Instruction Manual

Modero X-Series Touch Panels

MXT/D-1000 - 10.1" Modero X Series Touch Panels
MXT/D-700 - 7" Modero X Series Touch Panels
MXD-430 - 4.3" Modero X Series Touch Panels

AMX Limited Warranty and Disclaimer

This Limited Warranty and Disclaimer extends only to products purchased directly from AMX or an AMX Authorized Partner which include AMX Dealers, Distributors, VIP's or other AMX authorized entity.

AMX warrants its products to be free of defects in material and workmanship under normal use for three (3) years from the date of purchase, with the following exceptions:

- Electroluminescent and LCD Control Panels are warranted for three (3) years, except for the display and touch overlay components are warranted for a period of one (1) year.
- Disk drive mechanisms, pan/tilt heads, power supplies, and MX Series products are warranted for a period of one (1) year.
- AMX lighting products are guaranteed to switch on and off any load that is properly connected to our lighting products, as long as the AMX lighting products are under warranty. AMX also guarantees the control of dimmable loads that are properly connected to our lighting products. The dimming performance or quality there of is not guaranteed, impart due to the random combinations of dimmers, lamps and ballasts or transformers.
- AMX software is warranted for a period of ninety (90) days.
- Batteries and incandescent lamps are not covered under the warranty.
- AMX AutoPatch Epica, Modula, Modula Series4, Modula CatPro Series and 8Y-3000 product models will be free of defects in materials and manufacture at the time of sale and will remain in good working order for a period of three (3) years following the date of the original sales invoice from AMX. The three-year warranty period will be extended to the life of the product (Limited Lifetime Warranty) if the warranty card is filled out by the dealer and/or end user and returned to AMX so that AMX receives it within thirty (30) days of the installation of equipment but no later than six (6) months from original AMX sales invoice date. The life of the product extends until five (5) years after AMX ceases manufacturing the product model. The Limited Lifetime Warranty applies to products in their original installation only. If a product is moved to a different installation, the Limited Lifetime Warranty will no longer apply, and the product warranty will instead be the three (3) year Limited Warranty.

All products returned to AMX require a Return Material Authorization (RMA) number. The RMA number is obtained from the AMX RMA Department. The RMA number must be clearly marked on the outside of each box. The RMA is valid for a 30-day period. After the 30-day period the RMA will be cancelled. Any shipments received not consistent with the RMA, or after the RMA is cancelled, will be refused. AMX is not responsible for products returned without a valid RMA number.

AMX is not liable for any damages caused by its products or for the failure of its products to perform. This includes any lost profits, lost savings, incidental damages, or consequential damages. AMX is not liable for any claim made by a third party or by an AMX Authorized Partner for a third party.

This Limited Warranty does not apply to (a) any AMX product that has been modified, altered or repaired by an unauthorized agent or improperly transported, stored, installed, used, or maintained; (b) damage caused by acts of nature, including flood, erosion, or earthquake; (c) damage caused by a sustained low or high voltage situation or by a low or high voltage disturbance, including brownouts, sags, spikes, or power outages; or (d) damage caused by war, vandalism, theft, depletion, or obsolescence.

This limitation of liability applies whether damages are sought, or a claim is made, under this warranty or as a tort claim (including negligence and strict product liability), a contract claim, or any other claim. This limitation of liability cannot be waived or amended by any person. This limitation of liability will be effective even if AMX or an authorized representative of AMX has been advised of the possibility of any such damages. This limitation of liability, however, will not apply to claims for personal injury.

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Modero X Series Touch Panels (10.1", 7"& 4.3")

Overview

This new generation of G4 touch panels is built for usability offering edge-to-edge capacitive touch glass with multi-touch capabilities. It features advanced technology empowering users to operate AV equipment seamlessly, while providing the ultimate in audio and video quality. The distinctive appearance will complement even the most sophisticated meeting facilities and homes.

FIG. 1 Modero X Series Touch Panels (10.1", 7" and 4.3")

The Modero X Series Touch Panels covered in this manual include:

Modero X Series Touch Panels			
Name	**FG#**	**Description**	**Page Ref**
MXT-1000	FG5968-03	10.1" Modero X Series Tabletop	page 7
MXD-1000-P MXD-1000-L	Portrait: FG5968-07 Landscape: FG5968-13	10.1" Modero X Series Wall-Mount	page 12
MXT-700	FG5968-04	7" Modero X Series Tabletop	page 27
MXD-700-P MXD-700-L	Portrait: FG5968-08 Landscape: FG5968-14	7" Modero X Series Wall-Mount	page 32
MXD-430	FG5968-15	4.3" Modero X Series Wall/Flush Mount	page 43
X Series - No Comm Panels: The X Series - No Comm Panels do not have camera, microphone, or NFC capability. Otherwise, they have all of the functionality of the standard Modero X Series panels.			
MXT-1000-NC	FG5968-24	No Comm 10.1" Modero X Series Tabletop	
MXD-1000-P-NC MXD-1000-L-NC	Portrait: FG5968-25 Landscape: FG5968-26	No Comm 10.1" Modero X Series Wall Mount Panels	
MXT-700-NC	FG5968-27	No Comm 7" Modero X Series Tabletop	
MXD-700-P-NC MXD-700-L-NC	Portrait: FG5968-28 Landscape: FG5968-29	No Comm 7" Modero X Series Wall-Mount	

NOTE

For information on the MXD/T-2000XL and MXD/T-1900L Panoramic X Series touch panels, refer to the Modero X-Series Panoramic Touch Panels Instruction Manual.

Sleep Button

X Series touch panels are operated using an integral touchscreen, as well as the *Sleep* button. For tabletop and landscape wall-mount panels, the Sleep button is located on the top center edge of the panel; for portrait panels it is located at the left center edge.(see FIG. 2).

FIG. 2 Sleep Button location - Tabletop, Landscape and Portrait layouts)

If the device has gone into its Sleep Mode, a touch of the touchscreen or of the Sleep button will reactivate it.

Settings Page

Unlike previous AMX touch panels, Modero X Series touch panels no longer have separate *Setup* and *Protected Setup* pages. All touch panel settings and functionality are now controlled through one *Settings* page. The *Connection & Networks* and *Configuration* sections are accessible with the correct password.

Accessing the Settings Page

To access the *Settings* page, press and hold the **Sleep** button on the touch panel for 3 seconds.

Alternately, some installation circumstances may require disabling *Settings* page access through the **Sleep** button. In this case, you may access *Settings* pages during a bootup of the panel. As the panel boots up, watch for a series of indicator dots to appear on the splash screen (FIG. 3). To access the *Settings* page, press the bottom right corner of the touchscreen within the first three seconds of these dots appearing on the screen.

FIG. 3 Indicator dots on the Modero X Series splash screen

Using the Settings Pages

When opened, the *Settings* pages appear in the center of the panel display. Please note that many of the pages may be longer than they initially appear. To reach additional functions on a given page, the page itself may be scrolled up and down to reveal those functions.

For detailed information on using the options in the Settings Page to configure the touch panels, refer to the *Modero X® Series Touch Panels Programming Guide*.

Bluetooth Support

X Series touch panels allow the use of Bluetooth keyboard and mouse combinations, using HID Profile v1.1.

Using a keyboard and mouse with the device requires use of the MXA-BT Bluetooth USB Adapter (**FG5968-19**).

NFC Support

X Series touch panels support Near Field Communications™ (NFC) Technology. NFC technology facilitates making transactions, exchanging digital content, and connecting electronic devices with a touch. NFC transmissions are short-range (from a touch to a few centimeters), working with existing contact-less card technologies and containing built-in capabilities to support secure applications. By using NFC technology, users may receive access to touch panels and touch panel pages through access badges and other card options.

Common Access Card (CAC) Support In MXT/D-2000XL-PAN			
Card Type	**Card Unique Identifier (UID)**	**Card Data**	**Personal Identity Verification (PIV) Card holder UID**
15693	8 byte UID	Not Supported	N/A
14443A Non-Gov't	4, 7 or 10 byte UID **(1)**	Not Supported	N/A
14443A Gov't	4, 7 or 10 byte UID **(1)**	Not Supported **(2)**	Not currently
14443B Non-Gov't	4 byte UID	Not Supported	N/A
14443B Gov't	4 byte UID	Not Supported **(2)**	Not currently
FeliCa	Not Supported	Not Supported	N/A
(1) The UID can be a fixed unique number or a random number dynamically generated by the card.			
(2) Requires contact card reader (not accessible via NFC)			

- The maximum range for the NFC antenna is 0.5" (12.7 mm), but the typical usage range is 0.25" (6.35 mm).
- The antenna itself is accessible from the front of the panel, 3.25" (82.55 mm) from the left corner of the panel and 0.375" (9.53 mm) from the top edge.

When using an NFC device with the X Series panel, align your device's antenna with the center of the touch panel's antenna (FIG. 4):

FIG. 4 NFC antenna location (Tabletop, Landscape and Portrait layouts)

NOTE

To facilitate NFC antenna access, consider adding an icon to the panel's page(s), pointing to the location of the antenna on the panel.

Picture View

By connecting a USB drive via one of the device's USB ports, Picture View allows the Modero X Series panel to access JPEG images on that drive and display them on the touchscreen. Individual images may be accessed at any time, or the entire collection may be displayed for predetermined times. Picture View may be stopped at any time by removing the USB drive, and the panel will return to its default display page.

NOTE

The maximum source resolution for Picture View is 1920x1920 pixels.The maximum displayed resolution is the same as the screen resolution.

Starting Picture View

1. Connect a USB drive to the device. Picture View will automatically recognize all available images on the drive and start displaying them on the touchscreen.
2. When the images begin to display, touch any place on the touchscreen to open the configuration popup menu (FIG. 5). If no selection is made, this menu will remain in place for 15 seconds and then disappear. It may be accessed again by touching anywhere on the touchscreen.

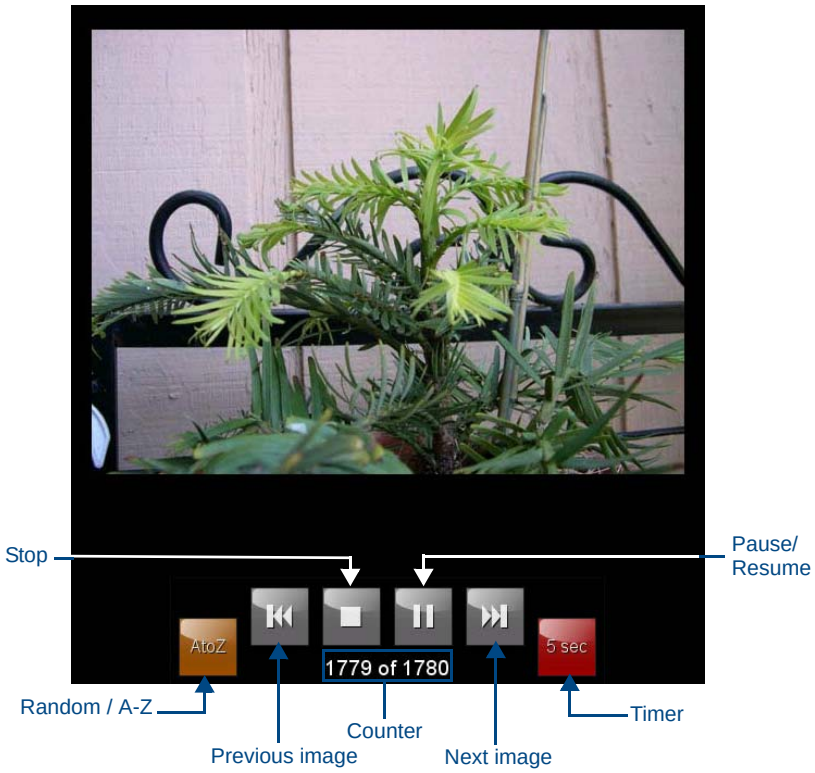


FIG. 5 Picture View Configuration Popup Menu

3. On the leftmost amber button, select between **Rand** (images display at random) and **A-Z** (images display in alphabetical order based on the name of the file).
4. The four gray buttons allow scrolling through saved images and the rate of display:
   - The **Previous Image Saved** button returns the display to the first image uploaded by Page View.
   - The **Stop** button stops Page View and returns to the default panel page.
   - The **Pause/Resume** button allows the display to stop on one particular image. Press it again to resume the display procession.
   - The **Next Image Saved** button returns the display to the last image uploaded by Page View. If the panel has not accessed all of the images available on a USB drive, Page View will display the last one uploaded to date.
5. On the rightmost red button, select the number of seconds a selected image will be displayed in Picture View. This may be selected between 5, 10, 15, 30, and 60 seconds.
6. The counter beneath the buttons displays the number of images currently uploaded by the MST-1001 versus the number detected on the USB drive.

Preview Mode and Normal Mode

Picture View has two modes: Preview Mode and Normal Mode. Preview Mode allows the user to configure Picture View. Once a USB drive containing images is inserted into the panel, the images will begin to display. Touching any place on the display will result in the configuration popup to slide from the bottom of the display.

Picture View goes into its Normal Mode when the MST-1001 goes into idle timeout while connected to a USB drive. Normal Mode displays images until the touchscreen is touched, or some other wakeup event is detected. When the device goes back into timeout, Normal Mode will return to displaying images until the USB drive is removed from the device.

Picture View Send Command (^PIC)

The **^PIC** Send Command stops either mode of Picture View, or starts Preview Mode. For more information, please refer to the *Modero S Series Programming Guide*, available at **www.amx.com**.

NOTE

All images must be in JPEG format. PNG and other image formats cannot be viewed through Picture View.

Cleaning the Touch Overlay and Case

- When cleaning the device, **do not directly spray the device with cleaning fluid**. Instead, spray the cloth and then apply the cloth to the touch screen.
- Do **NOT** use abrasives of any type to clean the device, as abrasives may permanently damage or remove the device's finish.

A Note About Wall and Rack Installation

Some products are installed in areas of differing temperature and cooling methodologies. These include products installed in walls, racks, cabinets, etc. Those areas may have different temperatures and/or cooling approaches that must be taken into consideration to maintain the product within the specified operating temperature.

FIG. 6 shows an AMX device installed in a wall with a filled volume (such as with insulation or concrete), as well as with a closed volume (such as between studs in an otherwise finished wall). The diagram shows how heat generated by the device or other devices may have no way to escape, and may build up to levels that may affect device operation.

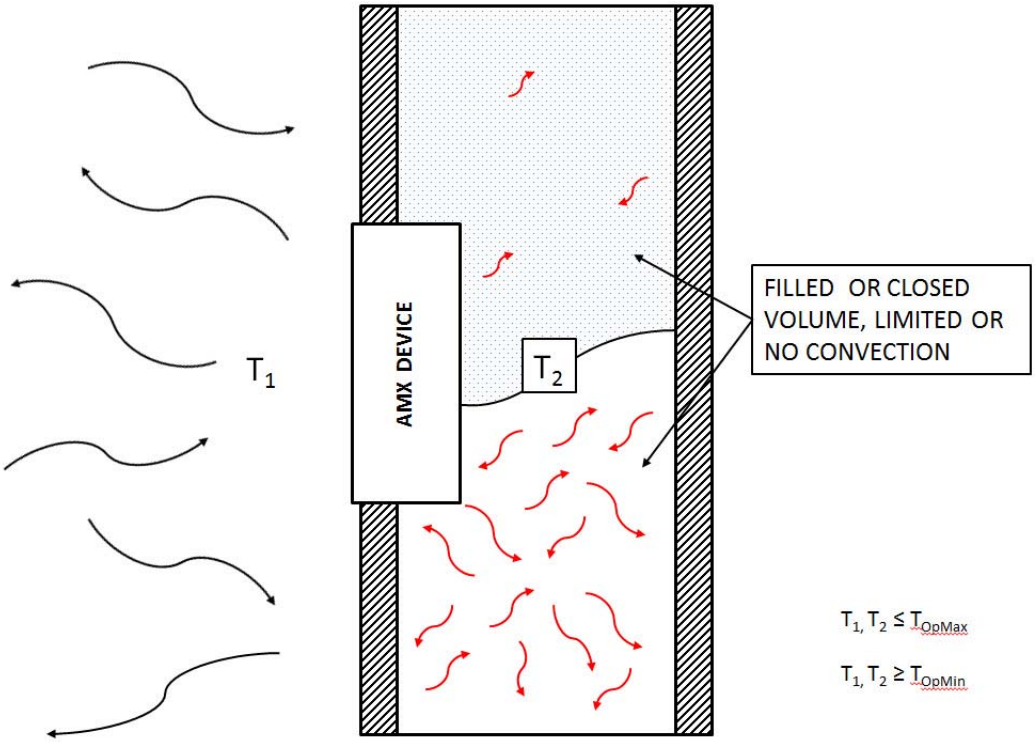


FIG. 6 Heat convection in filled or closed volume, limited or no convection

In FIG. 7, the diagram displays an AMX device in a typical rack mounting, with full air circulation around the front and back of the device. In this case, the main concern is with heat building up between components, possibly to levels that may affect device operation.

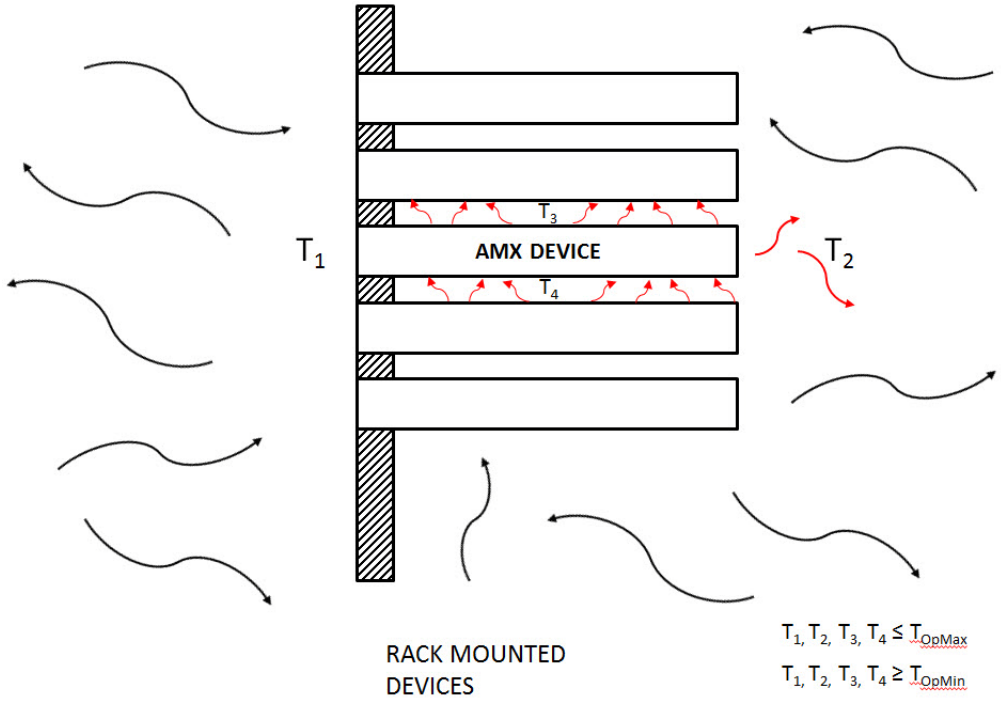


FIG. 7 Heat convection in rack-mounted devices

Installation Recommendations

During any installation, a lack of ventilation may produce conditions that may adversely affect the device's operation. In these circumstances, special care must be made to make sure that temperatures within enclosed areas do not exceed the device's maximum rated temperature.

NOTE

While the outside temperature of the device may be at or below its maximum operating temperature, special care must be taken before and during installation to ensure that the maximum operating temperature is not exceeded within wall or rack installation spaces.

MXT/D-1000 - 10.1" X Series Panels

MXT-1000 (Tabletop)

The MXT-1000 10.1" Modero X Series® Tabletop Touch Panel (**FG5968-03**) features edge-to-edge capacitive touch glass with multi-touch capabilities. It features advanced technology empowering users to operate AV equipment seamlessly, while providing the ultimate in audio and video quality. The distinctive appearance will complement even the most sophisticated meeting facilities and homes.

