

Fx4 SDI

Multi Display Controller

USER GUIDE

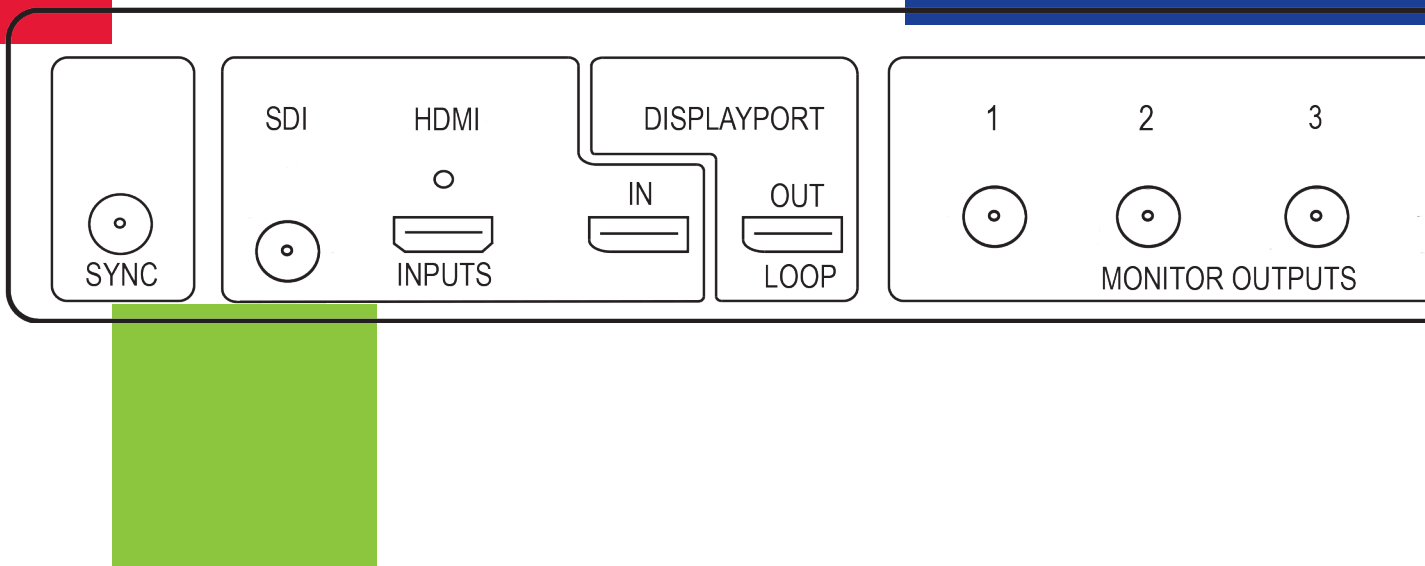


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Quick Start Guide

A version of the Quick Start Guide is included for your convenience.

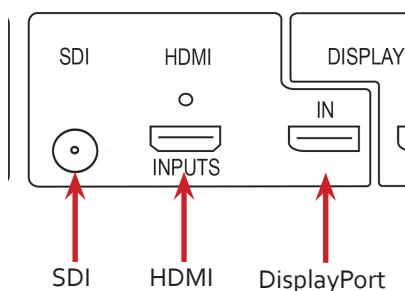
Contents

- The Fx4-SDI Multi Display Controller
- 1 x Mains power cable
- USB 2.0 cable Type A to Type B
- Quick Start Guide
- 2 x Rack mount attachments
- 6 x Rack mount screws
- 1 x HDMI cable lock with tie wrap

If any of the items are missing, please contact Datapath for further instructions.

The Fx4-SDI is not supplied with input and output cables therefore please ensure you have the relevant cables to hand to complete your project.

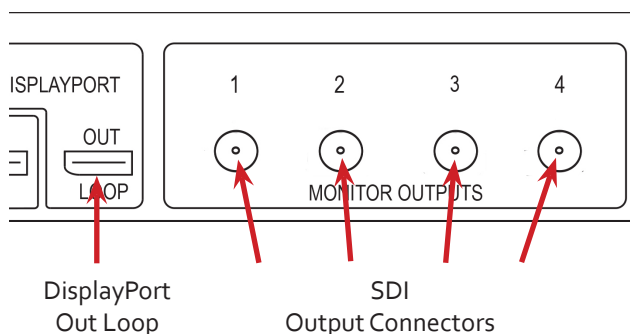
Step 1 - Connecting the Inputs



Connect your input source to one of the 3 input connectors on the rear of the Fx4-SDI. You can connect up to 3 input sources, 1 x SDI, 1 x HDMI and 1 x DisplayPort.

Ensure cables are inserted correctly, it is recommended that locking cable connectors are used for the HDMI connector.

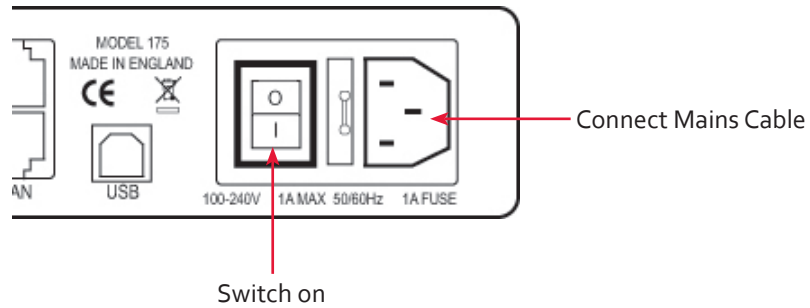
Step 2 - Connecting the Outputs



Connect the SDI cables to the SDI output connectors on the rear of the Fx4-SDI, you can connect up to 4 devices to a single Fx4-SDI unit. Ensure the cables are inserted correctly, rotated and locked.

The DisplayPort Out Loop is used to when connecting multiple Fx4-SDI units.

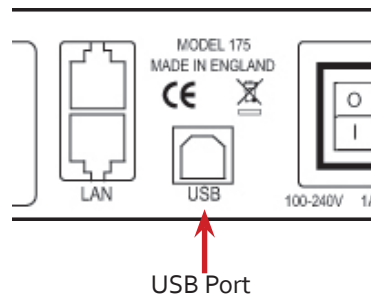
Step 3 - Connect a Mains Cable



When the power is switched on the Fx4-SDI will boot and the LEDs on the front panel will flash for up to 15 seconds. Should the LED's continue to flash see the troubleshooting section.

Step 4 - Connecting to a PC

To successfully configure the Fx4, first install the Wall Designer application on your PC by downloading the latest version from the Datapath website: www.datapath.co.uk.

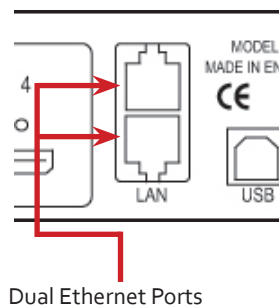


When the Fx4-SDI has booted, connect it to your PC using the USB cable provided. The Fx4-SDI unit is a plug and play device, Wall Designer will detect it when the layouts are configured.

The Fx4-SDI can also be configured via a Network, see Step 5.

Step 5 - Configure Via a Network

The Fx4-SDI has dual ethernet ports to allow users to add the device to their network. Only one Fx4-SDI in any chain requires connection to the physical LAN as ethernet loop through is supported on the second LAN Port, meaning multiple devices can be connected.




Connect the Fx4-SDI to a network using the top LAN connector then open Wall Designer and create your display layout. At the point where you associate the virtual device with a physical device the list will display all Fx4-SDI's currently connected to the network either directly or daisy chained.

