

FAIRLIGHT

I/O options

SX-8, SX-12V, SX-20, SX-20R, SX-36, CMI and CMO

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Introduction

Fairlight offers a variety of all-in-one I/O, synchronisation and control interfaces for audio post production systems powered by Fairlight's Crystal Core audio engine. External and internal versions are available, including:

- External 1U rack mount unit versions, including: the SX-36, the SX-20R and the SX-20.
- PCB cards for mounting inside a host PC, including: the SX-12V and SX-8.

Full specifications of all cards are detailed in the following table.

FAIRLIGHT | I/O and Sync Solutions

Features	SX-8	SX-12V	SX-20	SX-20R	SX-36
Simultaneous 9-Pin Control ports	0	1	2	2	2
Video Reference	0	SD+HD, in only, BNC		SD+HD, in & thru, BNC	SD+HD, in & thru, BNC
Digital Sync In	Sync to any digital input			Sync to any AES/EBU input	Sync to any AES/EBU input
Word Clock Sync In	Yes, BNC				
Word Clock Sync Out	Switchable, BNC		Adaptor cable, BNC	Yes, BNC	Yes, BNC
MTC In	Yes, 25-pin 'D'		Yes, 5-pin DIN	Yes, 5-pin DIN	Yes, 5-pin DIN
MTC Out	Yes, 25-pin 'D'		Yes, 5-pin DIN	Yes, 5-pin DIN	Yes, 5-pin DIN
LTC In		Un-balanced, 25-pin 'D'	Un-balanced, Phono	Balanced, 25-pin 'D'	Balanced, 25-pin 'D'
LTC Out		Un-balanced, 25-pin 'D'	Un-balanced, Phono	Balanced, 25-pin 'D'	Balanced, 25-pin 'D'
GPI/GPO				1 in, 1 out, 25-pin 'D'	1 in, 1 out, 25-pin 'D'
Analogue Mic/Instrument Inputs			2 x gain control pot, XLR/TRS combo	2 x remote gain control, XLR/TRS combo	2 x remote gain control, XLR/TRS combo
Analogue Line In	2 x +18dBu, 25-pin 'D'	2 x +18dBu, 25-pin 'D'	2 x +24dBu, TRS	2 x +24dBu, TRS	8 x +24dBu, 25-pin 'D'
Analogue Line Out	6 x +18dBu, 25-pin 'D'	6 x +18dBu, 25-pin 'D'	12 x +24dBu, TRS	12 x +24dBu, TRS	4 x 24dBu TRS + 8 x 24dBu 25-pin 'D'
Headphone Out	Stereo 3.5mm mini-jack	Stereo 3.5mm mini-jack			
AES/EBU In				1 on 25-pin 'D'	9 x 25-pin 'D'
AES/EBU Out				3 on 25-pin 'D'	11 x 25-pin 'D'
Sony/Philips Digital Interface Format (S/PDIF) In	1 x 25-pin 'D'	1 x 25-pin 'D'	2 x phono	1, with SRC, phono	1, with SRC, phono
S/PDIF Out	1 x 25-pin 'D'	3 x 25-pin 'D'	4 x phono	1 x phono	1 x phono
Digital I/O	2 x in, 2 x out	2 x in, 6 x out	4 x in, 8 x out	4 x in, 8 x out	20 x in, 24 x out
Analog I/O	2 x in, 6 x out	2 x in, 6 x out	4 x in, 12 x out	4 x in, 12 x out	10 x in, 12 x out
Metering			Analog signal present	8 x switchable bar graphs	12 x switchable bar graphs
Format	Internal	Internal	1U rack	1U rack	1U rack

If you require to interface to other devices such as switches and lights then Fairlight offers an optional GPIO solution. These cards with 8 optically isolated inputs and 8 relay outputs, all of which can be integrated in any Fairlight system to control external equipment. The GPIO card is available in both and in-console mounted version as well as a remote Ethernet-interfaced version.

For high-density audio connections Fairlight offers optional additional MADI interfaces. This interface mounts inside the host PC, and provides 3 MADI in and 3 MADI output ports. The card comes in two versions, either coax or optical.

SX-8 Installation

Hardware Overview

The SX-8 unit provides a compact option to the traditional SX-20 interface box. With 6 analog outputs it provides the basis for a fully-functional 5.1 mixing suite. The SX-8 is also a perfect solution for those users who are looking for a more compact CC-2 powered solution for small project and music studios which do not require video sync capability.

Please refer to the [Fairlight I/O and Sync Solution Comparison table](#) for technical specifications.

Optional Breakout cable

The digital, LTC and MTC I/O is all combined on a single D-25 connector. An optional breakout cable called AIOX104-A is available which breaks these signals out to individual connectors.

Installing the hardware

The SX-8 is physically a standard single lane PCIe form-factor card, but does not actually use the PCIe connection. The SX-8 card itself connects to the Host CC-card via a standard SATA cable.

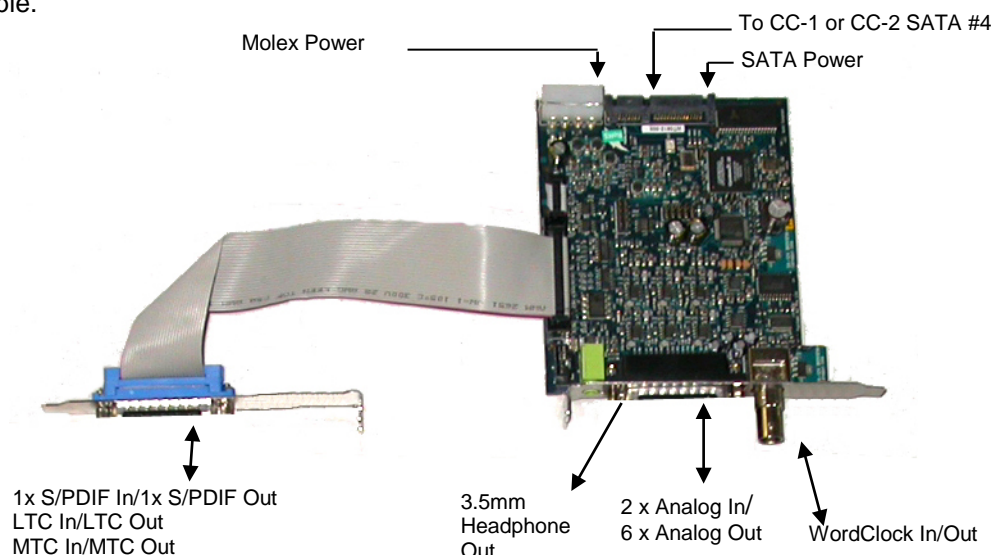
The SX-8 fits easily within any standard ATX Host PC chassis.

The SX8 requires a power connection from the Host PC. This can be via either SATA or Molex hard drive power connection. However, some hard drive power looms have restricted cable length. Extension hard drive power cables may be required.

The SX-8 backplane provides 2 x Analog In and 6 x Analog Out connections on a 25-pin 'D' connector. The pin-out for this connection can be found in Appendix 1 of this document.

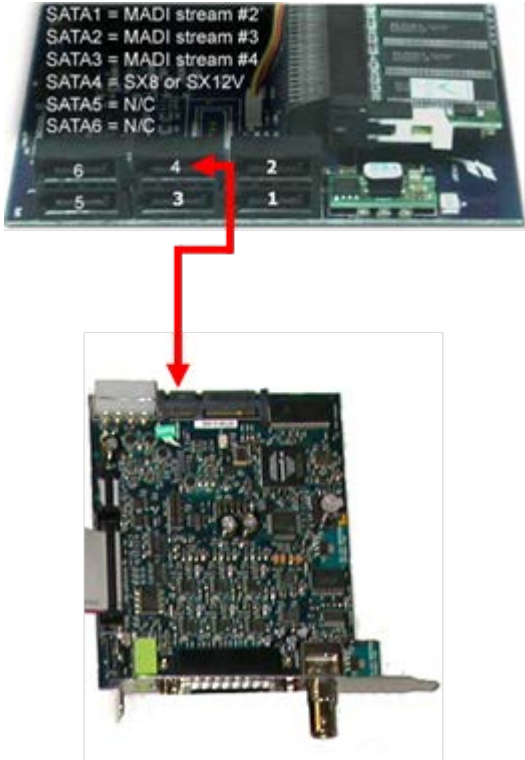
The SX-8 backplane also provides access to the Wordclock Input/Output BNC connector, and the Headphone Out 3.5mm stereo mini jack.

The SX8 is supplied with a secondary breakout backplane. This connects to the SX8 via an internal ribbon cable.

