**Overview**

Enova DGX 8/16/32/64 Digital Media Switchers are available in various configurations in increments of four up to 8x8, 16x16, 32x32, and 64x64 respectively. Therefore, the illustrations in this guide may differ from the model(s) purchased. Each enclosure contains an integrated NetLinx Central Control Processor. For complete documentation (including system and board specifications and supported resolutions), see the Instruction Manual – Enova DGX 8/16/32/64 Digital Media Switchers at www.amx.com.

**Installation**

**Rack Mounting**

**Caution:** To prevent overheating, avoid placing high heat-producing equipment directly above/below enclosure. The system requires a minimum of 1 empty rack unit above and below (3 empty rack units are recommended). Verify that the openings on the sides and top of the enclosure are not blocked and do not have restricted airflow.

To rack mount Enova DGX 8/16/32 enclosure (DGX 32 requires 2 people minimum):

1. Position enclosure in rack and secure it with rack mounting screws.
2. Provided recommended for DXLink Fiber Boards – Install cable management bars:
   - Fasten bar with two screws on one end of the board and one screw at the other (the long part of the bar is to the right of holes); do not over tighten. Enova DGX 32 only – Remove number plate at rear top; replace the number plate when finished.

* When fully loaded, the Enova DGX 32 weighs approx. 73 lbs (33.1 kg).

To rack mount Enova DGX 64 enclosure (requires 3 people minimum):

1. While shipping box is still on the pallet, cut and remove outer straps.
2. Remove cardboard tray from top of reusable shipping box (note wheels on box).
3. Lift box from pallet (Enova DGX 64 weighs approx. 150 lbs [68.0 kg] fully loaded).
4. Ensure all parties involved in lifting are prepared and follow local requirements.
5. Unlock 4 latches on sides of shipping box. Lift top of box straight up and set aside.
6. Attach 2 handles provided for lifting; use of 4 holes on side, in front or rear position.
7. Using bottom of shipping box, roll the enclosure into position. Lift onto temporary shelf/support in rack. Align as closely as possible and then remove lifting handles.
8. Lift into position and screw in rack ear screws.
9. Provided recommended for DXLink Fiber Boards – Install cable management bars:
   - Fasten bar with two screws on one end of the board and one screw at the other (the long part of the bar is to the right of holes); do not over tighten.

**Attaching Input and Output Cables**

Generally, any input board in an Enova DGX Switcher can route signals to any type of output board; the signal format is automatically converted to match the output board.

DXLink™ Twisted Pair Input and Output Boards require DXLink™ Twisted Pair Transmitters and Receivers. DXLink™ Fiber Input and Output Boards require DXLink™ Fiber Transmitters and Receivers. For details, see each product’s Quick Start Guide or Instruction Manual.

For testing purposes, attach just the first two source and destination devices (and any required transmitters or receivers).

Enova DGX AIE, HDMI, DVI, DXLink Twisted Pair, and DXLink Fiber Boards

**AIE Board** – This board is documented separately. Before wiring audio, AIE boards must be uninstalled, have their DIP switches set, and be reinstalled. For directions, see the Quick Start Guide - Enova DGX Audio Insert/Extract Board.

**HDMI Boards** (HDCP 1.4) – Inputs and outputs incorporate HDCP™ technology. HDMI connectors route high-resolution HDMI or DVI signals with or without HDCP. For single-link DVI signals, use a cable adapter.

**DVI Boards** (HDCP 1.4) – Inputs and outputs are HDMI compatible. DVI output pin 14 (+5 VDC out) supplies 50 mA per each of the four output connectors. By changing the EDID, DVI Boards can route HDMI.

**Note:** If an HDCP signal is switched from an HDMI or DVI Output Board to a destination which does not support HDCP or to an SC Optical Output Board (no HDCP support), a dark red image displays indicating authentication failure. For HDCP signals switched via DXLink (Twisted Pair or Fiber), authentication failure is indicated by an orange image.

**DXLink Twisted Pair Boards** (HDCP 1.4) – Inputs and outputs incorporate HDCP technology. Use with DXLink Twisted Pair Transmitters / Receivers, which automatically adjust the scaling and image almost always result in a quality image on the monitor. If the setup has special requirements or adjustment is needed, see the Instruction Manual.

**DXLink Fiber Boards** (HDCP 1.4) – Inputs and outputs incorporate HDCP technology. DXLink Fiber boards and units are available for duplex and simplex functionality (with multimode and single mode options for each) for various system requirements. Use with DXLink Fiber Transmitter / Receiver units, which automatically adjust scaling and image, resulting in a quality image on the monitor. If the setup has special requirements or adjustment is needed, see the Instruction Manual.

**Warning:** DXLink Fiber units use laser transceivers, which are Class 1 Eye Safe per IEC 60825-1/CDRH requirements. Class 1 category indicates that invisible laser used is safe; we recommend avoiding direct eye exposure when using any optical fiber products.

**Caution:** For DXLink Fiber Boards and SC Optical Boards, we recommend using the provided cable management boards or some other type of cable management system to avoid damage to fiber cables.

