

**DIP Switch Toggles – Default OFF (for Auto-setup, see next page)**

Before installing the units, find the scenario you are using in the table below and set the DIP switch toggles accordingly. Toggle #4 is reserved for future functionality.

For standalone pair upgrades, set Toggles #1-2-3 to ON and connect one unit to Controller.

COMMON SCENARIOS	TOGGLES
<b>Standalone Setup</b>	<b>1 - 2 - 3</b>
AV signals only (plus serial/IR passthrough)	OFF - OFF - OFF
AV with Ethernet passthrough to networked device (plus serial/IR passthrough)*	ON - OFF - OFF
AV with NetLinx control of TX/RX unit and serial/IR ports**	ON - ON - ON
AV with NetLinx control of TX/RX unit and serial/IR ports, plus Ethernet passthrough to network device*	ON - ON - ON
<b>Switcher Setup (TX/RX with Enova DGX/DGX 100 Series Switcher)</b>	<b>1 - 2 - 3</b>
AV signals only	OFF - OFF - OFF
AV with Ethernet passthrough to networked device*	ON - OFF - OFF
AV with NetLinx control of TX/RX unit and serial/IR ports	OFF - OFF - ON
AV with NetLinx control of TX/RX unit and serial/IR ports, plus Ethernet passthrough to network device*	ON - OFF - ON

\* Connect ICS LAN port of DXLink fiber unit to network device (e.g., laptop, IP controlled projector, ICS Lan Device). In standalone setup, connect ICS LAN port of other DXLink unit to network.

\*\* In standalone setup using NetLinx control of DXLink serial/IR ports, only one of the DXLink fiber units should be connected to network (the unit with #1 Toggle enabled).

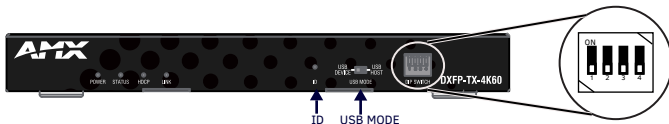


FIG. 1 DIP SWITCH TOGGLES ENABLE/DISABLE SPECIAL FUNCTIONALITY

**Overview**

The DXFP-TX-4K60 and DXFP-RX-4K60 transmit HDMI, audio, USB and control over fiber optic cable. The TX also has an HDMI loop out. DXLink fiber modules can be set up in one of three ways:

- Endpoint Mode (Switcher) – connect one or more to a switcher with an integrated Controller.
- Endpoint Mode (Standalone) – connect TX/RX pair directly to each other with one connected to a NetLinx Central Controller via LAN or directly to Controller.
- Extender Mode (Standalone) – connect TX/RX pair directly to each other.

These Modules support InstaGate Pro® and SmartScale® Technology. The *Hardware Reference Manual - DXLink 4K60 Fiber Transmitter/Receiver* contains complete documentation (including full specifications and supported input and output resolutions); for details, see [www.amx.com](http://www.amx.com).

**System Setup**

The DXFP-TX-4K60 and DXFP-RX-4K60 work with a switcher that supports DXLink Technology or as a stand-alone pair to transmit audio, video and control signals. The Transmitter receives audio and video from the HDMI source and transmits both audio and video over the fiber optic cable. This DXLink fiber optic cable can be connected directly to a DXLink fiber receiver or to a DXLink fiber input on a DXLink switcher where it can be routed to a DXLink fiber output and connected to a DXLink fiber receiver. The DXLink fiber receiver converts the DXLink fiber input to HDMI and analog audio outputs. On the transmitter, stereo audio connections are provided as a supplemental audio input. Both the transmitter and the receiver support RS-232 for serial data transfer, USB, IR, and Ethernet.

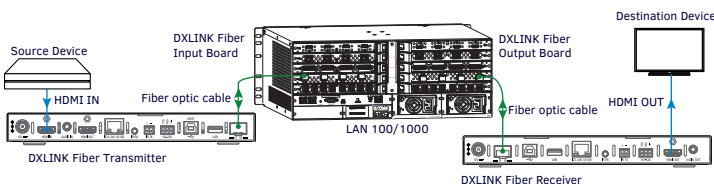


FIG. 2 DXLINK FIBER TX AND RX AS ENDPOINTS WITH COMPATIBLE DXLINK FIBER EQUIPMENT

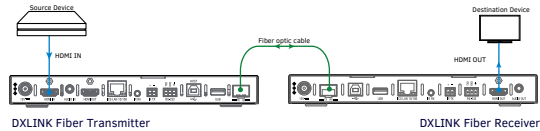


FIG. 3 DXLINK FIBER TX AND RX AS EXTENDER SOLUTION

**Mounting Options (Rack Trays and Mounting Brackets)**

The DXFP-TX-4K60 and DXFP-RX-4K60 can be mounted using V Style Surface Mounting Brackets, V Style Single Module Pole Mounting Kit, or NMX-VRK V-Style Rack Shelf. For details, see [www.amx.com](http://www.amx.com)

**IMPORTANT:** When mounting under a surface, the module should be mounted upright and lowered in the mounting bracket slots to provide an airflow gap between the surface and the vent holes. If not using V Style brackets, be sure to leave a gap between the top of the unit and the surface for heat to escape.