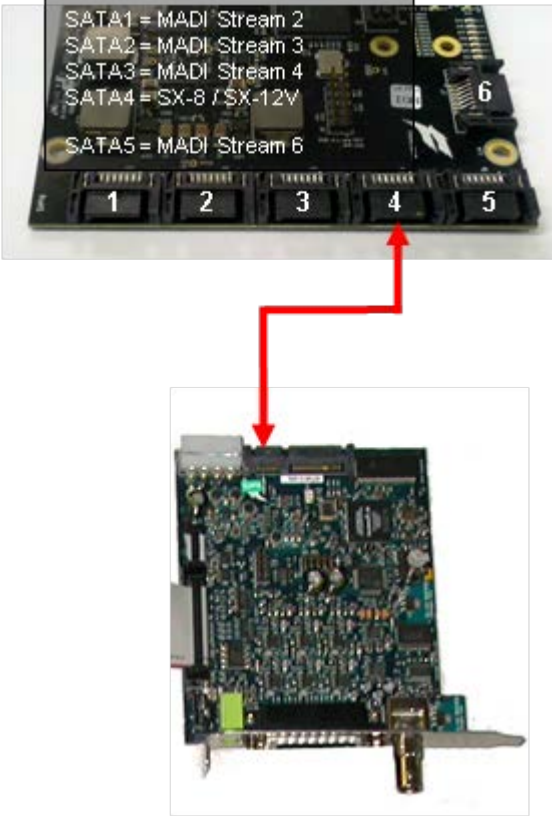


This secondary backplane provides access to the LTC, MTC, and S/PDIF I/O connections via a 25-pin 'D' connector.

Connecting SX-8 to CC-1



Connecting SX-8 to CC-2



SX-12V Installation

Hardware Overview

The SX-12 provides an internal I/O solution, it will fit in any available PC slot position, with or without a PCI slot making the CC-2 Audio engine totally self-contained with no external equipment required to make the system run. It is most commonly used in a system like Pyxis but can be used for any CC-2 solution when the extended features provided by the SX-20 are not required.

The SX-12V is also a perfect solution for those users who are looking for a more compact CC-2 powered solution for project studios and mobile recording and editing systems which require video sync capability.

Please refer to the [Fairlight I/O and Sync Solution Comparison table](#) for technical specifications.

Optional Breakout cable

The digital, LTC and MTC I/O is all combined on a single D-25 connector. An optional breakout cable called AIOX104-A is available which breaks these signals out to individual connectors.

Installing the hardware

The SX-12V is physically a standard single lane PCIe form-factor card, but does not actually use the PCIe connection. The SX-12V card itself connects to the Host CC-card via a standard SATA cable.

The SX-8 fits easily within any standard ATX Host PC chassis.

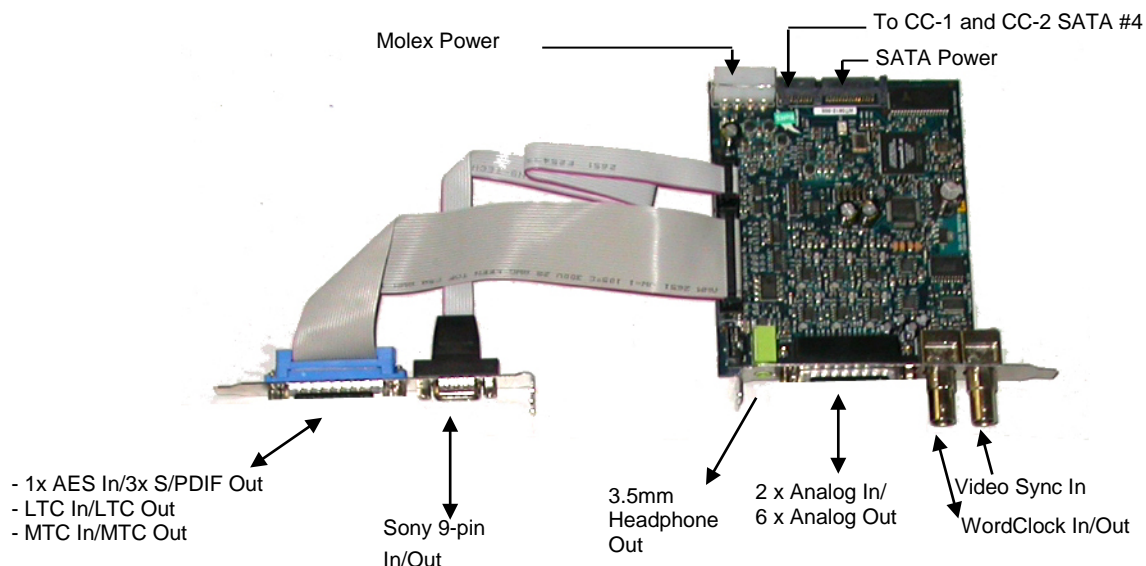
The SX12V requires a power connection from the Host PC. This can be via either SATA or Molex hard drive power connection. However, some hard drive power looms have restricted cable length. Extension hard drive power cables may be required.

The SX12V backplane provides 2 x Analog In and 6 x Analog Out connections on a 25-pin 'D' connector. The Pin-out for this connection can be found in Appendix 1 of this document.

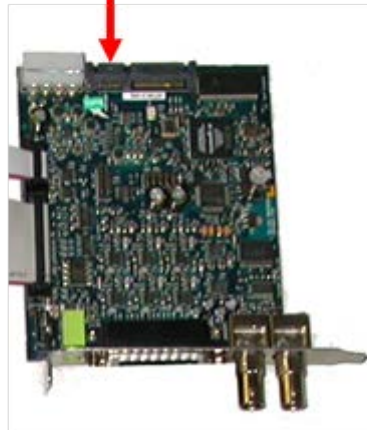
The SX12V backplane also provides access to the Video Sync In, Word clock Input/Output BNC connectors, and the Headphone Output 3.5mm stereo mini jack.

The SX12V is supplied with a secondary breakout backplane. This connects to the SX8 via TWO internal ribbon cables.

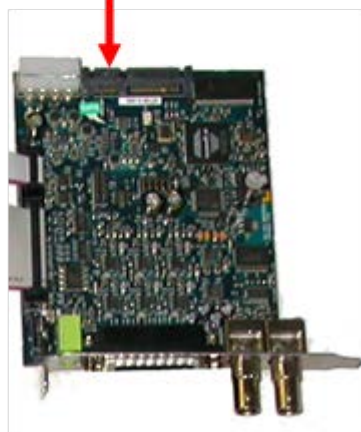
This second backplane provides access to the LTC, MTC, and S/PDIF I/O connections via a 25-pin 'D' connector. Sony 9-pin control is also mounted on this secondary breakout backplane, via a 9-pin 'D'.