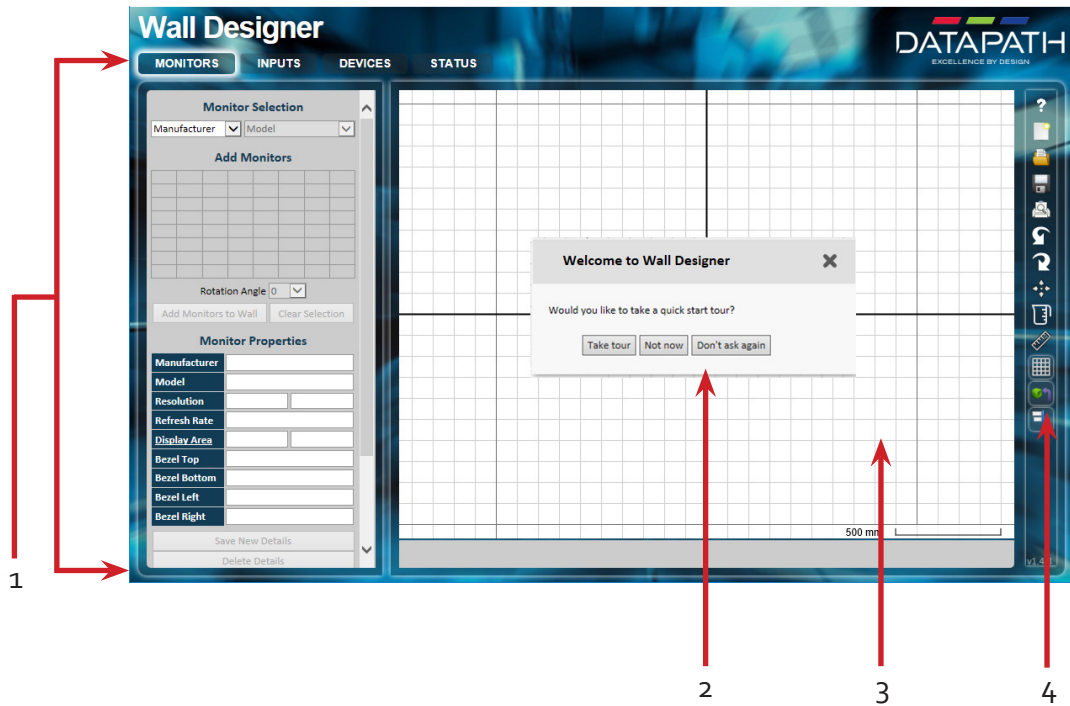
Click on the virtual device to display its properties, the **Device Properties** can be changed in the same way as if connecting via USB. Once any changes have been made click on **Apply Settings** to save.

See the Fx4-SDI User Guide for information regarding network settings.

Step 6 - Wall Designer

 Start | All Programs | Wall Designer |

When Wall Designer is opened, the following dialogue is displayed:

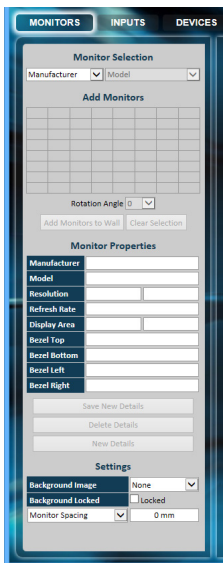


1	Operation Modes: Select , inputs and configure devices
2	Quick Tour Dialogue
3	Virtual Canvas
4	Toolbar

It is highly recommended that when using Wall Designer for the first time, all users take the Quick Start Tour.

Step 7 - Operation

Monitors



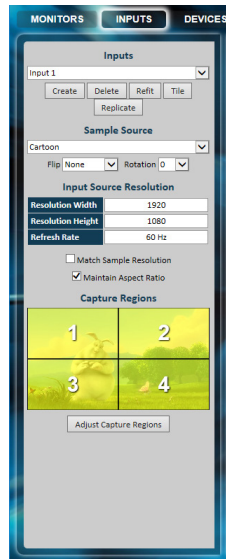
Select the monitor manufacturer from the drop down list on the left, then select the model.

Choose the number of by clicking and dragging in the **Add** grid.

Select a background to enhance the Virtual Canvas

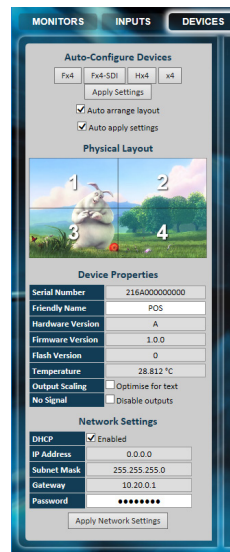
Click **Add to Wall** then open the **Inputs** tab.

Inputs



Set up your input sources to be displayed on your. Click on the **Create** button and select a sample source for a preview of what the display wall will look like.

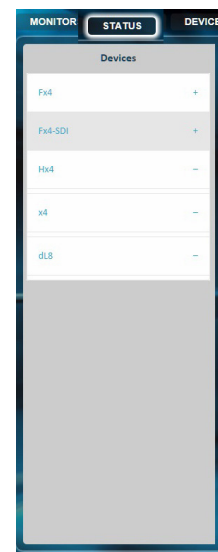
Devices



Configure hardware devices by clicking on **Auto-configure Fx4-SDI**. Once you are satisfied with the configuration, right click on the virtual device in the main window and associate it with the physical device connected to your computer or on your network.

To complete the device configuration, click on the **Apply Settings** button.

Status

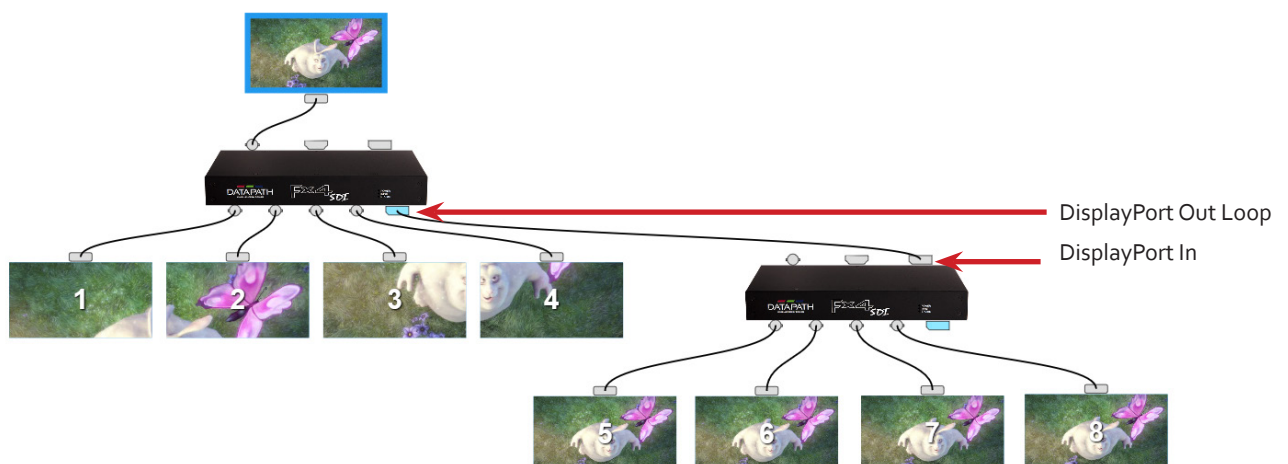


Click on a device from the list and the Status Panel is populated with a detailed summary of the device including details of Flash and Firmware versions, IP Address (if connected via a network), serial number and average temperature of the device etc.

The Status Panel displays the input and output properties. A detailed view of each property can be viewed by clicking on each drop-down menu.

