

Overview

This guide pertains to the SDX-414-DX 4x1 4K HDMI Digital Switcher with DXLink Output (**FG1010-314**). The purpose of this document is to illustrate how the device is to be installed and set up in its simplest configuration by a trained technician.

What's in the Box?

The following items are included with the SDX-414-DX:

- (2) 5-pin Phoenix connectors
- (1) 4-pin Phoenix connector
- (4) rubber feet

Power

Active power requirements:

- Voltage, DC (typical): 12VDC
- Power consumption (max): 18W

Environmental Requirements

The environmental requirements for the SDX-414-DX are as follows:

- **Operating Temperature:** 32° F (0° C) to 104° F (40° C)
- **Storage Temperature:** -22° F (-30° C) to 158° F (70° C)
- **Operating Humidity:** 5% to 85% RH (non-condensing)
- **Storage Humidity:** 0% to 90% RH (non-condensing)

Configuration

Perform the following to prepare the switcher for network communication:

Setting the Configuration DIP Switches

Use the Configuration DIP switch to enable/disable the LAN ports and set network connectivity. DIP switch settings are read on reboot. Any changes to the DIP switch settings are not acted upon until after you reboot the device.

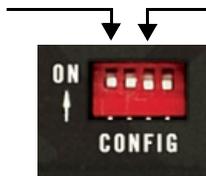
Enabling the LAN 10/100 Ports

The LAN 10/100 ports on the switchers are disabled by default. You can enable the ports by setting #1 DIP switch to ON (see FIG. 1).

Enabling Network Connectivity

Network connectivity on the switchers is disabled by default. You can enable network connectivity by setting #3 DIP switch to ON (see FIG. 1).

#1 switch, set to ON to enable LAN 10/100 ports



#3 switch, set to ON to enable network connectivity

FIG. 1 CONFIGURATION DIP SWITCH

Installation

Before connecting the switcher to its peripheral devices and powering the device, be sure to mount the device using one of the methods detailed below. You can also pole-mount the switcher using the V Style Single Module Pole Mounting Kit (**FG1010-723**). The switchers also include rubber feet that you can apply to the bottom of the device for table-top mounting.

Surface Mounting

The Solecis Digital Switchers can be mounted using V Style Surface Mounting Brackets (**FG1010-722**). The Surface Mount Brackets are designed for mounting a single module (to a wall, on or under a desk, etc.) The brackets may be attached to mount the top or the bottom flush with the mounting surface.

Rack Mounting

You can mount the switcher on a rack shelf by using an NMX-VRK V-Style Rack Shelf (**FG3201-60**). In addition to the switcher, you can also use wire ties to mount the switcher's power supply on the rack shelf.

Consult the Installation Guide included with the mounting hardware of your choice for mounting instructions.

Getting Connected

The following sections describe how to connect your switcher to your network, audio/video sources, and accessories.

Connecting the Switcher to a Video Input

The HDMI INPUT connectors on the rear panel route digital video (and audio) from connected source input devices to the connected output devices. The SDX-414-DX features four HDMI INPUT connectors.

Connecting the Switcher to a Video Output

The switchers can transmit a signal simultaneously to both DXLink and HDMI outputs.

- The switcher uses standard HDMI cabling to connect to the HDMI inputs and outputs. Use an HDMI cable to connect the HDMI OUT port on the rear panel of the switcher to the display device.
- The switcher uses category cabling to connect to the DXLink output. See the *Important Twisted Pair Cabling Requirements and Recommendations* section for information about cable requirements for the DXLink port. Use category cabling to connect the DXLINK port on the rear panel of the switcher to the DXLink input port on a DXLink receiver, Enova DVX switcher, or Enova DGX switcher.

Video Switching

Auto Switching mode is the default switching mode. With Auto Switching mode, the switcher responds to the most recently added video input by switching the new input to display on the HDMI and DXLink output. If the currently selected video source is removed, the switcher remains on that input.

You can disable Auto Switching mode by using the VIDIN_AUTO_SELECT NetLinX command. See the *Solecis SDX Digital Switchers Instruction Manual* for more information on this command.

To switch between video inputs that have already been established, you can perform one of the following:

- Use the Select button on the front of the panel to cycle through the video inputs.
- Use a connected external button (not included) with either of the External Button/LED Control connectors located on the rear panel of the switcher. The External Button/LED Control connectors are 5-pin, 3.5mm terminal screw connectors to which you can connect up to two single-button modules, such as the HPX-U100-BTN. With a single button module connected to one of these ports, you can press the button on the module to switch the input and send a button press event to a connected Master. You can use this function to have the Master send a command back to the switcher to execute an additional event.
- Use the NetLinX command `Cl to switch between video inputs. See the Solecis SDX Digital Switchers Instruction Manual for more information on this command.`

Toggling Between DHCP and Static IP Addresses

Solecis Digital Switchers support both DHCP and static IP addresses. When the #3 DIP switch is set to ON, the switchers automatically use DHCP with link-local fallback. However, you can use a static IP address which you can set via a Telnet command (SET IP), or you can use the factory default static IP address. The default static IP address can be recalled at any time by resetting the unit to its factory default configuration. The default link-local address is 169.254.2.2. The switcher defaults to the link-local address if no IP address is obtained from a DHCP server.

The ID Pushbutton can be used to toggle between the DHCP and Static IP Modes.