Connecting SX-12V to CC-1



Connecting SX-12V to CC-2



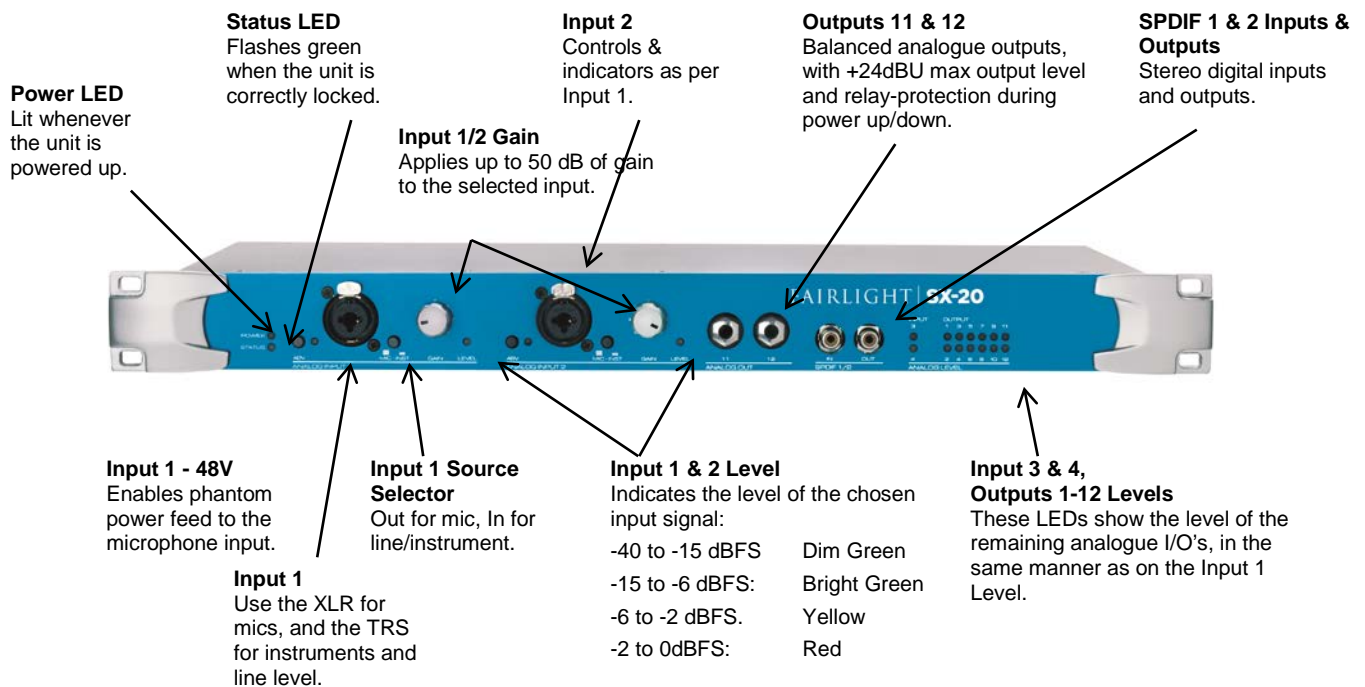
SX-20 Installation

Hardware Overview

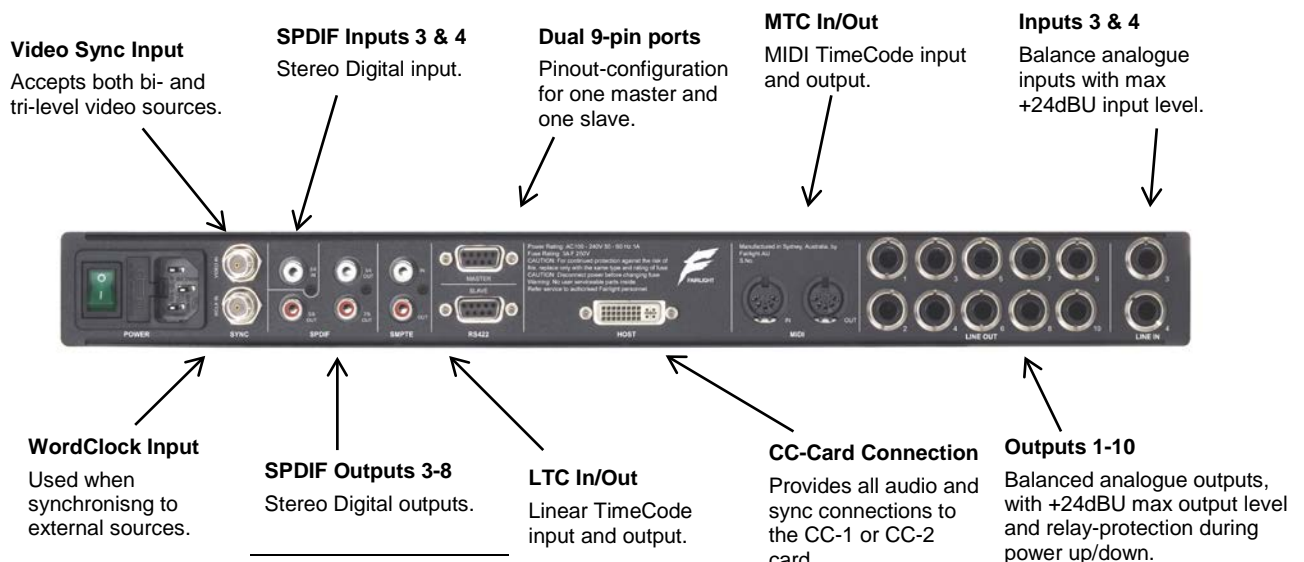
Fairlight's SX-20 is a versatile "Sync I/O Toolbox". It offers an extensive range of analog and digital I/O, high-resolution sound, pristine mic preamps, precise lock to timecode and ultra low latency, making it the perfect setting for most demanding media productions.

The SX-20 is a 1U rack mountable interface with a host of features. It provides a complete I/O solution for the CC-2, with enough outputs to feed a full 5.1 monitoring setup including multiple near field monitors, two independent 9-pin ports, tri-level sync, word clock, LTC and MTC. The SX-20 provides for sync at any frame rate including HD Trilevel sync, Video Sync, Word Clock, AES and LTC. The unit also generates LTC at any standard rate. Please refer to the [Fairlight I/O and Sync Solution Comparison table](#) for technical specifications.

Front Panel



Rear Panel



Installing the hardware

The SX-20 I/O unit presents as a standard 1RU device. Rack mounting ears and screws are provided in the accessory pack, within the SX-20 shipping carton.

The rack mounting ears have multiple sets of screw holes to enable flush, or recessed mounting of the SX-20 unit in the equipment rack. A recessed mounting configuration may be useful for situations where the front panel connectors protrude beyond the front surface of the equipment rack. Use a #2 Pozi screwdriver to install the rack mounting ears to the SX-20 enclosure.

It is recommended that the SX-20 be mounted in close proximity to the Host PC. It is typical to mount the Host PC and SX-unit in the same rack.

Connecting to CC-1/CC-2

Once the SX-20 unit is mounted within the rack, connect the SX-20 to the Host PC CC-card with the 2metre DVI-I cable provided.

NOTE!

- SX-20 must use a DVI-I cable for connection to the Host CC-card.
- DVI-I cable length must NOT exceed 5 metres.
- DVI-D cables are not suitable for this purpose.
- Active DVI Extenders of any format are NOT suitable for this purpose.

The SX-20 will now automatically power-on only when the Host PC is powered on. There is no need to manually turn the SX-20 mains power on or off under normal operations.

SX-20R Installation

Hardware Overview

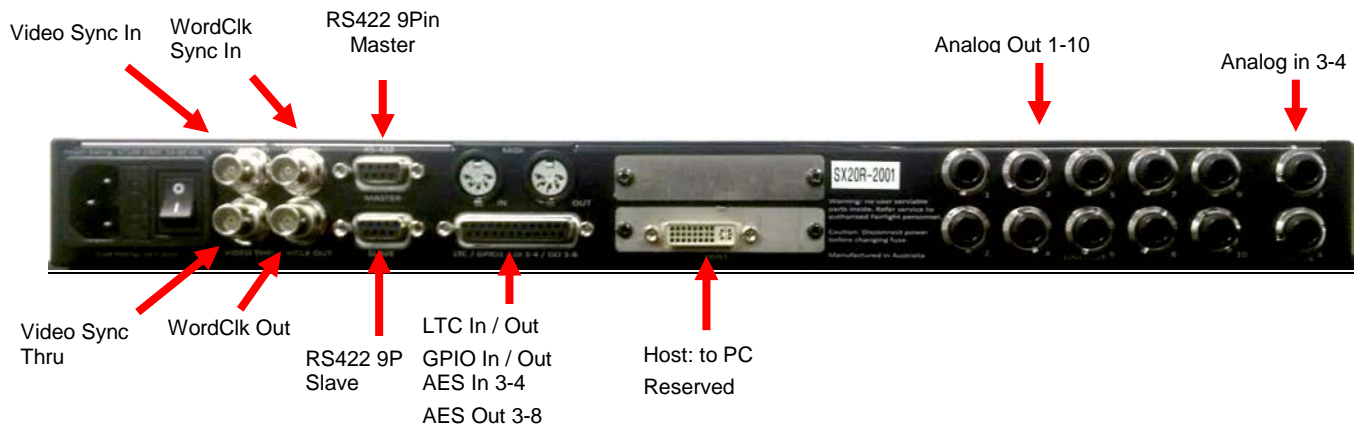
The SX-20R is a versatile, all-in-one I/O, synchronisation and control interface, designed for audio post production systems powered by Fairlight's Crystal Core. The SX-20R offers an extensive range of analog and digital I/O, high-resolution sound, pristine remote-controlled mic preamps, precise lock to timecode and ultra low latency, making it the perfect setting for most demanding media productions.

Please refer to the [Fairlight I/O and Sync Solution Comparison table](#) for technical specifications.

Front Panel



Rear Panel



Installing the hardware

The SX-20R I/O unit presents as a standard 1RU device. Rack mounting ears and screws are provided in the accessory pack, within the SX-20R shipping carton.

The rack mounting ears have multiple sets of screw holes to enable flush, or recessed mounting of the SX-20R unit in the equipment rack. A recessed mounting configuration may be useful for situations where the front panel connectors protrude beyond the front surface of the equipment rack. Use a #2 Pozi screwdriver to install the rack mounting ears to the SX-20R enclosure.

It is recommended that the SX-20R be mounted in close proximity to the Host PC. It is typical to mount the Host PC and SX-unit in the same rack.

Connecting to CC-1/CC-2

Once the SX-20R unit is mounted within the rack, connect the SX-20R to the Host PC CC-card with the 2metre DVI-I cable provided.

NOTE!

- SX-20R must use a DVI-I cable for connection to the Host CC-card.
- DVI-I cable length must NOT exceed 5 metres.
- DVI-D cables are not suitable for this purpose.
- Active DVI Extenders of any format are NOT suitable for this purpose.

The SX-20R will now automatically power-on only when the Host PC is powered on. There is no need to manually turn the SX-20R mains power on or off under normal operations.

Front Panel Controls

The SX-20R front panel is equipped with a number of controls and indicators.



At left, the SX-20R has 4 status indicators. These give an at-a-glance indication of the SX-20R operating status:

- The blue “Power” LED indicates presence of mains power and correct connection to an operating CC-1 or CC-2 equipped Host PC.
- The flashing green “Pulse” LED indicates correct SX-20R internal operating status.
- The orange “Comms” LED indicates data transfer between SX-20R unit and the Host CC-1/CC-2 card.
- The red “Status” LED is a mute status indicator. This indicator will be ON any time the system has its analog outputs muted.

Both front panel Analog Inputs are equipped with a pair of LED indicators.