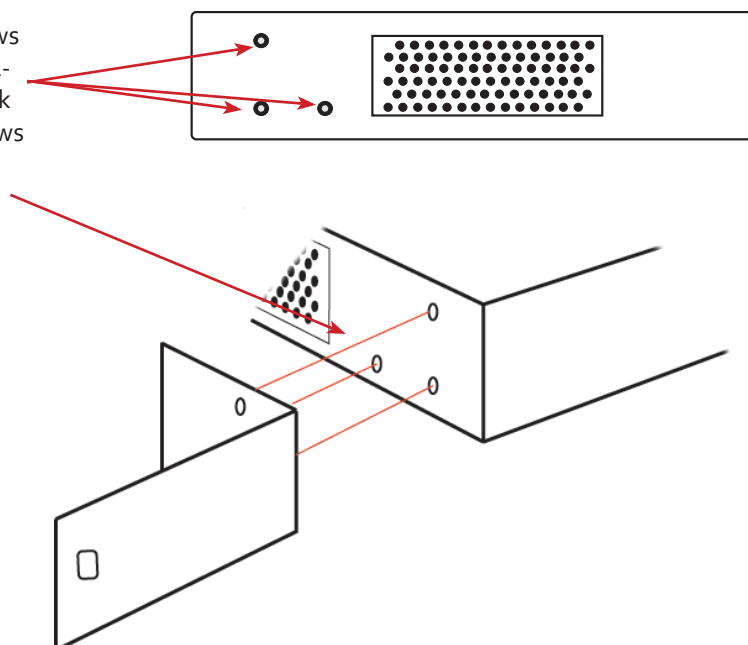
Step 8 - Multiple Devices

Where more than four outputs are required, (the example below shows eight) the Auto Config Fx4-SDI function will determine the most logical way to connect all devices. To daisy chain a second Fx4-SDI, use a DisplayPort cable (not supplied) to connect the DisplayPort Out Loop on the first Fx4-SDI to the DisplayPort In on the second Fx4-SDI.



Step 9 - Rack Mounting (Optional)

Remove the stud screws on the side of your Fx4-SDI and secure the rack mounts using the screws provided



Step 9 - IP Control Panel

The Fx4-SDI has a control panel that can be accessed via an IP connection, simply type in the IP address of the Fx4-SDI into an Internet browser and a control panel for that particular Fx4-SDI is displayed. The control panel allows you to change properties and settings, manually define cropping regions, upload your own logo or open the Wall Designer application.

Fx4-SDI Control Panel Password:

- Device Properties
- Network Settings
- Input Properties
- Output Properties
- Capture Regions
- Log Messages

Any settings changed will be lost on power off unless they are saved to flash. To save settings to flash click on the save settings button below.

Logo upload can take up to 10 minutes, please do not close this window until upload is fully complete. Progress information can be seen in the log messages window.

Step 10 - Troubleshooting

Front Panel LED Lights

On start-up all three lights will flash, after a few seconds the flashing should stop and the power light stays on permanently. If the light continues to flash this indicates that the Fx4-SDI requires upgrading. See User Guide for details on how to upgrade your Fx4-SDI.

Chapter 1 - Introduction

1.1 Introduction

Congratulations on your purchase of the Datapath Fx4-SDI Multi Display Controller. The Fx4-SDI has been manufactured and tested to the highest standards offering unparalleled quality and reliability. The aim of this user guide is to assist you through the installation of the Fx4-SDI safely and effectively and act as a reference guide for future use. Do not switch the controller on until all the relevant cables have been connected.

1.2 How the User Guide is Organised

The user guide is broken down into chapters and each chapter into sections. Chapters, sections and pages are numbered individually. Pages are numbered in Arabic numerals with the exception of the cover page (no numbering).

1.3 Fonts and Symbols

1.3.1 Fonts




The font used throughout the user guide is Corbel however the following font styles mean:

Bold = Used to describe menu titles, buttons in software or elements that you must type.

Blue Underlined = Indicates a hyper-link. Some hyper-links may be linked to live websites.

1.3.2 Symbols

Symbols are used throughout this user guide to assist the user in quickly identifying important safety information and notes.

	Yellow triangle indicates that failure to observe the instructions could result in injury and/or damage to the system.
	White arrow in a blue box indicates a useful tip.
	White exclamation mark in a blue box indicates important information.

Chapter 2 - Safety



2.1 Safety Precautions

To prevent damage to your Datapath product or injury to personnel operating the equipment, please read the following safety precautions prior to operation. These instructions should be made available to all those who will use and operate Datapath products.

2.1.1 Power Supply

All Datapath products require a mains power supply. This power supply must be disconnected when equipment is being relocated.

2.1.2 Cables

Do not expose cables to any liquids; doing so may cause a short circuit which could damage the equipment. Do not place heavy objects on top of any cables as this can cause damage and possibly lead to exposed live wires.

2.1.3 Ventilation

The Fx4-SDI should be located in a well ventilated area. All ventilation holes on the casing must be kept clear of any obstruction at all times. Failure to do so will result in the system over heating and damaging your equipment.

2.1.4 Working Environment

The equipment should be located in an environment free from dust, moisture and extreme changes in temperature and should be placed on a stable and solid work surface. Liquids (hot/cold drinks etc) should not be placed near the equipment as spillage could cause serious damage.

2.1.5 Gas/Flammable Liquids

Electronic equipment should never be used in the presence of gas or any flammable liquid, doing so could result in an explosion or serious fire.

2.1.6 Smoke/Unusual Smells

Should you notice smoke or unusual smells being emitted from your system, turn off and unplug the system from the mains supply. The system should then be passed to a qualified technician for inspection. Continued operation could result in personal injury and damage to property.

2.1.7 Maintenance

Apart from what is detailed in this user guide, maintenance should only be carried out by competent technicians, Fx4-SDI's that are physically damaged should be returned to Datapath for repair using Datapath RMA procedures.

2.2 Unpacking and Initial Inspection

2.2.1 Unpacking

All packaging materials should be retained for future transit.

2.2.2 Initial Inspection

All Datapath products are carefully prepared for shipment and every effort is made to ensure you receive the product in pristine condition. On receipt, you should carefully inspect the outer packaging for any transit damage i.e. any signs that the item may have been dropped etc.

Use the product leaflet enclosed to establish that all the items are present. Should any items be missing, contact Datapath for further instructions.

Check the Fx4-SDI for damage that could have an adverse affect on the operation of the system or could cause injury to the operator. Should there be any physical damage to the power sockets or exposed wiring do not connect to a power source, contact Datapath for further instructions.

2.3 Unpacking

Your packing box should contain the following items:

- The Fx4-SDI Multi Display Controller
- 1 x Mains power cable
- USB 2.0 cable Type A to Type B
- 1 x HDMI cable lock with tie wrap
- Quick Start Guide
- 2 x Rack mount attachments
- 6 x Rack mount screws

If any of the items are missing, please contact Datapath for further instructions.

Chapter 3 - General

3.1 Overview

Live events and broadcast markets face similar challenges when deploying video walls. Fast transmission speeds are paramount to project success, with large distances needing to be covered by vast networks of cables.

The Datapath Fx4-SDI offers the perfect solution for staging and televised video walls. Delivering four SDI outputs and the ability to loop multiple units together, even the largest, most complex video wall installations are possible. Datapath's intuitive Wall Designer software and fully featured API means that whole projects can be quickly set up and easy to manage.

The Fx4-SDI features one 3G SDI input, one DisplayPort 1.2 input and one HDMI 1.4 input, offering up to 2k (2048x1080) at 60fps, 4k (4096x2160) at 60fps and 4k (4096x2160) at 30fps respectively. The intuitive user interface, Wall Designer (See [Chapter 5](#)) allows users to determine which input is used.

The Datapath Fx4-SDI has dual Ethernet ports to allow users to add the device to their networks. Only one Datapath Fx4-SDI in the chain requires connection to the physical LAN as Ethernet loop through is supported on the second port, meaning multiple devices can be connected.

