



INSTALLATION & HARDWARE REFERENCE MANUAL

MODERO G5 TOUCH PANELS

MD-702 7" MODERO G5 WALL MOUNT TOUCH PANEL

MT-702 7" MODERO G5 TABLETOP TOUCH PANEL

MD-1002 10" MODERO G5 WALL MOUNT TOUCH PANEL

MT-1002 10" MODERO G5 TABLETOP TOUCH PANEL

MT-2002 20" MODERO G5 PANORAMIC TABLETOP TOUCH PANEL



IMPORTANT SAFETY INSTRUCTIONS

1. READ these instructions.
2. KEEP these instructions.
3. HEED all warnings.
4. FOLLOW all instructions.
5. DO NOT use this apparatus near water.
6. CLEAN ONLY with dry cloth.
7. DO NOT block any ventilation openings. Install in accordance with the manufacturer's instructions.
8. DO NOT install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9. DO NOT defeat the safety purpose of the polarized or grounding type plug. A polarized plug has two blades with one wider than the other. A grounding type plug has two blades and a third grounding prong. The wider blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10. PROTECT the power cord from being walked on or pinched, particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11. ONLY USE attachments/accessories specified by the manufacturer.



12. USE ONLY with a cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13. UNPLUG this apparatus during lightning storms or when unused for long periods of time.
14. REFER all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.
15. DO NOT expose this apparatus to dripping or splashing and ensure that no objects filled with liquids, such as vases, are placed on the apparatus.
16. To completely disconnect this apparatus from the AC Mains, disconnect the power supply cord plug from the AC receptacle.
17. Where the mains plug or an appliance coupler is used as the disconnect device, the disconnect device shall remain readily operable.
18. DO NOT overload wall outlets or extension cords beyond their rated capacity as this can cause electric shock or fire.



The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.



The lightning flash with arrowhead symbol within an equilateral triangle is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electrical shock to persons.



ESD Warning: The icon to the left indicates text regarding potential danger associated with the discharge of static electricity from an outside source (such as human hands) into an integrated circuit, often resulting in damage to the circuit.

- WARNING:** To reduce the risk of fire or electrical shock, do not expose this apparatus to rain or moisture.
- WARNING:** No naked flame sources - such as candles - should be placed on the product.
- WARNING:** Equipment shall be connected to a MAINS socket outlet with a protective earthing connection.
- WARNING:** To reduce the risk of electric shock, grounding of the center pin of this plug must be maintained.

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AMX WARRANTY AND RETURN POLICY

The AMX Warranty and Return Policy and related documents can be viewed/downloaded at www.amx.com.

ESD WARNING



To avoid ESD (Electrostatic Discharge) damage to sensitive components, make sure you are properly grounded before touching any internal materials.

When working with any equipment manufactured with electronic devices, proper ESD grounding procedures must be followed to make sure people, products, and tools are as free of static charges as possible. Grounding straps, conductive smocks, and conductive work mats are specifically designed for this purpose. These items should not be manufactured locally, since they are generally composed of highly resistive conductive materials to safely drain static discharges, without increasing an electrocution risk in the event of an accident.

Anyone performing field maintenance on AMX equipment should use an appropriate ESD field service kit complete with at least a dissipative work mat with a ground cord and a UL listed adjustable wrist strap with another ground cord.



CAUTION

RISK OF ELECTRIC SHOCK
DO NOT OPEN



WARNING: Do Not Open! Risk of Electrical Shock. Voltages in this equipment are hazardous to life. No user-serviceable parts inside. Refer all servicing to qualified service personnel.

Place the equipment near a main power supply outlet and make sure that you can easily access the power breaker switch.

WARNING: This product is intended to be operated ONLY from the voltages listed on the back panel or the recommended, or included, power supply of the product. Operation from other voltages other than those indicated may cause irreversible damage to the product and void the products warranty. The use of AC Plug Adapters is cautioned because it can allow the product to be plugged into voltages in which the product was not designed to operate. If the product is equipped with a detachable power cord, use only the type provided with your product or by your local distributor and/or retailer. If you are unsure of the correct operational voltage, please contact your local distributor and/or retailer.