- The “48V” LED indicates whether the 48V phantom-power function is currently enabled or not.
- The “Inst” LED indicates the current Analog Input mode.
 - When “Inst” is ON, the Analog Input is operating in “Instrument” mode, and the TRS (1/4” Jack) line-level connections are active.
 - When “Inst” is OFF, the Analog Input is operating in “Microphone” mode, and the XLR mic-level connections are active.

The SX-20R Meter section has a “Signal Level Select” button. Pressing this button cycles through the various sets of Analog and Digital Inputs and Outputs, and determines which signal levels are being shown on the meter displays. The currently displayed signals are indicated by the Signal Level Select LEDs.

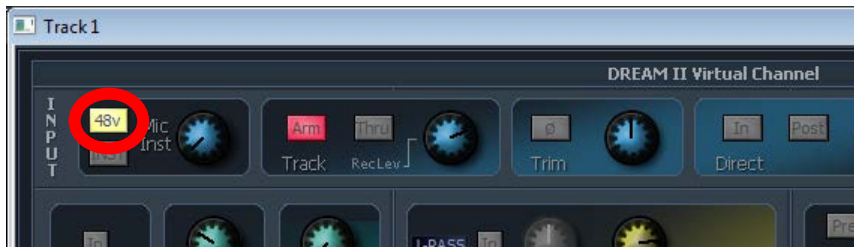
Adjusting Analog Input settings

Analog Input 48V Phantom Power

To enable +48V Phantom power on the SX-20R front panel mic inputs:

- Patch the front panel Analog Input (1 or 2) to a Track or Live (Example shows Track1).
- Invoke the Virtual Channel Panel (Double-click the appropriate Track/Live name tile on the Mixer).

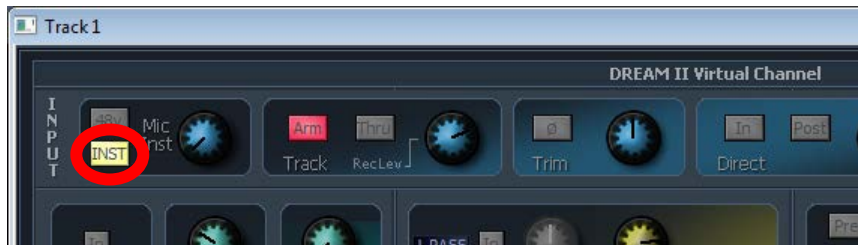
- Enable the “48V” button as shown below.



Analog Input Mic/Inst

To change between “Mic” mode (microphone level via XLR connections) and “Inst” mode (Instrument Line level via TRS connections) on the SX-20R front panel mic inputs:

- Patch the front panel Analog Input (1 or 2) to a Track or Live (Example shows Track1).
- Invoke the Virtual Channel Panel (Double-click the appropriate Track/Live name tile on the Mixer).
- To invoke Inst mode select the “INST” button as shown below.



Analog Input Mic Gain/Level

To adjust the Analog Input Gain on the SX-20R front panel mic inputs:

- Patch the front panel Analog Input (1 or 2) to a Track or Live (Example shows Track1).
- Invoke the Virtual Channel Panel (Double-click the appropriate Track/Live name tile on the Mixer).
- Use the PC mouse to adjust the gain control as required.



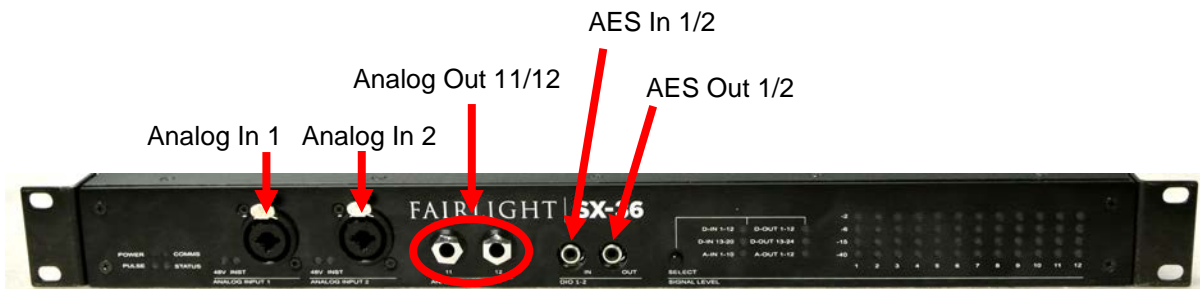
SX-36 Installation

Hardware Overview

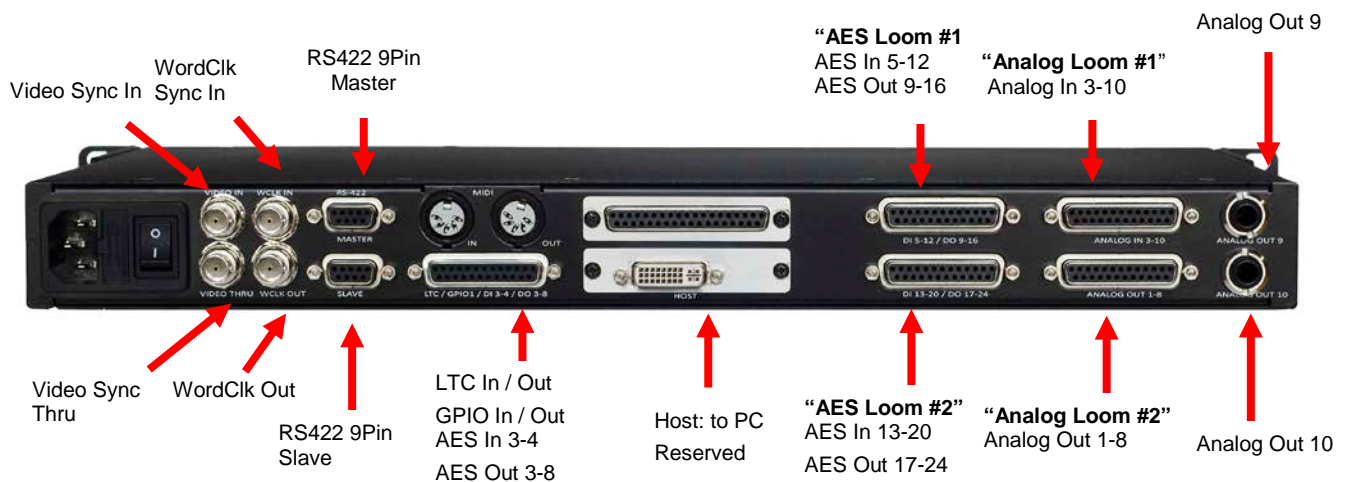
The SX-36 is a high-end, all-in-one I/O, synchronisation and control interface, designed for audio post production systems powered by Fairlight’s Crystal Core Media Engine. The SX-36 offers an extensive range of analog and digital I/O, high-resolution sound, pristine remote-controlled mic preamps, precise lock to timecode and ultra low latency, making it the perfect setting for most demanding media productions.

Please refer to the [Fairlight I/O and Sync Solution Comparison table](#) for technical specifications.

Front Panel



Rear Panel



Installing the hardware

The SX-36 I/O unit presents as a standard 1RU device. Rack mounting ears and screws are provided in the accessory pack, within the SX-36 shipping carton.

The rack mounting ears have multiple sets of screw holes to enable flush, or recessed mounting of the SX-36 unit in the equipment rack. A recessed mounting configuration may be useful for situations where the front panel connectors protrude beyond the front surface of the equipment rack. Use a #2 Pozi screwdriver to install the rack mounting ears to the SX-36 enclosure.

It is recommended that the SX-36 be mounted in close proximity to the Host PC. It is typical to mount the Host PC and SX-unit in the same rack.

Connecting to CC-1/CC-2

Once the SX-36 unit is mounted within the rack, connect the SX-36 to the Host PC CC-card with the 2metre DVI-I cable provided.

NOTE!

- SX-36 must use a DVI-I cable for connection to the Host CC-card.
- DVI-I cable length must NOT exceed 5 metres.
- DVI-D cables are not suitable for this purpose.
- Active DVI Extenders of any format are NOT suitable for this purpose.

The SX-36 will now automatically power-on only when the Host PC is powered on. There is no need to manually turn the SX-36 mains power on or off under normal operations.

Front Panel Controls

The SX-36 front panel is equipped with a number of controls and indicators.



At left, the SX-36 has 4 status indicators. These give at-a-glance indication of the SX-36 operating status:

- The blue “Power” LED indicates presence of mains power and correct connection to an operating CC-1 or CC-2 equipped Host PC.
- The flashing green “Pulse” LED indicates correct SX-36 internal operating status.
- The orange “Comms” LED indicates data transfer between SX-36 unit and the Host CC-1/CC-2 card.
- The red “Status” LED is a mute status indicator. This indicator will be ON any time the system has its analog outputs muted.

Both front panel Analog Inputs are equipped with a pair of LED indicators.