3.2 Features

Each output device (monitors, projectors or alternative SDI inputs) can take its input from any region of the input image as all of the required cropping, scaling, rotation and frame-rate conversion is handled by the Datapath Fx4-SDI hardware. These regions can overlap to allow any output to replicate another or can be configured to support any creative splice of the source material. This allows the support of many non-rectangular screen arrangements with uneven gaps, and any mix of monitor orientations.

- Infinite creative configurations
- Up to Ultra HD input, four SDI 1080p outputs
- Rotates, crops, scales, mirrors and bezel corrects
- Multiple inputs for flexible connectivity
- True stand-alone operation: Datapath Fx4-SDI can adapt to changes in inputs by adjusting all scale factors
- Network or USB interfaces allow platform independent control
- Pre-load an image for use when signal is not detected

Chapter 4 - Hardware

4.1 Front Panel



4.1.1 Operation Indicators

The front panel has three LEDs to indicate the operational status of the Fx4-SDI:

- Power
- Input
- Status

Power

When illuminated, the Power LED indicates the Fx4-SDI is connected to a mains supply.



The LED's can flash for up to 15 seconds when the Fx4-SDI is switched on.

Input

When illuminated, the Input LED indicates a valid source is connected.

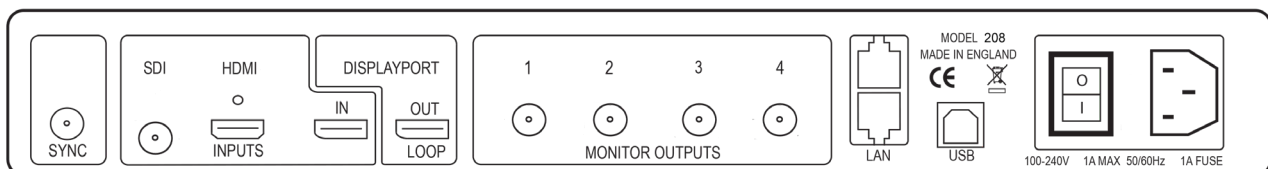
Status

Continuous illumination – Indicates the Fx4-SDI is operating normally.

The Status LED should stay lit at all times unless there is a failure somewhere within the Fx4-SDI, at which point it would briefly flash off for 0.25 s and then it would be lit again.

When the Fx4-SDI device is connected to a PC by a USB cable and Wall Designer application is active, then all three lights flash in turn to help to identify which unit is being controlled.

4.2 Rear Panel



Sync

The Sync accepts Tri-level or Black burst syncs for genlocking the Fx4-SDI to external devices.

Inputs

The Fx4-SDI has 3 input connectors, 1 x 3G SDI, 1 x HDMI and 1 x DisplayPort . All 3 inputs can be connected to sources playing concurrently, however only 1 of the inputs can be displayed at any one time. Switching between inputs is achieved using the Wall Designer software application.

DisplayPort Out Loop

Used to connect multiple Fx4-SDI units, enabling larger display walls.

Monitor Outputs

4 x 3G SDI output connectors. The Monitor Output connectors are used to connect the Fx4-SDI to the display devices.

LAN

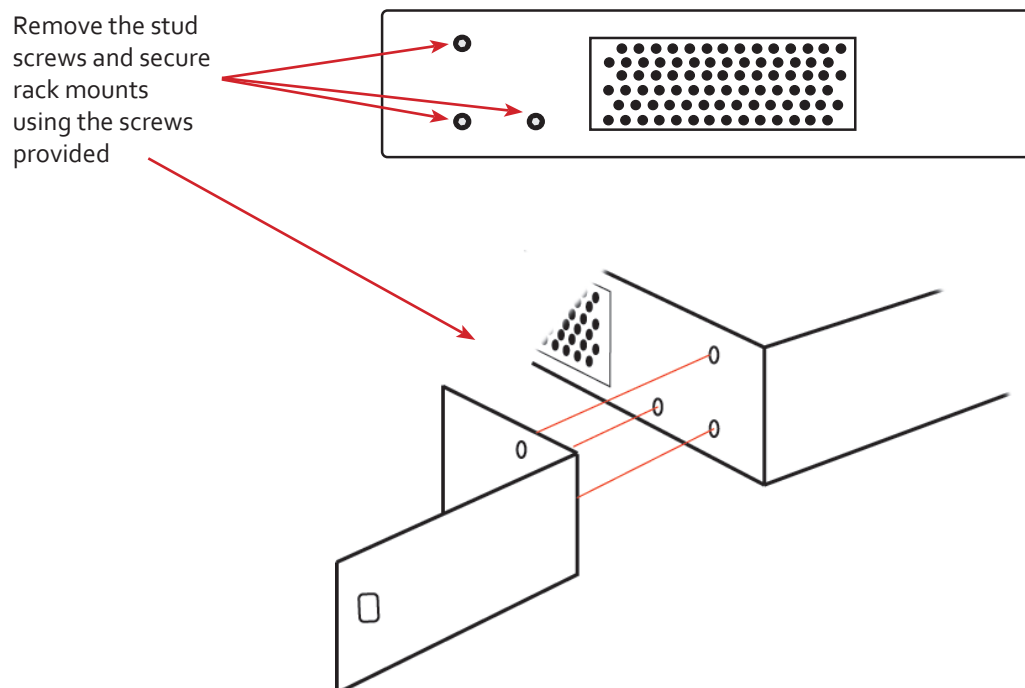
The LAN connector is used to connect the Fx4-SDI to a network for configuration and control, it can also be used to connect multiple Fx4-SDIs in a daisy chain architecture using Ethernet cables. Ethernet loop through is supported. The LAN connector can also be used to connect the Fx4-SDI to a PC for configuration.

USB

The USB socket is used to connect the Fx4-SDI to a PC via a USB connection using the supplied USB Type A to Type B cable.

4.3 Rack Mounting the Fx4-SDI

The Fx4-SDI is supplied with attachments to enable you to mount the Fx4-SDI in a rack. Remove the 3 mounting screws on each side of the Fx4-SDI using a cross head screwdriver and attach the rack mounts as shown in the illustration below.



Chapter 5 - Software

This chapter will cover:

Introduction to Wall Designer

Installing the Wall Designer application

Running the Wall Designer application

A summary of Wall Designer features

5.1 Wall Designer

Multi-Monitor Display Wall installations can be challenging to design, build, configure and implement. Highly creative display projects often require multiple display devices arranged in unconventional formations with a myriad of bezel sizes, gaps and monitor positions. Project designers, installers and integrators require simple yet effect Video Wall creation tools in order to manage the project from start to finish.

The software includes a community driven database of from popular manufacturers which continues to grow as users add their own monitor specifications and submit them back to Datapath for inclusion in the next database update.

5.2 Wall Designer Features

Wall Designer is the perfect solution to creating and managing your display wall project from start to finish, giving you total creative control reliably and efficiently.

- Datapath's monitor database is regularly updated with new manufacturers and models. Users can add and submit their own monitor information and once validated, will be added to the master database.
- Output devices can be arranged landscape and portrait with gaps.
- Add content into your project and place it across the virtual canvas filling the display wall with content.
- Automatically configure the Fx4-SDI assigning each output to a device.
- Print out design schematics to aid physical monitor installation.
- Language support for German, Spanish, French, Japanese, Polish, Portuguese, Russian and Simplified Chinese.
- Comprehensive help files to guide you through the application.

5.3 Installing Wall Designer

5.3.1 Downloading The Application

The Wall Designer application should be downloaded from the Support/Downloads pages of the [Datapath website](#) under the Display Controller Downloads section.

5.3.2 View Readme

Click on View Readme to open an HTML document containing the latest information and bug fixes for the application. The Wall Designer application can be installed from the Readme.