FIG. 8 MXT-1000 Touch Panel

MXT-1000 Specifications

MXT-1000 Specifications	
DIMENSIONS (HWD)	6 7/8" x 9 7/8" x 4 7/8" (174 mm x 252 mm x 124 mm)
WEIGHT	3.0 lbs (1.36 Kg)
POWER CONSUMPTION	• Full-On: 8 W • Standby: 3.2 W • Shutdown: 1 W • Start-Up Inrush Current: Not applicable due to PoE standard
EXTERNAL POWER SUPPLY REQUIRED	Optimal performance requires use of one of the following AMX PoE power supplies (not included): • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63)
CERTIFICATIONS	• UL 60950-1 • FCC Part 15 Class B • C-Tick CISPR 22 Class B • CE EN 55022, EN 55024 and EN 60950-1 • IEC 60950-1 • IC • IEC/EN-60950 • RoHS/WEEE compliant

MXT-1000 Specifications (Cont.)	
TOUCH SCREEN DISPLAY	• Display Type: TFT Active Matrix Color LCD with In-plane Switching Technology (IPS) • Display Size (WH): 9.9" x 6.7" (252 mm x 170 mm), 12.0" (304 mm) diagonal • Viewable Area (WH): 8.5" x 5.3" (217mm x 136mm), 10.1" (257mm) diagonal • Resolution (WH): 1280x800 • Aspect Ratio (WH): 16:9 • Brightness: 400 cd/m2 • Contrast Ratio: 700:1 • Color Depth: 264K colors • Illumination: LED • Touch Overlay: Projected capacitive, multi-touch support, 3 simultaneous max
VIEWING ANGLE	• Vertical: ± 89° • Horizontal: ± 89°
MEMORY	• SDRAM: 512 MB • Flash: 4 GB • Maximum Project Size: 2.4 GB flash available to user
COMMUNICATIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector. Supported IP and IP-based protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, Telnet, FTP, DNS, RFB (for VNC), HTTP • USB: (2) USB host 2.0, Type A ports (1 with limited physical access requiring right angle connection): Firmware upgrade, touch panel file transfer, JPEG image viewer, HID peripherals, USB audio output for headsets (1) Micro-USB device port: video output from on-board camera (landscape touch panel only), USB audio from on-board microphone to host device • Near Field Communication (NFC): Supports standards ISO/IEC 15693, ISO/IEC 14443A, ISO/IEC 14443B; Unique Identifier (UID), typ range=.25", max = .5" • Bluetooth: Mouse/Keyboard: HID Profile v1.1, requires MXA-BT Bluetooth Adapter (FG5968-19) Handset: Hands Free Profile v1.5, Headset Profile v1.2, requires MXA-BT Bluetooth Adapter (FG5968-19) and MXA-HST Bluetooth Handset (FG5968-17)
VIDEO	• Supported Video Codecs: MPEG2-TS: MPEG-2 Main Profile @High Level up to 720p at 25 fps (decode only) MPEG-2-TS: H.264 High Profile @Layer 4, AAC-LC up to 720p at 25 fps (encode/decode) MJPEG up to 720p at 25 fps (decode only) • Supported Video Transport Streams: MPEG-TS for MPEG-2 and H.264, HTTP for MJPEG • Max Number of Active Video Streams: One decode plus one encode • Video Output: Camera video output: H.264, up to 720p@25 fps via Micro-USB port only (controlled by host device) • Video Conferencing: Panel-to-panel and video chat
AUDIO	• Microphone: -42 dB ±3 dB sensitivity FET microphone • Speakers: 4 ohm, 2 Watt, 300 Hz cutoff frequency • Supported Audio Codecs: MP2 Layer I and II, MP3 (8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz) AAC-LC (8 kHz, 96 kHz) G.711 with µLaw (VoIP encode/decode at 8 kHz) • Audio Output: USB Audio out USB port (head/hand set support) • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom: Full Duplex VoIP, SIP v2.0 (supported with AMX-CSG)

MXT-1000 Specifications (Cont.)	
GRAPHICS ENGINE	AMX G4: G4 enhanced feature set supporting multi-touch and gestures, scrolling, transitions - See TPD4 Operations Guide for more information
EMBEDDED APPLICATIONS	• Remote Management: VNC Server, G4 Web Control, AMX Resource Management Suite • Video Conferencing: Panel-to-panel and video chat • Audio Conferencing: Audio (Full Duplex Intercom)
FRONT PANEL COMPONENTS	• Light Sensor: Photosensitive light detector for automatic adjustment of the panel brightness • Proximity Detector: Max range = ~3', typ range = ~1', FOV = ~10 degrees • Camera: HD 720p camera for video conferencing/video chat support • LED Indicators: Camera active indicator (models with camera only) • Sleep Button: Sleep button to activate sleep mode and powering off. Also provides access to setup pages (can be disabled)
CONNECTIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector through cable extension • USB: (2) USB host 2.0, Type A ports (1) Micro-USB device port • Power: PoE (Power over Ethernet), 802.3af, class 3
ENVIRONMENTAL	• Temperature (Operating): 32° F to 104° F (0° C to 40° C) • Temperature (Storage): 4° F to 140° F (-20° C to 60° C) • Humidity (Operating): 20% to 85% RH • Humidity (Storage): 5% to 85% RH • Power ("Heat") Dissipation: On: 21.3 BTU/hr Standby: 10.6 BTU/hr
INCLUDED ACCESSORIES	• MXA-USB-C, USB Port Cover Kit, Modero X/S Series Touch Panel (FG5968-18) • 3/4" Mini-Grommet (FG570-01) • MXA-CLK, Modero X/S Series Cleaning Kit (FG5968-16)
OPTIONAL ACCESSORIES	• MXA-STMK-10, Secure Table Mount Kit, 10.1" Modero X Tabletop (FG5968-66) • MXA-MP, Modero X/S Series Multi Preview (FG5968-20) • MXA-MPL, Modero X/S Series Multi Preview Live (FG5968-10) • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • HPG-10-10K, 3/4" Mini-Grommet, 10-Pack (FG570-01-10K) • MXA-BT Bluetooth USB Adapter for Modero X/S Series (FG5968-19) • MXA-CLK, Modero X/S Series Cleaning Kit (FG5968-16) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63) • MXA-USB-C, USB Port Covers for the Modero X Series Touch Panels (FG5968-18) • MXA-HST, Bluetooth Handset for Modero X/S Series Touch Panels (FG5968-17) • MXA-UENET, Video Acceleration Cable for Modero X 10.1" and 7" Touch Panels (FG5968-75)

NOTE

*The **MXT-1000-NC** (**FG5968-24**) No Comm touch panel does not have camera, microphone, or NFC capability. It otherwise has all of the functionality of the MXT-1000 panel.*

Touch Panel Aspect Ratio

While the touch panel screen physical dimensions fall between 16:9 and 16:10, any incoming video stream can be scaled to 16:9 if needed. This may lead to some letter boxing around the video in some cases.

MXT-1000 Installation

Detailed specifications drawings for the MXT-1000 are available to download from www.amx.com.

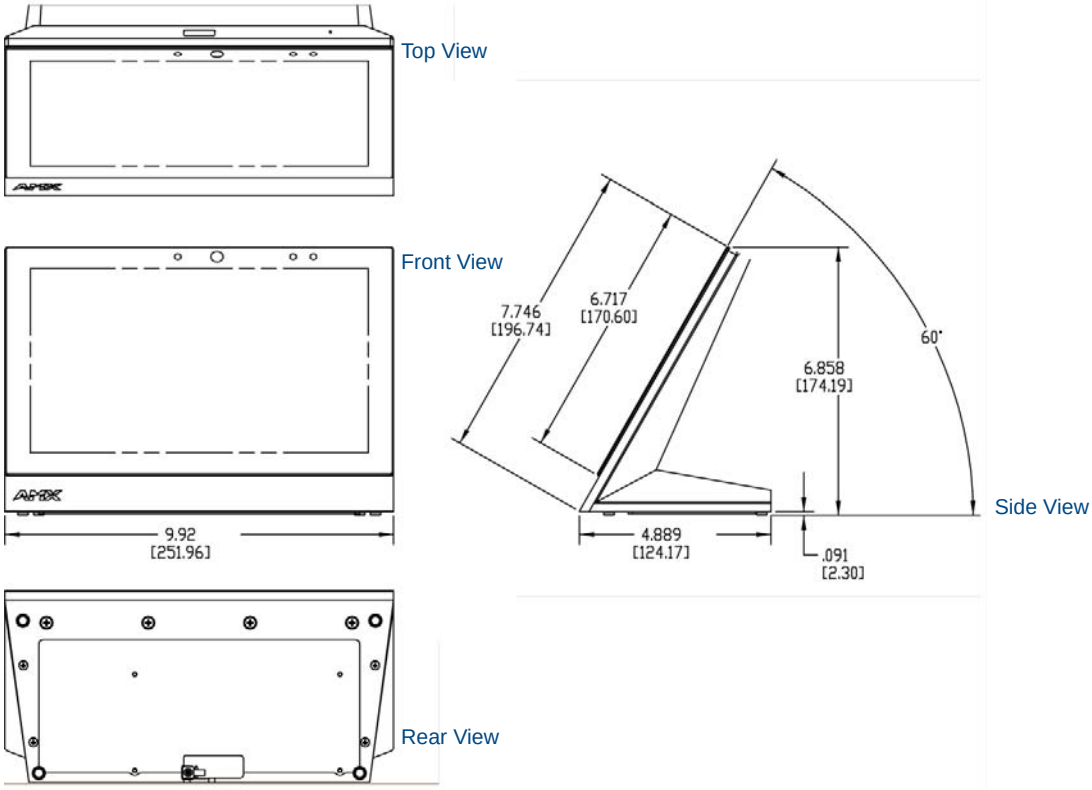


FIG. 9 MXT-1000

Connector Locations

USB peripherals (mouse, keyboard, etc.) may be connected to either of the two USB ports on the rear of the device (FIG. 10). Updates to the device's firmware can also made via the USB ports (see *Upgrading Firmware via USB Flash Drive* on page 53 for details).

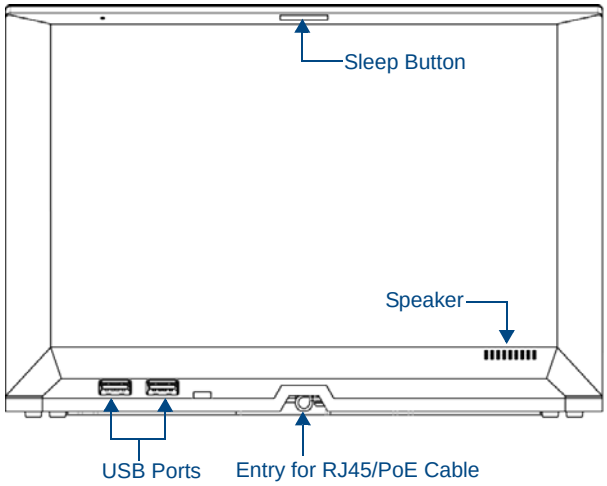


FIG. 10 MXT-1000 - rear view

Power via PoE

Power for the MXT-1000 is supplied via PoE (Power Over Ethernet), utilizing an AMX-certified, capacitive touch-compliant PoE injector such as the PS-POE-AT High Power PoE Injector (**FG423-81**) or other approved AMX PoE power source. The incoming Ethernet cable should be connected to the RJ45 port on the cable attached to the device.

Ethernet Cable Installation and Modification

In installations where concealing the Ethernet cable is desired, a hole at least 1.00” (2.54 cm) in diameter is required in the surface to allow passage of the female RJ45 connector (FIG. 11).

If using a smaller hole is unavoidable, you will need to disconnect the Ethernet cable (**ECA5968-05**) from the device, to feed the male end of the cable through.

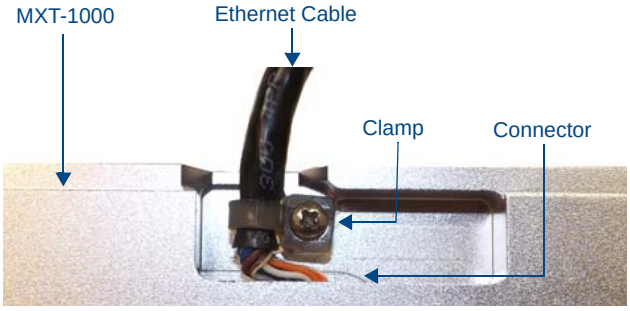


FIG. 11 Bottom of the MXT-1000

NOTE

The minimum diameter hole through which the Ethernet cable may pass is 0.50" (1.27 cm).

To disconnect and reconnect the MXT-1000’s Ethernet cable to allow use of a hole smaller than 1.00” in diameter:

1. On a soft surface, turn the MXT-1000 face-down to access the bottom of the device.
2. Remove the clamp holding the Ethernet cable (FIG. 11).
3. Remove the Ethernet cable connector and pull the cable out of the clamp.
4. Pass the Ethernet cable (**ECA5968-05**) through the hole, with the RJ45 connector on the other side of the installation surface from the device.
5. Press the Ethernet cable back into the clamp.
   *Do **NOT** tighten the clamp at this time.*
6. Using a non-conductive item such as a wooden stick, reinsert the Ethernet cable connector into the device.
   Ensure that the connector is properly seated.
7. Tighten the clamp to secure the Ethernet cable.
   Make sure the clamp is around the bundled black cable, not the individual wires
8. Connect the RJ45 connector to its incoming Ethernet cable and apply power.

MXD-1000 (Wall-Mount - Landscape/Portrait)

The MXD-1000 10.1" Modero X Series® Wall Mount Touch Panel features edge-to-edge capacitive touch glass with multi-touch capabilities as well as advanced technology empowering users to operate AV equipment seamlessly, while providing the ultimate in audio and video quality.

The MXD-1000 is available in Portrait and Landscape layouts:

Portrait	**MXD-1000-P**	**FG5968-07**
Landscape	**MXD-1000-L**	**FG5968-13**

FIG. 12 MXD-1000 Wall Mount (Portrait and Landscape)

MXD-1000 Specifications

MXD-1000 Specifications	
DIMENSIONS (HWD)	• Landscape: 6 11/16" x 9 7/8" x 2 5/8" (171 mm x 252 mm x 67 mm) • Portrait: 9 7/8" x 6 11/16" x 2 5/8" (252 mm x 171 mm x 67 mm)
WEIGHT	2.0 lbs (0.91 Kg)
POWER CONSUMPTION	• Full-On: 8 W • Standby: 3.2 W • Shutdown: 1 W • Start-Up Inrush Current: Not applicable due to PoE standard
EXTERNAL POWER SUPPLY REQUIRED	Optimal performance requires use of one of the following AMX PoE power supplies (not included): • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63)
CERTIFICATIONS	• UL 60950-1 • FCC Part 15 Class B • C-Tick CISPR 22 Class B • CE EN 55022, EN 55024 and EN 60950-1 • IEC 60950-1 • IC • IEC/EN-60950 • RoHS/WEEE compliant

MXD-1000 Specifications (Cont.)	
TOUCH SCREEN DISPLAY	• Display Type: TFT Active Matrix Color LCD with In-plane Switching Technology (IPS) • Display Size (WH) Landscape: 9.9" x 6.7" (252 mm x 170 mm), 12.0" (304 mm) diagonal Portrait: 6.7" x 9.9" (170 mm x 252 mm), 12.0" (304 mm) diagonal • Viewable Area (WH) Landscape: 8.5" x 5.3" (217mm x 136mm), 10.1" (257mm) diagonal Portrait: 5.3" x 8.5" (136 mm x 217 mm), 10.1" (257mm) diagonal • Resolution Landscape: 1280x800 Portrait: 800x1280 • Aspect Ratio Landscape: 16:9 Portrait: 9:16 • Brightness: 400 cd/m2 • Contrast Ratio: 700:1 • Color Depth: 264K colors • Illumination: LED • Touch Overlay: Projected capacitive, multi-touch support, 3 simultaneous max
VIEWING ANGLE	• Vertical: ± 89° • Horizontal: ± 89°
MEMORY	• SDRAM: 512 MB • Flash: 4 GB • Maximum Project Size: 2.4 GB flash available to user
COMMUNICATIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector. Supported IP and IP-based protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, Telnet, FTP, DNS, RFB (for VNC), HTTP • USB: (2) USB host 2.0, Type A ports (1 with limited physical access requiring right angle connection): Firmware upgrade, touch panel file transfer, JPEG image viewer, HID peripherals, USB audio output for headsets (1) Micro-USB device port: video output from on-board camera (landscape touch panel only), USB audio from on-board microphone to host device • Near Field Communication (NFC): Supports standards ISO/IEC 15693, ISO/IEC 14443A, ISO/IEC 14443B; Unique Identifier (UID), typ range=.25", max = .5" • Bluetooth: Mouse/Keyboard: HID Profile v1.1, requires MXA-BT Bluetooth Adapter (FG5968-19) Handset: Hands Free Profile v1.5, Headset Profile v1.2, requires MXA-BT Bluetooth Adapter (FG5968-19) and MXA-HST Bluetooth Handset (FG5968-17)

MXD-1000 Specifications (Cont.)	
VIDEO	• Supported Video Codecs, Landscape Model (FG5968-13): MPEG-2-TS: MPEG-2 Main Profile@High Level up to 720p at 25 fps (decode only) MPEG-2-TS: H.264 High Profile@Layer 4, AAC-LC up to 720p at 25 fps (encode/decode) MJPEG up to 720p at 25 fps (decode only) • Supported Video Codecs, Portrait Model (FG5968-07): MPEG-2-TS: MPEG-2 Main Profile@High Level up to 720p at 25 fps (decode only) MPEG-2-TS: H.264 High Profile@Layer 4, AAC-LC up to 720p at 25 fps (decode) MJPEG up to 720p at 25 fps (decode only) • Supported Video Transport Streams: MPEG-TS for MPEG2 and H.264; HTTP for MJPEG • Max Number of Active Video Streams: Portrait: One decode Landscape: One decode plus one encode • Video Conferencing, Landscape Model (FG5968-13): Panel-to-panel and video chat • Video Conferencing, Portrait Model (FG5968-07): Panel-to-panel and video chat (the portrait wall mount receives video and returns audio) • Video Output, Landscape Model Only (FG5968-13): Camera video output: H.264, up to 720p@25 fps via Micro-USB port only (controlled by host device)
AUDIO	• Microphone: -42 dB ±3 dB sensitivity FET microphone • Speakers: 4 ohm, 2 Watt, 300 Hz cutoff frequency • Supported Audio Codecs: MP2 Layer I and II, MP3 (8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz) AAC-LC (8 kHz, 96 kHz) G.711 with µLaw (VoIP encode/decode at 8 kHz) • Audio Output: USB Audio out USB port (head/hand set support) • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom: Full Duplex VoIP, SIP v2.0 (supported with AMX-CSG)
GRAPHICS ENGINE	AMX G4: G4 enhanced feature set supporting multi-touch and gestures, scrolling, transitions - See TPD4 Operations Guide for more information
EMBEDDED APPLICATIONS	• Remote Management: VNC Server, G4 Web Control, AMX Resource Management Suite • Video Conferencing: Panel-to-panel and video chat • Audio Conferencing: Audio (Full Duplex Intercom)
FRONT PANEL COMPONENTS	• Light Sensor: Photosensitive light detector for automatic adjustment of the panel brightness • Proximity Detector: Max range = ~3', typ range = ~1', FOV = ~10 degrees • Camera, Landscape Model Only (FG5968-13): HD 720p camera for video conferencing/video chat support • LED Indicators: Camera active indicator (models with camera only) • Sleep Button: Sleep button to activate sleep mode and powering off. Also provides access to setup pages (can be disabled)
CONNECTIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector through cable extension • USB: (2) USB host 2.0, Type A ports (1) Micro-USB device port • Power: PoE (Power over Ethernet), 802.3af, class 3

MXD-1000 Specifications (Cont.)	
ENVIRONMENTAL	• Temperature (Operating): 32° F to 104° F (0° C to 40° C) • Temperature (Storage): 4° F to 140° F (-20° C to 60° C) • Humidity (Operating): 20% to 85% RH • Humidity (Storage): 5% to 85% RH • Power ("Heat") Dissipation: On: 21.3 BTU/hr Standby: 10.6 BTU/hr
INCLUDED ACCESSORIES	• MXA-USB-C, USB Port Cover Kit, Modero X Series Touch Panel (FG5968-18) • MXA-CLK, Modero X/S Series Cleaning Kit (FG5968-16) • Installation Template, 10" Modero X Series (68-5968-03)
OPTIONAL ACCESSORIES	• MXA-FMK-10, Flush Mount Kit, 10" Modero X Wall Mount (FG5969-62) • MXA-RMK-10, Modero X Series Rack Mount Kit (FG5969-62) • MXA-MP, Modero X/S Series Multi Preview (FG5968-20) • MXA-MPL, Modero X/S Series Multi Preview Live (FG5968-10) • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • CB-MXP10, Rough-In Box and Cover Plate for Modero X Series Touch Panel, 10" (FG039-17) • MXA-BT Bluetooth USB Adapter for Modero X/S Series (FG5968-19) • MXA-CLK, Modero X/S Series Cleaning Kit (FG5968-16) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63) • MXA-USB-C, USB Port Cover Kit, Modero X Series Touch Panel (FG5968-18) • MXA-HST, Bluetooth Handset for Modero X Series Touch Panels (FG5968-17) • MXA-UENET, Video Acceleration Cable for Modero X 10.1" and 7" Touch Panels (FG5968-75)

*The **MXD-1000-P-NC** (**FG5968-25**) and **MXD-1000-L-NC** (**FG5968-26**) No Comm touch panels do not have camera, microphone, or NFC capability. These otherwise have all of the functionality of the MXD-1000 panels.*

Touch Panel Aspect Ratio

While the touch panel screen physical dimensions fall between 16:9 and 16:10, any incoming video stream can be scaled to 16:9 if needed. This may lead to some letter boxing around the video in some cases.