- The “48V” LED indicates whether the 48V phantom-power function is currently enabled or not.
- The “Inst” LED indicates the current Analog Input mode.
 - When “Inst” is ON, the Analog Input is operating in “Instrument” mode, and the TRS (1/4” Jack) line-level connections are active.
 - When “Inst” is OFF, the Analog Input is operating in “Microphone” mode, and the XLR mic-level connections are active.

The SX-36 Meter section has a “Signal Level Select” button. Pressing this button cycles through the various sets of Analog and Digital Inputs and Outputs, and determines which signal levels are being shown on the meter displays. The currently displayed signals are indicated by the Signal Level Select LEDs.

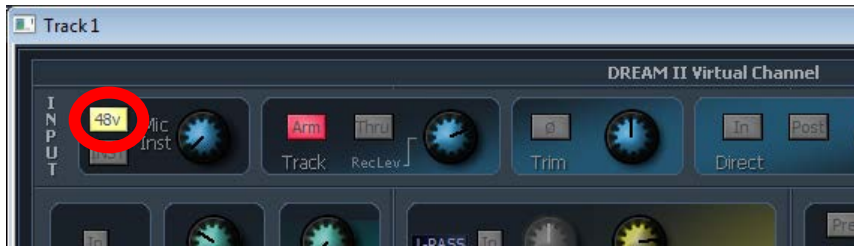
Adjusting Analog Input settings

Analog Input 48V Phantom Power

To enable +48V Phantom power on the SX-36 front panel mic inputs:

- Patch the front panel Analog Input (1 or 2) to a Track or Live (Example shows Track1).

- Invoke the Virtual Channel Panel (Double-click the appropriate Track/Live name tile on the Mixer).
- Enable the “48V” button as shown below.



Analog Input Mic/Inst

To change between “Mic” mode (microphone level via XLR connections) and “Inst” mode (Instrument Line level via TRS connections) on the SX-36 front panel mic inputs:

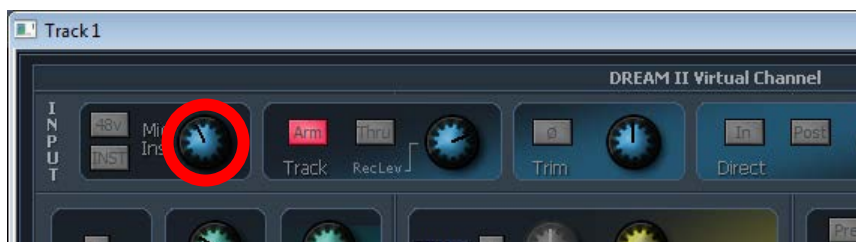
- Patch the front panel Analog Input (1 or 2) to a Track or Live (Example shows Track1).
- Invoke the Virtual Channel Panel (Double-click the appropriate Track/Live name tile on the Mixer).
- To invoke Inst mode select the “INST” button as shown below.



Analog Input Mic Gain/Level

To adjust the Analog Input Gain on the SX-36 front panel mic inputs:

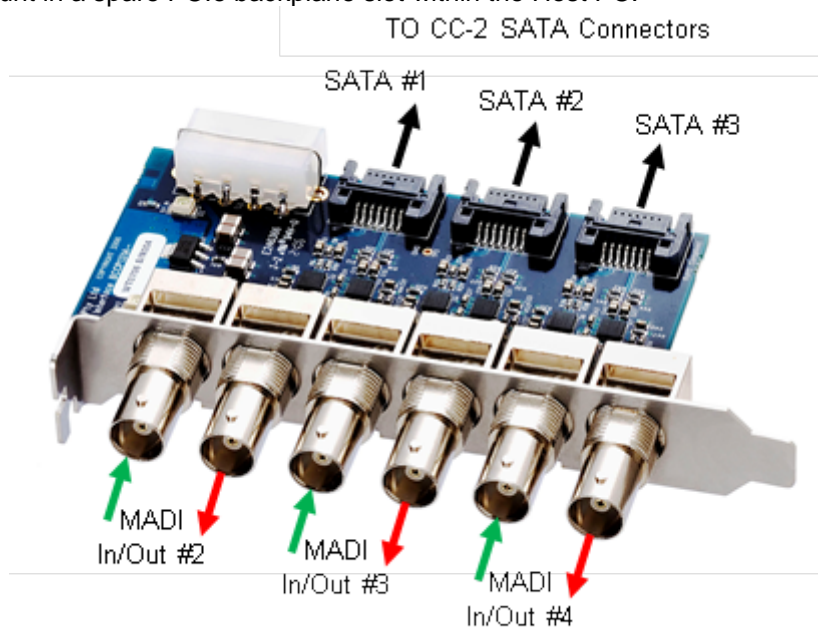
- Patch the front panel Analog Input (1 or 2) to a Track or Live (Example shows Track1).
- Invoke the Virtual Channel Panel (Double-click the appropriate Track/Live name tile on the Mixer).
- Use the PC mouse to adjust the gain control as required.



CMI/CMO Installation

Hardware Overview

The Fairlight CMI/CMO cards are MADi adapter daughter boards for the CC-2 card. They are designed to mount in a spare PCIe backplane slot within the Host PC.



Fairlight's CMI connects to 3 x SATA connectors on the CC-2 card and adapts them to 3 x BNC MADi In/Out pairs of connectors.

A CMI requires an ATX MOLEX specification power connection to operate.

Fairlight's CMO connects to 3 x SATA connectors on the CC-2 card and adapts them to 3 x SC fibre-optic MADi In/Out pairs of connectors.

The CMO requires a 5-wire SATA specification power connection to operate.

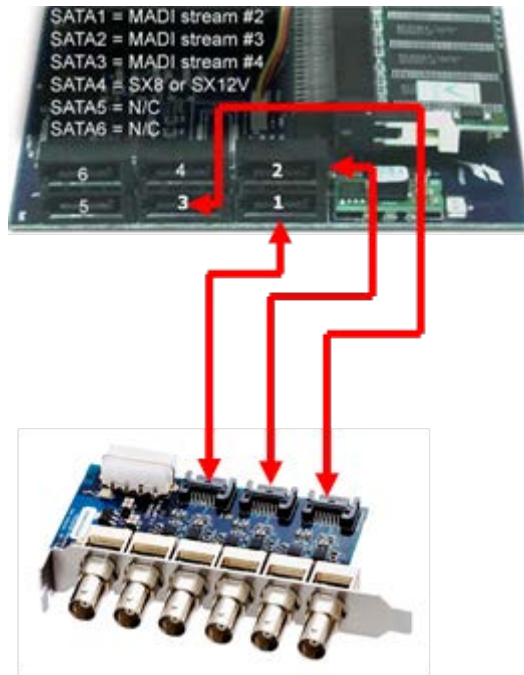
Installing the hardware

Fairlight CMI/CMO adapter units are designed to be installed in a PCIe backplane slot of the Host PC. The cards do not actually use an electrical PCIe slot, but occupy a backplane position. This is important when specifying the configuration of a Host PC for any given Fairlight system.

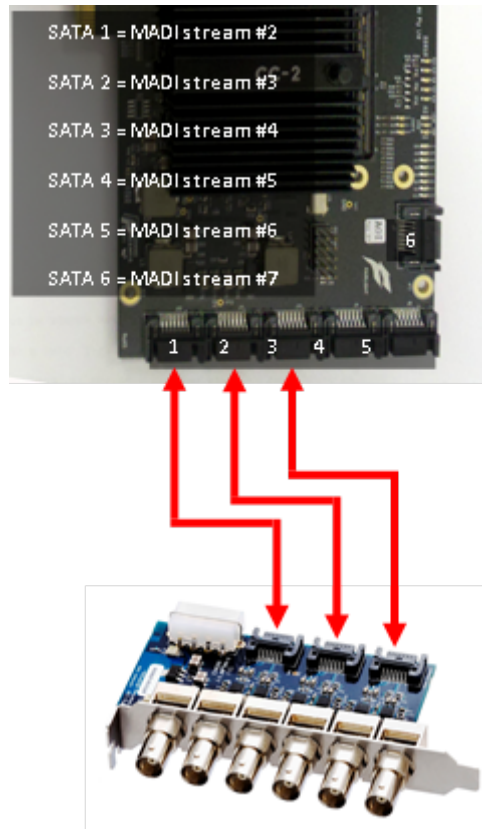
The CMI/CMO unit **CANNOT** be mounted independently of the Host PC.

For the CMI variant, once mounted in the Host PC chassis, use a 14mm tube spanner to install the 2x locking plates + washers + locking nuts as shown below.