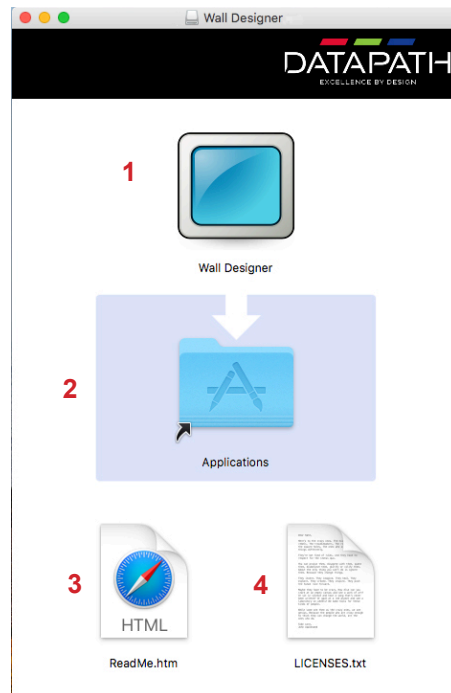
5.3.3 Install the Wall Designer Software

Double click on the downloaded Wall Designer.exe file to initiate the installation wizard. Wall Designer is a multi-lingual application and you are offered a selection of languages when the install process begins. Select the required language and the install wizard will continue installing the software.

5.4 Installing the Wall Designer - Mac OS

5.4.1 Web Download

The Wall Designer application for Mac is available to download from the [Datapath website](#). Once the application has been downloaded, locate and click on the walldesigner.dmg in your downloads folder and the following dialogue is displayed:



Drag the Wall Designer application (1) into the Application folder (2) and the Wall Designer application becomes available to open from Launchpad.

The ReadMe (3) and the Software License Agreement (4) can be opened by clicking on them. You are strongly advised to read both prior to using the Wall Designer application.

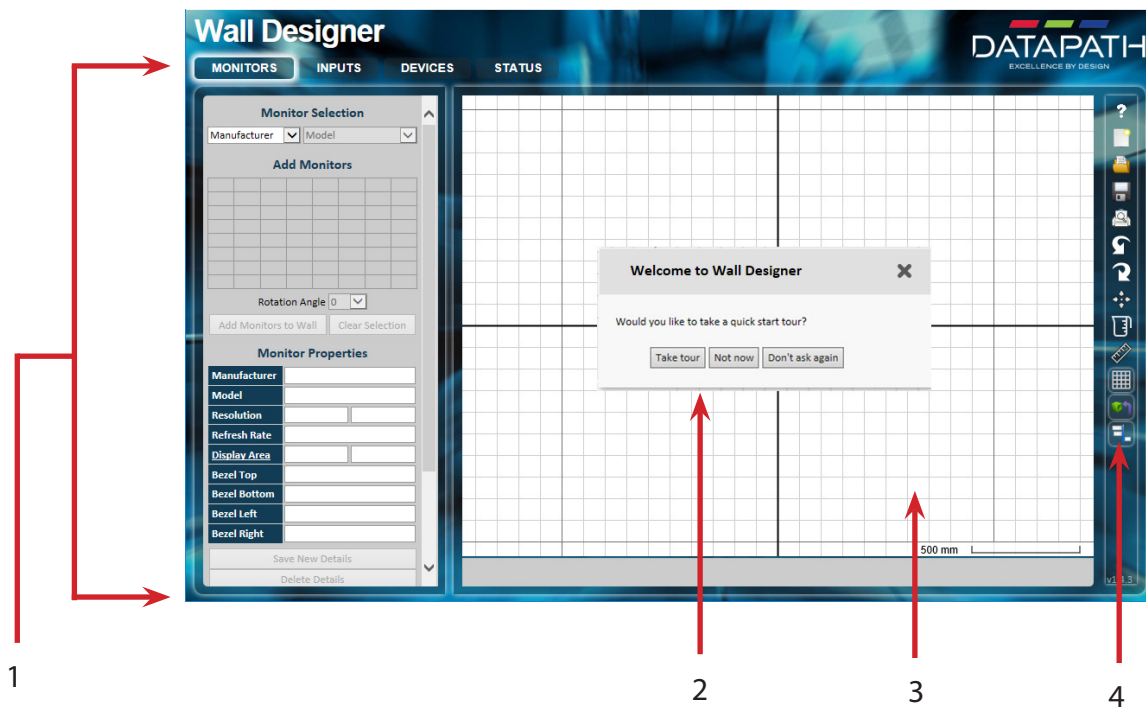
5.5 Running the Wall Designer Application

Once the software has been installed you can open the application:

Start | All Programs | Wall Designer

5.5.1 Wall Designer Interface

When Wall Designer is opened, the following dialogue is displayed:



1	Operation Modes: Select , inputs and configure devices
2	Quick Tour Dialogue
3	Virtual Canvas
4	Toolbar

5.5.2 Operation Modes

The application has 4 separate operation modes: Monitor, Inputs, Devices and Status:

Wall Designer includes a database containing a selection of the more commonly used monitor manufacturers and models. Use the manufacturer and models dropdown list to select a specific monitor. When selected the monitor properties are automatically populated with the specification of the monitor. If a monitor being used is not listed in the database, manually add the required values to the Monitor Properties.

To add simply click or click and drag the cells inside the 8x8 grid. Once the have been arranged on the virtual canvas and you are happy with the wall design, click on Add to Wall.

A selection of background images are available in the Settings drop down menu to enhance the Virtual Canvas.

Inputs

The inputs section of the application toolbar enables you to select a given input and allocate regions of the input to each monitor on the display wall.

A collection of sample sources are available via a dropdown menu, this contains a list of images and videos contained within the application's and user's media folder.

Devices

The devices section of the application toolbar brings together the input, hardware devices and the thereby completing the design of your display wall. This is done by allocating the input to available devices and the outputs from the devices to specific on the display wall.

For ease of use Wall Designer has an automatic configuration feature (Auto-config) which when clicked, automatically adds the required number of devices and configures all the links from the input to the via your Fx4-SDI's in the most logical configuration.

The virtual device can be associated with an actual device by right clicking on it and selecting **Associate Device**. Click in the device to display the device properties, these properties can be changed if required, for example the **Friendly Name** (recommended).

Status

Click on a device and the Status Panel is populated with a detailed summary of the device including details of Flash and Firmware versions, IP Address (if connected via a network), serial number and average temperature of the device etc.

The Status Panel also displays the input and output properties, a detailed view of each property can be viewed by clicking on each drop-down menu.

5.5.3 Quick Tour

When opening the application for the first time a quick tour dialogue is presented. It is highly recommended that you take a few minutes to complete the tour. The quick tour dialogue can be turned off so it will not be displayed in the future.

5.5.4 Virtual Canvas

The Virtual Canvas displays a representation of the selected and their orientation, thereby offering a view of the completed wall design. In Device mode, the Virtual Canvas illustrates how the input source, Fx4-SDI(s) and are configured.

5.5.5 Toolbar

The toolbar offers a group of tools which assist in creating, opening and saving layouts, you can also display actual video wall measurements in metric or imperial.

5.5.6 Help Files

The Wall Designer application has an inbuilt help file system which can be accessed by clicking on the **?** at the top of the toolbar.

Chapter 6 - Cabling

This chapter will cover:

Connecting a House Sync cable.

Attaching HDMI Cable Lock.

Connecting input sources.

Connecting a loop-through output cable.

Connecting the outputs to

Cable lengths

6.1 Connecting a Sync Cable

The Sync BNC connector supports tri-level and black burst video signals which is used to genlock the 4. For multiple Fx4-SDI's, a distribution unit is required (not supplied).

