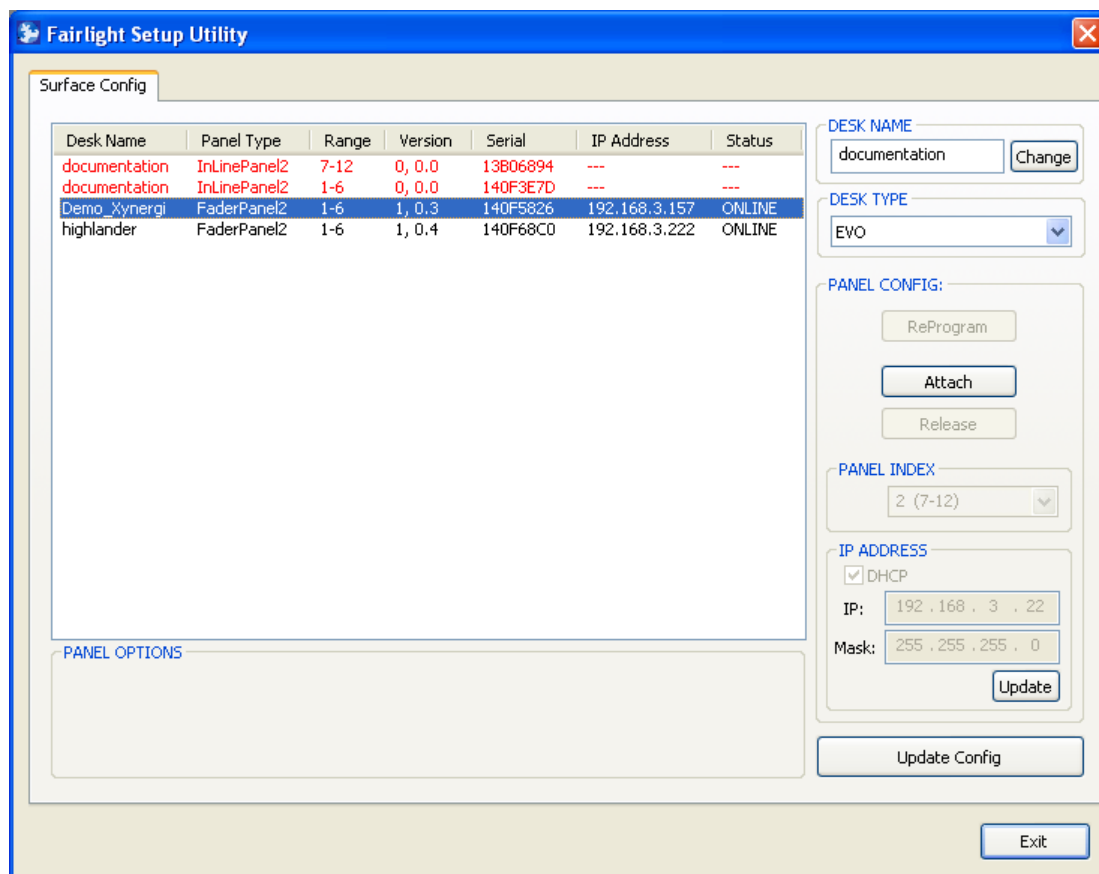
If no DHCP server is available on the network, the panel reverts after 30 seconds to an internally-generated IP address. This is based on an ID chip in the panel, and can produce a range of up to 256 IP addresses. This makes the likelihood of a clash very small.

In many cases your network design will require that you set the IP address yourself. This is easy to do, by selecting a device, deselecting the DHCP checkbox, and entering an IP address.

Complex Networks

In a complex installation, a number of consoles may be operating on the same Ethernet. Because of the nature of Ethernet, all the computers and all the panels on the net will be seen at the same time.

It might look something like this:



This screen shows the following:

- The computer running the application is called "documentation"

- Two panels which were formerly attached to documentation are now disconnected from the network. As a result we don't know what their IP addresses are.
- Two other panels are online, one attached to Demo_Xynergi and one to highlander.