Connecting to CC-1



Connecting to CC-2



I/O Configuration

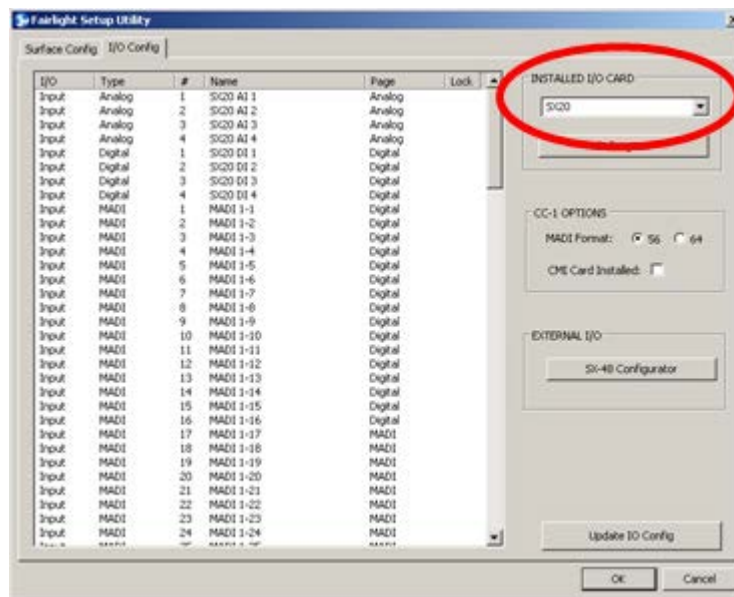
Fairlight Setup Utility

Initial configuration of an SX-IO unit need only be performed one time during initial commissioning. It is easily achieved via the Fairlight Setup Utility.

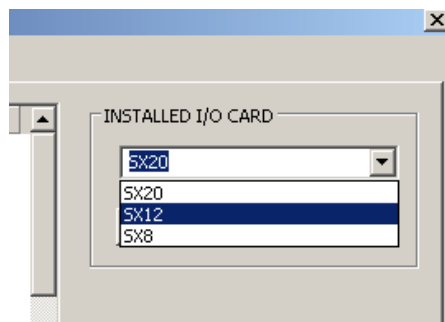
To launch Fairlight Setup Utility, navigate to:

START > All Programs > Fairlight > DreamII > DreamII Utils > Fairlight Setup Utility

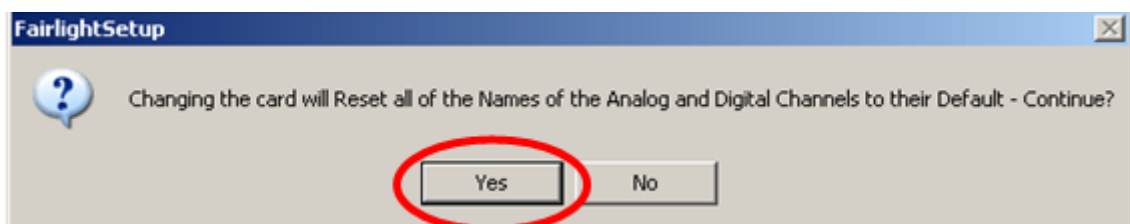
Click on the "I/O" tab, to view the I/O config and SX-selection menu. Notice that the default value for the "Installed IO Card" field is "SX20".



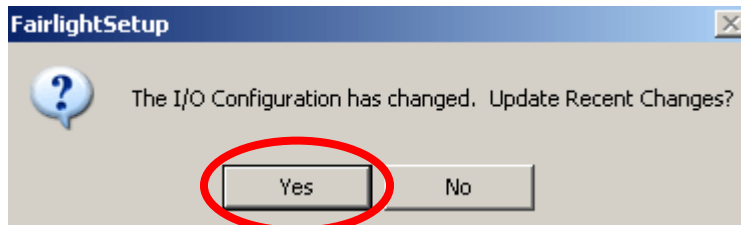
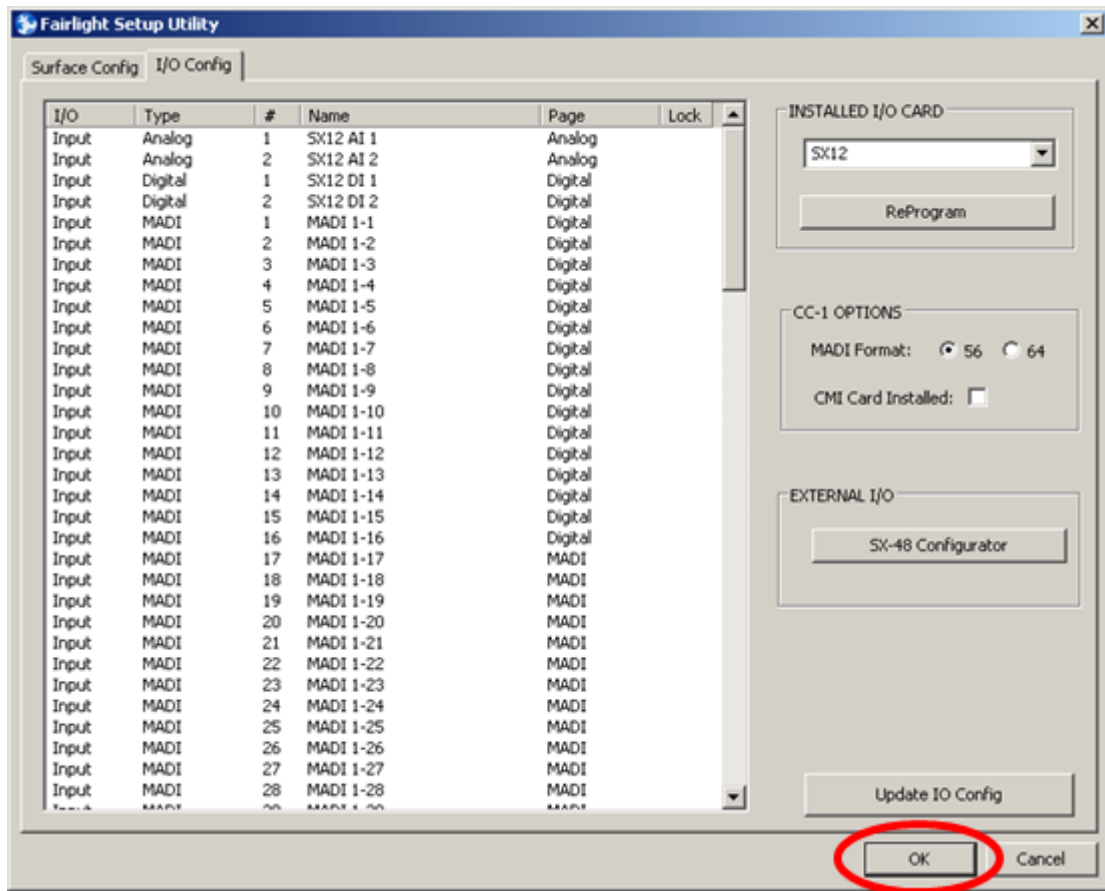
Click on the drop-down menu, and select the appropriate SX-unit option. (SX12 is selected in the example below)



A dialog box will appear confirming that the IO Config file and user names will be adjusted to suit the selected SX-unit. Please click "Yes"



To confirm and save the change to the SX-Unit settings, click “OK”



A dialog box will appear prompting to accept the changes made to the IO Configuration. Click “Yes”

The Host PC is now configured to use the selected SX unit.

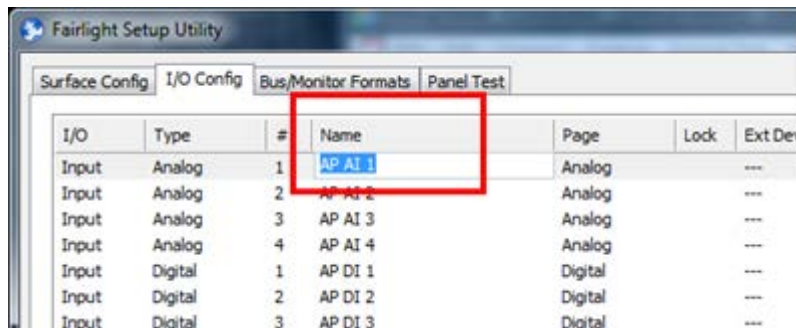
Naming I/O

For clarity during operation, all Fairlight Inputs and Outputs can be named by end users. This is most easily accomplished within Fairlight Setup Utility.

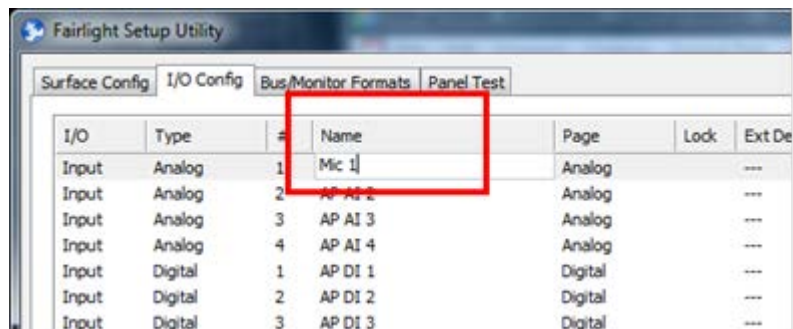
- Ensure the LIVE application is closed before proceeding.
- Navigate to

START > All Programs > Fairlight > LIVE > LIVE Utils

- Click “Fairlight Setup Utility 64”
- Click the “I/O Config” tab
- Select the Input or Output to rename
- Click in the “Name” column. The existing name will highlight as shown, ready for data entry (Example shows the default name “AP AI 1”)



Type in the required name
(Example shows “Mic 1”)



- Click away from the Name column to confirm the change.
- Once configured, click “Update IO Config”, and accept all prompts.
- Click “OK” to close Fairlight Setup Utility.