MXD-1000 Installation

Detailed specifications drawings for the MXD-1000 are available to download from www.amx.com.

NOTE

*Refer to **A Note About Wall and Rack Installation** **on page 5** for important notes on thermal concerns with Rack and Wall installations.*

The MXD-1000 may be installed directly into a solid surface environment, using either solid surface screws or the included locking tabs for different mounting options.

Once installed, the MXD-1000 is contained within a clear outer housing known as the Backbox (FIG. 13). This Backbox is removed to install the device into a wall or when using the optional Rough-In Box accessory (**FG039-17**).

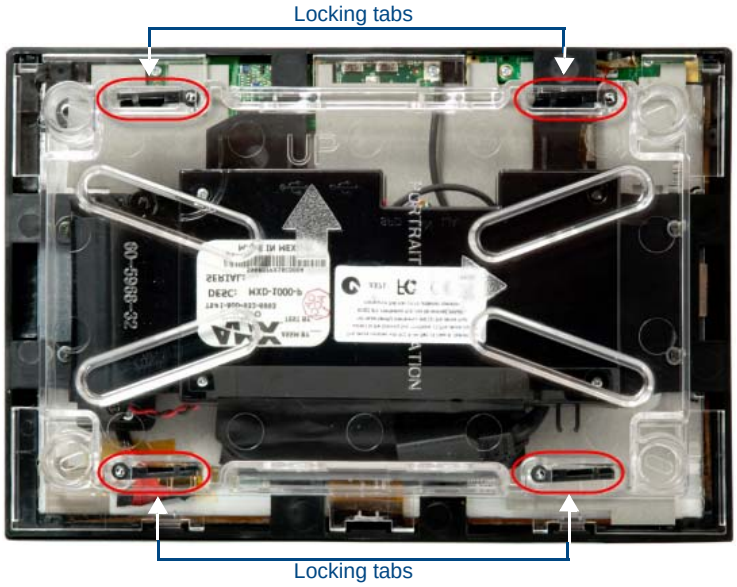


FIG. 13 MXD-1000 Backbox (Landscape orientation)

NOTE

For typical mounting surfaces, such as drywall, use the locking tabs as the primary method for securing the Backbox to the surface. For thin walls or solid surfaces, use mounting screws (not included).

Installing the MXD-1000 into a Wall

The MXD-1000 comes with a clear plastic Backbox (designed to attach the panel to most standard wall materials. The Backbox has four locking tabs (two on top and two on bottom) to help lock the Backbox to the wall (see FIG. 13).

These locking tabs are only extended AFTER the Backbox is inserted into the wall. (FIG. 14 and FIG. 15).

WARNING

When installing the Backbox, make sure that the assembly is in the correct position and in the correct place. Once the locking tabs are extended and locked into place, removing the Backbox may be difficult without having access to the back of the wall or causing damage to the wall.

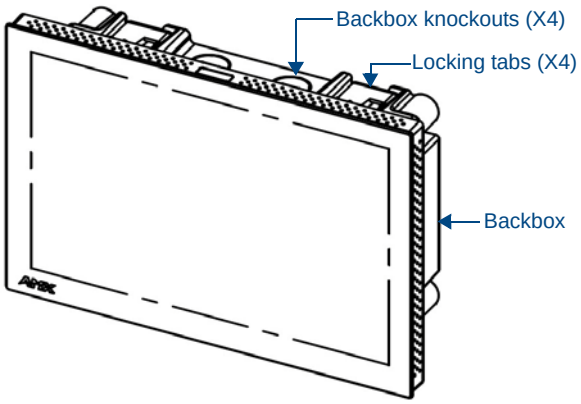
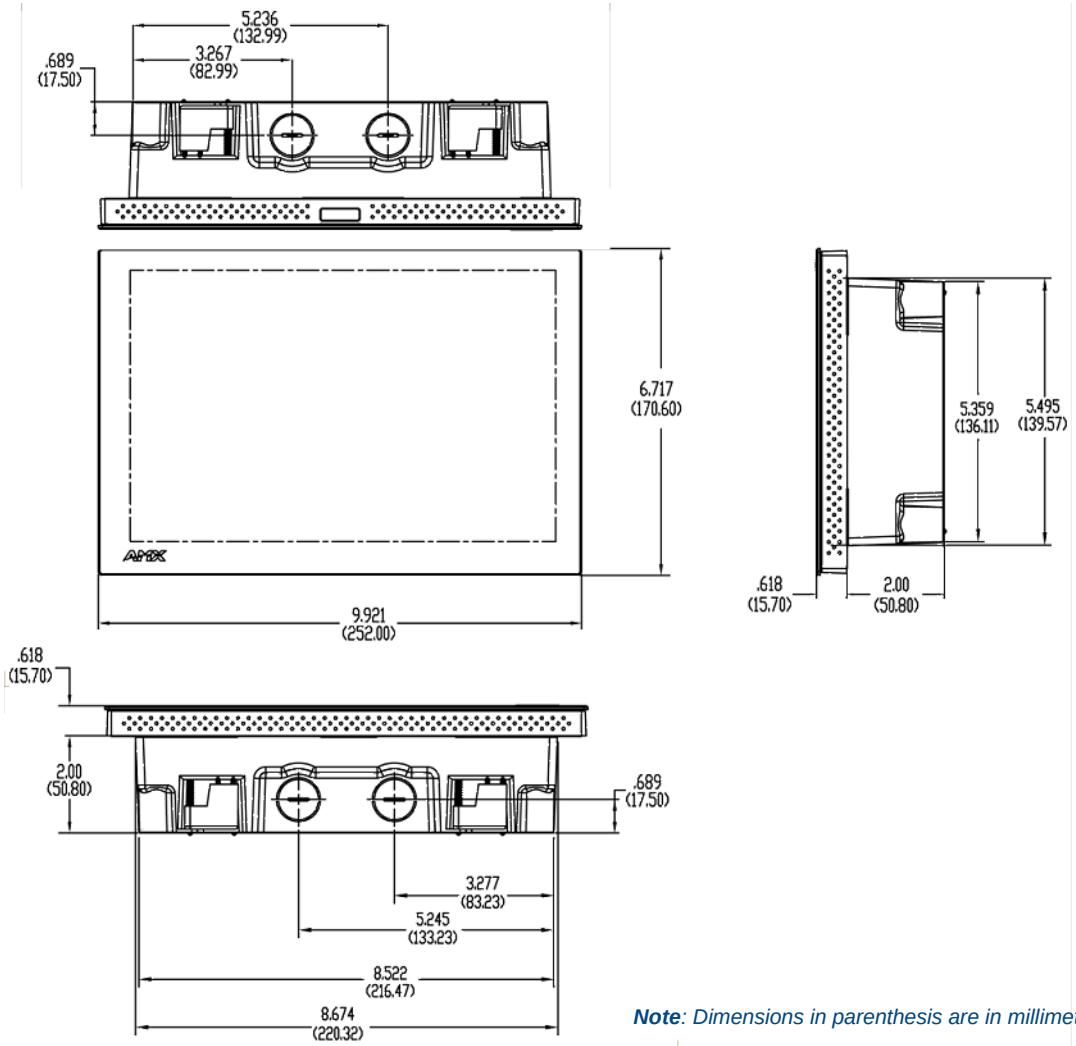


FIG. 14 MXD-1000 (Landscape)



***Note**: Dimensions in parenthesis are in millimeters*

FIG. 15 MXD-1000

NOTE

In order to ensure a stable installation of the MXD-1000, the thickness of the wall material must be a minimum of .50 inches (1.27cm) and a maximum of .875 inches (2.22cm). The mounting surface should also be smooth and flat.

Installing the Backbox

***Note**: Dimensions in parenthesis are in millimeters*

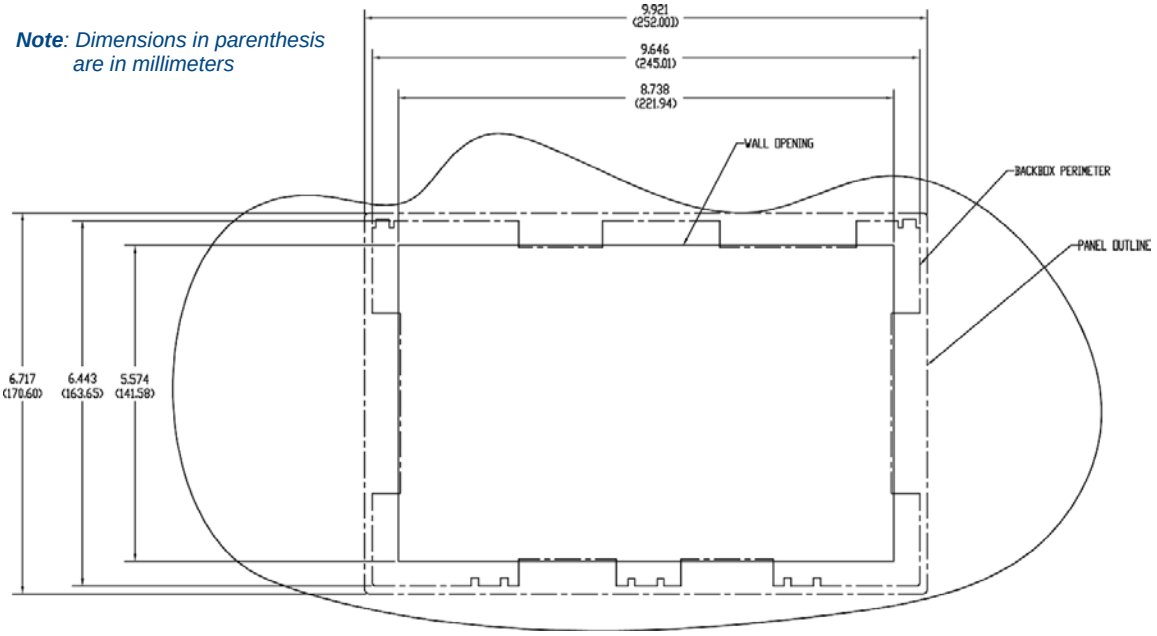
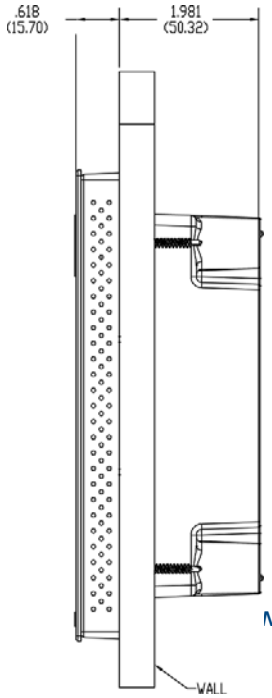


FIG. 16 MXD-1000 Installation Dimensions (front view)



***Note**: Dimensions in parenthesis are in millimeters*

FIG. 17 MXD-1000 Installation Dimensions (side view)

For best results, use the included Installation Template (**68-5968-03**) to ensure proper placement.

WARNING

Using the Installation Template to select the final placement of the Backbox is highly recommended. The outside edges of the template are the same dimensions as the touch panel, which allows you to troubleshoot possible conflicts with wall edges, doors, and other potential obstacles.

The Installation Template is marked on one side with directions for both landscape and portrait installations to ensure that the touch panel and Backbox are properly aligned.

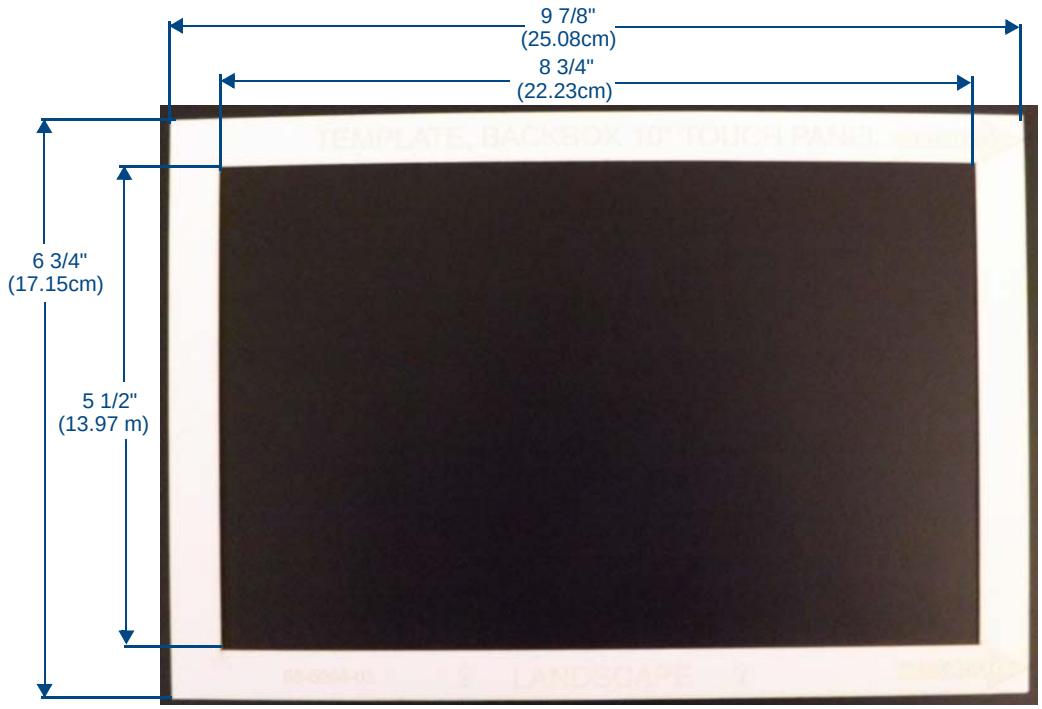


FIG. 18 10" Installation Template

1. Prepare the area by removing any screws or nails from the drywall before beginning the cutout process.
2. After ensuring proper placement, cut out the mounting surface for the Backbox, using the included Installation Template as a guide.

CAUTION

Making sure the actual cutout opening is slightly smaller than the provided dimensions is highly recommended. This provides a margin for error if the opening needs to be expanded. Too little wall material removed is always better than too much.

3. Thread the incoming cables through the surface opening (FIG. 19 and FIG. 20).
   Leave enough slack in the wiring to accommodate any re-positioning of the panel.

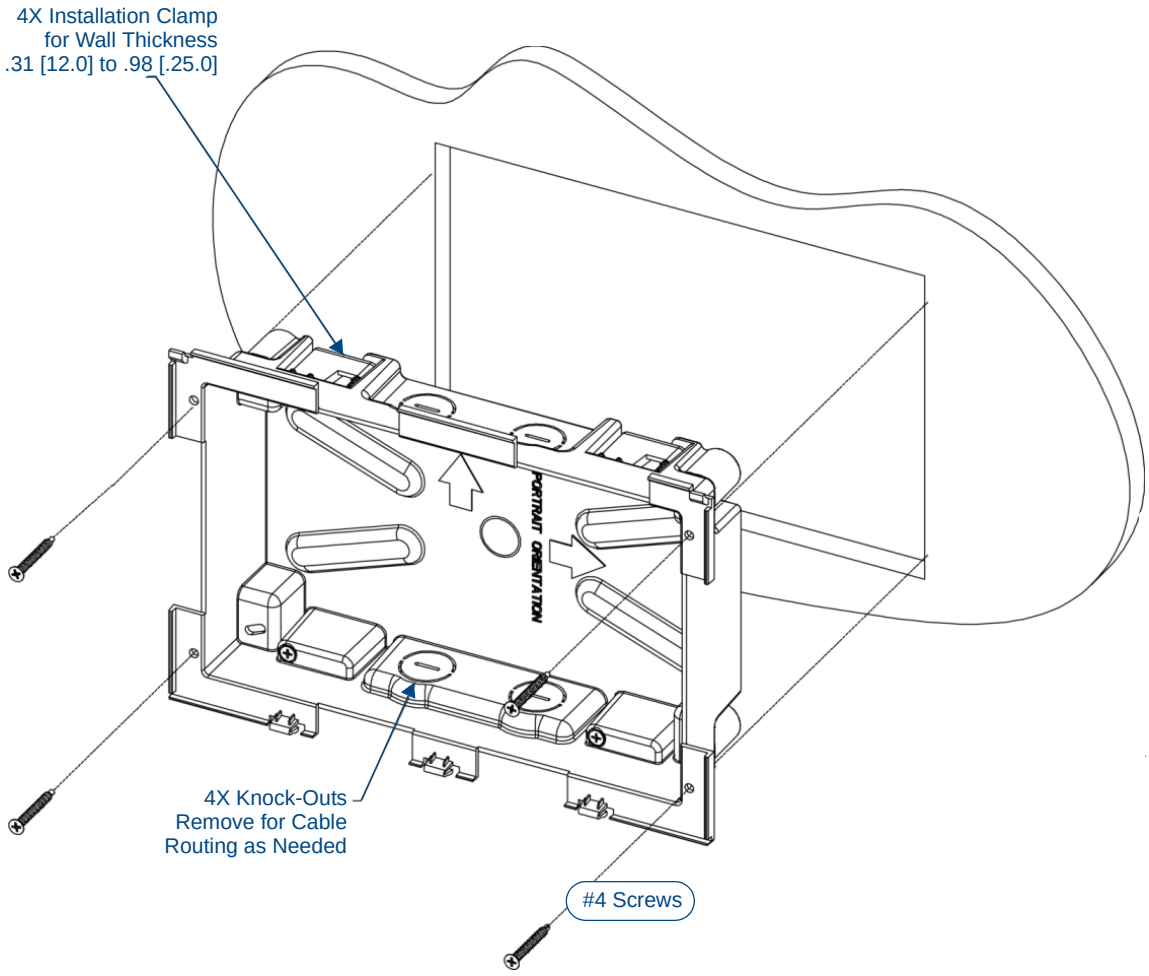


FIG. 19 MXD-1000 Backbox Installation (Landscape)

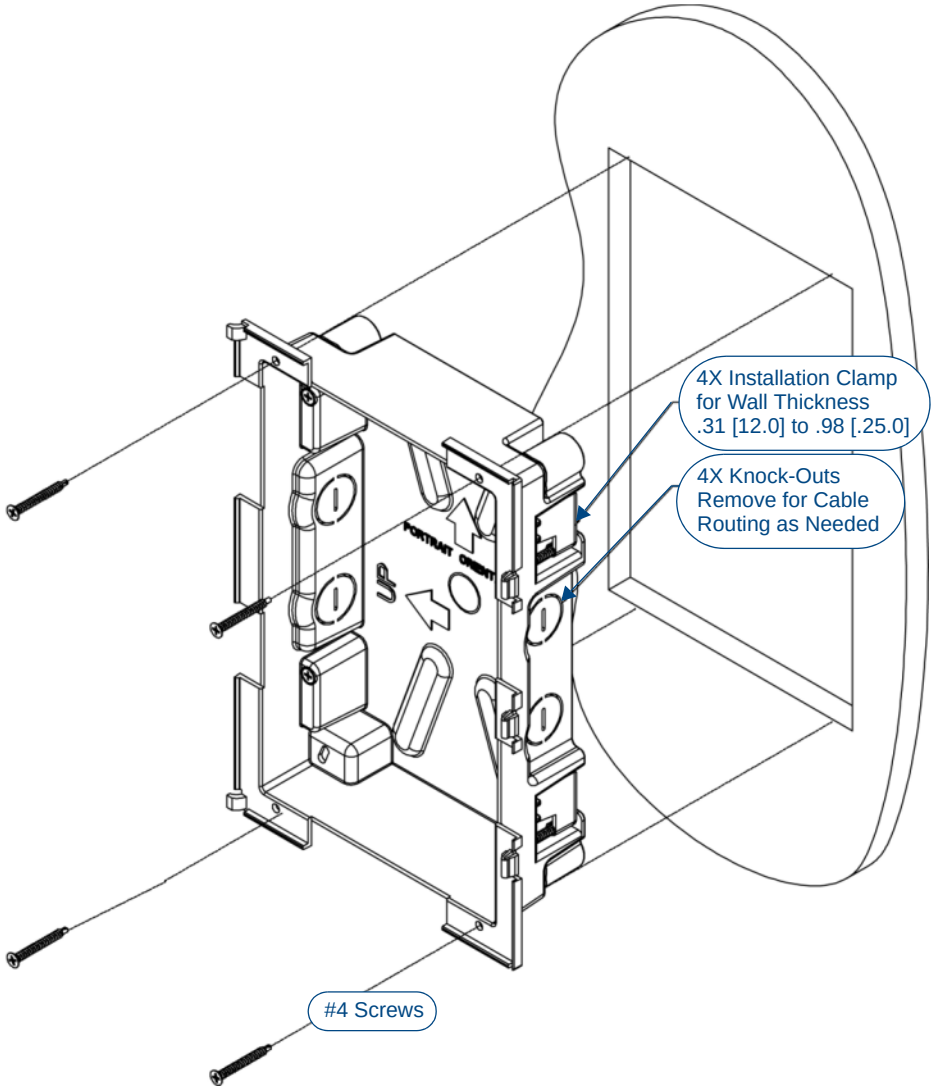


FIG. 20 MXD-1000 Backbox Installation (Portrait)

4. Remove the Backbox knockouts (FIG. 19) and thread the incoming wiring through the knockout holes.

   To facilitate installation, thread the Ethernet cable through a bottom knockout (Landscape) or a right-side knockout (Portrait), and the Micro-USB or USB cables through a top knockout (Landscape) or left knockout (Portrait)

5. Thread the incoming Ethernet, USB, and Micro-USB wiring (if USB or Micro-USB access is desired) from the surface opening and through the knockouts.

