Quick Start Guide

NXA-AVB/ETHERNET Modero® Ethernet/Video Breakout Box

Overview

The NXA-AVB/ETHERNET Breakout Box (**FG2254-10**) facilitates the installation and distribution of video, data, and audio to Modero touch panels located up to 200 feet (60.96 m) from the AVB box. This unit accepts either Composite or S-Video from standard video devices. FIG. 1 shows the NXA-AVB/ETHERNET Breakout Box.

For more detailed installation and operating instructions, refer to the specific Modero touch panel instruction manual, available online at **www.amx.com**.

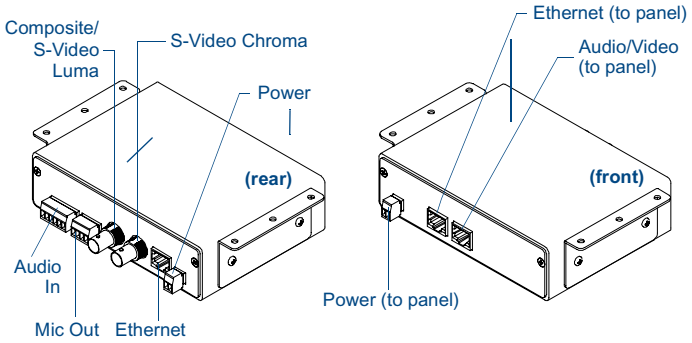

FIG. 1 Connector layouts on the NXA-AVB/ETHERNET Breakout Box

Specifications

NXA-AVB/ETHERNET Specifications	
Dimensions (HWD):	• 1.50" x 5.55" x 4.88" (3.81 cm x 14.10 cm x 12.40 cm) • Width when attached to mounting ears: 6.65" (16.89 cm)
Power Consumption:	• 50mA (with audio/video input) • 23mA (with no audio/video) • Routed through AVB using a PSN power supply (Refer to FIG. 2 and FIG. 3 for more information).
Certifications:	• FCC, CE, and EN60950
Front Components:	• 2-pin 3.5 mm Phoenix connector for power to the touch panel • Green LED provides an indication of power status • RJ-45 connector provides Ethernet signals to the touch panel • RJ-45 connector provides differential audio and video signals to the touch panel (panel type dependent)
Rear Components:	• 6-pin 3.5 mm Phoenix connector for in-bound (left/right channel) audio • 4-pin 3.5 mm Phoenix connector for out-bound (from microphone) audio • BNC connector (female) for Composite or Chroma (**for video-capable panels only**) • BNC connector (female) for luminance (**for video-capable panels only**) • RJ-45 connector for Ethernet input from the control system • 2-pin 3.5 mm Phoenix connector for in-bound power
Features:	• Accepts either Composite or S-Video (**video-capable panels only**) • Provides audio distribution to the non-video touch panels over a CAT5 cable (up to 200 ft.) • Provides video/audio distribution to the video-capable touch panels over CAT5 cable up to 200 ft. (60.9 m)
Availability:	• This unit is not included with current Modero panels • This unit is included with VG-series Video Kits and with the 7" panels
Included Accessories:	• Two 2-pin Phoenix connectors (41-5025) • One 4-pin Phoenix connector (41-5047) • One 6-pin Phoenix connector (41-5063) • One Rack Mount Kit (KA2250-40) with mounting bracket (62-2254-02)
Optional Accessories:	• AC-RK Accessory RackMount Kit (**FG515**) • Modero Table Top Cable (CA2250-50) • PSN6.5 power supply (**FG423-41**) (*panel dependent*)

NXA-AVB/ETHERNET Breakout Box

FIG. 1 shows the front and rear connectors on the breakout box.

Note: The breakout box unit can be mounted on either a horizontal flat surface or into an equipment rack (by removing the front screws and attaching it to an AC-RK).

Note: The PSN power supply being used on the NXA-AVB/ETHERNET is dependent on the power requirements of the target touch panel.

Connections and Wiring

A PSN power supply can indirectly provide power to a Modero panel by routing power through the NXA-AVB/ETHERNET Breakout Box. FIG. 2 shows a sample wiring configuration using both an indirect or direct PSN power connection for a video-capable Modero panel. Refer to the online Modero Touch Panel instruction manuals for connection options.