I/O unit Firmware Reprogramming

Under some conditions (for example, specific software updates), it may be required to reprogram the I/O unit. This is easily achieved via the Fairlight Setup Utility.

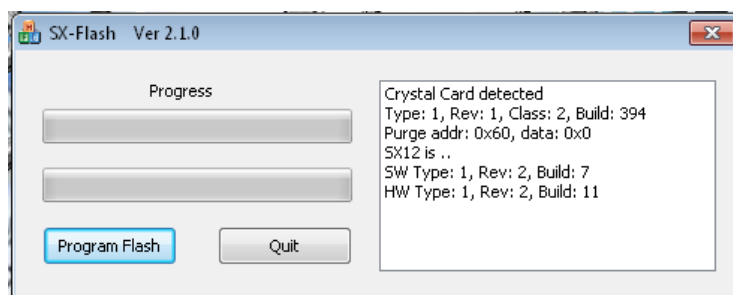
To launch Fairlight Setup Utility, navigate to:

START > All Programs > Fairlight > DreamII > DreamII Utils > Fairlight Setup Utility

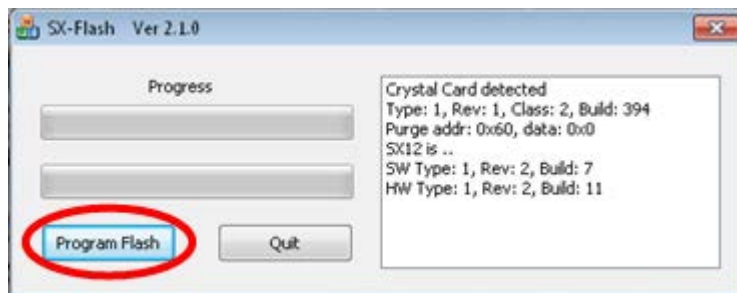
Click on the “I/O” tab, to view the I/O config and SX-selection menu. Ensure the correct SX unit is selected in the “Installed IO card” menu.

For diagnostic purposes, it is worth noting the existing Crystal Card and SX-device information *before* reprogramming. (Example below shows an SX-12V)

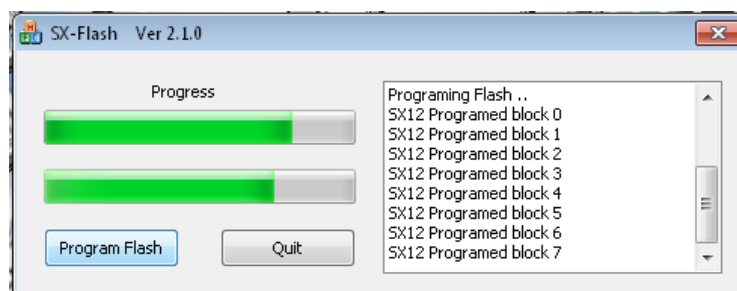
To start the Re-Program sequence, click “ReProgram”. This will launch the SX-Flash Utility.



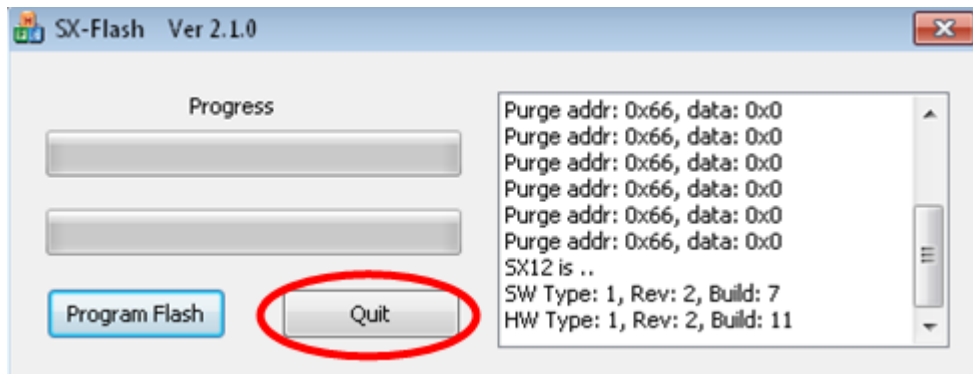
To begin the I/O unit reprogramming, click “Program Flash”



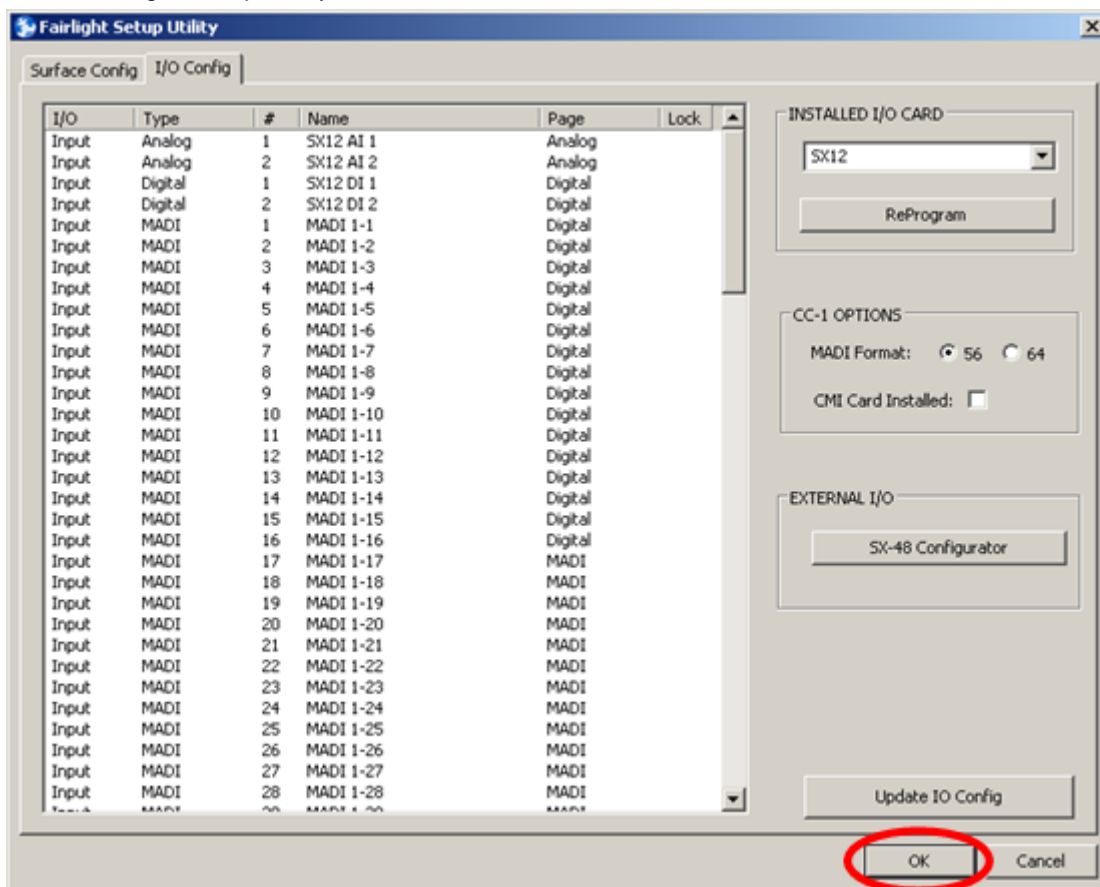
As the reprogramming process occurs, the status of the procedure will be displayed in real-time, as shown below.



When the reprogramming process is complete, the utility will display the new I/O unit firmware and status. To exit the SX-Flash Utility, click "Quit".



To exit the Fairlight Setup Utility, click "OK".