6. Push the Backbox into the mounting surface.

   Ensure that the locking tabs lie flush against the Backbox and that the Backbox goes freely into the opening.

7. Extend the locking tabs on the sides of the Backbox by tightening the screws inside the box until snug.

WARNING

The maximum recommended torque to screw in the locking tabs on the plastic Backbox is 5 IN-LB [56 N-CM]. Applying excessive torque while tightening the tab screws, such as with powered screwdrivers, can strip out the locking tabs or damage the plastic Backbox.

- Not all of the tabs must be extended to lock the Backbox in place, but extending a minimum of the top and bottom tabs is highly recommended.
- Apply enough pressure to the screw head to keep the box flush with the wall: this ensures that the locking tabs will tighten up against the inside of the wall.

- The Backbox is clear to allow visual confirmation that the tabs have been extended and are gripping the wall, as well as in assisting with removal if necessary.
- For additional strength, #4 mounting screws (not included) may be secured through circular holes located at the left and right sides of the MXD-1000 (FIG. 19). In order to prevent damage to the touch panel, make sure that these are flush with the Backbox.

8. Insert each connector into its corresponding location along the back of the device.

- To reach the RJ45 connector, gently pull it from beneath the electronics cover (FIG. 21).
- Attach the Ethernet cable and gently push the connection back under the cover.

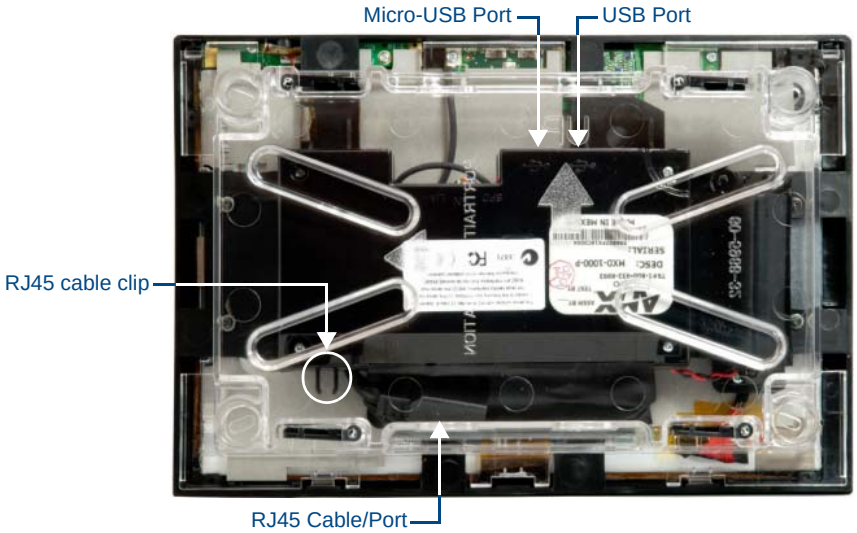


FIG. 21 MXD-1000 - rear view

9. Test the incoming wiring by attaching the panel connections to their terminal locations and applying power.

NOTE

Do not disconnect the connectors from the touch panel. The unit must be installed with the attached connectors before being inserted into the mounting surface.

- Verify that the panel is receiving power and functioning properly to prevent repetition of the installation.
- Remove power before continuing with the installation.

10. Latch the panel onto the hooks on the Backbox.

Push in on the bottom snaps (Landscape) or on the right (Portrait) (FIG. 22) gently but firmly until the snaps “click” to lock it down.

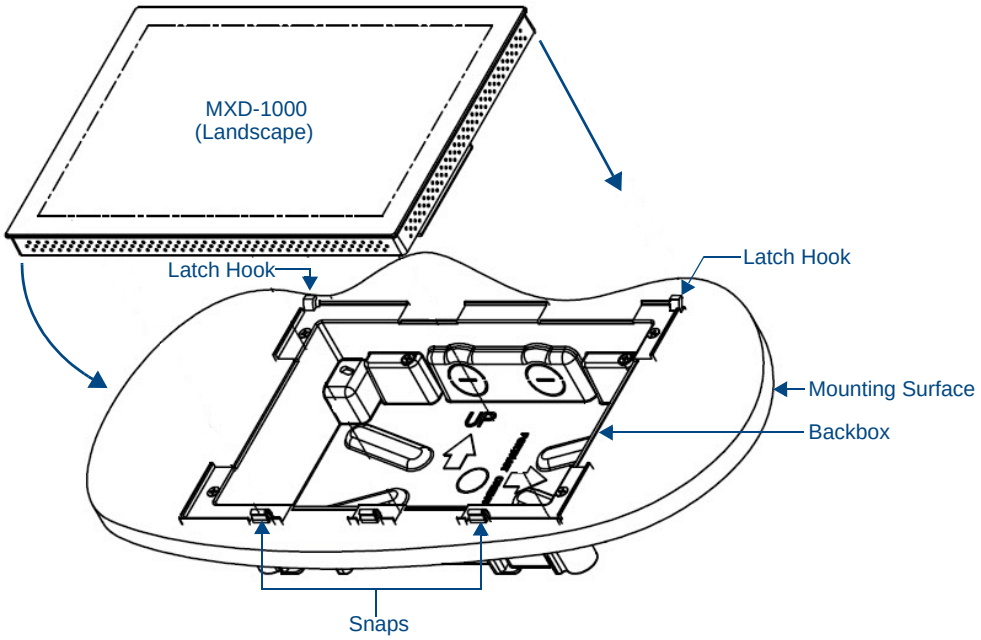


FIG. 22 Installing the MXD-1000 (Landscape)

WARNING

If a gap is observed between the panel and the Backbox, or feel any binding while locking down the panel, stop immediately and verify that no cables or other items are in the way. Do not force the panel into position, as this can cause damage to the touch screen or the panel electronics.

11. Reconnect the terminal Ethernet and USB to their respective locations on either the Ethernet port or NetLinx Master.

Removing the MXD-1000

The MXD-1000 is held in place via latch hooks and clips in the Backbox. In certain circumstances, such as firmware updates or other maintenance that requires accessing the device's USB or Micro-USB ports, the device may need to be removed from the Backbox.

The clips that lock down the MXD-1000's bottom edge (Landscape) or right edge (Portrait) may be unlatched in order to remove the device from the mounting surface.

Removing an MXD-1000 from Its Backbox

1. The MXD-1000 has three rows of ventilation holes along the molding (FIG. 23):

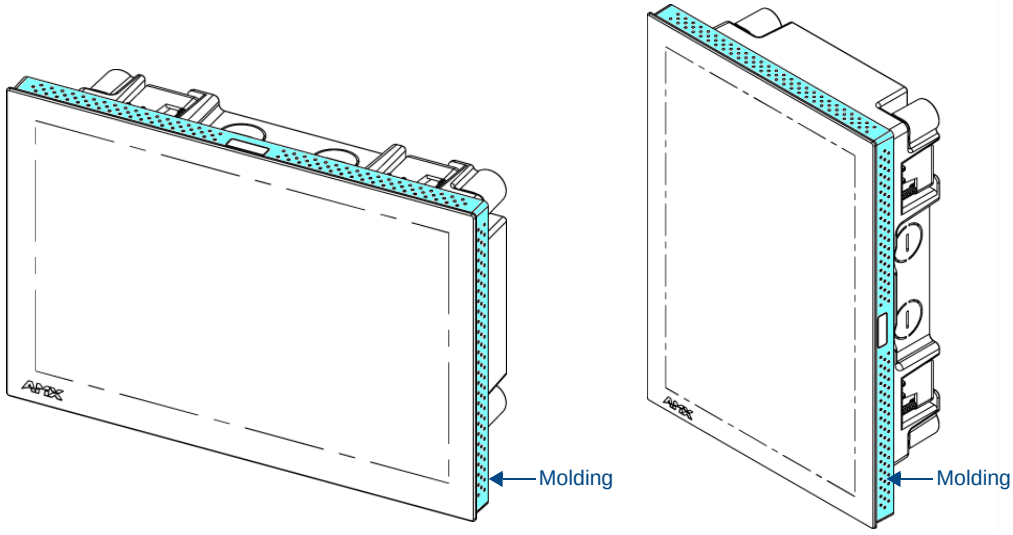


FIG. 23 MXD-1000 Molding (highlighted in blue)

2. On the bottom (Landscape) or right side (Portrait) of the MXD-1000, locate the **seventh and eight** ventilation holes from each edge, on the row closest to the Backbox (FIG. 24): .

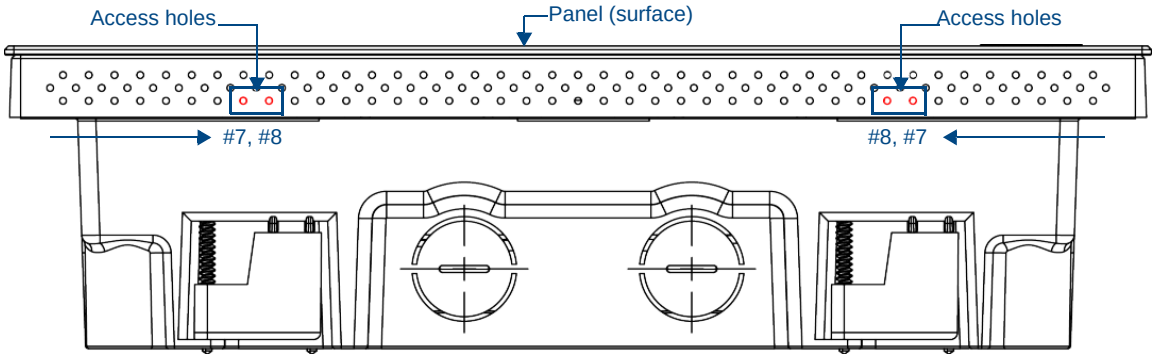


FIG. 24 Bottom View (Landscape) or Right-Side View (Portrait) of the MXD-1000 showing access holes in molding

3. With a stout, strong point (i.e. push pin or straightened paper clip), carefully press into the access holes in either end of the molding until the snap is disconnected.

   To facilitate the disconnection, grasp the bottom of the panel (Landscape) or right side (Portrait) and pull gently outward until the side of the panel is free of the snap. Use your other hand to hold stable the front of the touch panel.

WARNING

Always pull on the frame of the touch panel. NEVER pull on the glass edge.

4. When the first side is free, repeat the process with the other.
5. With the edge of the touch panel free, carefully lift up and out (Landscape) or to the left and out (Portrait) to remove the touch panel from the Backbox.

Be careful not to pull on the cables or connectors.

6. To reattach the panel to its Backbox, repeat the installation procedure.

NOTE

*For further information, refer to the video available at www.amx.com (go to **Newsroom > Videos > Touch Panels**).*

MXT/D-700 - 7" X Series Panels

MXT-700 (Tabletop)

The MXT-700 7" Modero X Series® Tabletop Touch Panel (**FG5968-04**) features edge-to-edge capacitive touch glass with multi-touch capabilities, as well as advanced technology empowering users to operate AV equipment seamlessly, while providing the ultimate in audio and video quality. The distinctive appearance will complement even the most sophisticated meeting facilities and homes.

FIG. 25 MXT-700 touch panel

MXT-700 Specifications

MXT-700 Specifications	
DIMENSIONS (HWD)	5" x 7 5/16" x 4 1/8" (126 mm x 187 mm x 105 mm)
WEIGHT	1.8 lbs (0.82 Kg)
POWER CONSUMPTION	• Full-On: 8 W • Standby: 3.2 W • Shutdown: 1 W • Start-Up Inrush Current: Not applicable due to PoE standard
EXTERNAL POWER SUPPLY REQUIRED	Optimal performance requires use of one of the following AMX PoE power supplies (not included): • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63)
CERTIFICATIONS	• UL 60950-1 • FCC Part 15 Class B • C-Tick CISPR 22 Class B • CE EN 55022, EN 55024 and EN 60950-1 • IEC 60950-1 • IC • IEC/EN-60950 • RoHS/WEEE compliant

MXT-700 Specifications (Cont.)	
TOUCH SCREEN DISPLAY	• Display Type: TFT Active Matrix Color LCD with Fringe Field Switching (FFS) - Wide Viewing Angle Technology • Display Size (WH): Landscape: 7.3" x 4.8" (186 mm x 122 mm), 8.8" (222 mm) diagonal • Viewable Area (WH): Landscape: 6.05" x 3.54" (154 mm x 90 mm), 7.0" (178 mm) diagonal • Resolution (WH): Landscape: 1024x600 • Aspect Ratio (WH): Landscape: 16:9 • Brightness: 400 cd/m2 • Contrast Ratio: 800:1 • Color Depth: 16.7M colors • Illumination: LED • Touch Overlay: Projected capacitive, multi-touch support, 3 simultaneous max
VIEWING ANGLE	• Vertical: ± 89° • Horizontal: ± 89°
MEMORY	• SDRAM: 512 MB • Flash: 4 GB • Maximum Project Size: 2.4 GB flash available to user
COMMUNICATIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector. Supported IP and IP-based protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, Telnet, FTP, DNS, RFB (for VNC), HTTP • USB: (2) USB host 2.0, Type A ports (1 with limited physical access requiring right angle connection): Firmware upgrade, touch panel file transfer, JPEG image viewer, HID peripherals, USB audio output for headsets • Near Field Communication (NFC): Supports standards ISO/IEC 15693, ISO/IEC 14443A, ISO/IEC 14443B; Unique Identifier (UID), typ range=.25", max = .5" • Bluetooth: Mouse/Keyboard: HID Profile v1.1, requires MXA-BT Bluetooth Adapter (FG5968-19) Handset: Hands Free Profile v1.5, Headset Profile v1.2, requires MXA-BT Bluetooth Adapter (FG5968-19) and MXA-HST Bluetooth Handset (FG5968-17)
VIDEO	• Supported Video Codecs: MPEG2-TS: MPEG-2 Main Profile@High Level up to 720p at 25 fps (decode only) MPEG-2-TS: H.264 High Profile@Layer 4, AAC-LC up to 720p at 25 fps (decode) MJPEG up to 720p at 25 fps (decode only) • Supported Video Transport Streams: MPEG-TS for MPEG2 and H.264; HTTP for MJPEG • Max Number of Active Video Streams: One decode
AUDIO	• Microphone: -42 dB ±3 dB sensitivity FET microphone • Speakers: 4 ohm, 2 Watt, 300 Hz cutoff frequency • Supported Audio Codecs: MP2 Layer I and II, MP3 (8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz) AAC-LC (8 kHz, 96 kHz) G.711 with µLaw (VoIP encode/decode at 8 kHz) • Audio Output: USB Audio out USB port (head/hand set support) • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom: Full Duplex VoIP, SIP v2.0 (supported with AMX-CSG)
GRAPHICS ENGINE	AMX G4: G4 enhanced feature set supporting multi-touch and gestures, scrolling, transitions - See TPD4 Operations Guide for more information

MXT-700 Specifications (Cont.)	
EMBEDDED APPLICATIONS	• Remote Management: VNC Server, G4 Web Control, AMX Resource Management Suite • Video Conferencing: Panel-to-panel and video chat (the MXT-700 receives video and returns audio) • Audio Conferencing: Audio (Full Duplex Intercom)
FRONT PANEL COMPONENTS	• Light Sensor: Photosensitive light detector for automatic adjustment of the panel brightness • Proximity Detector: Max range = ~3', typ range = ~1', FOV = ~10 degrees • Sleep Button: Sleep button to activate sleep mode and powering off. Also provides access to setup pages (can be disabled)
CONNECTIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector through cable extension • USB: (2) USB host 2.0, Type A ports • Power: PoE (Power over Ethernet), 802.3af, class 3
ENVIRONMENTAL	• Temperature (Operating): 32° F to 104° F (0° C to 40° C) • Temperature (Storage): 4° F to 140° F (-20° C to 60° C) • Humidity (Operating): 20% to 85% RH • Humidity (Storage): 5% to 85% RH • Power ("Heat") Dissipation: On: 18.5 BTU/hr Standby: 10.6 BTU/hr
INCLUDED ACCESSORIES	• MXA-USB-C, USB Port Cover Kit, Modero X/S Series Touch Panel (FG5968-18) • 3/4" Mini-Grommet (FG570-01) • MXA-CLK, Modero X/S Series Cleaning Kit (FG5968-16)
OPTIONAL ACCESSORIES	• MXA-MP, Modero X/S Series Multi Preview (FG5968-20) • MXA-MPL, Modero X/S Series Multi Preview Live (FG5968-10) • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • HPG-10-10K, 3/4" Mini-Grommet, 10-Pack (FG570-01-10K) • MXA-BT Bluetooth USB Adapter for Modero X/S Series (FG5968-19) • MXA-CLK, Modero X/S Series Cleaning Kit (FG5968-16) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63) • MXA-HST, Bluetooth Handset for Modero X/S Series Touch Panels (FG5968-17) • MXA-USB-C, USB Port Covers for the Modero X/S Series Touch Panels (FG5968-18) • MXA-UENET, Video Acceleration Cable for Modero X 10.1" and 7" Touch Panels (FG5968-75)

NOTE

*The **MXT-700-NC** (**FG5968-27**) No Comm touch panel does not have microphone capability. It otherwise has all of the functionality of the MXT-700 panel.*

Touch Panel Aspect Ratio

While the touch panel screen physical dimensions fall between 16:9 and 16:10, any incoming video stream can be scaled to 16:9 if needed. This may lead to some letter boxing around the video in some cases.

MXT-700 Installation

Detailed specifications drawings for the MXT-700 are available to download from www.amx.com.