FCC AND CANADA EMC COMPLIANCE INFORMATION:

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Approved under the verification provision of FCC Part 15 as a Class B Digital Device.

Caution: Changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this device.

CAN ICES-3 (B)/NMB-3(B)

WIRELESS TRANSMITTER COMPLIANCE INFORMATION:

The term "IC:" before the radio certification number only signifies that Industry Canada technical specifications were met.

Le terme "IC:" avant le numéro de certification radio signifie seulement que les spécifications techniques d'Industrie Canada ont été respectées.

This device complies with part 15 of the FCC Rules and the applicable Industry Canada license-exempt RSS standard(s).

Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This equipment complies with FCC and IC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Cet appareil est conforme à FCC et IC l'exposition aux rayonnements limites fixées pour un environnement non contrôlé. Cet appareil doit être installé et utilisé avec une distance minimale de 20 cm entre le radiateur et votre corps. Cet transmetteur ne doit pas être co-situé ou opérant en liaison avec toute autre antenne ou transmetteur.

EU COMPLIANCE INFORMATION:

Eligible to bear the CE mark; Conforms to European Union Low Voltage Directive 2006/95/EC; European Union EMC Directive 2004/108/EC; European Union Restriction of Hazardous Substances Recast (RoHS2) Directive 2011/65/EU; European Union WEEE (recast) Directive 2012/19/EU; European Union Radio and Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC

You may obtain a free copy of the Declaration of Conformity by visiting <http://www.amx.com/techcenter/certifications.asp>.

WEEE NOTICE:

 	<p>This appliance is labeled in accordance with European Directive 2012/19/EU concerning waste of electrical and electronic equipment (WEEE). This label indicates that this product should not be disposed of with household waste. It should be deposited at an appropriate facility to enable recovery and recycling.</p>
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CHINA COMPLIANCE INFORMATION:




	<p>This device is designed and evaluated under the condition of non-tropical climate; it can only be used in locations in non-tropical climate areas. Using the device in tropical climate areas could result in a potential safety hazard.</p>
	<p>This device is designed and evaluated under the condition of altitude below 2000 meters above sea level; it can only be used in locations below 2000 meters above sea level. Using the device above 2000 meters could result in a potential safety hazard.</p>

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Modero G5 Touch Panels

Overview

The most elegant interface designed specifically for dedicated room control has been significantly enhanced to include a new G5 Graphic Engine to provide even faster and smoother animations and transitions, and we quadrupled the processing power with a new Quad Core Processor. This new generation of 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. With a lightning fast processor, brilliant graphics and enhanced capabilities, the Modero G5 is the control surface that simply delivers more.



FIG. 1 Modero G5 Touch Panels

The Modero G5 Touch Panels covered in this manual include:

Modero G5 Touch Panels		
FG5969-55BL	MD-702-BL	7" Modero G5 Wall Mount Touch Panel
FG5969-53	MT-702	7" Modero G5 Tabletop Touch Panel
FG5969-49BL	MD-1002-BL	10" Modero G5 Wall Mount Panel
FG5969-47	MT-1002	10" Modero G5 Tabletop Touch Panel
FG5969-35	MT-2002	20" Modero G5 Panoramic Tabletop Touch Panel

NOTE: The G5 panels described in this document represent a different product family than the X Series (G4) touch panels. For information on X Series G4 touch panels, refer to the Modero G4 Touch Panels Instruction Manual.

Sleep Button

G5 touch panels are operated using its integral touchscreen, as well as the *Sleep* button. The sleep button is located on the top left edge of the frame when facing the panel (see Fig 2).



FIG. 2 Sleep Button location - Tabletop and Wall Mount

If the device has gone into its Sleep Mode, touching the touchscreen or pressing the Sleep button will reactivate it. Press and hold the Sleep button to access the Settings menu.