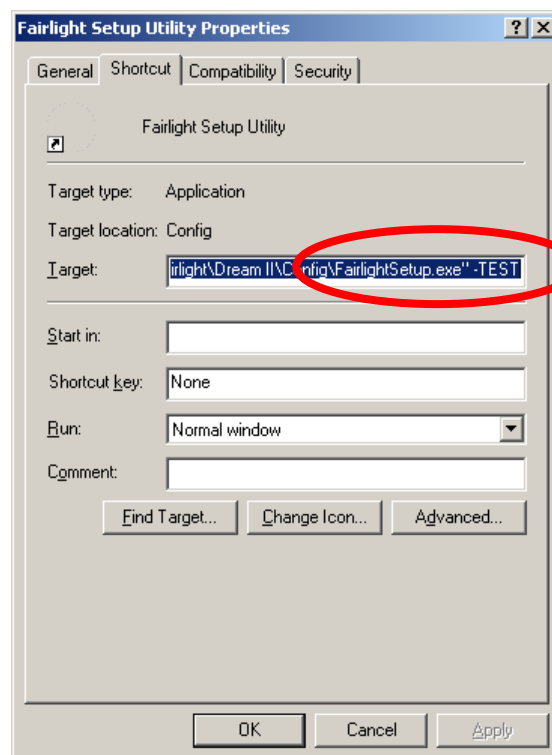
It is important to connect only the right panels to your computer. In the picture above, pressing the Attach button will cause documentation to "steal" a fader panel from Demo_Xynergi. The software will prompt for confirmation, but if you go ahead, it could cause a problem. On the other hand, if you have just physically moved that fader panel from another studio to your studio, you might need to steal it from the desk that was previously attached.

Chapter 3 - Diagnostic Procedures

Basic EVO Panel Diagnostics

Basic diagnostics of all EVO panels is performed via the Fairlight Setup Utility application. To prepare a version of Fairlight setup Utility for Diagnostic purposes, a custom launch shortcut will be required.

- Navigate to
START > All Programs > Fairlight > Dream II > Dream II Utils
- Right-click "Fairlight Setup Utility"
- Click "Send to... > Desktop (create shortcut)"
- On Host PC desktop, locate the shortcut
- Right-click on shortcut
- Click "Properties"
- A "Properties" dialog box will appear. Locate the "Target" field.
- Place the cursor in the "Target" field, and add "-TEST" as shown below



- Click "OK" to confirm this change.

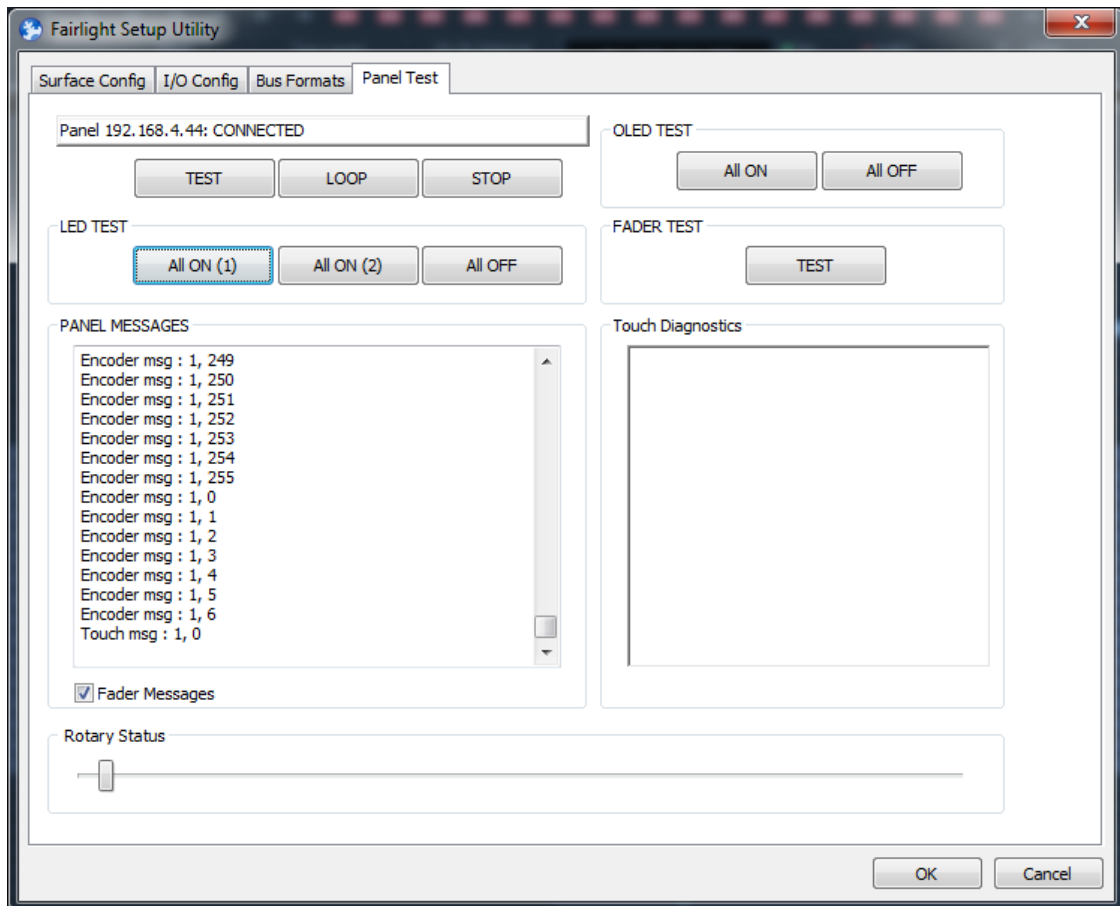
The resulting Desktop Shortcut for FSU is now configured with additional diagnostic functions. Please use this desktop shortcut to launch FSU for the following diagnostic procedures.