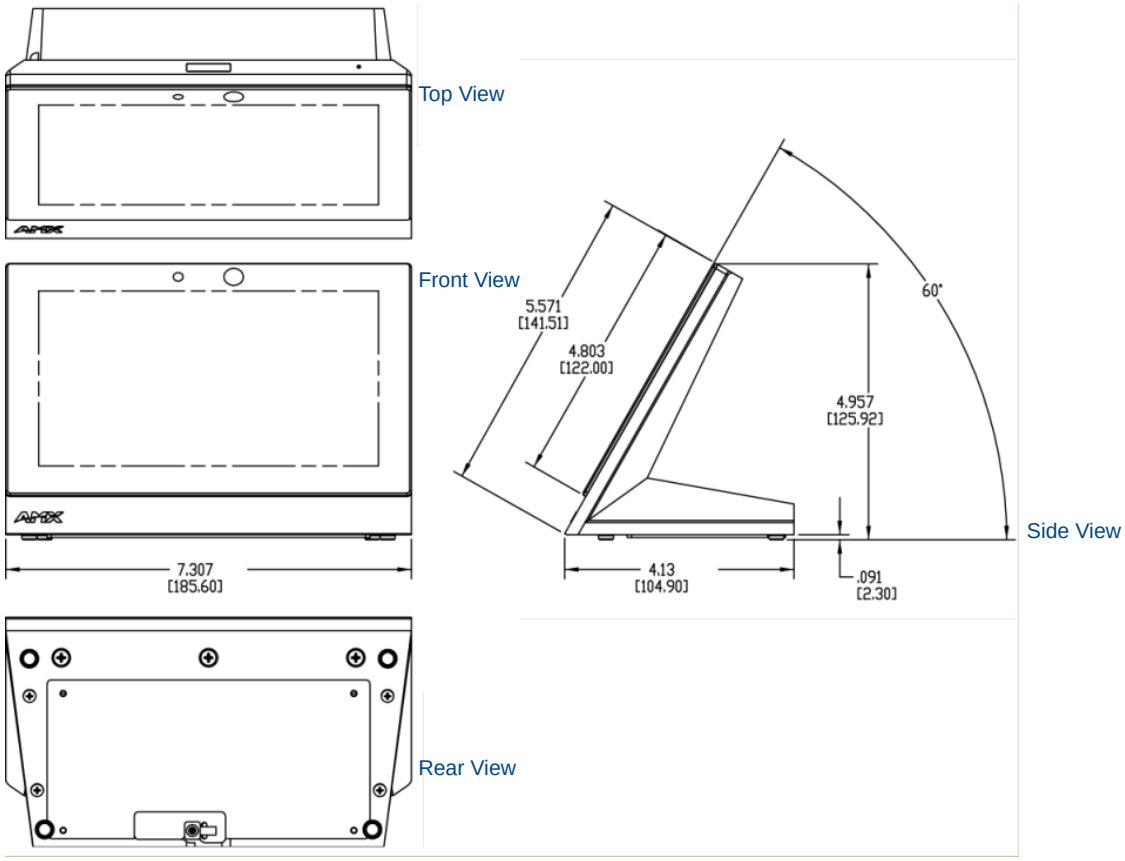


FIG. 26 MXT-700

Connector Locations

USB peripherals (mouse, keyboard, etc.) may be connected to either of the two USB ports on the rear of the device (FIG. 27). Updates to the device's firmware can also made via the USB ports (see *Upgrading Firmware via USB Flash Drive* on page 53 for details).

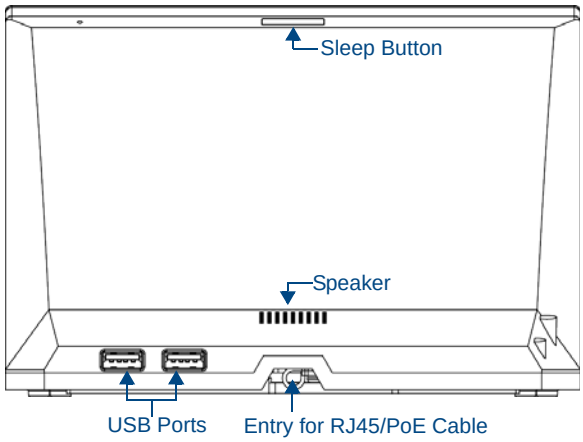


FIG. 27 MXT-700 - rear view

Power via PoE

Power for the MXT-700 is supplied via PoE (Power Over Ethernet), utilizing an AMX-certified, capacitive touch-compliant PoE injector such as the PS-POE-AT High Power PoE Injector (**FG423-81**) or other approved AMX PoE power source.

The incoming Ethernet cable connects to the RJ45 port on the cable attached to the device.

Ethernet Cable Installation and Modification

In installations where you wish to conceal the Ethernet cable, a hole at least 1.00” (2.54 cm) in diameter is required in the surface to allow passage of the female RJ45 connector (FIG. 28).

If using a smaller hole is unavoidable, you will need to disconnect the Ethernet cable (**ECA5968-05**) from the device, to feed the male end of the cable through.

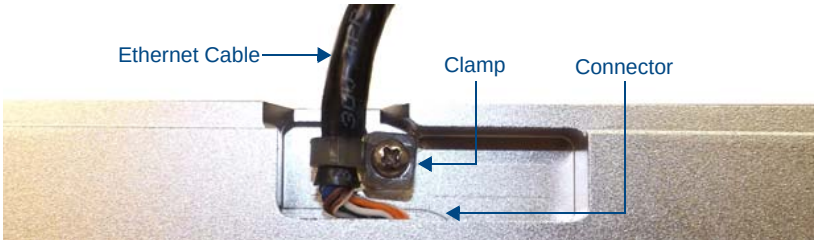


FIG. 28 Bottom of the MXT-700

NOTE

The minimum diameter hole through which the Ethernet cable may pass is 0.50" (1.27 cm).

To disconnect and reconnect the MXT-700’s Ethernet cable:

1. On a soft surface, turn the MXT-700 face-down to access the bottom of the device.
2. Remove the clamp holding the Ethernet cable (FIG. 28).
3. Remove the Ethernet cable connector and pull the cable out of the clamp.
4. Pass the Ethernet cable (**ECA5968-05**) through the hole, with the RJ45 connector on the other side of the installation surface from the device.
5. Press the Ethernet cable back into the clamp.
   *Do **NOT** tighten the clamp at this time.*
6. Using a non-conductive item such as a wooden stick, reinsert the Ethernet cable connector into the device.
   Ensure that the connector is properly seated.
7. Tighten the clamp to secure the Ethernet cable.
   Make sure the clamp is around the bundled black cable, not the individual wires.
8. Connect the RJ45 connector to its incoming Ethernet cable and apply power.

MXD-700 (Wall-Mount - Landscape/Portrait)

The MXD-700 7" Modero X Series® Wall Mount Touch Panel features edge-to-edge capacitive touch glass with multi-touch capabilities as well as advanced technology empowering users to operate AV equipment seamlessly, while providing the ultimate in audio and video quality.

The MXD-700 is available in Portrait and Landscape layouts: .

Portrait	**MXD-700-P**	**FG5968-08**
Landscape	**MXD-700-L**	**FG5968-14**

FIG. 29 MXD-700 Wall Mount (Portrait and Landscape)

MXD-700 Specifications

MXD-700 Specifications	
DIMENSIONS (HWD)	• Landscape: 4 13/16" x 7 5/16" x 2 1/2" (122 mm x 186 mm x 63 mm) • Portrait: 7 5/16" x 4 13/16" x 2 1/2" (186 mm x 122 mm x 63 mm)
WEIGHT	1.4 lbs (0.64 Kg)
POWER CONSUMPTION	• Full-On: 8 W • Standby: 3.2 W • Shutdown: 1 W • Start-Up Inrush Current: Not applicable due to PoE standard
EXTERNAL POWER SUPPLY REQUIRED	Optimal performance requires use of one of the following AMX PoE power supplies (not included): • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63)
CERTIFICATIONS	• UL 60950-1 • FCC Part 15 Class B • C-Tick CISPR 22 Class B • CE EN 55022, EN 55024 and EN 60950-1 • IEC 60950-1 • IC • IEC/EN-60950 • RoHS/WEEE compliant

MXD-700 Specifications (Cont.)	
TOUCH SCREEN DISPLAY	• Display Type: TFT Active Matrix Color LCD with Fringe Field Switching (FFS) - Wide Viewing Angle Technology • Display Size (WH) Landscape: 7.3" x 4.8" (186 mm x 122 mm), 8.8" (222 mm) diagonal Portrait: 4.8" x 7.3" (122 mm x 186 mm), 8.8" (222 mm) diagonal • Viewable Area (WH) Landscape: 6.05" x 3.54" (154 mm x 90 mm), 7.0" (178 mm) diagonal Portrait: 3.54" x 6.05" (90 mm x 154 mm), 7.0" (178 mm) diagonal • Resolution Landscape: 1024x600 Portrait: 600x1024 • Aspect Ratio Landscape: 16:9 Portrait: 9:16 • Brightness: 400 cd/m2 • Contrast Ratio: 800:1 • Color Depth: 16.7M colors • Illumination: LED • Touch Overlay: Projected capacitive, multi-touch support, 3 simultaneous max
VIEWING ANGLE	• Vertical: ± 89° • Horizontal: ± 89°
MEMORY	• SDRAM: 512 MB • Flash: 4 GB • Maximum Project Size: 2.4 GB flash available to user
COMMUNICATIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector. Supported IP and IP-based protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, Telnet, FTP, DNS, RFB (for VNC), HTTP • USB: (2) USB host 2.0, Type A ports (1 with limited physical access requiring right angle connection): Firmware upgrade, touch panel file transfer, JPEG image viewer, HID peripherals, USB audio output for headsets • Near Field Communication (NFC): Supports standards ISO/IEC 15693, ISO/IEC 14443A, ISO/IEC 14443B; Unique Identifier (UID), typ range=.25", max = .5" • Bluetooth: Mouse/Keyboard: HID Profile v1.1, requires MXA-BT Bluetooth Adapter (FG5968-19) Handset: Hands Free Profile v1.5, Headset Profile v1.2, requires MXA-BT Bluetooth Adapter (FG5968-19) and MXA-HST Bluetooth Handset (FG5968-17)
VIDEO	• Supported Video Codecs: MPEG2-TS: MPEG-2 Main Profile@High Level up to 720p at 25 fps (decode only) MPEG-2-TS: H.264 High Profile@Layer 4, AAC-LC up to 720p at 25 fps (decode) MJPEG up to 720p at 25 fps (decode only) • Supported Video Transport Streams: MPEG-TS for MPEG2 and H.264; HTTP for MJPEG • Max Number of Active Video Streams: One decode

MXD-700 Specifications (Cont.)	
AUDIO	• Microphone: -42 dB ±3 dB sensitivity FET microphone • Speakers: 4 ohm, 2 Watt, 300 Hz cutoff frequency • Supported Audio Codecs: MP2 Layer I and II, MP3 (8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz) AAC-LC (8 kHz, 96 kHz) G.711 with µLaw (VoIP encode/decode at 8 kHz) • Audio Output: USB Audio out USB port (head/hand set support) • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom: Full Duplex VoIP, SIP v2.0 (supported with AMX-CSG)
GRAPHICS ENGINE	AMX G4: G4 enhanced feature set supporting multi-touch and gestures, scrolling, transitions - See TPD4 Operations Guide for more information
EMBEDDED APPLICATIONS	• Remote Management: VNC Server, G4 Web Control, AMX Resource Management Suite • Video Conferencing: Panel-to-panel and video chat (the MXD-700 receives video and returns audio) • Audio Conferencing: Audio (Full Duplex Intercom)
FRONT PANEL COMPONENTS	• Light Sensor: Photosensitive light detector for automatic adjustment of the panel brightness • Proximity Detector: Max range = ~3', typ range = ~1', FOV = ~10 degrees • Sleep Button: Sleep button to activate sleep mode and powering off. Also provides access to setup pages (can be disabled)
CONNECTIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector through cable extension • USB: (2) USB host 2.0, Type A ports • Power: PoE (Power over Ethernet), 802.3af, class 3
ENVIRONMENTAL	• Temperature (Operating): 32° F to 104° F (0° C to 40° C) • Temperature (Storage): 4° F to 140° F (-20° C to 60° C) • Humidity (Operating): 20% to 85% RH • Humidity (Storage): 5% to 85% RH • Power ("Heat") Dissipation: On: 18.5 BTU/hr Standby: 10.6 BTU/hr
INCLUDED ACCESSORIES	• MXA-USB-C, USB Port Cover Kit, Modero X Series Touch Panel (FG5968-18) • MXA-CLK, Modero X/S Series Cleaning Kit (FG5968-16) • Installation Template, 7" Modero X Series (68-5968-04)
OPTIONAL ACCESSORIES	• MXA-FMK-07 Flush Mount Kit, 7" Modero X Wall Mount (FG5968-71) • MXA-RMK-07 Modero X Series Rack Mount Kit (FG5969-63) • MXA-MP, Modero X/S Series Multi Preview (FG5968-20) • MXA-MPL, Modero X/S Series Multi Preview Live (FG5968-10) • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • CB-MXSA-07, Rough-In Box, Modero X/S Series Touch Panel, 7" (FG039-18) • CB-MXP7, Rough-In Box, Modero X/S Series Touch Panel, 7" (FG039-18) • MXA-BT Bluetooth USB Adapter for Modero X/S Series (FG5968-19) • MXA-CLK, Modero X/S Series Cleaning Kit (FG5968-16) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63) • MXA-USB-C, USB Port Cover Kit, Modero X Series Touch Panel (FG5968-18) • MXA-HST, Bluetooth Handset for Modero X/S Series Touch Panels (FG5968-17) • MXA-UENET, Video Acceleration Cable for Modero X 10.1" and 7" Touch Panels (FG5968-75)

NOTE

*The **MXD-700-P-NC** (**FG5968-28**) and **MXD-700-L-NC** (**FG5968-29**) No Comm touch panels do not have microphone capability. These otherwise have all of the functionality of the MXD-700 panels.*

Touch Panel Aspect Ratio

While the touch panel screen physical dimensions fall between 16:9 and 16:10, any incoming video stream can be scaled to 16:9 if needed. This may lead to some letter boxing around the video in some cases.

MXD-700 Installation

Detailed specifications drawings for the MXD-700 are available to download from www.amx.com.

NOTE

*Refer to **A Note About Wall and Rack Installation** **on page 5** for important notes on thermal concerns with Rack and Wall installations.*

The MXD-700 may be installed directly into a solid surface environment, using either solid surface screws or the included locking tabs for different mounting options. Once installed, the MXD-700 is contained within a clear outer housing known as the Backbox (FIG. 30). This Backbox is removed to install the device into a wall or when using the optional Rough-In Box accessory (**FG039-18**).

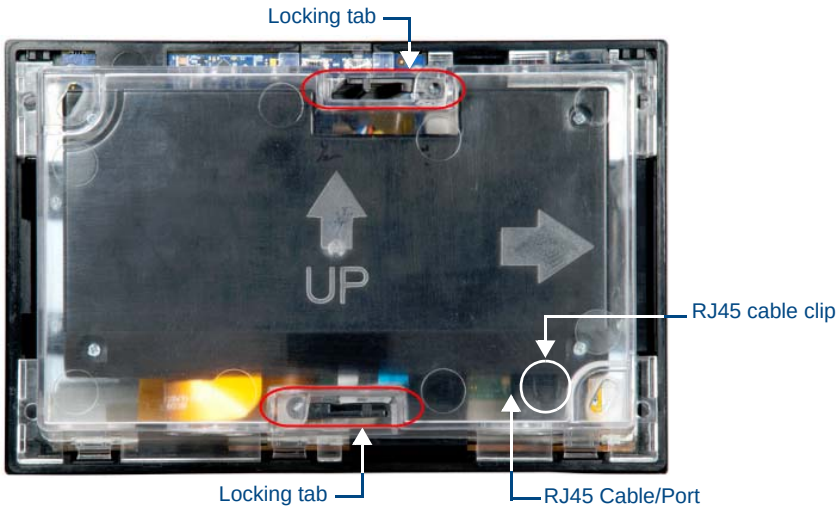


FIG. 30 MXD-700 Backbox

NOTE

For typical mounting surfaces, such as drywall, use the locking tabs as the primary method for securing the Backbox to the surface. For thin walls or solid surfaces, use mounting screws (not included).

Power Via PoE

Power for the MXD-700 is supplied via PoE (Power Over Ethernet), utilizing an AMX-certified, capacitive touch-compliant PoE injector or other approved AMX PoE power source.

The incoming Ethernet cable connects to the RJ45 port on the MXD-700 (see FIG. 30).

Installing the MXD-700 into a Wall

The MXD-700 comes with a clear plastic Backbox (designed to attach the panel to most standard wall materials. This Backbox has two locking tabs (one on top and one on bottom) to help lock the Backbox to the wall.

These locking tabs are only extended AFTER the Backbox is inserted into the wall. (FIG. 31).

WARNING

When installing the Backbox, make sure that the assembly is in the correct position and in the correct place. Once the locking tabs are extended and locked into place, removing the Backbox may be difficult without having access to the back of the wall or causing damage to the wall.

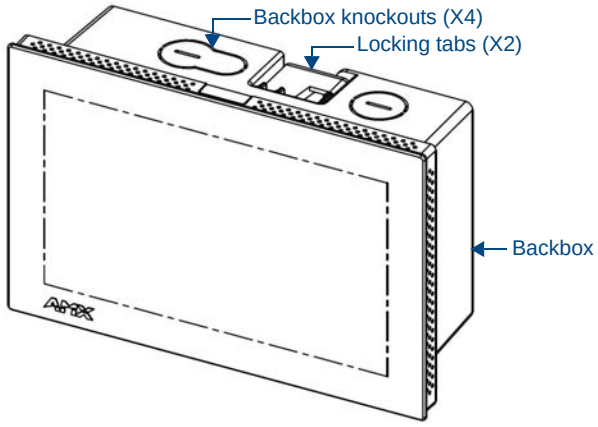
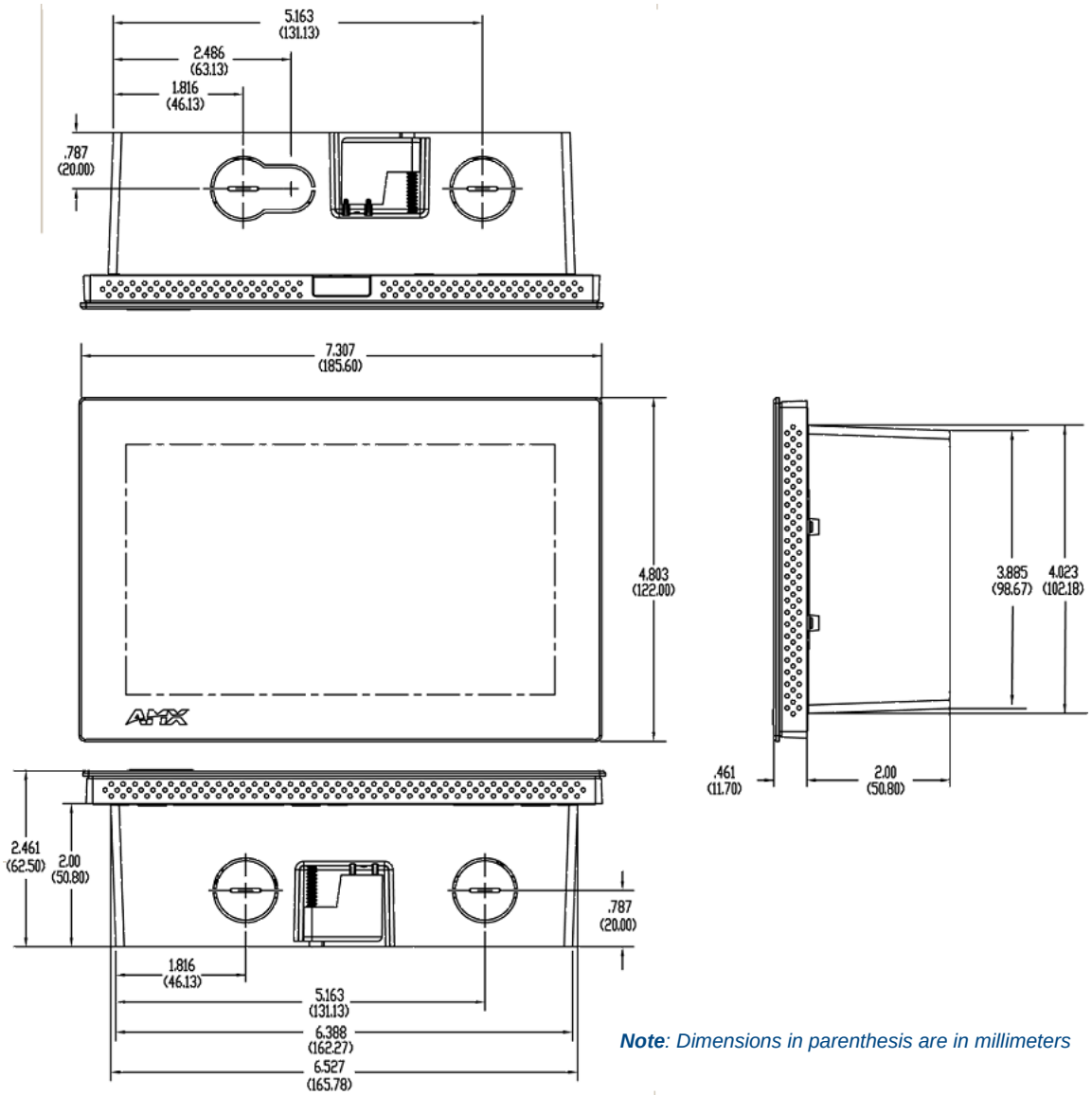