Perform these steps to toggle between IP addressing modes:

1. After the switcher boots, press and hold the ID Pushbutton until the STATUS and LINK/ACT LEDs toggle back and forth in unison approximately 10 times.
2. Release the pushbutton when the LEDs start to blink faster.
 - When you release the Pushbutton, the switcher toggles either from static to dynamic (DHCP) IP addressing or vice versa and remains in that mode until you use the ID Pushbutton to toggle the IP mode again or you perform a factory reset.
 - The switcher automatically reboots to complete the process.

Assigning a Device Address (ID Mode)

You can use the ID Pushbutton in conjunction with the ID (Identify) Mode feature in NetLinX Studio. A momentary press of the ID Pushbutton assigns a device address to the switcher (which must be bound to the Master). You must first place the device in ID Mode in NetLinX Studio or the momentary press will be ignored.

NOTE: The latest version of NetLinX Studio is available to download and install from www.amx.com. Refer to the NetLinX Studio online help for instructions on using the application.

Perform these steps to assign a device address:

1. Check to be sure DIP switch #3 on the switcher is set to ON.
2. In NetLinX Studio's OnLine Tree, select the Master to which the switcher is bound.
3. From the Diagnostic menu, select **Device Addressing**. The Device Addressing dialog box opens.
4. In the ID Mode section, enter the Device and System numbers that you want assigned to the device in the appropriate text boxes.
5. Click **Start Identify Mode** to place the named system in ID Mode. The button changes to "Cancel Identify Mode" (click to cancel ID Mode). The text box below the button displays a "Waiting...Press Cancel to Quit" message.

NOTE: When in ID Mode, the entire system is put on hold while it waits for an event from any NetLinx device in the named system (e.g., pressing the ID Pushbutton on the switcher). The device that generates the first event is the device that will be "identified."

6. Briefly press and release the ID Pushbutton on the switcher. The switcher will exhibit the following behavior:
 - Respond with an ID Mode address response.
 - Report its old address offline.
 - Report its new address online.

The Online Tree will refresh to display the new device address for the switcher.

NOTE: NetLinx Studio (v3.3 or later) provides the ability to auto-increment IP Addresses and Hostnames as well as Device and System Numbers. Refer to the NetLinx Studio online help for details.

Restore the Factory Firmware Image and Factory Default Parameters

During power up – if you hold the ID Pushbutton until the STATUS and LINK/ACT LEDs toggle back and forth in unison approximately 30 times (10 slow, 20 fast) and then release the pushbutton when the LEDs turn solid, the switcher's factory firmware image will be restored. This procedure affects both the firmware version and the parameters.

Perform these steps to restore the factory firmware image and factory default parameters:

1. Press and hold the ID Pushbutton while plugging in the power connector. Start counting when the STATUS and LINK/ACT LEDs begin to flash in unison, not when the power connector is inserted.
2. After the LEDs complete the following sequence, release the ID Pushbutton:
 - Once the switcher has started booting up, all LEDs flash in unison at the rate of once per second.
 - After 10 flashes at that rate, the LEDs will blink in unison at a faster rate.
 - After 10 seconds of flashing at the increased rate, all LEDs turn on solid.
3. Upon release of the ID Pushbutton, the switcher executes the following actions:
 - Restores itself to its factory firmware image.
 - Resets to factory default parameters
4. Once all actions in Step 3 are completed, the LEDs all turn off, indicating the switcher is ready to reboot.

The switcher automatically reboots to complete the process.

Hardware Information

This section lists important hardware information for the SDX-414-DX.

Port Numbers

| SDX-414-DX PORT NUMBERS | | |
|-------------------------|-------------|--------------|
| Port | Port Number | Address |
| HDMI IN 1 | 1 | <DevID>:1:0 |
| HDMI IN 2 | 2 | <DevID>:2:0 |
| HDMI IN 3 | 3 | <DevID>:3:0 |
| HDMI IN 4 | 4 | <DevID>:4:0 |
| HDMI OUT | 1 | <DevID>:1:0 |
| DXLINK OUT | 1 | <DevID>:1:0 |
| External Buttons | 14 | <DevID>:14:0 |
| AXLINK Keypad 1 | 15 | <DevID>:15:0 |
| AXLINK Keypad 2 | 17 | <DevID>:17:0 |

Default IP Addresses

The default IP addressing mode is DHCP.

| SDX-414-DX DEFAULT IP ADDRESSES | |
|---------------------------------|-------------|
| Static IP Address | 192.168.1.2 |
| Link-Local Address | 169.254.2.2 |

Important Twisted Pair Cabling Requirements and Recommendations

The following requirements and recommendations apply to cabling DXLink (RJ-45) connectors:

- DXLink cable runs require shielded category cable (STP) of Cat6 (or better).
- DXLink twisted pair cable runs for DXLink equipment shall only be run within a common building.*
- DXLink delivers 10.2 Gb/s throughput over shielded category cable. Based on this bandwidth requirement, we recommend following industry standard practices designed for 10 Gigabit Ethernet when designing and installing the cable infrastructure.
- The cables should be no longer than necessary to reach the endpoints. We recommend terminating the cable to the actual distance required rather than leaving any excess cable in a service loop.

For more details and helpful cabling information, reference the white paper titled "Cabling for Success with DXLink" available at www.amx.com or contact your AMX representative.

* "Common building" is defined as: Where the walls of the structure(s) are physically connected and the structure(s) share a single ground reference.

Additional Documentation

Additional documentation for this device is available at www.amx.com. Refer to the *Solecis SDX Digital Switchers Instruction Manual* for additional details on installing, upgrading, and wiring the SDX-414-DX.

You can also access this Quick Start Guide online by using your mobile device to scan the QR code located on the bottom of the SDX-414-DX.