**ICS LAN 10/100 Port**

The ICS LAN 10/100 port uses twisted pair cable. FIG. 4 shows the LEDs for this port.

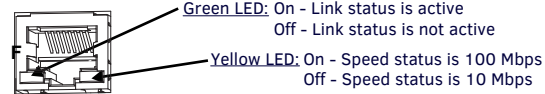


FIG. 4 ICS LAN (RJ45) PORT

**Fiber Optic Transceivers**

The DXLink Fiber Transmitters and Receivers use SFP+ fiber optic transceivers. Fiber optic transceivers are self-contained modules that send and receive optical signals over fiber cable. DXLink SFP+ fiber optic transceivers is multimode and must be wired with the corresponding cable type. Multimode transceivers support bidirectional and unidirectional communication.

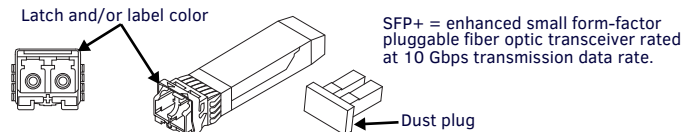


FIG. 5 FIBER OPTIC TRANSCEIVER MARKED BLACK (MULTIMODE)

**Attaching Signal, Transport, and Control Cables**

**Important Cabling Requirements and Considerations**

- Fiber optic cable with LC termination for snap coupling with SFP+ transceivers
  - LC Duplex conforming to ANSI TIA-EIA 604-10 (FOCIS 10A)
  - DXLink Fiber multimode transceivers use OM3 50/125 μm multimode fiber optic cable type over distances of up to 984 feet (300 m)\*
  - Do not create a network (Ethernet) loop. A network loop is created when the enclosure and one or more of its DXLink Fiber units connect to a common LAN.
- \* Cable quality is a determining factor for the maximum length of cable runs.

**WARNING:** DXLink Fiber units use laser transceiver, which are Class 1 Eye Safe per IEC 60825-1/CDRH requirements. While the Class 1 category indicates that the invisible laser used is safe, we recommend avoiding direct eye exposure when using any optical fiber products (See OSHA directive referenced in the "Hardware Reference Manual").

### Transmitter panel description and installation steps:

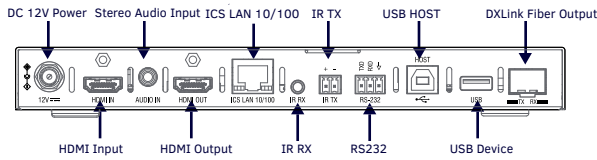


FIG. 6 TRANSMITTER PANEL DESCRIPTION

### To attach signal, transport, and control cables to the Transmitter:

1. Set DIP switch toggles if necessary (for settings, see the previous page).
2. HDMI In – Attach an HDMI cable from the source to the HDMI In connector.
3. DXLink Fiber Output - Attach a fiber cable to the DXLink fiber output port and to a DXLink fiber input connector on the switcher (or on the RX for a standalone pair).
4. Stereo Audio In jack (optional) – Insert analog audio cable from source.
5. HDMI Output (optional) – Insert an HDMI cable from the display to HDMI Out connector.
6. ICS LAN 10/100 port (optional) – Use to attach twisted pair cable to LAN.

### Receiver panel description and installation steps:

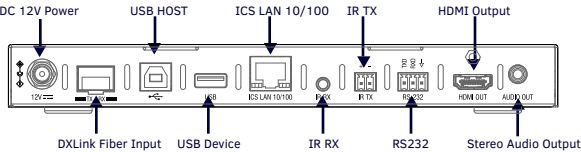


FIG. 7 RECEIVER PANEL DESCRIPTION

### To attach signal, transport, and control cables to the Receiver:

1. Set DIP switch toggles if necessary (for settings, see previous page).
2. DXLink Fiber Input - Attach a fiber cable to the DXLink fiber input port and to a DXLink fiber output connector on the switcher (or on the RX for a standalone pair).
3. HDMI Out – Attach HDMI cable from this port to the destination.
4. Stereo Audio Out jack (optional) – Connect analog audio cable from port to destination.

### Applying Power

A desktop power supply (ENERGY STAR® qualified) is provided with each TX and RX. **CAUTION: The provided desktop power supply must be used to power the DXLink Fiber TX and RX, and it must not be altered in any way.**

### To apply power to the Transmitter and/or Receiver:

1. Plug the cord from the desktop power supply (provided) into the power jack on rear of the unit (2.1 mm DC jack for 12 V local power).
2. Plug the desktop power supply into an AC external power source. The Power LED on the front of the unit illuminates green, indicating a ready state.