Encoder Diagnostics

EVO console panels use custom optical rotary encoders. There is no User Adjustable parameters.

To quickly diagnose whether a given rotary encoder is functioning normally:

- Launch FSU in –TEST mode
- Select the ILP or Fader panel in question
- Select the "Panel Test" tab
- Rotate the encoder in question, and observe appropriate change of values in the Status window. Valid value ranges are 0-255

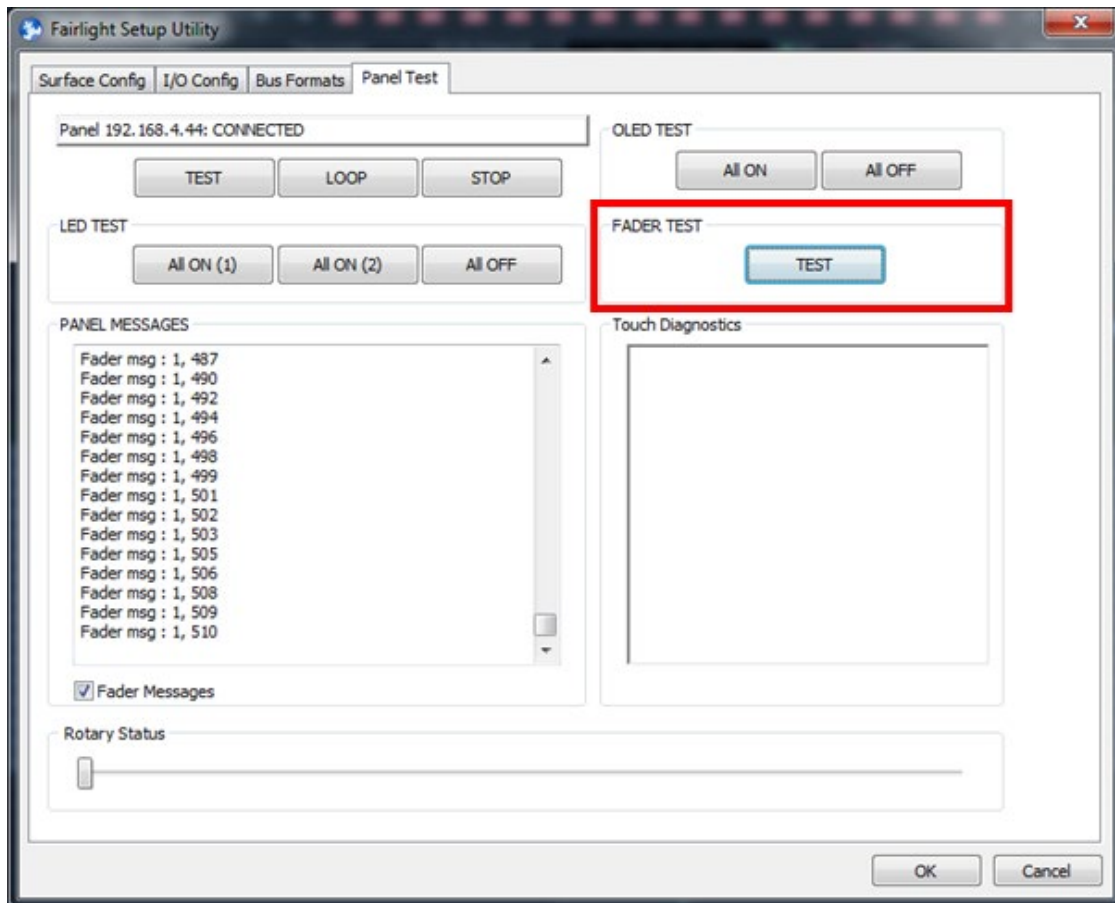


Fader Diagnostics

EVO console panels use high quality custom faders. There is no User Adjustable parameters.