FIG. 31 MXD-700 (Landscape)



***Note**: Dimensions in parenthesis are in millimeters*

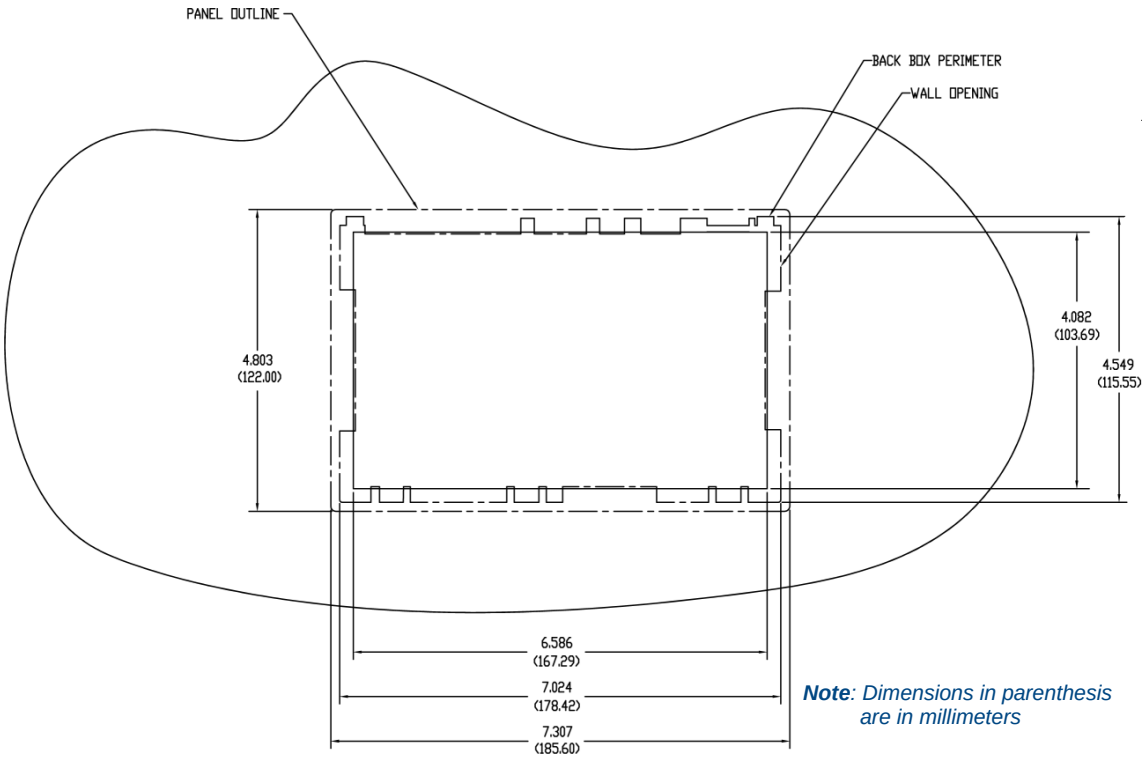
FIG. 32 MXD-700

NOTE

In order to ensure a stable installation of the MXD-700, the thickness of the wall material must be a minimum of .50 inches (1.27cm) and a maximum of .875 inches (2.22cm). The mounting surface should also be smooth and flat.

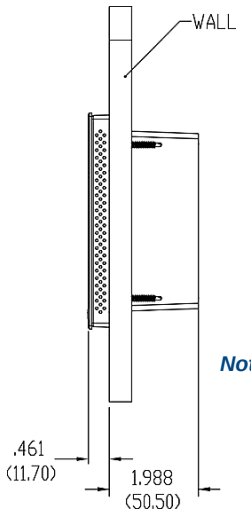
Installing the Backbox

For best results, use the included Installation Template (**68-5968-04**) to ensure proper placement.



***Note**: Dimensions in parenthesis are in millimeters*

FIG. 33 MXD-700-L Installation Dimensions (front view)



***Note**: Dimensions in parenthesis are in millimeters*

FIG. 34 MXD-700 Installation Dimensions (side view)

WARNING

Using the Installation Template to select the final placement of the Backbox is highly recommended. The outside edges of the template are the same dimensions as the touch panel, which allows you to troubleshoot possible conflicts with wall edges, doors, and other potential obstacles.

The Installation Template is marked on one side with directions for both landscape and portrait installations to ensure that the touch panel and Backbox are properly aligned.

1. Prepare the area by removing any screws or nails from the drywall before beginning the cutout process.
2. After ensuring proper placement, cut out the mounting surface for the Backbox, using the Installation Template as a guide.

CAUTION

Making sure the actual cutout opening is slightly smaller than the provided dimensions is highly recommended. This provides a margin for error if the opening needs to be expanded. Too little wall material removed is always better than too much.

3. Thread the incoming cables through the surface opening (FIG. 35 and FIG. 36).

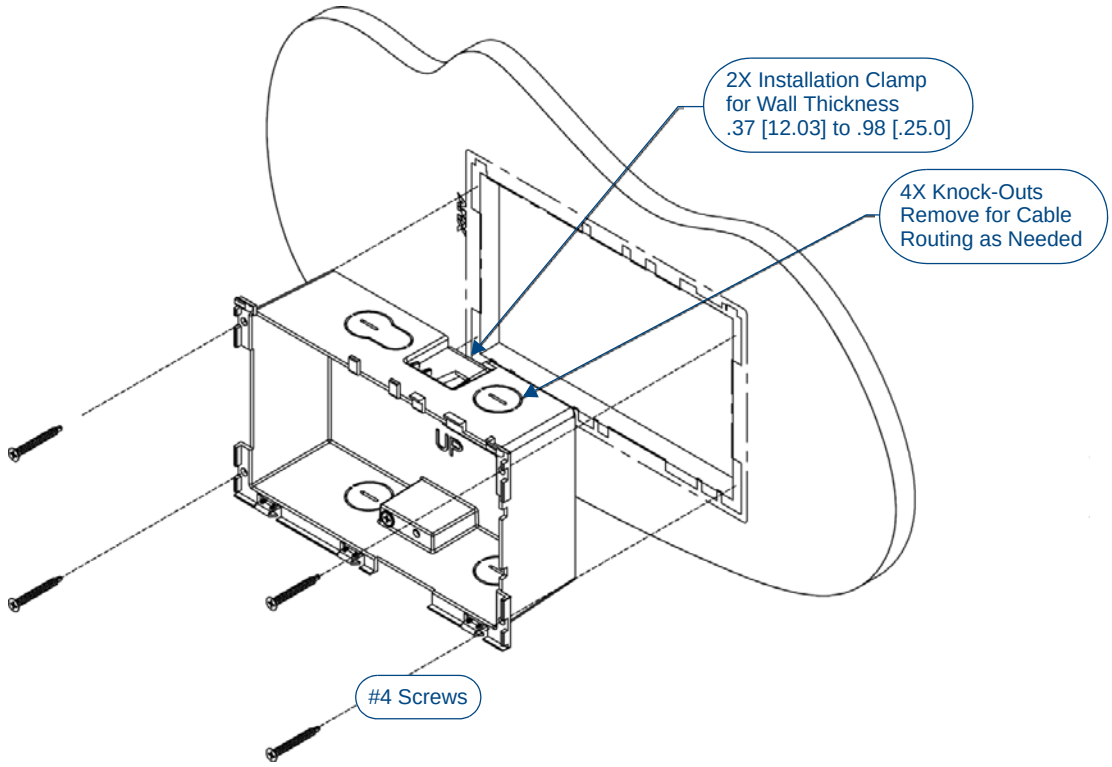


FIG. 35 MXD-700 Backbox Installation (Landscape)

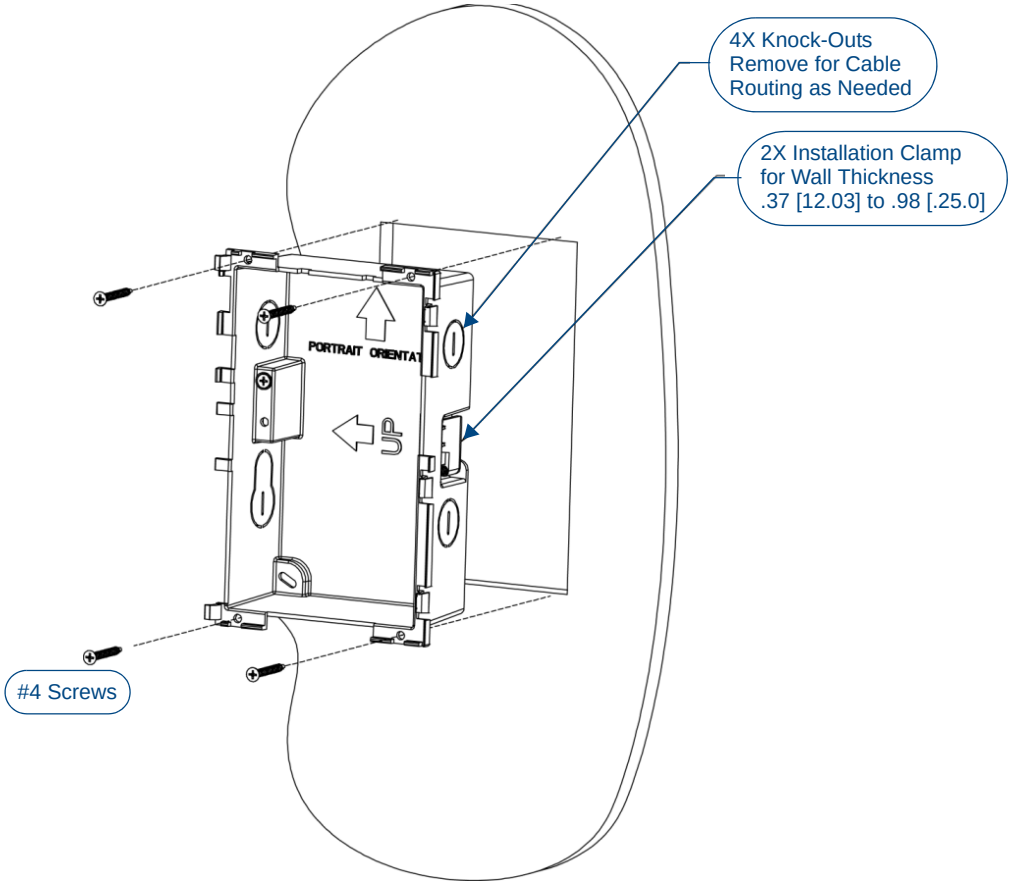


FIG. 36 MXD-700 Backbox Installation (Portrait)

Leave enough slack in the wiring to accommodate any re-positioning of the panel.

4. Remove the Backbox knockouts and thread the incoming wiring through the knockout holes.To facilitate installation, thread the Ethernet cable through a bottom knockout (Landscape) or a right-side knockout (Portrait), and the USB cable through a top knockout (Landscape) or left knockout (Portrait)
5. Thread the incoming Ethernet and USB wiring (if USB access is desired) from the surface opening and through the knockouts.
6. Push the Backbox into the mounting surface. Insure that the locking tabs lie flush against the Backbox and that the Backbox goes freely into the opening.
7. Extend the locking tabs on the sides of the Backbox by tightening the screws inside the box until snug.

WARNING

The maximum recommended torque to screw in the locking tabs on the plastic Backbox is 5 IN-LB [56 N-CM]. Applying excessive torque while tightening the tab screws, such as with powered screwdrivers, can strip out the locking tabs or damage the plastic Backbox.

- Not all of the tabs must be extended to lock the Backbox in place, but extending a minimum of the top and bottom tabs is highly recommended.
- Apply enough pressure to the screw head to keep the box flush with the wall: this ensures that the locking tabs will tighten up against the inside of the wall.
- The Backbox is clear to allow visual confirmation that the tabs have been extended and are gripping the wall, as well as in assisting with removal if necessary.
- For additional strength, #4 mounting screws (not included) may be secured through circular holes located at the left and right sides of the MXD-700 (FIG. 35). In order to prevent damage to the touch panel, make sure that these are flush with the Backbox.

8. Insert each connector into its corresponding location along the back of the device.
   - To reach the RJ45 connector, gently pull it from beneath the electronics cover.
   - Attach the Ethernet cable and gently push the connection back under the cover.

NOTE

To facilitate connection of the RJ45 connector to the Ethernet cable, press the RJ45's cable into the RJ45 cable clip to hold it in a stable position. Make sure to remove the cable from the cable clip before continuing the rest of the installation.

9. Test the incoming wiring by attaching the panel connections to their terminal locations and applying power.

NOTE

Do not disconnect the connectors from the touch panel. The unit must be installed with the attached connectors before being inserted into the mounting surface.

   - Verify that the panel is receiving power and functioning properly to prevent repetition of the installation.
   - Remove power before continuing with the installation.

10. Latch the panel onto the top hooks on the Backbox and push it down (Landscape) onto the bottom snaps or on the left side and push it to the right (Portrait) (FIG. 37).
    Press gently but firmly on the ends until the snaps "click" to lock it down.

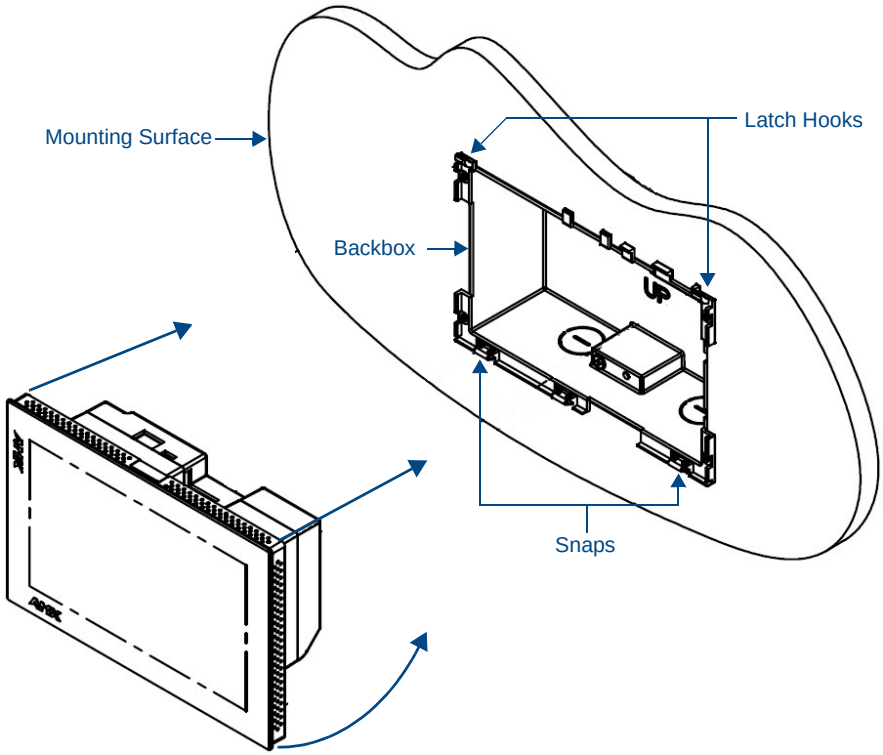


FIG. 37 Installing the MXD-700

WARNING

If you see a gap between the panel and the Backbox, or feel any binding while locking down the panel, stop immediately and verify that no cables or other items are in the way. Do not force the panel into position, as this can cause damage to the touch screen or the panel electronics.

11. Reconnect the terminal Ethernet and USB to their respective locations on the Ethernet port.

Removing the MXD-700

The MXD-700 is held in place to the Backbox via latch hooks and clips on the Backbox, securing it to the mounting surface. In certain circumstances, such as firmware updates or other maintenance that requires accessing the device's USB port, the device may need to be removed from the Backbox.

The clips that lock down the MXD-700's bottom edge (Landscape) or right edge (Portrait) may be unlatched in order to remove the device from the mounting surface.

Removing an MXD-700 from Its Backbox

1. The MXD-700 has three rows of ventilation holes along the molding (FIG. 38):

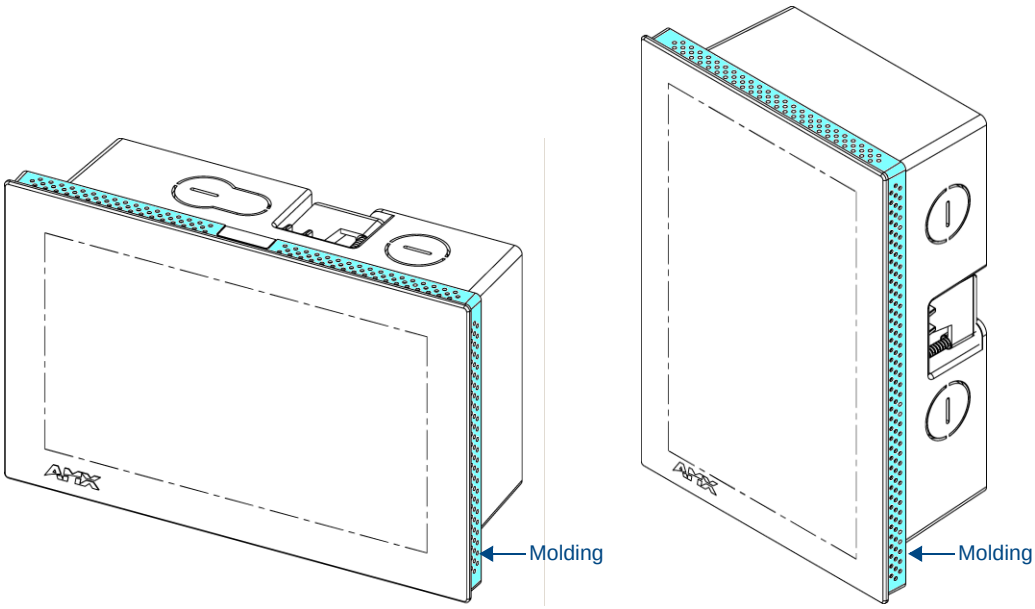


FIG. 38 MXD-700 Molding (highlighted in blue)

2. On the bottom (Landscape) or right side (Portrait) of the MXD-700, locate the **fifth** ventilation holes from each edge, on the row closest to the Backbox (FIG. 39): .

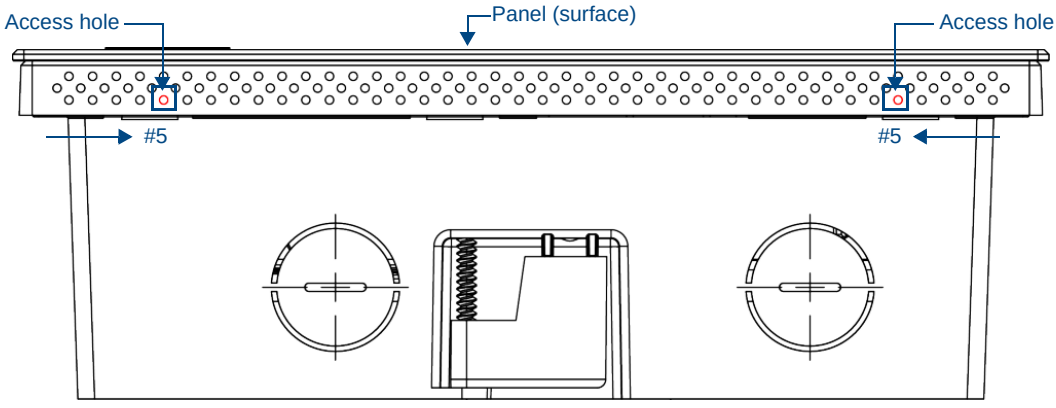


FIG. 39 Bottom View (Landscape) or Right-Side View (Portrait) of the MXD-700 showing access holes in molding

3. With a stout, strong point (a push pin or straightened paper-clip, for example), carefully press into the access holes in either end of the molding until the snap is disconnected.