Powering On/Off G5 Panels

Modero G5 touch panels may be powered on by touching the *Sleep* button. To power off the panel, press and hold the Sleep button, and select **Power Off** on the on-screen menu (FIG. 3):



FIG. 3 Sleep Button - Press to power on the panel; press and hold to access Power Off/Settings options

Configuration and Programming

G5 touch panels are equipped with a *Settings* menu that provides the ability to configure various features on the panels. To access the *Settings* menu, press and hold the Sleep button, and select **Settings** (FIG. 3). This opens the main Settings menu (FIG. 4):



FIG. 4 Main Settings Menu

Information on the *Settings* menu, panel configuration, and programming is included in the *Modero G5 Programming Guide*, available at www.amx.com.

NOTE: *Programming the Modero G5 touch panels require the use of the latest versions of NetLinX Studio and TPDesign5, both available to download at www.amx.com.*

Bluetooth Support

G5 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**).

Active Video Windows - Limitations

The following limitations apply to the display of active video windows on G5 panels:

NOTE: *The term “Active Video Windows” refers to any “window” on the touch panel (which could be a Page, Popup, Sub-Page or Button) that is displaying active video content.*

- Maximum supported number of active video windows displayed simultaneously on the panel: **2**
While this limitation is not enforced (i.e the TPDesign5 application will allow you include any number of video windows in the panel design), attempting to display more than two active video windows at one time may have a negative impact on the panel’s overall performance.
- Maximum supported resolution for video windows: **720dpi**
- Maximum supported frame rate for video windows: **30fps**

Cleaning the Touch Overlay and Case

The following limitations apply to the display of active video windows on G5 panels:

G5 touch panels come with the MXA-CLK Modero Cleaning Kit (**FG5968-16**), which may be used to clean fingerprints and dirt from the device. This kit comes with cleaning cloths and a bottle of cleaning fluid specifically for use with the device.

- 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.

Additional Documentation

Refer to the *Modero G5 Touch Panels Configuration and Programming Manual* for details on configuring and programming G5 touch panels, including:

- Information on Modero G5 Programming, including Transitioning from G4 to G5
- Detailed descriptions of each page and page option available in the G5 Settings Menu
- Firmware upgrades via the G5 Settings Menu (Reset and Update page)
- Using Content Sharing
- Using Gestures
- MXA-MP and MXA-MPL Programming
- Detailed descriptions of all G5-supported Send Commands and SSH Commands

NOTE: *Refer to the Modero G5 Configuration and Programming - G5 Touch Panels Instruction Manual for details.*

NOTE: *Touch Panel files for G5 Touch Panels are created via TPDesign5 software (available to download from www.amx.com). Refer to the TPDesign5 online help and Instruction Manual for details.*

MT-2002 - 10.1" G5 Touch Panels

MT-2002 (Tabletop)