To quickly diagnose whether a given fader is functioning normally:

- Launch FSU in –TEST mode
- Select the panel in question
- Select the "Panel Test" tab
- Click the Fader Test "Test" button, and observe correct operation of each fader



Joystick Calibration and Diagnostics

To quickly diagnose whether a given Joystick is functioning normally:

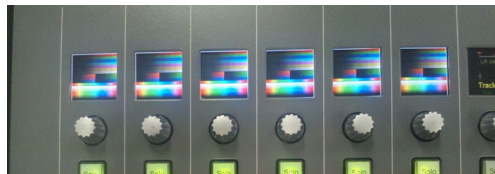
- Launch FSU in –TEST mode
- Select the Fader panel the Joystick in question is connected to
- Physically move the joystick to the Top Left position
- Click the "Top Left" joystick calibration button
- Physically move the joystick to the Bottom Right position
- Click the "Bottom Right" joystick calibration button

LCD Diagnostics

EVO console panels use OLED technology to display information on each Fader Panel Channel strip. There are no User Adjustable parameters.

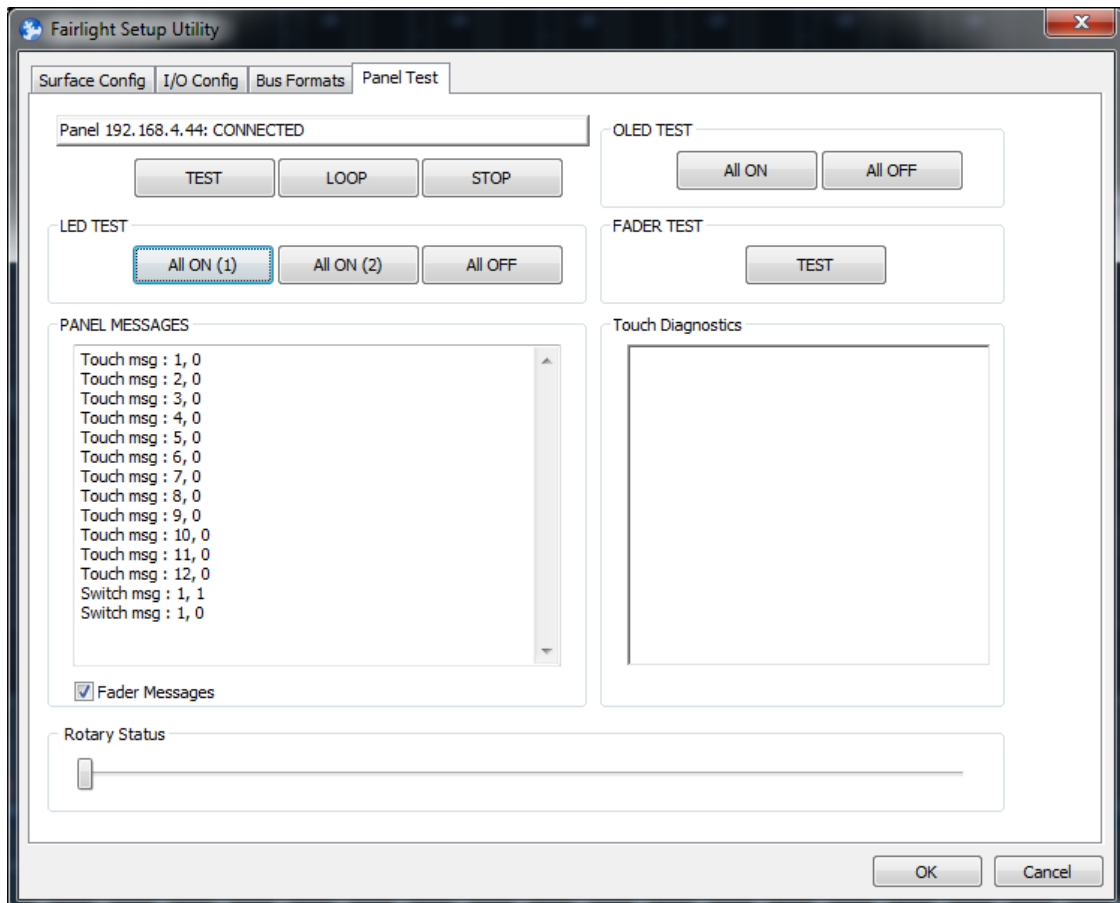
To quickly diagnose whether a given OLED display is functioning normally:

- Launch FSU in –TEST mode
- Select the panel in question
- Select the "Panel Test" tab
- Click the "All OLEDs ON" button, and observe correct "Test Pattern" display on each OLED



Switch Diagnostics

- Launch FSU in –TEST mode
- Select the panel in question
- Select the "Panel Test" tab
- Press each button in turn, and observe appropriate response in the "Status" window

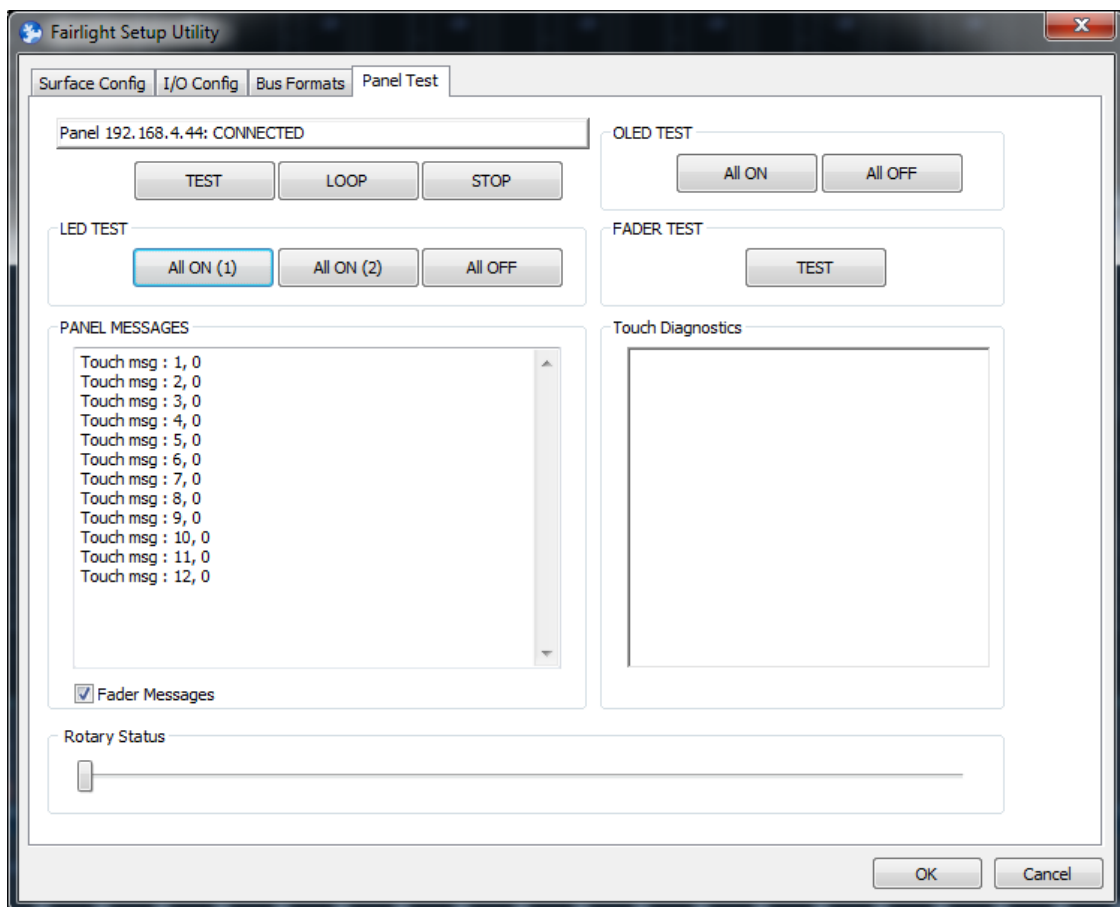


Touch Sensor Diagnostics

EVO console touch sensitive controls are not designed for User Calibration. Each touch sensor initially self-calibrates when the EVO console is powered-on. Each Touch sensitive control then self-adjusts over time as it is used.