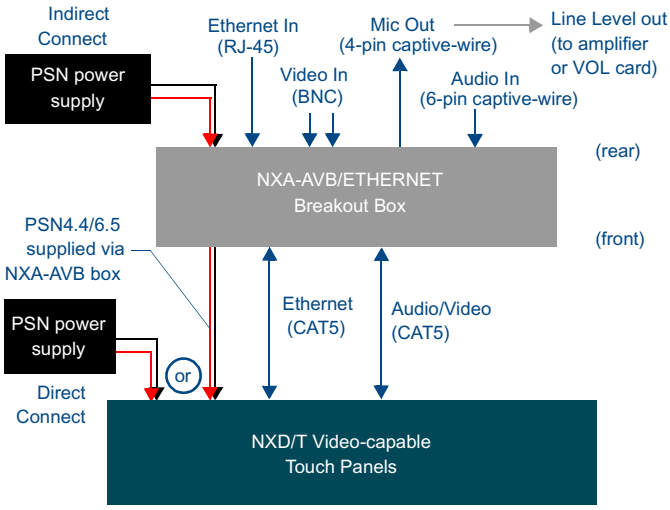

FIG. 2 Sample wiring configuration on video-capable panels using this Breakout Box

The NXA-AVB/ETHERNET is an optional accessory for non-video capable Modero touch panels but can only transfer Audio signals between the Breakout Box and the target touch panel.

A PSN power supply can also directly provide power through the unit to a target Modero panel. Refer to the specific Modero touch panel instruction manual for detailed wiring information. FIG. 3 shows a sample wiring configuration for a non-video capable Modero panel.

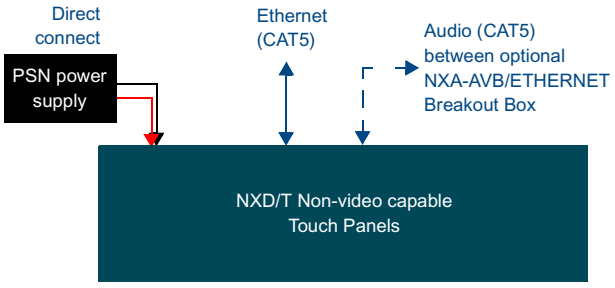

FIG. 3 Sample Wiring configuration on non-video panel using this Breakout Box

Note: *AMX recommends using the above power connection examples when connecting the breakout box to your touch panel. If you want to attempt another configuration or if you want to use two power supplies, be sure to avoid any potential ground loops that may occur in your connection configuration. Ground loops can cause display errors with your touch panel.*

Wiring the NXA-AVB/ETHERNET connectors and cables

The inputs and outputs on the breakout box are separated into front and rear connectors. The rear connectors are used to input external signals. The front connectors are used to communicate signals between the NXA-AVB/ETHERNET and a target Modero panel. FIG. 4 provides a layout of the wiring connection both into and from the breakout box.

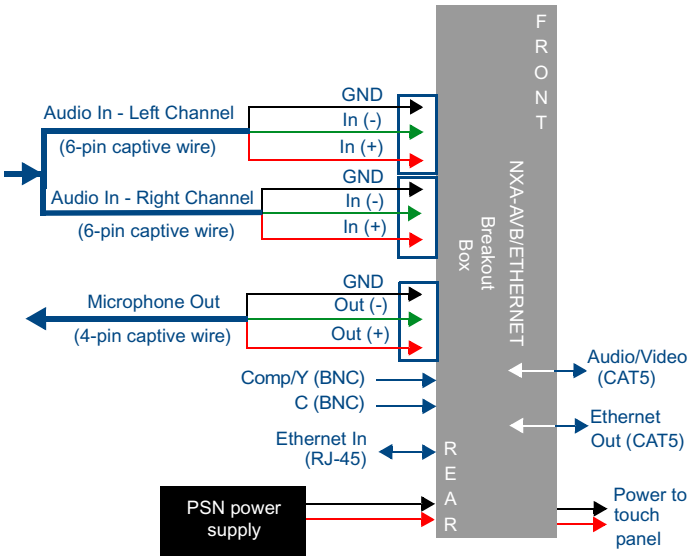

FIG. 4 NXA-AVB/ETHERNET Breakout box connector wiring diagram

Rear wiring connections:

- **AUDIO IN:** 6-pin mini-Phoenix connector, divided into left and right audio channels. Each channel is divided into GND, IN+, and IN- terminal cable connectors (2 sets of 3 for each channel).
  An example of the cable is to strip the ends of 2 RCA audio cables and insert them into their respective locations on the Audio In port.
  Either a balanced (+, -, and GND) or unbalanced (+ and GND) audio signal can be connected to this input.
- **MIC OUT:** 4-pin mini-Phoenix connector, divided into GND, OUT-, and OUT+ terminal connectors.
  An example of the cable use for this connector is to strip the terminal ends of a 3.5mm mini-jack and insert them into their respective locations on the Mic Out port. This signal can be fed as a Line Level In to either an amplifier or an AMX VOL card.
  Either a balanced (+, -, and GND) or unbalanced (+ and GND) audio signal can be connected to this output.
- **Video In BNCs:** Feeds either Composite/S-Video Luma or S-Video Chroma signals into the NXA-AVB/ETHERNET. This feed is then redirected out to a Modero panel through the front Audio/Video CAT5 port.
- **Ethernet:** RJ-45 connector routes data to the G4 touch panel through the front Ethernet port. These connections use a standard CAT5 Ethernet cable to provide communication between the target touch panel, Breakout Box, and NetLinx® Master. When feeding an A/V signal from the breakout box to a 1200V-Series, VG-Series, or Table Top CV10 touch panel via an RJ-45 cable, you must use the appropriate number of CAT5 Suppression Ferrites (included with the touch panel) on the cable.
- **PWR:** 2-pin 3.5 mm mini-Phoenix connector connects to a PSN power supply. This port can be used to provide power to a Modero panel by sending it through the NXA-AVB/ETHERNET (rear power connector through to the front power connector).

Wiring the NXA-AVB/ETHERNET for Unbalanced Audio

Most domestic audio equipment has unbalanced audio inputs and outputs. This means that the audio output (left, right, or mono) appears on a single wire, and is referenced to "0 V" or "Ground". Typical connectors used are RCA "phono" connectors, DIN plugs/sockets, and 0.25" (6.3mm) or 3.5mm jack plugs/sockets.

Unbalanced audio is adequate for most domestic environments and for line-level signals in a typical broadcast studio. Problems may occur if the signals are carried over long distances, especially if the source and destination have separate main supplies. Use the following wiring drawing (FIG. 5) to configure an unbalanced audio connection.

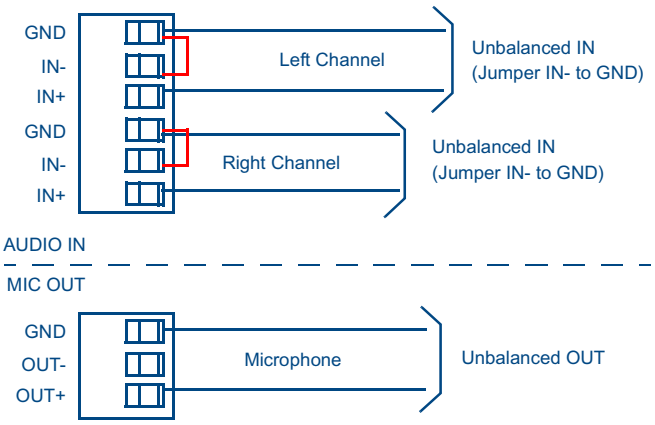

FIG. 5 Wiring the rear AUDIO IN and MIC OUT for use with Unbalanced Audio

When using unbalanced audio for the AUDIO IN connector (FIG. 5), the "-" and the "GND" terminals should be connected together and then connected to the GND of the unbalance audio signal.
When connecting to an unbalanced audio input from the MIC OUT connector (FIG. 5), wire the "+" terminal to the signal input, and the "GND" terminal to the signal ground.

Description of Balanced Audio

Professional audio equipment will often use balanced audio inputs and outputs, usually on 3-pin "XLR" connectors. A balanced audio signal consists of a pair of wires carrying the audio signal in anti-phase with each other (if one wire carries a positive voltage, the other carries an equal and opposite negative voltage).

The advantage of balanced audio over unbalanced audio is its ability to reject external interference added as the signal is carried over the wire. The receiving equipment takes the voltage difference between the two wires as the input signal. Interference will usually get added to both wires equally, and so gets cancelled by the receiving equipment.

The 3 wires used in a typical XLR lead are often referred to as Ground, Live (Hot), and Return (Cold). "Live" and "Return" carry the "in-phase" and "out-of-phase" versions of the audio respectively. The pins of the XLR plug/socket are as follows:

- X = GROUND
- L = LIVE (Hot)
- R = RETURN (Cold)

When connecting the MIC OUT connector to a balanced audio input (FIG. 6), use all three audio terminals (+, -, and GND), then connect the "+" terminal to the "live" signal, the "-" terminal to the "return" signal, and the "GND" terminal to the ground signal.

FIG. 6 Wiring the rear MIC OUT connector for use with Balanced Audio

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