FIG. 5 MT-2002 touch panel

MT-2002 Specifications

MT-2002 Specifications	
Dimensions (HWD)	9 3/16" x 20 3/8" x 5 7/8" (235mm x 519mm x 150mm)
Weight	12.3 lbs (5.58 Kg)
Power Consumption	<ul style="list-style-type: none"> • Full-On: 35 W (12V $\overline{\text{---}}$, 2.9A) • Standby: 7 W (12V $\overline{\text{---}}$, 0.58A)
External Power Supply Required	Requires one of these AMX power sources (not included): <ul style="list-style-type: none"> • PSR5.4 Power Supply, 12 VDC, 5.4A, 3.5mm Phoenix Connector with Retention Screws (FG423-48) • MXA-MPL Modero X/S Series Multi Preview Live (FG5968-10)
Certifications	<ul style="list-style-type: none"> • FCC Part 15 Class B • AS/NZS CISPR 32 Class B • CE EN 55032, 55035, 60950-1 • CB Scheme IEC 60950-1 • IC • IEC/EN-60950 • UL 60950-1 • RoHS/WEEE compliant
Touch Screen Display	<ul style="list-style-type: none"> • Display Type: TFT Active Matrix Color LCD with In-plane Switching Technology (IPS) • Display Size (WH): 20.4" x 9.5" (519mm x 242mm), 21.3" (541mm) diagonal • Viewable Area (WH): 18.7" x 7.8" (475mm x 198mm), 20.3" (514mm) diagonal • Resolution: 1920x800 • Aspect Ratio: 12:5 • Brightness: 250 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	<ul style="list-style-type: none"> • Vertical: $\pm 89^\circ$ • Horizontal: $\pm 89^\circ$
Memory	<ul style="list-style-type: none"> • SDRAM: 2 GB • Flash: 16 GB • Maximum Project Size: 12 GB flash, available for apps and touch panel files
Communications	<ul style="list-style-type: none"> • Ethernet: 10/100 Auto MDI-X port, RJ-45 connector. Supported IP and IP-Based Protocols: UCP, TCP, ICMP, IGMP, IGMP, DHCP, SSH, FTP, DNS, RFB (for VNC), HTTP • USB: (3) USB host 2.0, Type A ports: Firmware upgrade, Touch Panel File Transfer, document and image viewing, HID Peripherals • Bluetooth: Mouse/Keyboard: HID Profile v1.1 Handset: Hands Free Profile v1.5, Headset Profile v1.2

MT-2002 Specifications (Cont.)	
Video	<ul style="list-style-type: none"> Supported Video Codecs: <ul style="list-style-type: none"> 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: 2 (720dpi/30fps)
Audio	<ul style="list-style-type: none"> 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) Suggested max packet size for G.711 Voice: 20ms File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) Intercom*: Full Duplex VoIP, SIP v2.0
Graphics Engine	AMX G5: G5 enhanced feature set supporting multi-touch and gestures, scrolling, transitions, applications - See TPD5 Operations Guide for more information
Embedded Applications	<ul style="list-style-type: none"> Viewer Applications: PDF, JPEG, BMP, PNG, TIFF, GIF Remote Management: VNC Server Audio Conferencing: Audio (Full Duplex Intercom*)
Front Panel Components	<ul style="list-style-type: none"> 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 Sleep Button: Sleep button to activate sleep mode and powering off. Also provides access to setup pages (can be disabled)
Connections	<ul style="list-style-type: none"> Ethernet: 10/100 port, RJ-45 connector USB: <ul style="list-style-type: none"> (3) USB host 2.0, Type A ports: Firmware upgrade, Touch Panel File Transfer, document and Image viewing (1) Micro-USB device port (currently not in use) Power: 2-pin, locking 3.5mm Phoenix connector
Environmental	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> On: 119.4 BTU/hr Standby: 23.9 BTU/hr
Included Accessories	<ul style="list-style-type: none"> Locking 2-pin Phoenix mate (41-0002-SA) MXA-USB-C, USB Port Cover Kit, Modero Touch Panel (FG5968-18) HPG-10-10K, 3/4" Mini-Grommet (FG570-01) MXA-CLK, Modero Cleaning Kit (FG5968-16)
Optional Accessories	<ul style="list-style-type: none"> MXA-STMK-20, Secure Table Mount Kit, 20.3" Modero Tabletop (FG5968-64) PSR5.4 Power Supply, 12 VDC, 5.4A, 3.5mm Phoenix Connector with Retention Screws (FG423-48) MXA-MPL Modero X/S Series Multi Preview Live (FG5968-10) HPG-10-10K, 3/4" Mini-Grommet, 10-Pack (FG570-01-10K) MXA-CLK, Modero Cleaning Kit (FG5968-16) MXA-USB-C, USB Port Covers for the Modero Touch Panels (FG5968-18)
* This feature will be available upon release of a future firmware update.	