To quickly diagnose whether a given touch-sensitive control is functioning normally:

- Launch FSU in –TEST mode
- Select the panel in question
- Select the "Panel Test" tab
- touch each touch-sensitive control in turn, and observe appropriate response in the "Status" window



For Service of EVO Touch Sensitive controls, see your local Fairlight Representative.

LED Diagnostics

To quickly diagnose whether a given LED indicator is functioning normally:

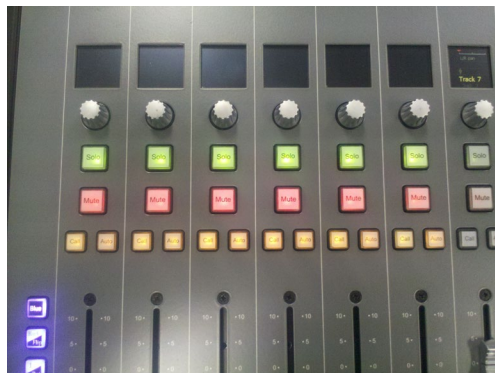
- Launch FSU in –TEST mode
- Select the panel in question
- Select the "Panel Test" tab
- Click the "All LEDs ON (1)" button, and observe the appropriate LED display on the panel (Note the side buttons display Orange, and the Call buttons will display Red)



- Click "All LEDs OFF"
- Click the "All LEDs ON (2)" button, and observe the appropriate LED display on the panel (Note the side buttons display Blue, and the Call buttons will display Green)



- Click the "All LEDs ON (1)" button, **and** then the "All LEDs ON (2)" button. This will turn all bi-color LEDs ON. Observe the appropriate LED display on the panel. (Note the side buttons display Purple, and the Call buttons will display Orange)



XCS Panel Diagnostics

Diagnosing correct hardware operation of an XCS editor panel does not use the Fairlight Setup Utility. It requires a significantly different procedure as outlined below.

Preparing the system for Xynergi diagnostic testing

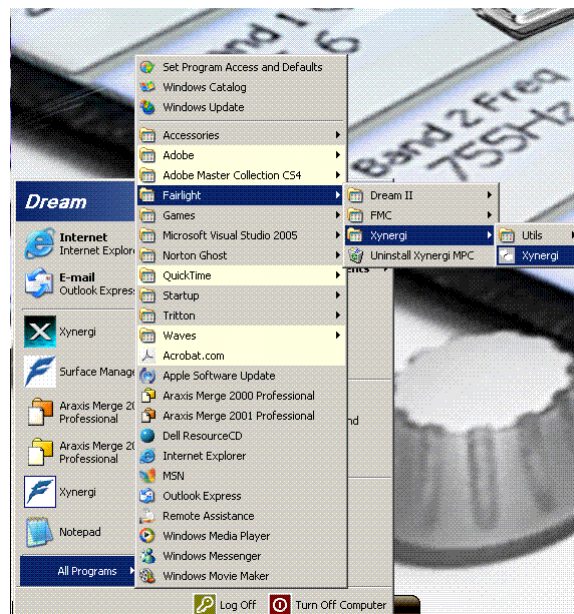
- Connect and confirm operation of the "normal" USB keyboard and mouse. These devices must be connected directly to the PC. Confirm that you have full keyboard and mouse control of the PC BEFORE proceeding.
- In the System Tray of your Xynergi System will be a Blue "Fairlight F" icon.



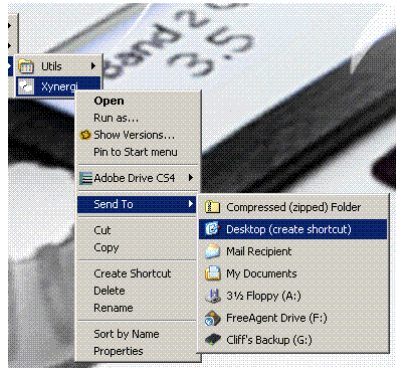
- Float the cursor over the icon, and the word "Xynergi" should appear.
- Right-click on the icon, and left-click on "EXIT". This will shutdown the Xynergi software service.

Your Xynergi Controller's "ESC" key should now start flashing, indicating that it is effectively "offline". The QWERTY keyboard will also disappear from the SLICK keys, and will be replaced by a version of your desktop image. This is Normal.