6.2 Attaching an HDMI Cable Lock

The Fx4-SDI is supplied with a HDMI cable lock which should be used on non lockable HDMI cables to ensure an HDMI input cable remains firmly attached to the Fx4-SDI.



Thread the cable tie through the holes in the side of the cable lock.



Sit the cable lock on the top of the HDMI cable connector ensuring the cable lock is flush with the front of the shroud on the HDMI connector.



Pull the cable tie tightly and ensure it fits firmly on the HDMI connector.

6.3 Connecting Input Sources

The Datapath Fx4-SDI has three dedicated input connectors 1 x SDI, 1 x HDMI and 1 x DisplayPort. It is strongly recommended that locking cables are used to prevent the input source cables from becoming detached from the Fx4-SDI. Cables should be attached as shown below:



Connecting SDI Input Cable



Connecting HDMI Input Cable

6.4 Connecting the Out Loop

The Out Loop connector is used to connect two or more Fx4-SDI's when the requirement is to create large video display walls with more than 4 .

Using a DisplayPort cable (not supplied) connect the Out Loop from the first Fx4-SDI to the DisplayPort Input on the second Fx4-SDI and so on until all the required units are connected. The input signal will be gen-locked through all the connected Fx4-SDI's in the chain. This output has been optimised for connection to another Fx4-SDI and may not link to a standard DisplayPort monitor.

6.5 Connecting Outputs to

Each Fx4-SDI display controller can support up to 4 output devices, the output connectors are 3G SDI.

Each output can display any region of the input image, all the required cropping, scaling and rotations is calculated within the Fx4-SDI hardware.



Connecting HDMI Output Cable

6.5.1 Cable Lengths

Workable cable lengths depend on the quality of the cables used to set up your Fx4-SDI, Datapath recommends using certified cables when installing your Fx4-SDI.

Cable Type	Bit Rate	Maximum Length (m)
SDI (Input/Output)	3G	100m*
DisplayPort (Loop through)	Reduced Bit Rate (RBR)	20
DisplayPort (Loop through)	High Bit Rate (HBR)	10
DisplayPort (Loop through)	High Bit Rate 2 (HBR2)	2
Ethernet Cable (Network/Setup)	N/A	100
USB (Setup)	N/A	3

* Cable type tested was Belden 1694A



The Wall Designer software has a Maximum Link Rate selector which enables you to manually select the link rate of the DisplayPort input to suit your own requirements. The default rate of HBR2 allows operation up to the full 4k/60 capability of the DisplayPort input, but if the actual input signal is only HD then the maximum link rate can be changed to HBR or RBR to enable the use of longer cables.

Chapter 7 - Operation

This chapter will cover:

Setting up

Switching on the Fx4-SDI

Configuring the Fx4-SDI using a USB connection

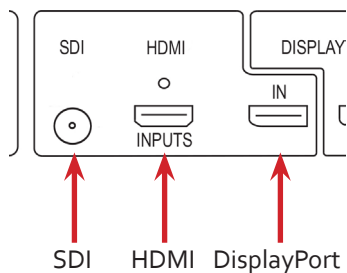
Configuring the Fx4-SDI over a Network

7.1 Setting up the Fx4-SDI

7.1.1 Connecting an Input

Firstly, ensure you have all the relevant input and output cables you need for your project:

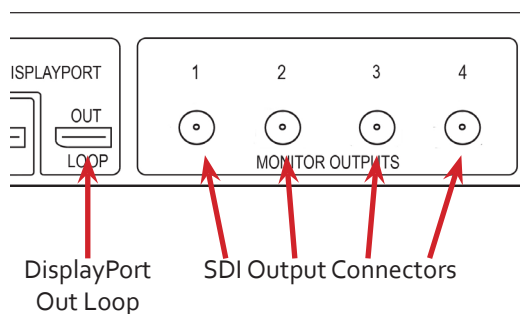
- Begin by connecting your input source to one of the 3 input connectors on the rear of the Fx4-SDI. You can connect up to 3 input sources, 1 x 3G SDI, 1 x HDMI and 1 x DisplayPort. If using more than one Fx4-SDI, the DisplayPort Input connector will act as the loop through input on the additional devices. Ensure the input cables are inserted correctly, it is recommended that locking cable connectors are used for HDMI and DisplayPort.



7.1.2 Connecting Outputs

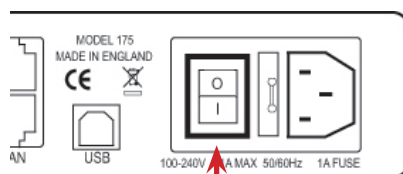
The Fx4-SDI has 5 output connectors, 4 x device outputs and 1 x DisplayPort loop through.

- Connect the device SDI cables to the output connectors on the rear of the Fx4-SDI, you can connect up to 4 to a single Fx4-SDI unit. Ensure the cables are inserted and locked correctly
- The DisplayPort Out Loop is used to when connecting multiple Fx4-SDI units. See [Chapter 6](#) for cabling requirements.



7.2 Switching On the Fx4-SDI

The Fx4-SDI has a built in power unit which is controlled using the power switch on the rear panel. Connect in the power cable supplied with your Fx4-SDI and plug in to a mains supply. Switch on the power on the rear of the Fx4-SDI as shown in the following illustration:



Power Switch

When the power is switched on the Fx4-SDI will boot and the LEDs on the front panel will flash as described in [Chapter 4](#).

Please note, it could take up to 15 seconds for the Fx4-SDI to fully boot.

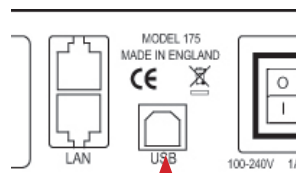
7.3 Configuring the Fx4-SDI via USB

When the Fx4-SDI has booted, connect it to the computer which has the Wall Designer application installed using the USB cable provided.



The Fx4-SDI is a plug and play device therefore relies on the device drivers in the Windows operating system. To enable the operating system to “attach” to the Fx4-SDI you must ensure the **Device Installation Settings** are set to automatic:

Control Panel \ Devices and Printers then right click on your computer icon and select **Device Installation Settings** from the menu. In the **Device Installation Settings**, select *Yes, do this automatically (recommended)* and click on **Save Changes**.



USB Port

Open the Wall Designer application and begin to design your video wall layout using the [tab](#) as described in [Chapter 5](#).

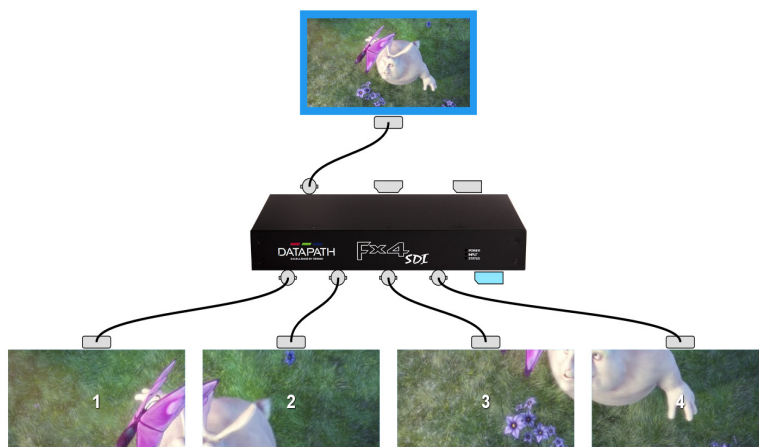
With the [selected](#) and the layout completed select the **Input** tab. Allocate the input to the Fx4-SDI by clicking on **Create** then selecting the required input from the drop down menu.

Once the input has been selected, navigate to the **Devices** tab, this is where the Fx4-SDI is configured.