Appendix 1 – SX8/SX12V DB-25 Pinouts

1	CH1_HOT	24	_____
	CH1_COLD	12	_____
	CH1_GND	25	_____
2	CH2_HOT	10	_____
	CH2_COLD	23	_____
	CH2_GND	11	_____
3	CH3_HOT	21	_____
	CH3_COLD	9	_____
	CH3_GND	22	_____
4	CH4_HOT	7	_____
	CH4_COLD	20	_____
	CH4_GND	8	_____
5	CH5_HOT	18	_____
	CH5_COLD	6	_____
	CH5_GND	19	_____
6	CH6_HOT	4	_____
	CH6_COLD	17	_____
	CH6_GND	5	_____
7	CH7_HOT	15	_____
	CH7_COLD	3	_____
	CH7_GND	16	_____
8	CH8_HOT	1	_____
	CH8_COLD	14	_____
	CH8_GND	2	_____
	NC_1	13	_____ ■

Appendix 2 – SX-20R DB-25 Pinouts

LTC/GPIO/AES Loom

AES In 3/4	Ch_1_Hot	24
	Ch_1_Cold	12
	Ch_1_GND	25
LTC In	Ch_2_Hot	10
	Ch_2_Cold	23
	Ch_2_GND	11
GPIO In	Ch_3_Hot	21
	Ch_3_Cold	9
	Ch_3_GND	22
GPIO Out	Ch_4_Hot	7
	Ch_4_Cold	20
	Ch_4_GND	8
AES Out 3/4	Ch_5_Hot	18
	Ch_5_Cold	6
	Ch_5_GND	19
AES Out 5/6	Ch_6_Hot	4
	Ch_6_Cold	17
	Ch_6_GND	5
AES Out 7/8	Ch_7_Hot	15
	Ch_7_Cold	3
	Ch_7_GND	16
LTC Out	Ch_8_Hot	1
	Ch_8_Cold	14
	Ch_8_GND	2
	NC	13

Appendix 3 – SX-36 DB-25 Pinouts

LTC/GPIO/AES Loom

AES In 3/4	Ch_1_Hot	24
	Ch_1_Cold	12
	Ch_1_GND	25
LTC In	Ch_2_Hot	10
	Ch_2_Cold	23
	Ch_2_GND	11
GPIO In	Ch_3_Hot	21
	Ch_3_Cold	9
	Ch_3_GND	22
GPIO Out	Ch_4_Hot	7
	Ch_4_Cold	20
	Ch_4_GND	8
AES Out 3/4	Ch_5_Hot	18
	Ch_5_Cold	6
	Ch_5_GND	19
AES Out 5/6	Ch_6_Hot	4
	Ch_6_Cold	17
	Ch_6_GND	5
AES Out 7/8	Ch_7_Hot	15
	Ch_7_Cold	3
	Ch_7_GND	16
LTC Out	Ch_8_Hot	1
	Ch_8_Cold	14
	Ch_8_GND	2
	NC	13

AES Loom #1

AES In 5/6	Ch_1_Hot	24
	Ch_1_Cold	12
	Ch_1_GND	25
AES In 7/8	Ch_2_Hot	10
	Ch_2_Cold	23
	Ch_2_GND	11
AES In 9/10	Ch_3_Hot	21
	Ch_3_Cold	9
	Ch_3_GND	22
AES In 11/12	Ch_4_Hot	7
	Ch_4_Cold	20
	Ch_4_GND	8
AES Out 9/10	Ch_5_Hot	18
	Ch_5_Cold	6
	Ch_5_GND	19
AES Out 11/12	Ch_6_Hot	4
	Ch_6_Cold	17
	Ch_6_GND	5
AES Out 13/14	Ch_7_Hot	15
	Ch_7_Cold	3
	Ch_7_GND	16
AES Out 15/16	Ch_8_Hot	1
	Ch_8_Cold	14
	Ch_8_GND	2
	NC	13

AES Loom #2

AES In 13/14	Ch_1_Hot	24
	Ch_1_Cold	12
	Ch_1_GND	25
AES In 15/16	Ch_2_Hot	10

	Ch_2_Cold	23
	Ch_2_GND	11
AES In 17/18	Ch_3_Hot	21
	Ch_3_Cold	9
	Ch_3_GND	22
AES In 19/20	Ch_4_Hot	7
	Ch_4_Cold	20
	Ch_4_GND	8
AES Out 17/18	Ch_5_Hot	18
	Ch_5_Cold	6
	Ch_5_GND	19
AES Out 19/20	Ch_6_Hot	4
	Ch_6_Cold	17
	Ch_6_GND	5
AES Out 21/22	Ch_7_Hot	15
	Ch_7_Cold	3
	Ch_7_GND	16
AES Out 23/24	Ch_8_Hot	1
	Ch_8_Cold	14
	Ch_8_GND	2
	NC	13

Analog Loom #1

Analog In 3	Ch_1_Hot	24
	Ch_1_Cold	12
	Ch_1_GND	25
Analog In 4	Ch_2_Hot	10
	Ch_2_Cold	23
	Ch_2_GND	11
Analog In 5	Ch_3_Hot	21
	Ch_3_Cold	9

	Ch_3_GND	22
Analog In 6	Ch_4_Hot	7
	Ch_4_Cold	20
	Ch_4_GND	8
Analog In 7	Ch_5_Hot	18
	Ch_5_Cold	6
	Ch_5_GND	19
Analog In 8	Ch_6_Hot	4
	Ch_6_Cold	17
	Ch_6_GND	5
Analog In 9	Ch_7_Hot	15
	Ch_7_Cold	3
	Ch_7_GND	16
Analog In 10	Ch_8_Hot	1
	Ch_8_Cold	14
	Ch_8_GND	2
	NC	13

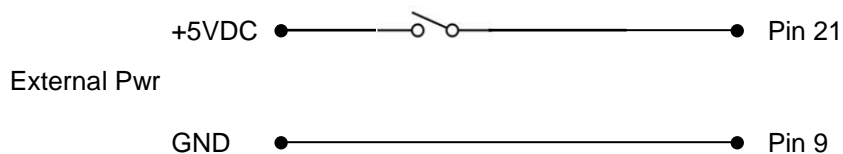
Analog Loom #2

Analog Out 1	Ch_1_Hot	24
	Ch_1_Cold	12
	Ch_1_GND	25
Analog Out 2	Ch_2_Hot	10
	Ch_2_Cold	23
	Ch_2_GND	11
Analog Out 3	Ch_3_Hot	21
	Ch_3_Cold	9
	Ch_3_GND	22
Analog Out 4	Ch_4_Hot	7

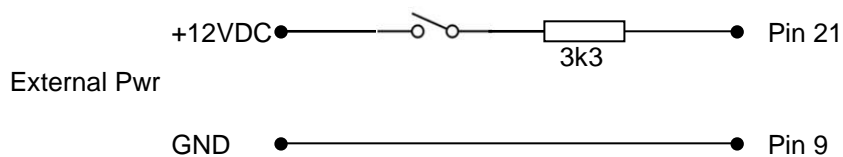
	Ch_4_Cold	20
	Ch_4_GND	8
Analog Out 5	Ch_5_Hot	18
	Ch_5_Cold	6
	Ch_5_GND	19
Analog Out 6	Ch_6_Hot	4
	Ch_6_Cold	17
	Ch_6_GND	5
Analog Out 7	Ch_7_Hot	15
	Ch_7_Cold	3
	Ch_7_GND	16
Analog Out 8	Ch_8_Hot	1
	Ch_8_Cold	14
	Ch_8_GND	2
	NC	13

GPIO connections (LTC/GPIO/AES Loom)

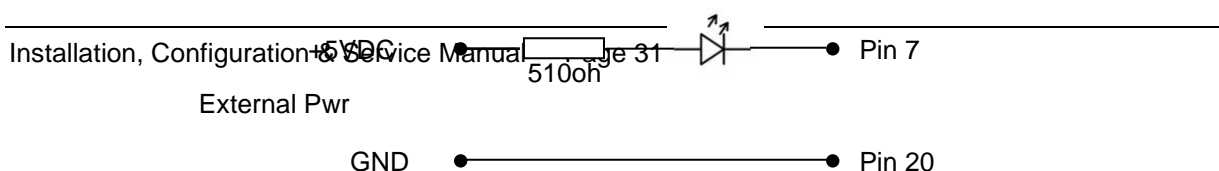
The SX-36 supports a single set of GPIO remote Input and Output. For basic GPI “trigger switch” contact closure, the following shows a simple trigger input example. The GPI terminals are Opto-Isolated. Therefore they will need a power source in order to function. The example below shows a simple SPST switch, using an external 5VDC and GND supply (PSU plug pack or similar).



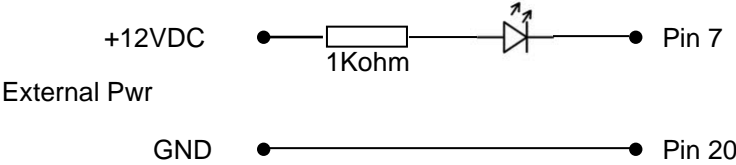
For use with 12VDC external supplies, an additional resistor will be necessary.



The GPO connection is a simple SPST relay switch closure. As such, it cannot drive a LED or simple “tally light” on its own. For basic GPO “LED tally” indicators, the following shows a simple example, using an external 5VDC and GND supply.



For use with 12VDC external supplies, a different value resistor will be necessary.



Appendix 4 - SX-20, SX-20R and SX-36 9-Pin Ports

These units are all equipped with two RS-422 9-pin deck control ports. One is configured as a Master (Output), and the other as a Slave (Input).

- The “Master” port is hardwired to **send** deck control commands to a slave device with a standard RS-422 “Straight Through” cable.
- The “Slave” port is hardwired to **receive** deck control commands from a master/controlling device with a standard RS-422 “Straight Through” cable.

Both ports may be configured to run as Master (Outputs) simultaneously, by:

- Forcing the Slave port into “Chase” mode via the DREAM software, and
- Using a RS-422 “cross-over” cable on the SX-unit’s “Slave” port.

One reason for configuring both RS-422 ports as “Master” would be to allow the DREAM Constellation control surface to simultaneously control an external Video feeder device such as a Digital Betacam deck, and a separate external video recording device, such as a standalone PYXIS Ingest PC. (See example schematic below).