MT/D-1002 – 10.1” G5 Touch Panels

MT-1002 (Tabletop)



FIG. 6 MT-1002 (front and side views)

MT-1002 Specifications

MT-1002 Specifications	
Dimensions (HWD)	6 3/16" x 10 1/16" x 4 1/16" (157mm x 255mm x 103mm)
Weight	2.6 lbs (1.179 Kg)
Power Consumption	<ul style="list-style-type: none"> • Full-On: 14.5 W maximum • Standby: 5.8 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): <ul style="list-style-type: none"> • PS-POE-AT-TC, PoE Injector, 802.3AT Compliant (FG423-84) • NXA-ENET8-POE+, Gigabit PoE Ethernet Switch (FG2178-64)
Certifications	<ul style="list-style-type: none"> • FCC Part 15 Class B • CE EN 55032, 55035, 60950-1 • IEC 60950-1 • AS/NZS CISPR 32 Class B • IC CISPR 22 Class B • UL 60950-1 • VCCI CISPR 22 Class B • RoHS • WEEE
Touch Screen Display	<ul style="list-style-type: none"> • Display Type: TFT Active Matrix Color LCD • Display Size (WH): Landscape: 9.1" x 5.9" (230mm x 149mm), 10.8" (274mm) diagonal • Viewable Area (WH): Landscape: 8.5" x 5.4" (217mm x 136mm), 10.0" (256mm) diagonal • Resolution: Landscape: 1280x800 • Aspect Ratio: Landscape: 16:9 • Brightness: 350 cd/m2 • Contrast Ratio: 800:1 • Color Depth: 16.7M colors • Illumination: LED • Touch Overlay: Projected capacitive, multi-touch support, 3 simultaneous max <p>Note: 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.</p>
Viewing Angle	85°/85°/85°/85° (Up/Down/Left/Right)
Memory	<ul style="list-style-type: none"> • SDRAM: 2 GB • Flash: 16 GB • Maximum Project Size: 12 GB flash, available for apps and touch panel files

MT-1002 Specifications (Cont.)	
Communications	<ul style="list-style-type: none"> Ethernet: 10/100 Auto MDI-X port, RJ-45 connector. Supported IP and IP-Based Protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, SSH, 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, document and image viewing, HID Peripherals Bluetooth*: Mouse/Keyboard: HID Profile v1.1 Handset: Hands Free Profile v1.5, Headset Profile v1.2
Video	<ul style="list-style-type: none"> Supported Video Codecs: <ul style="list-style-type: none"> 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: 2 (720dpi/30fps)
Audio	<ul style="list-style-type: none"> 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) Suggested max packet size for G.711 Voice: 20ms File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) Intercom*: Full Duplex VoIP, SIP v2.0
Graphics Engine	AMX G5: G5 enhanced feature set supporting multi-touch and gestures, scrolling, transitions, applications - See TPD5 Operations Guide for more information
Embedded Applications	<ul style="list-style-type: none"> Viewer Applications: PDF, JPEG, BMP, PNG, TIFF, GIF Remote Management: VNC Server Audio Conferencing: Audio (Full Duplex Intercom*)
Front Panel Components	Sleep Button: Sleep button to activate sleep mode and powering off. Also provides access to setup pages (can be disabled)
Connections	<ul style="list-style-type: none"> Ethernet: 10/100 port, RJ-45 connector USB: (1) USB host 2.0, Type A port Power: PoE (Power over Ethernet), 802.3at, class 3
Environmental	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> On: 49.5 BTU/hr Standby: 19.8 BTU/hr
Included Accessories	<ul style="list-style-type: none"> MXA-USB-C, USB Port Cover Kit (60-5968-29) Cat5e Ethernet Cable, Flat Black (ECA2265-10) UTP CAT.5E Snap In Coupler, Black (64-5968-01)
Optional Accessories	<ul style="list-style-type: none"> MSA-STMK-10, Secure Table Mount Kit for Modero Tabletop Touch Panel, 10" (FG2265-16) MXA-MPL, Modero Multi Preview Live (FG5968-10) PS-POE-AT-TC, PoE Injector, 802.3AT Compliant (FG423-84) NXA-ENET8-POE+, Gigabit PoE Ethernet Switch (FG2178-64) HPG-10-10K, 3/4" Mini-Grommet, 10-Pack (FG570-01-10K) MXA-CLK, Modero Screen Cleaning Kit (FG5968-16) MXA-USB-C, USB Port Covers for the Modero Touch Panels (FG5968-18)
* This feature will be available upon release of a future firmware update.	