- Navigate to
Start > All Programs > Fairlight > Xynergi
- Locate the "Xynergi" application,

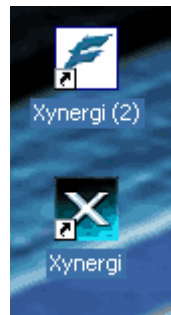


- Right-click the "Xynergi" Application, and Left-click "Send to > Desktop (make shortcut)"



This will create a shortcut "Fairlight Blue F" icon on the PC desktop.

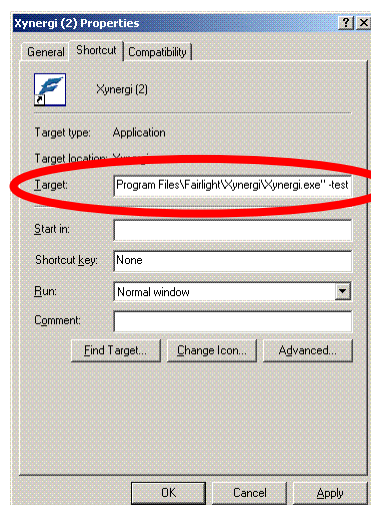
(It will probably assume the name "Xynergi (2)", in order to avoid a naming conflict with the normal "Xynergi" application desktop icon. In the example shown below, the top icon is the "Xynergi Test" icon. The lower icon is the "Normal" Xynergi Application icon which launches the DreamII/Xynergi audio editing application).



- Right-click the new "Xynergi (2)" shortcut, and left-click "Properties". The "Xynergi (2) Properties" window will appear.
- Left-click the "Shortcut" tab.
- Locate the "Target" field, and add the following text to the end of the string

-test

It should end up looking like the example shown below.

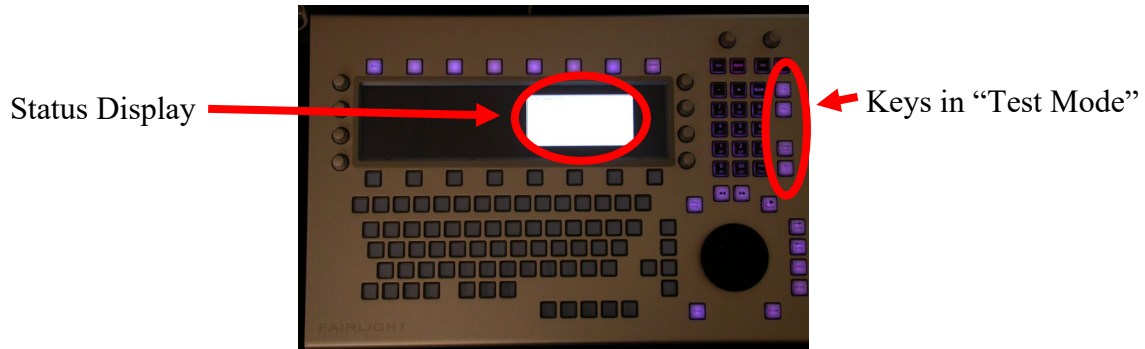


- Click "Apply" and "OK" to accept the changes

- Having added the “-test” switch, double-click the “Xynergi (2)” icon to launch the test.

Your Xynergi console should turn all of its fixed key LEDs ON.

The display area should also display a white box with black text.



Using and Interpreting the test conditions

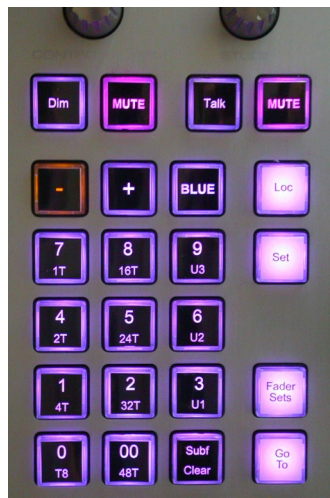
- Fixed Key LED operation.

Each fixed key, such as the keys around the jog-wheel, and the numeric keypad, are equipped with a dual-color LED. This LED is capable of displaying Orange and Blue aspects, which combine to give a purple color when in test mode.

NB that the MUTE keys have a dual-color Red/Blue LED, and thus will show a more definite “red” color when in test mode. This is Normal.

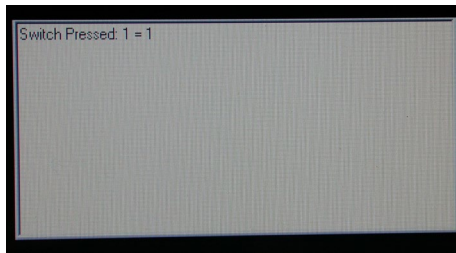
If you see a key with a definite “Orange” color, it is likely that the BLUE element of that key’s LED unit has failed. (In the image below, the “-” key appears to have a failed Blue LED element!)