The **Devices** window is where the input, devices and [are](#) linked to complete the design of the video wall; this is done by allocating inputs to devices and the outputs from the devices to specific [on](#) the video wall.

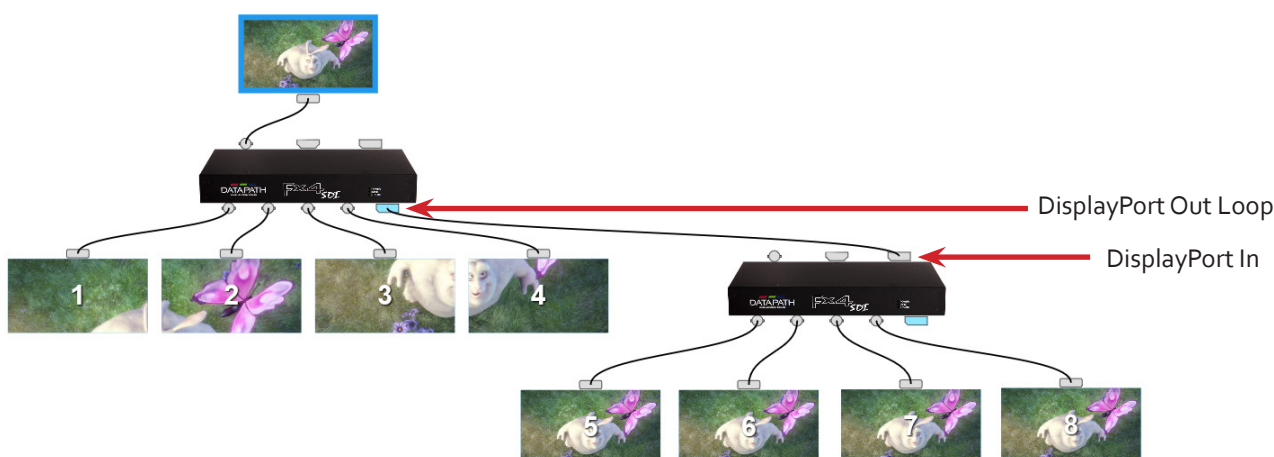
For ease of use the **Auto-config Fx4-SDI** function will, when clicked, automatically add devices and configure all the links from the inputs to the [via](#) the Fx4-SDI in the most logical configuration.

Click on the **Auto-config Fx4-SDI** button and a visual representation of the configured Fx4-SDI will appear in the main window, for example:



The illustration above shows the input source connected to Input 1 (SDI) on the Fx4-SDI and each device connected to the respective output connector.

Where more than four outputs are required, (the example below shows eight) the **Auto Config Fx4-SDI** function will determine the most logical way to connect all devices. The blue output connector on the first Fx4-SDI represents the DisplayPort Out Loop connector which is used to daisy chain additional Fx4-SDI's if more outputs are required. To daisy chain a second Fx4-SDI, use a DisplayPort cable (not supplied) to connect the DisplayPort Out Loop on the first Fx4-SDI to the DisplayPort Input on the second Fx4-SDI.



To associate the virtual Fx4-SDI in the main window with an actual physical device, highlight the device by right clicking then select **Associate Device** from the displayed menu, a list of available Fx4-SDI's is displayed.

Click on the virtual device to display its properties, the **Device Properties** can be changed if required, for example you may wish to allocate a different Friendly Name which can be useful when connecting to multiple devices. Once changes have been made click on **Apply Settings** to save.

If an input source is connected to the Fx4-SDI but the actual signal fails, the Fx4-SDI will try to connect to a valid signal by scanning the input connectors in the following order:

- 1 - DisplayPort
- 2 - SDI
- 3 - HDMI

If no signal is detected on either of the three input connectors the Fx4-SDI will display a pre-configured Datapath logo. To upload your preferred logo (max 4k), click on the **Upload Logo** button in the **Devices Tab** and browse to upload your logo.

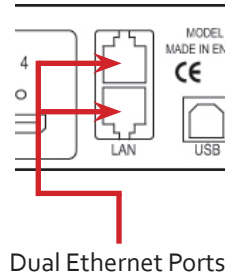


It can take up to 10 minutes to complete the upload

Full instructions on how to configure your Fx4-SDI are available in the Wall Designer application help file.

7.4 Configuring the Fx4-SDI via a Network

The Fx4-SDI has dual ethernet ports to allow users to add the device to their network. Only one Fx4-SDI in any chain requires connection to the physical LAN as ethernet loop through is supported on the second LAN Port, meaning multiple devices can be connected.



Connect the Fx4-SDI to a network using the top LAN connector then open Wall Designer and create your display layout as described in [Paragraph 7.3](#).

At the point where you associate the virtual device with a physical device the list will display all Fx4-SDI's currently connected to the network either directly or daisy chained.

Click on the virtual device to display its properties, the **Device Properties** can be changed in the same way as if connecting via USB. Once any changes have been made click on **Apply Settings** to save.

7.4.1 Network Settings

The Network Settings become active once you have successfully connected to an Fx4-SDI either by USB or Ethernet.

The Fx4-SDI allows you to switch between Dynamic (DHCP) and Static IP's. Out of the box, the Fx4-SDI is configured to accept DHCP.

When DHCP is selected the network will assign the Fx4-SDI with an IP address, this IP address can change depending on how the network allocates IP addresses.

If the Fx4-SDI is assigned a Static IP address it will keep that address until it is changed by the user.

The IP Address, Subnet Mask and Gateway fields are not available to edit if DHCP is selected and the display settings are assigned via a DHCP server.

In Static mode the IP Address, Subnet Mask and Gateway can be manually configured.

Chapter 8 - Troubleshooting

8.1 Troubleshooting

8.1.1 Network Timing Out

The network connection fails and the Fx4-SDI can't be seen in devices. Indicates that an IP address needs to be set.

8.1.2 Front Panel LED Lights

On start-up all three lights will flash, after a few seconds the flashing should stop and the power light stays on permanently. If the lights continue to flash this indicates that the Fx4-SDI requires upgrading.

To upgrade, connect the Fx4-SDI via the USB or Network interface to a PC and open the Wall Designer application. Create a monitor layout, allocate an input and auto-configure the Fx4-SDI. When the visual representation of the Fx4-SDI appears in the Device window right click to associate it with a physical device and a blue information icon will be displayed.

Click on the information icon for details of available upgrades.

8.1.3 Intermittent or Loss of Input Signal

If you lose your input signal or if the signal is intermittent it could mean there is a problem with the link rate between the source and the Fx4-SDI.

Check that all cables are fitted correctly.

When using DisplayPort cables ensure that the bitrate and cable length are compatible using the table shown in Chapter 6 or try selecting a lower maximum link rate in the Wall Designer application.

8.2 Technical Support

Registered users can access our technical support using email and the Support Enquiry Form on our website, usually with a response within 24 hours (excluding weekends).

8.2.1 Email

Send an email to support@datapath.co.uk with as much information about your system as possible. To enable a swift response our support team will need to know the following details:

- Specification of the PC - including processor speed.
- Operating system.
- Application Software.
- Datapath Hardware/Software.
- Details of the input source.
- Details of the output device(s)
- The exact nature of the problem - please be as specific as possible.

Please quote version and revision numbers of hardware and software wherever possible.

Chapter 9 - Maintenance

9.1 Maintenance of the Fx4-SDI

Your Fx4-SDI requires little maintenance however care should be taken to keep all ventilation holes clear to allow an unrestricted flow of air through the unit.

Note:

Failure to keep ventilation holes clear could result in damage to your Fx4-SDI and invalidate the warranty.

Chapter 10 - Environmental

10.1 Certification and Compliances

10.1.1 CE



EU- Class A Declaration of Conformity

Datapath Ltd declares that this product complies with the essential requirements and other relevant provisions of Directives 2014/30/EU, 2014/35/EU and 2011/65/EU.