   To facilitate the disconnection, grasp the bottom of the panel (Landscape) or right side (Portrait) and pull gently outward until the side of the panel is free of the snap. Use your other hand to hold stable the front of the touch panel.

WARNING

Always pull on the frame of the touch panel. NEVER pull on the glass edge.

4. When the first side is free, repeat the process with the other.
5. With the edge of the touch panel free, carefully lift up and out (Landscape) or to the left and out (Portrait) to remove the touch panel from the Backbox. Be careful not to pull on the cables or connectors.
6. To reattach the panel to its Backbox, repeat the installation procedure.

NOTE

*For further information, refer to the video available at www.amx.com (go to **Newsroom > Videos > Touch Panels**).*

MXD-430 4.3" X Series Wall/Flush Mount Touch Panel

Overview

The MXD-430 4.3" Modero X Series Wall/Flush Mount Touch Panel (**FG5968-15*)** features edge-to-edge capacitive touch glass with multi-touch capabilities as well as advanced technology empowering users to operate AV equipment seamlessly while providing the ultimate in audio and video quality. The distinctive appearance will complement even the most sophisticated meeting facilities and homes.

FIG. 40 MXD-430

MXD-430 Specifications

MXD-430 Specifications	
DIMENSIONS (HWD)	Portrait: 4 7/8" x 3 1/4" x 2 3/8" (120 mm x 82 mm x 61 mm)
WEIGHT	0.75 lbs (.34 Kg
POWER CONSUMPTION	• Full-On: 6.5 W • Standby: 4.2 W • Shutdown: 1.9 W • Start-Up Inrush Current: Not applicable due to PoE standard
EXTERNAL POWER SUPPLY REQUIRED	Optimal performance requires use of one of the following AMX PoE power supplies (not included): • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63)

MXD-430 Specifications (Cont.)	
CERTIFICATIONS	• UL 60950-1 • FCC Part 15 Class B • C-Tick CISPR 22 Class B • CE EN 55022, EN 55024 and EN 60950-1 • IEC 60950-1 • IC • IEC/EN-60950 • RoHS / WEEE compliant
TOUCH SCREEN DISPLAY	• Display Type: TFT Active Matrix Color LCD with In-plane Switching Technology (IPS) • Display Size (WH): Portrait: 3.3" x 4.8" (82 mm x 120 mm), 4.9" (119 mm) diagonal • Viewable Area (WH): Portrait: 2.2" x 3.7" (56 mm x 94 mm), 4.3" (109 mm) diagonal • Resolution: Portrait: 480x800 • Aspect Ratio: Portrait: 9:16 • Brightness: 500 cd/m2 • Contrast Ratio: 1000:1 • Color Depth: 16.7M colors • Illumination: LED • Touch Overlay: Projected capacitive, multi-touch support, 3 simultaneous max
VIEWING ANGLE	• Vertical: ± 80° • Horizontal: ± 80°
MEMORY	• SDRAM: 512 MB • Flash: 4 GB • Maximum Project Size: 2.4 GB flash available to user
COMMUNICATIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector. Supported IP and IP-based protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, Telnet, FTP, DNS, RFB (for VNC), HTTP • USB: (1) USB host 2.0, Type A port: Firmware upgrade, touch panel file transfer, JPEG image viewer • Near Field Communication (NFC): Supports standards ISO/IEC 15693, ISO/IEC 14443A, ISO/IEC 14443B; Unique Identifier (UID), typ range=.25", max = .5" • Bluetooth: Mouse/Keyboard: HID Profile v1.1, requires MXA-BT Bluetooth Adapter (FG5968-19) Handset: Hands Free Profile v1.5, Headset Profile v1.2, requires MXA-BT Bluetooth Adapter (FG5968-19) and MXA-HST Bluetooth Handset (FG5968-17)
VIDEO	• Supported Video Codecs: MPEG2-TS: MPEG-2 Main Profile@High Level up to 720p at 25 fps (decode only) MPEG-2-TS: H.264 High Profile@Layer 4, AAC-LC up to 720p at 25 fps (decode) MJPEG up to 720p at 25 fps (decode only) • Supported Video Transport Streams: MPEG-TS for MPEG2 and H.264; HTTP for MJPEG • Max Number of Active Video Streams: One decode
AUDIO	• Microphone: -42 dB ±3 dB sensitivity FET microphone • Speakers: 4 ohm, 2 Watt, 300 Hz cutoff frequency • Supported Audio Codecs: MP2 Layer I and II, MP3 (8 kHz, 11.025 kHz, 12 kHz, 16 kHz, 22.05 kHz, 24 kHz, 32 kHz, 44.1 kHz, 48 kHz) AAC-LC (8 kHz, 96 kHz) G.711 with µLaw (VoIP encode/decode at 8 kHz) • Audio Output: USB Audio out USB port (head/hand set support) • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom: Full Duplex VoIP, SIP v2.0 (supported with AMX-CSG)

MXD-430 Specifications (Cont.)	
GRAPHICS ENGINE	AMX G4: G4 enhanced feature set supporting multi-touch and gestures, scrolling, transitions - See TPD4 Operations Guide for more information
EMBEDDED APPLICATIONS	• Remote Management: VNC Server, G4 Web Control, AMX Resource Management Suite • Video Conferencing: Panel-to-panel and video chat (the MXD-430 receives video and returns audio) • Audio Conferencing: Audio (Full Duplex Intercom)
FRONT PANEL COMPONENTS	• Light Sensor: Photosensitive light detector for automatic adjustment of the panel brightness • Proximity Detector: Max range = ~3', typ range = ~1', FOV = ~10 degrees • Sleep Button: Sleep button to activate sleep mode and powering off. Also provides access to setup pages (can be disabled) • Programmable Red/Green LEDs: Programmable red/green LED recessed in the left and right sides of the panel
CONNECTIONS	• Ethernet: 10/100 Auto MDI-X port, RJ-45 connector through cable extension • USB: (1) USB host 2.0, Type A port • Power: PoE (Power over Ethernet), 802.3af, class 3
ENVIRONMENTAL	• Temperature (Operating): 32° F to 104° F (0° C to 40° C) • Temperature (Storage): 4° F to 140° F (-20° C to 60° C) • Humidity (Operating): 20% to 85% RH • Humidity (Storage): 5% to 85% RH • Power ("Heat") Dissipation: On: 22.2 BTU/hr Standby: 14.3 BTU/hr
INCLUDED ACCESSORIES	• MXA-USB-C, USB Port Cover Kit, Modero X Series Touch Panel (FG5968-18) • MXA-CLK, Modero X/S Series Cleaning Kit (FG5968-16) • Installation Template, 4.3" Modero X Series (68-5968-05)
OPTIONAL ACCESSORIES	• MXA-FMK-43, Flush Mount Kit for 4.3" Modero X Series Wall Mount Touch Panel (FG5968-72) • MXA-MP, Modero X/S Series Multi Preview (FG5968-20) • MXA-MPL, Modero X/S Series Multi Preview Live (FG5968-10) • PS-POE-AF-TC, PoE Injector, 802.3AF Compliant (FG423-83) • CB-MXP43, Rough-In Box and Cover Plate for Modero X Series Touch Panel, 4.3" (FG039-19) • MXA-BT Bluetooth USB Adapter for Modero X/S Series (FG5968-19) • MXA-CLK, Modero X/S Series Cleaning Kit (FG5968-16) • NXA-ENET8-2POE, Gigabit PoE Ethernet Switch (FG2178-63) • MXA-USB-C, USB Port Cover Kit, Modero X Series Touch Panel (FG5968-18) • MXA-HST, Bluetooth Handset for Modero X/S Series Touch Panels (FG5968-17) • MXA-UENET-43D, Video Acceleration Cable for Modero X 4.3" Touch Panels (FG5968-76)

MXD-430 Installation

NOTE

*Refer to **A Note About Wall and Rack Installation** **on page 5** for important notes on thermal concerns with Wall and Rack Installations.*

The MXD-430 may be installed directly into a solid surface environment, using either solid surface screws or the included locking tabs for different mounting options.

Once installed, the MXD-430 is contained within a clear outer housing known as the Backbox (FIG. 41). This Backbox is removed before installing the device into a wall or when using the optional Rough-In Box accessory (**FG039-19**).

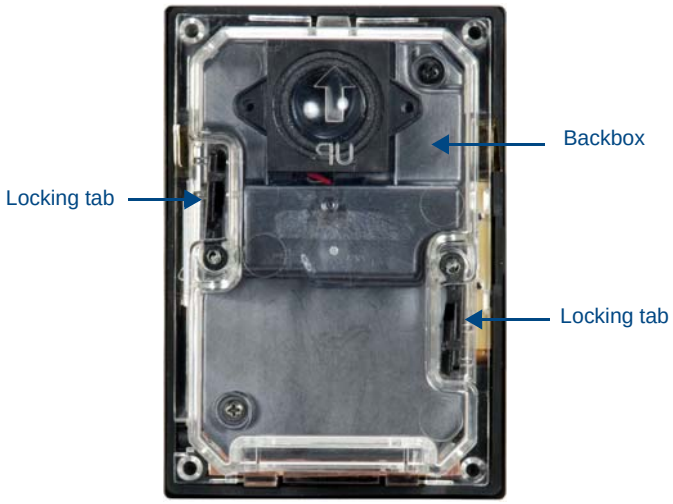


FIG. 41 MXD-430 Backbox

NOTE

For typical mounting surfaces, such as drywall, use the locking tabs as the primary method for securing the Backbox to the surface. For thin walls or solid surfaces, use mounting screws (not included).

Power via Power Over Ethernet

Power for the MXD-430 is supplied via Power Over Ethernet (PoE), utilizing an AMX-certified, capacitive touch-compliant PoE injector or other approved AMX PoE power source. The incoming PoE Ethernet cable should be connected to the RJ45 port on the MXD-430 (FIG. 40).

Installing the MXD-430 into a Wall

The MXD-430 comes with a clear plastic backbox (designed to attach the panel to most standard wall materials. This backbox has two locking tabs (one on each side) to help lock the backbox to the wall.

These locking tabs are only extended AFTER the backbox is inserted into the wall. (FIG. 42).

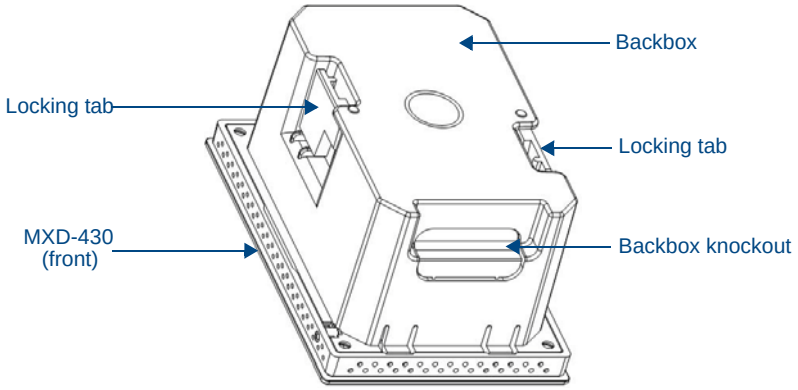


FIG. 42 Oblique rear view of MXD-430 Backbox installation

WARNING

When installing the backbox, make sure that the assembly is in the correct position and in the correct place. Once the locking tabs are extended and locked into place, removing the backbox may be difficult without having access to the back of the wall or causing damage to the wall.

NOTE

In order to ensure a stable installation of the MXD-430, the thickness of the wall material must be a minimum of .50 inches (1.27cm) and a maximum of .875 inches (2.22cm). The mounting surface should also be smooth and flat.

Installing the Backbox

1. Prepare the area by removing any screws or nails from the drywall before beginning the cutout process.
2. For best results, use the MXD-430 Installation Template (**68-5968-05**) to ensure proper placement (FIG. 43). The template is marked on one side with directions for both landscape and portrait installations to ensure that the touch panel and Backbox are properly aligned.

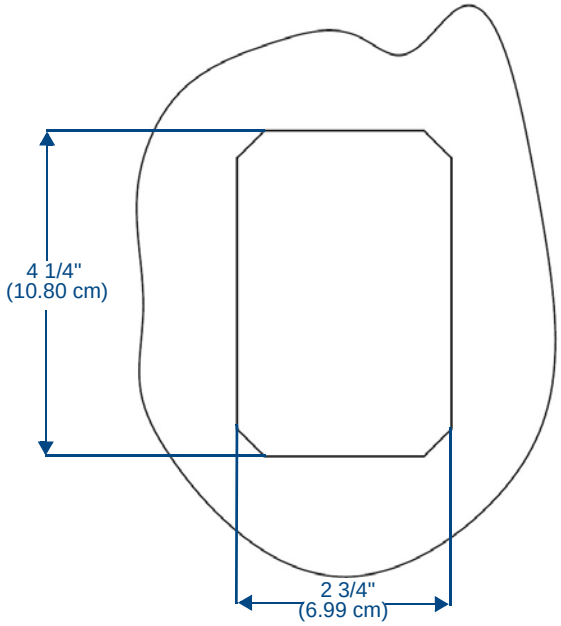


FIG. 43 MXD-430 Installation Template

WARNING

Using the included template to select the final placement of the Backbox is highly recommended. The outside edges of the template are the same dimensions as the touch panel, which allows you to troubleshoot possible conflicts with wall edges, doors, and other potential obstacles.

3. After ensuring proper placement, cut out the mounting surface for the Backbox using the MXD-430 Installation Template as a guide.

CAUTION

Making sure the actual cutout opening is slightly smaller than the provided dimensions is highly recommended. This action provides a margin for error if the opening needs to be expanded. Too little wall material removed is always better than too much.

4. Thread the incoming Ethernet from their terminal locations through the surface opening (FIG. 44).
   Leave enough slack in the wiring to accommodate any re-positioning of the panel.

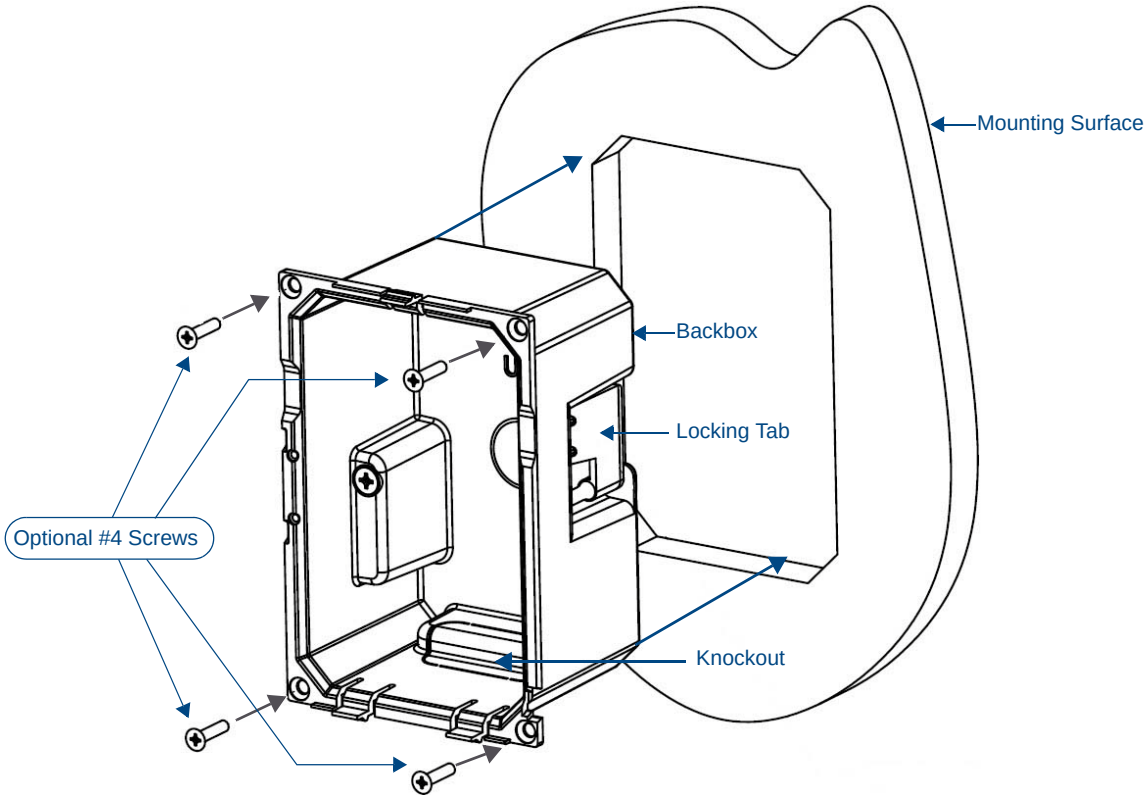


FIG. 44 MXD-430 Backbox Installation (Landscape)

5. Remove the knockout on the bottom of the Backbox (FIG. 43) and thread the incoming wiring through the knockout hole.
6. Thread the incoming Ethernet and USB wiring (if USB access is desired) from the surface opening and through the knockout.
7. Push the Backbox into the mounting surface. Insure that the locking tabs lie flush against the Backbox and that the Backbox goes freely into the opening.
8. Extend the locking tabs on the sides of the Backbox by tightening the screws inside the box (FIG. 45) until snug.

WARNING

The maximum recommended torque to screw in the locking tabs on the plastic Backbox is 5 IN-LB [56 N-CM]. Applying excessive torque while tightening the tab screws, such as with powered screwdrivers, can strip out the locking tabs or damage the Backbox.

- Apply enough pressure to the screw head to keep the box flush with the wall: this ensures that the locking tabs will tighten up against the inside of the wall.
- The Backbox is clear to allow visual confirmation that the tabs have been extended and are gripping the wall, as well as in assisting with removal if necessary.
- For additional strength, #4 mounting screws (not included) may be secured through circular holes located at the top and bottom of the MXD-430 (FIG. 44). In order to prevent damage to the touch panel, make sure that these are flush with the Backbox.

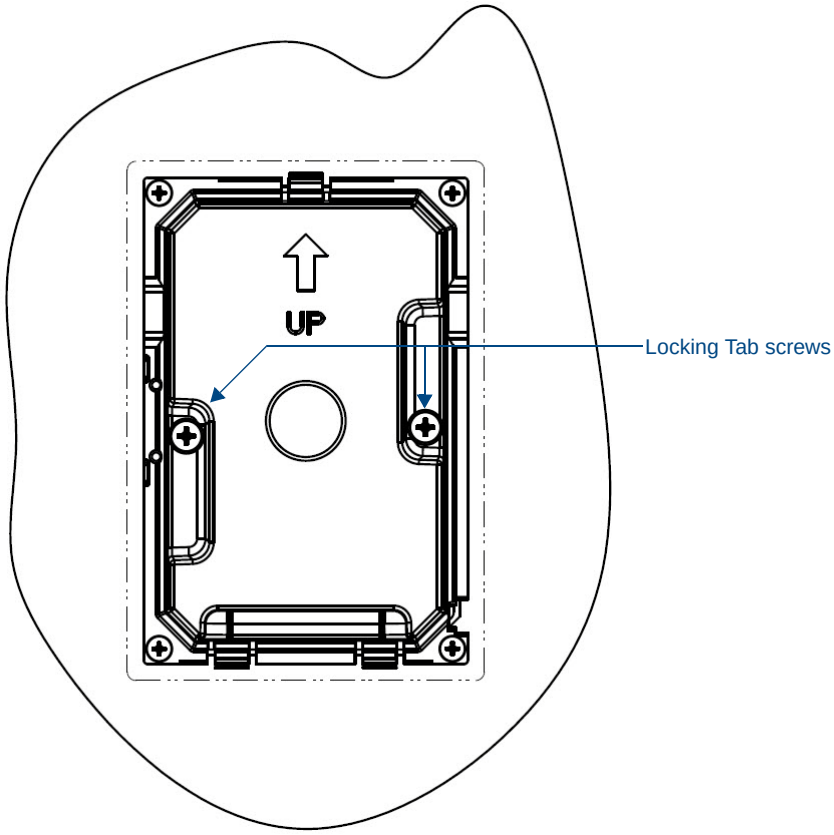


FIG. 45 MXD-430 Backbox installed in wall

9. Insert each connector into its corresponding location along the back of the device (FIG. 40).
Test the incoming wiring by attaching the panel connections to their terminal locations and applying power.
Verify that the panel is receiving power and functioning properly to prevent repetition of the installation.

NOTE

Do not disconnect the cables from the touch panel. The unit must be installed with the attached connectors before being inserted into the mounting surface.