**Important:** DIP switches must be set on the DXLink Twisted Pair and DXLink Fiber Transmitters and Receivers before units are cabled to the switcher via their boards. For information on DXLink Twisted Pair, see the applicable “Quick Start Guide.”

**Audio EDID Settings**

HDMI, DVI, DXLink Twisted Pair boards ship with a basic audio EDID configuration. DXLink Fiber Boards obtain EDIDs upon connection to their Transmitters. To optimize audio for your system, you may need to change the EDID settings. Custom EDID files and DXLink Configuration Software are available at www.amx.com. For information, see the Instruction Manual for the Enova DGX or look in the software’s Help file.

**DGX Board Custom EDID Files**

- 1080p (VIC 16): AMX_HDMI1v3__Standard.edid
- 720p (VIC 4): AMX_HDMI1v3__Standard.edid
- 1080p (VIC 16): AMX_HDMI1v3__Surround.edid
- 720p (VIC 4): AMX_HDMI1v3__Surround.edid

* The custom files listed are in the AMX_EDID_Library at www.amx.com along with additional EDID files that support 3D deep color and High Bit Rate (HBR) audio.

1. Supports basic audio only: 2Ch L-PCM sample rates of 32 kHz, 44.1 kHz, 48 kHz.
2. Supports up to 192 kHz for 48 kHz Dolby (5.1), and 48 kHz DTS (5.1), and 2Ch L-PCM sample rates of 32 kHz, 44.1 kHz, 48 kHz.

**Note:** File names containing “AMX_HDMI1v3” do not refer to the HDMI v1.3 standard.

**Applying Power and Startup**

The Enova DGX 8/16/32 each have two power supplies, and the Enova DGX 64 has four.

**Note:** We recommend using a surge protector and/or an AC line conditioner.

**Important:** If the system is used to power DXLink Twisted Pair TXs and/or RXs, use the “Enova DGX Configuration Tool” at www.amx.com/enova to calculate the power draw.

**Important: Enova DGX 64 only** - If two or more power supplies are not receiving power, the CPU and the control panel will continue to operate. However, input and output boards will become inoperable and the system will not send or receive signals until at least three power supplies resume functional status.

For proper redundant operations, all power supplies must be powered at all times.

Enova DGX 8/16 - Cable power via power strip to outlet connected to single 20 A circuit.

- Enova DGX 32 - Cable primary power feed to outlet connected to one 20 A circuit breaker. Cable redundant power feed to outlet connected to a second 20 A circuit breaker.

- Enova DGX 64 - To provide adequate power for an N+1 redundant application, connect each of the 4 power supplies to its own circuit.

**To apply power:**

1. Plug power cords into all power receptacles (Enova DGX 64 only – use provided AC power filtering clamp-on Ferrites on cords as close to power supplies as possible).
To establish an external control from RS-232 serial port:
1. If the system is not already powered, apply power according to the directions in the right-hand column on the first page.
2. Plug the null modem serial cable into the serial port on the enclosure (Fig. 6).
3. Plug the other cable end into the serial port on the serial controller/device (PC).
4. Open the serial communication software and set the port settings on the PC to match the Enova DGX Switcher default settings (baud rate = 9600, data bits = 8, stop bit = 1, parity = none, and flow control = none).

Establishing Serial Control (if applicable)
An Enova DGX Switcher can also be controlled by attaching an external control device/system to the Control (RS-232) port.

PC Requirements for BCS commands via a terminal emulation program:
- Windows 7® or Windows XP Professional®
- Serial port (or USB port – see the Instruction Manual)

* Complete BCS information can be found in the Instruction Manual – BCS (Basic Control Structure) Protocol at www.amx.com.

External Serial Control via BCS – Test Switch

BCS Commands – Open a terminal emulation program on the PC. When power is applied to the enclosure, a short splash screen appears. Enter CI1O2T (clears default switch of 1 to all). Enter CI1O2T (routes Input 1 to Output 2 on default level). When CI1O2T appears, the switch is successful.

Additional Information Covered in Instruction Manual

See the Instruction Manual – Enova DGX 8/16/32/64 Digital Media Switchers at www.amx.com for information on the following:
- NetLinx programming and firmware upgrades
- Complete control panel operation
- DGX Configuration Software with Scaler and EDID Programmer functionality, a terminal emulation view, and the ability to enable or disable HDCP
- Setup for complete power redundancy with redundant power supplies
- Managing configuration files with XNConnect
- Adding or replacing boards
- APDiagnose software (monitors and displays advanced diagnostic data)
- Programmer’s interface for system diagnostics, DGX_SHELL commands

Reference Documents

- Instruction Manual – DXLink Fiber Transmitters and Receivers
- Instruction Manual – DXLink Twisted Pair Transmitters/Receiver
- Cabling for Success with DXLink (on DXLink Twisted Pair product pages)
- Instruction Manual – DGX Transmitters & Receivers
- Instruction Manual – BCS (Basic Control Structure) Protocol

For full warranty information, refer to the AMX Instruction Manual(s) associated with your Product(s).

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