A copy of our Declaration of Conformity is available on request:

Datapath Ltd
Bemrose House
Bemrose Park
Wayzgoose Drive
Derby, DE21 6XQ
United Kingdom

10.1.2 FCC

These devices comply with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) These devices may not cause harmful interference, and (2) these devices must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at their own expense.



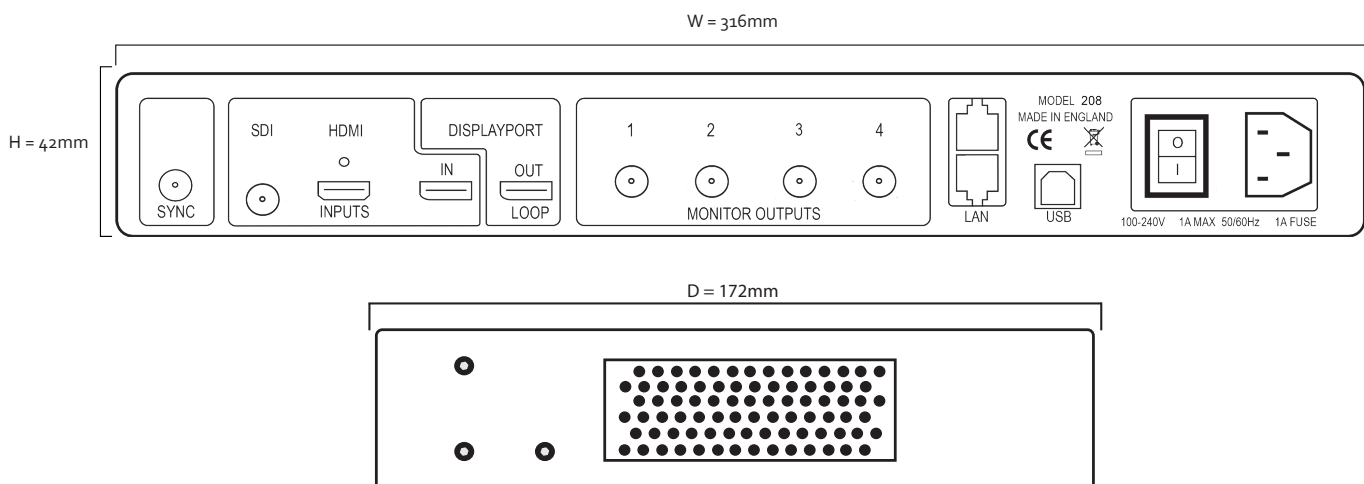
Caution. Changes or modifications to the equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment

10.1.3 Disposal

At the end of life all Datapath products should be disposed of as per local laws and regulations dictate. In the UK contact Datapath to arrange disposal. Our WEE registration number is WEEE/AA0005ZR.

Chapter 11 - Specifications

Dimensions	W 316mm x D 172mm x H 42mm (1.86kg).
Operating Temperature	0 - 35 DegC / 32 - 96 DegF.
Power Requirements	IEC switched and fused mains connector 100-240V, 50/60Hz / 30W.
Video Input Connections	3G SDI (1080p/60 or equivalent up to 165MP/s) DisplayPort1.2 (2160p/60 or equivalent up to 616MP/s) HDMI1.4 (2160p/30 or equivalent up to 297MP/s)
Video Output Connections	4 x 3G SDI (1080p/60 or equivalent up to 165MP/s) Loop-through: DisplayPort1.2 (locked to selected video input resolution)
SMPTE Standards	SDI SMPTE ST 2048 up to 60Hz SMPTE 274M up to 60Hz, SMPTE 296M up to 60Hz
	DisplayPort SMPTE ST 2048 up to 60Hz SMPTE ST 2036 up to 60Hz
	HDMI SMPTE ST 2048 up to 30Hz SMPTE ST 2036 up to 30Hz
Input Surface	8k x 8k maximum.
Genlock Input	Analogue black-burst on dedicated BNC connector. Any video input (SDI, HDMI, DisplayPort).
Control Interfaces	Dual 100BaseT Ethernet ports with in built managed switch. USB 2.0 Type B connector (full speed operation).
Firmware Support	Updates supported via USB and Ethernet connection
Storage Temperature	-20 to 70 DegC / -4 to 158 DegF
Relative Humidity	5% - 90% non-condensing
Warranty	3 years



Chapter 12 - Warranty/RMA

12.1 Warranty Statement

Datapath provides a return to manufacturer warranty on all its products for a standard 36 month period. It is important that RMA procedures are followed prior to products being returned as often issues can be resolved quickly without the need for products being returned.

12.2 RMA Returns Policy

If your Datapath product is not working as you expect, we recommend that you contact Datapath Ltd in the first instance for support, since many issues that may first appear as hardware faults, are actually installation or set-up problems and can normally be resolved without having to ship any hardware back to us. This route is therefore often the quickest, easiest and cheapest way of solving the problems that you are experiencing. Please email support@datapath.co.uk including as much detail regarding the failure as possible (for example: system description, signal types, input or output resolutions and any other relevant background information).

It is essential for you to know the serial number of the product(s) when contacting us.

If it appears that the fault is most likely to be hardware related, please email rma@datapath.co.uk stating the serial number and as much additional information regarding the nature of the failure as possible. Detailed explanation of the fault will help us to better identify the problem and will direct additional focused testing if necessary. We will then issue an "RMA Number" to you.

At the time that the "RMA Number" is issued we will inform you of the warranty status of the product and the cost of the repair, if appropriate - see paragraph (b) below. The product should then be returned, at your cost, to Datapath Ltd following the steps below.

There are 4 possible scenarios when a product is returned to us:

- (a) The product is in warranty and is either found to be genuinely faulty or no fault is found. In these cases, the product will be repaired as necessary, or replaced by a new or previously repaired product, and returned to you at our cost.
- (b) The product is out of warranty and is found to be faulty. The product if possible will be repaired or replaced at fixed cost, as stated in the RMA authorisation email. To cover this payment, you will be required to either provide a Purchase Order or Credit Card details, when the product is returned to us. (However, we will not issue an invoice or charge the credit card until the repair has been completed and is about to be returned to you)
- (c) The product is in warranty but is found to be damaged by mis-use. This will be treated as (b) above.
- (d) The product is out of warranty and is obsolete. In the unlikely situation that the product can be neither repaired nor replaced, because some of its components are obsolete and we have no swap-out stock left, then the product will either be returned to you, or disposed of at your request, with no charge.

PLEASE NOTE: Datapath will not accept responsibility for the safety, integrity or security of any programmes, data or other content held on hard drives or any other type of rewritable media which is sent to us either separately or as part of any equipment returned to us for repair or for any other purpose. Customers are advised to take back-ups of anything that they deem to be valuable or important before returning the equipment to us and anything which is confidential should be erased from the media before it's returned.

Once the RMA Number has been issued, you need to raise your Purchase Order, or supply your credit card details, and return the product to: Datapath Ltd, Bemrose House, Bemrose Park, Derby DE21 6XQ, United Kingdom - securely packed and with the RMA Number clearly displayed on the outside of the box. To prevent unnecessary carriage and handling please only send back products or accessory items you believe to be faulty.

In the case of paragraph (c), the fixed charge will be levied after we have seen the product and identified the misuse. In this case we will request you to issue a purchase order or provide credit card details before any repairs are completed.

Our policy is to return the repair (or swap-out) to you within 10 days of receipt.

12.3 Disclaimer/Copyright Statement

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Whilst every effort is made to ensure that the information contained in this User Guide is correct, Datapath Limited make no representations or warranties with respect to the contents thereof, and do not accept liability for any errors or omissions.

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