Remove power before continuing with the installation.

10. Latch the panel onto the bottom hooks on the Backbox and push it up onto the top snap (FIG. 46). Press gently but firmly on the ends until the snap “clicks” to lock it down.

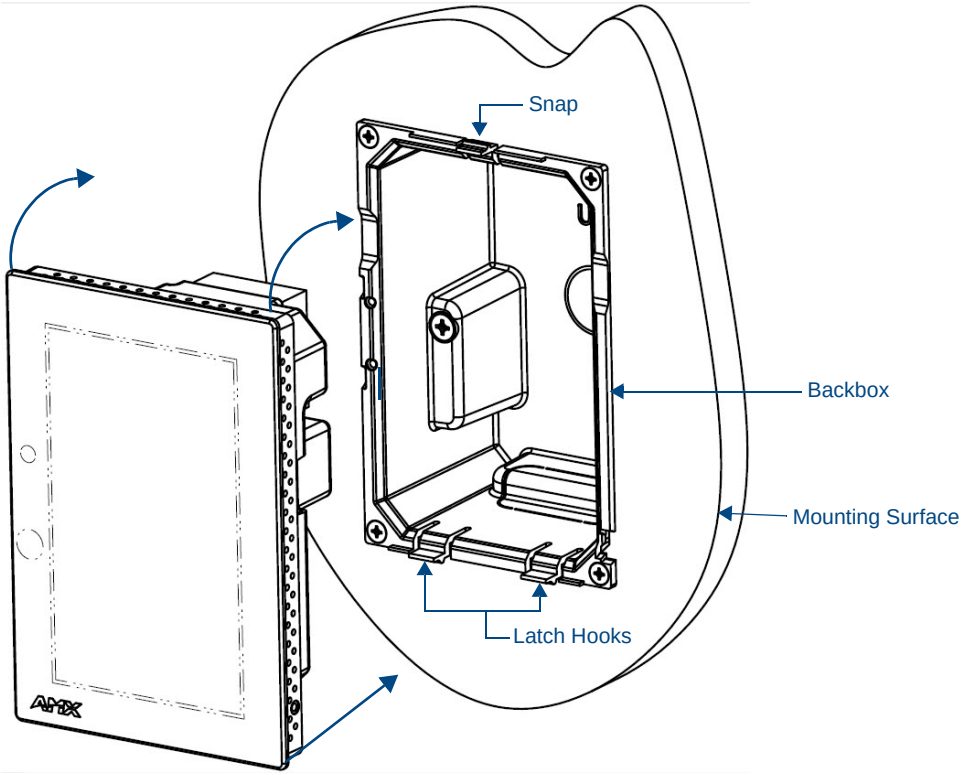


FIG. 46 Installing the MXD-430

If you see a gap between the panel and the Backbox or feel any binding while locking down the panel, stop immediately and verify that no cables or other items are in the way. Do not force the panel into position, as this can cause damage to the touch screen or the panel electronics.

11. Reconnect the terminal Ethernet and USB to their respective locations on either the Ethernet port or NetLinx Master.

Uninstalling the MXD-430

The MXD-430 is held in place to the Backbox via latch hooks and a clip on the Backbox (FIG. 46), securing it to the mounting surface. In certain circumstances, such as firmware updates or other maintenance that requires accessing the device's USB port, the device may need to be removed from the Backbox.

The clip that locks down the MXD-430's top edge may be unlatched in order to remove the device from the mounting surface.

Removing an MXD-430 from Its Backbox

1. The MXD-430 has three rows of ventilation holes along the molding (FIG. 47):

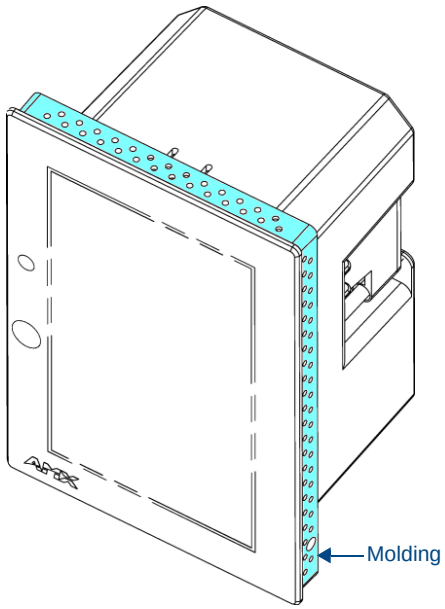


FIG. 47 MXD-430 Molding (highlighted in blue)

2. On the top of the MXD-430, locate the **seventh** ventilation holes from each edge, on the row closest to the glass (FIG. 48): .

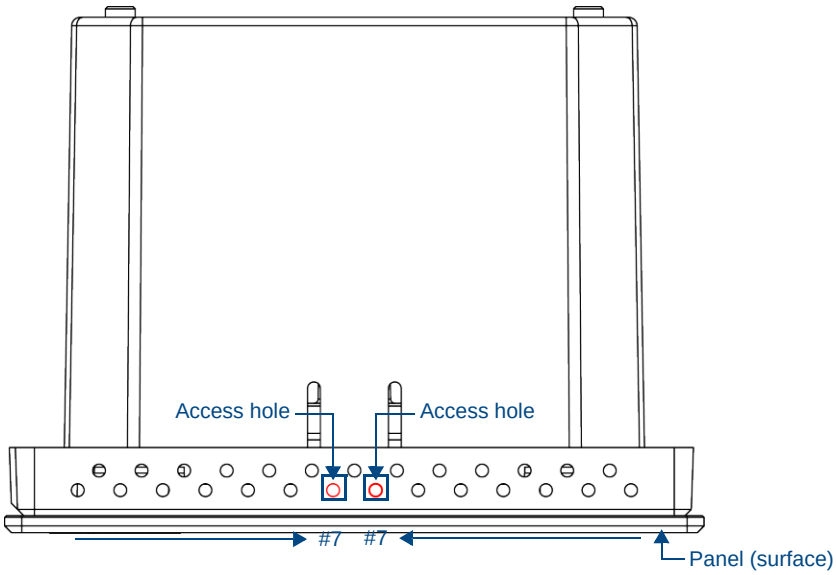


FIG. 48 Top View of the MXD-430 showing access holes in molding

3. With a stout, strong point (a push pin or straightened paper-clip, for example), carefully press straight into the access holes in the center of the molding (FIG. 48) until the snap is disconnected.

   Grasp the top of the panel and pull gently outward until the side of the panel is free of the snap. Use your other hand to stabilize the front of the touch panel.

Always pull on the frame of the touch panel. NEVER pull on the glass edge.

4. With the edge of the touch panel free, carefully lift down and out to remove the touch panel from the Backbox. Be careful not to pull on the cables or connectors.
5. To reattach the panel to its Backbox repeat the installation procedure.

Upgrading Firmware

Overview

Programming the X Series touch panels require the use of NetLinx Studio and TPDesign4, both available from www.amx.com.

Downloading Firmware Updates From www.amx.com

Before attempting to upgrade the firmware, you must have the appropriate Kit file for your touch panel:

NOTE

All X Series touch panels share the same firmware.

1. Open the product page for the panel, at www.amx.com (Trade Site).
2. Scroll down to locate *Firmware Files* on the right side of the page, and click the firmware file link provided. An example is shown in FIG. 49:

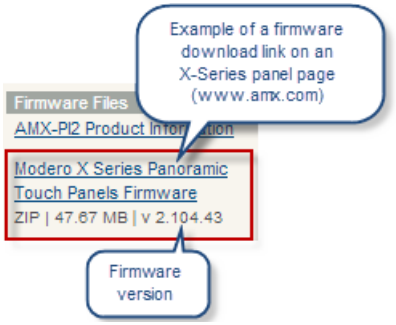
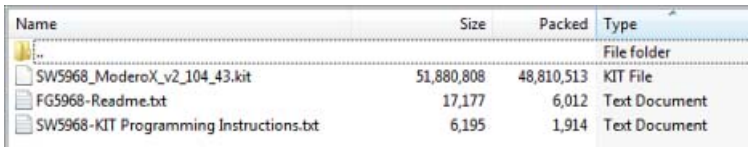


FIG. 49 www.amx.xom - X Series Touch Panel Product Page - Firmware File link

Note that for X Series touch panels, the firmware .KIT file is bundled in a ZIP file that typically also includes a *Readme.TXT* file (which provides details on this version of firmware), and a *Programming Instructions.TXT* file (which provides basic instructions for upgrading firmware on the panel):



Name	Size	Packed	Type
..			File folder
SW5968_ModeroX_v2_104_43.kit	51,880,808	48,810,513	KIT File
FG5968-Readme.txt	17,177	6,012	Text Document
SW5968-KIT Programming Instructions.txt	6,195	1,914	Text Document

FIG. 50 Example of firmware ZIP file contents

3. Extract the contents of the ZIP file to a known location.

Upgrading Firmware via USB Flash Drive

Firmware and TPDesign4 files may be transferred to the panel made via USB flash drive.

Load the Firmware on a USB Flash Drive

1. Insert the USB flash drive in an available USB port on your PC.
   - The flash drive must be in either FAT32 or FAT16 format.
   - 32GB is the maximum acceptable size for flash drives used with touch panels
   - For wall-mounted panels (MXD-xxx), accessing the USB ports may require removing the panel from the wall mount (if a USB extension was not already installed).
2. Create a directory on the USB flash drive with one of the following names, depending on the panel you are upgrading:
   - Note that the name must match exactly (do not include the quotes)
   - These directory names are *not* case-sensitive:

Directory Names for Firmware Files - by Touch Panel Type		
Directory Name	Panel Type(s)	
"MXT-1000"	MXT-1000 (FG5968-03)	MXT-1000-NC (FG5968-24)
"MXD-1000"	MXD-1000-P (FG5968-07) MXD-1000-L (FG5968-13)	MXD-1000-P-NC (FG5968-25) MXD-1000-L-NC (FG5968-26)
"MXT-700"	MXT-700 (FG5968-04)	MXT-700-NC (FG5968-27)
"MXD-700"	MXD-700-P (FG5968-08) MXD-700-L (FG5968-14)	MXD-700-P-NC (FG5968-28) MXD-700-L-NC (FG5968-29)
"MXD-430"	MXD-430-P (FG5968-15)	

3. Copy the firmware (.kit) file to be transferred (for example, "*SW5968_ModeroX_v2_103_52.kit*") into this directory on the flash drive.

NOTE

Make sure this is the only .kit file in this directory - if not, the latest version will be used.

4. Eject or unmount the flash drive from the PC.

Transfer the Firmware File From the Flash Drive to the Touch Panel

1. Connect the USB Flash Drive to one of the USB Type A ports on the panel.

NOTE

The Micro USB port cannot be used for firmware upgrades.

2. Go to the **Install Firmware** setup page (*Configuration->Admin->Install Firmware*):
   a. Press and hold the *Sleep* button for 3 seconds to open the *Settings* page.

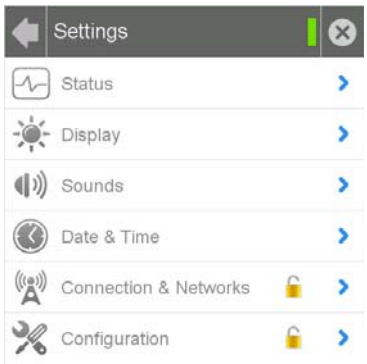


FIG. 51 Settings page

   b. From the *Settings* page, select the *Configuration* page. This may require entering a password.
   c. From the *Configuration* page, select *Admin*.
   d. From the *Admin Configuration* page, select *Install Firmware*.
3. In the *Firmware Installation* page, select **New** to install new firmware from external disk.
4. The popup page displays the name of the firmware file (for example, "*SW5968_ModeroX_v2_103_52.kit*").
5. Select **Yes**, and follow the directions displayed on the popup.
6. Once the panel reboots, it will perform the firmware upgrade.

After the upgrade, the device contains the newly loaded version of firmware.

Upgrading from Previous Firmware

X Series panels provide the option to revert the device to the previous firmware run before an upgrade. To upgrade the device from previously loaded firmware:

1. From the *Settings* page, select the *Configuration* page.
2. From the *Configuration* page, select *Admin*.
3. From the *Admin Configuration* page, select *Install Firmware*.
4. In the *Firmware Installation* page, select *Previous*.
5. The *Confirmation Dialog* box (FIG. 52) will ask "Are you sure you want to install the following firmware?" The option to choose **Yes** will be enabled after five seconds. Press **Yes** to load the firmware listed, and **No** to return to the *Firmware Installation* popup window.

FIG. 52 Previous Firmware installation confirmation dialog

6. If you choose **Yes**, the device will retrieve the files and then reboot.

Returning to Factory Default Firmware

X Series panels allow the option to return the device to its original factory default firmware, which may be necessary in certain situations. To return the device to its factory default firmware:

1. From the *Settings* page, select the *Configuration* page.
2. From the *Configuration* page, select *Admin*.
3. From the *Admin Configuration* page, select *Install Firmware*.
4. In the *Firmware Installation* page, select *Factory.*
5. The *Confirmation Dialog* box (FIG. 53) will ask "Are you sure you want to install the following firmware?" The option to choose **Yes** will be enabled after five seconds. Press **Yes** to load the firmware listed, and **No** to return to the *Firmware Installation* popup window.

FIG. 53 Previous Firmware installation confirmation dialog

If you choose **Yes**, the device will retrieve the files and then reboot.

Upgrading Firmware via NetLinx Studio

Firmware updates to X Series panels can be done via the NetLinx Studio software application. This requires that the touch panel is connected to a NetLinx Master, and that the Master is on the same network as (or accessible by) the PC running NetLinx Studio. This is because the firmware file is loaded to the panel through it's connection to the Master.

X Series panels use Kit files for firmware upgrades. A Kit file (*.kit) is a package of several files, all of which are required to upgrade the firmware, and are available online via www.amx.com (refer to the device page for firmware updates).

Transferring the KIT File via NetLinx Studio

1. In Netlinx Studio, right-click in the *Online Tree* tab of the Workspace window and select **Refresh System Online Tree** to refresh the device listing. The touch panel should be indicated in the device list.
2. Right-click on the target panel and select **Firmware Transfer** to open the *Send to NetLinx Device* dialog. Alternatively, select **Tools > Firmware Transfers > Send To NetLinx Device** to open this dialog (FIG. 54):

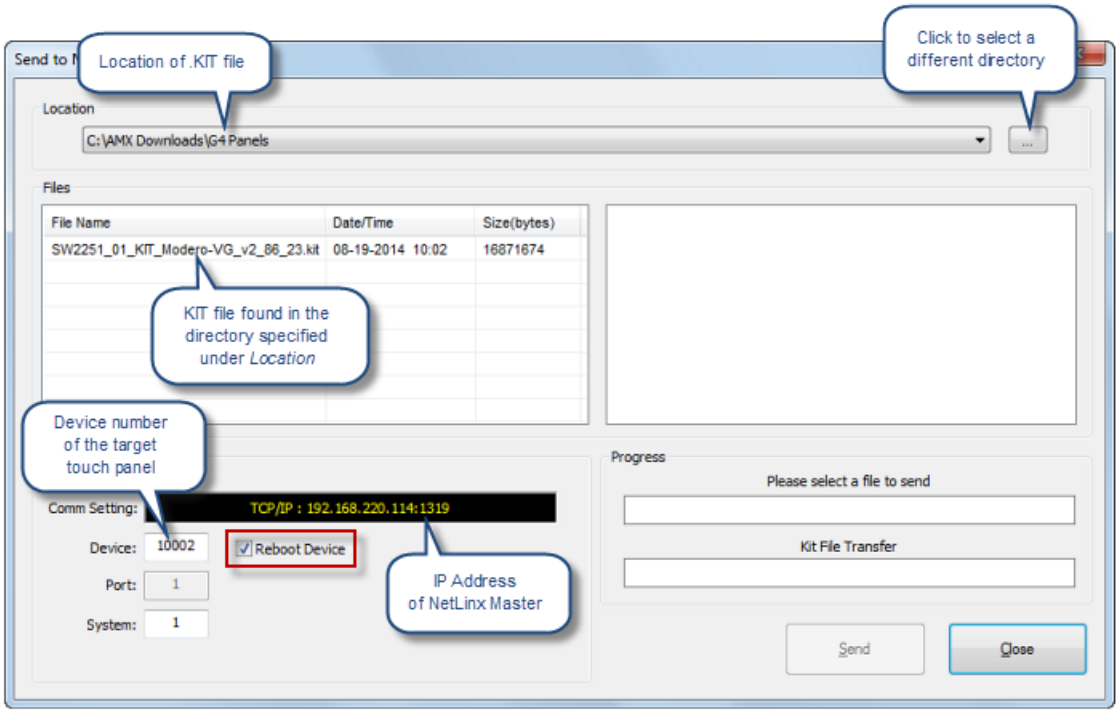


FIG. 54 NetLinx Studio - Send to NetLinx Device dialog

   a. Under **Location**, select the directory to which the firmware ZIP file was extracted. Use the *Browse* (**...**) button to locate and select a different directory if necessary.
   b. All KIT files detected in the selected directory are listed in the **Files** window. Select a KIT file to transfer.
      - Note that when a file is selected, file details may be displayed in the text field to the right of the *Files* window. Review this text before proceeding to see any important notes or instructions that are specific to this file.
      - Also note that the *Send* button is only enabled once a file has been selected in the *Files* window.
   c. Under *Target*, enter the Device number for the target touch panel in the **Device** field.
      - Use the Online Tree to determine the device's assigned ID (as well as the current firmware version).
      - Note that if this dialog was accessed by right-clicking on the touch panel in the Online Tree, the Device Number should already be set correctly.
   d. Verify that the **Reboot Device** option is selected. It is necessary to reboot the panel after a firmware upgrade.
3. Click **Send** to begin the file transfer.
4. The progress of the transfer operation is indicated in the *Progress* bars in this dialog, as well as on the panel itself.
5. When the transfer is finished, and the reboot is complete, press the **Close** button.

NOTE

If for any reason your Kit file transfer should fail, continue to retry the transfer until you are successful. DO NOT reboot the Master, or change connections until the transfer is complete. Failure to complete this operation successfully may result in a factory repair of the Master.

Appendix: Troubleshooting

Overview

This section describes the solutions to possible hardware/firmware issues that could arise during the common operation of a Modero X Series touch panel.

Panel Doesn't Respond to Touches

Symptom: The device either does not respond to touches on the touch screen or does not register the touch as being in the correct area of the screen.

If the screen is off:

- *The device may be in Display Sleep Mode.* Press and hold the **Sleep** button to wake up the panel.
- *The device may not be connected to power.* Verify that the power source is connected to the device and receiving power.

Panel Isn't Appearing in the Online Tree Tab

1. Verify that the System number is the same on both the NetLinx Studio Project Navigator window and the System Settings page on the device.
2. Verify the proper NetLinx Master IP and connection methods entered into the Master Connection section of the *System Settings* page.

Can't Connect to a NetLinx Master

Symptom: I can't seem to connect to a NetLinx Master using NetLinx Studio.

Select *Settings > Master Comm Settings > Communication Settings > Settings (for TCP/IP)*, and uncheck the "Automatically Ping the Master Controller to ensure availability".

The pinging is to determine if the Master is available and to reply with a connection failure instantly if it is not. Without using the ping feature, a connection may still be attempted, but a failure will take longer to be recognized.

If you are trying to connect to a Master controller that is behind a firewall, you may have to uncheck this option. Most firewalls will not allow ping requests to pass through for security reasons.

When connecting to a NetLinx Master controller via TCP/IP, the program will first try to ping the controller before attempting a connection. Pinging a device is relatively fast and will determine if the device is off-line, or if the TCP/IP address that was entered was incorrect.

If you decide not to ping for availability and the controller is off-line, or you have an incorrect TCP/IP address, the program will try for 30-45 seconds to establish a connection.

Only One Modero Panel in My System Shows Up

Symptom: I have more than one Modero panel connected to my System Master and only one shows up.

Multiple NetLinx Compatible devices can be associated for use with a single Master. If the user does not assign a device number, one will be assigned automatically to the panel. When using multiple panels, different Device Number values have to be assigned to each panel.

1. Press and hold the **Sleep** button to open the *Settings* menu.
2. Select the *NetLinx* menu, enter **1988** into the on-screen Keypad's password field, and press **Done** when finished.
3. Enter a Device Number value for the panel into the Device Number Keypad. The range is from 1 - 32000.

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