### LED Status Indicators:

INDICATOR LEDS	NORMAL POWER UP	INDICATES
Power	Green	Power is applied
Status (NetLinX) Indicator	Green	Controller is programmed and communicated properly
HDCP Indicator	Yellow (On/Blinking)	HDCP-protected content is being transmitted or not
RX - Scaling	Blue or Off	Scaling on or off
Netlinx Link/Act	Green (On/Blinking - #3 Toggle OFF)	Active LAN connection to an AMX Network or receiving Ethernet data packets

### DXLink Auto-setup with Enova DGX 100 Series Switchers

Auto-setup is the default for using DXLink Modules with Enova DGX 100 Series Switchers. When all of the following conditions are met, the modules automatically go into Auto-setup Mode and can communicate through the ICS LAN port with the integrated Controller:

- Endpoints must be set to DHCP Mode (default) and use the NDP connection mode (default).
- Endpoints must not be bound to a Controller.

**IMPORTANT:** On the switcher, the ICS LAN port acts as a DHCP server (private LAN) and the LAN 100/1000 port acts as a DHCP client (public LAN) with each port on a separate network. In order to avoid a Network Loop, do not connect any device on the private network to any branch on the public network.

### IP Addressing Modes

#### DHCP Mode (enabled when #3 Toggle is flipped ON)

In DHCP Mode, the Module attempts to get a DHCP lease (consisting of an IP address, gateway, and other network parameters). If the attempt fails, the Module configures itself for a link-local address, but periodically re-tries DHCP and re-assigns the IP to a valid DHCP grant if successful. At any time, if the Module determines that its IP address has changed, it will disconnect and reconnect to the Controller.

#### Static IP Mode (set with ID button or Telnet command)

With #3 Toggle set to ON, press ID for 10 seconds to assign address or use a Telnet command to set unit to Static IP Mode (see the manual).

### Enova DGX and DXLink Fiber IP Setup (system without auto-setup)

To setup DXLink fiber Modules with an Enova DGX without auto-setup, you must configure the Device ID for each connected DXLink fiber module and then connect (bind) the modules to the DGX unit. Complete instructions for DXLink fiber setup on systems that don't support auto-setup can be found in the Hardware Reference Manual – DXLink 4K60 Fiber Transmitter/Receiver.

### RS-232 Serial Data (Optional)

The 232 port label is relative to data flow. Data enters at RX label on the Transmitter, is sent via a fiber optic cable through the switcher, and leaves at TX label on Receiver. Flow is vice versa from Receiver to Transmitter. Applies to all DXLink fiber modules - wire RS-232 port for serial data transfer according to pinout above connectors (TXD-RXD-Ground).

### IR Control (Optional)

The IR Receiver connects to the IR RX port on the Transmitter and the IR Emitter connects to the IR TX port on the Receiver or vice versa, depending on the installation. The signal is sent via DXLink fiber optic cable through the switcher. When a Transmitter and Receiver are used as a standalone pair, IR control acts as a passthrough.

### Configuring and Using USB Ports

1. Each TX and RX has a Host Port (USB-B) and a Device Port (USB-A), but only one port is active at a time depending on the position of the USB DIP Switch.
2. The active USB port is set by the USB DIP Switch on the front panel of the TX/RX. The default setting is TX as Host, RX as Device.
3. Set the USB Mode to Host when connecting to a USB host like a PC. Set the USB Mode to Device when connecting to USB devices like keyboards, mice or cameras.
4. When connecting to a DGX DXLink 4K60 Fiber input/output board, the DGX will automatically detect the setting on the TX/RX and will set the function of the associated Micro-USB A/B port accordingly.
5. Some USB2.0 devices can only be powered by the TX/RX USB port when the TX/RX is powered via the local power connector.

#### Note:

- A reboot is required for changes to the USB Mode switch to take effect.
- USB ports can also be used to upgrade firmware. See Hardware Reference.
- When a TX and RX are connected point-to-point, the USB mode switches on the TX and RX cannot be set to the same mode.

### ID Button (Front)

The ID button on the front can be used to toggle between static and DHCP IP address, assign a device address, reset the factory defaults, and restore the factory firmware image (for details, see the manual).

### Additional Information Covered in Manual

For information on the following, see the Hardware Reference Manual - DXLink 4K60 Fiber Transmitter/Receiver at [www.amx.com](http://www.amx.com).

- NetLinX control and programming commands; Telnet commands;
- IR file transfers; upgrading firmware image; restoring factory default settings;
- Web UI configurations.

### Important Safety Information

Get the newest EC and FCC Declaration of Conformity at [www.amx.com](http://www.amx.com)



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