If you see a definite “Blue” color, it is likely that the ORANGE element of that key’s LED unit has failed



- Key switch operation

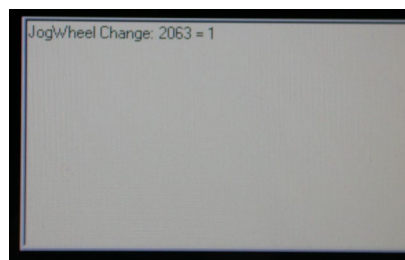
Click any given key, and the Status display in the Xynergi’s display window will report the number of the key that has last been operated. The example below shows “Switch 1”, which is the “ESC key”, with value “1” while it is pressed.



This function can be used to confirm the operation of each key in turn, and map any given keys which do NOT trigger correctly.

– Jog Wheel operation

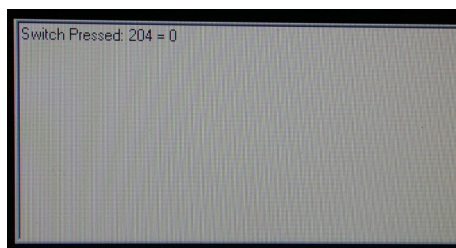
Rotate the jog wheel, and the Status display in the Xynergi's display window will report the current jog value.



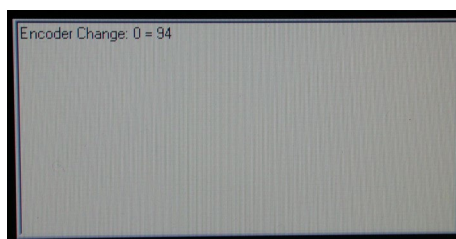
– Encoder operation

Touch any given encoder, and the Status display in the Xynergi's display window will report the switch number of the encoder that has last been touched.

NB that the 8 encoders located around the main display have switch numbers starting in the "200 series". The example is encoder "touch switch #204"



Rotate each encoder, and the Status display in the Xynergi's display window will report the current rotation value for the encoder.



Resetting your system after testing

Having tested your Xynergi, you will need to reset it back to "Normal Operation".

- In the System Tray of your Xynergi System will be a Blue "Fairlight F" icon.



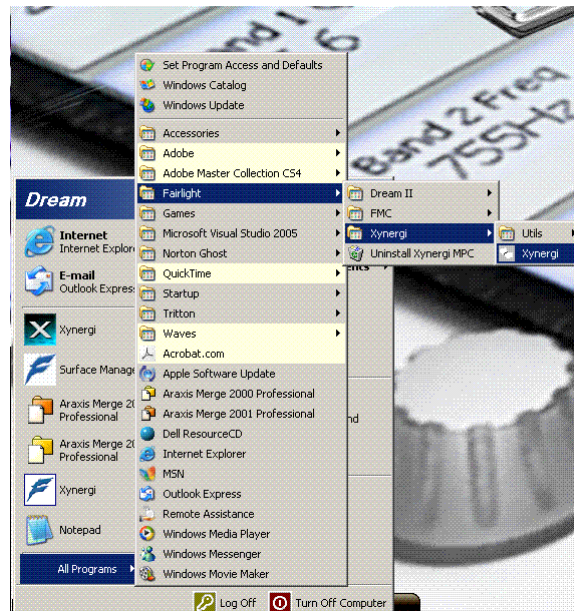
- Float the cursor over the icon, and the word "Xynergi" should appear.
- Right-click on the icon, and left-click on "EXIT".

The "test mode" displays should disappear, and your Xynergi Controller's "ESC" key should now start flashing, indicating that it is effectively "offline". The QWERTY keyboard will also disappear from the SLICK keys, and will be replaced by a version of your desktop image. This is Normal.

- Navigate to

Start > All Programs > Fairlight > Xynergi

- Locate the "Xynergi" application, and Left-click on it



This should re-initialize your Xynergi, and result in the Xynergi QWERTY keyboard being displayed.

Remember to delete the "Xynergi (2)" test icon from your desktop, to avoid confusing future operators of the machines.

Your EVO Editing System is now ready to resume normal operations.

Chapter 6 – Cable Drawings