MD-1002 (Wall Mount-Landscape)

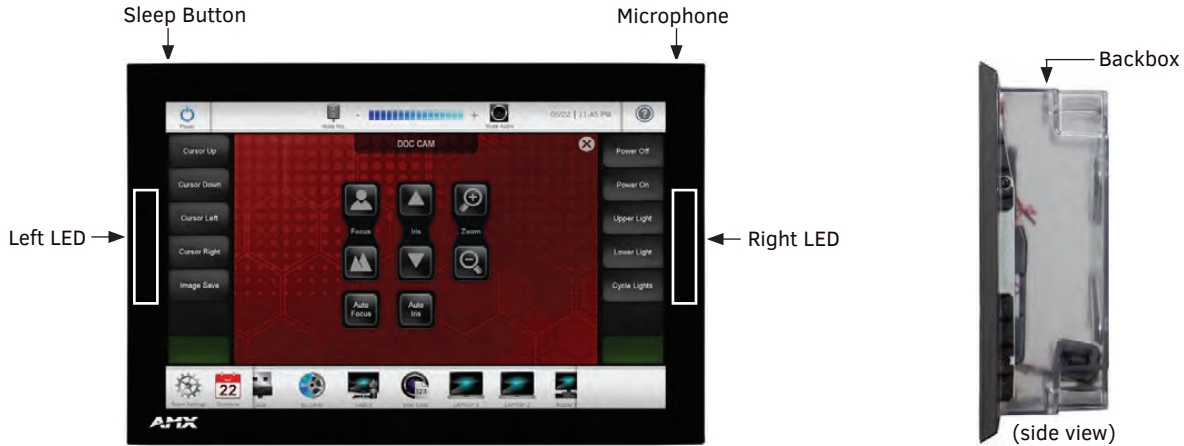


FIG. 7 MD-1002

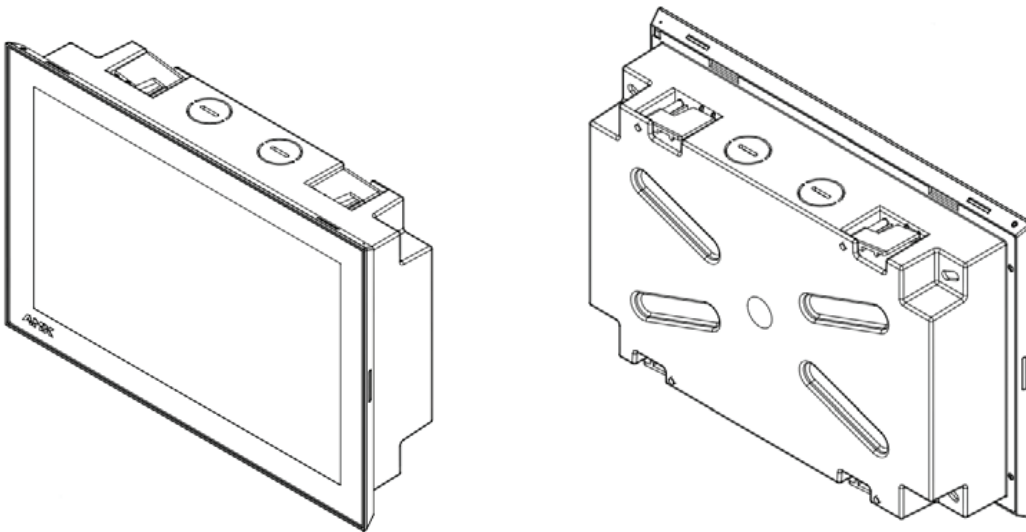


FIG. 8 MD-1002 front and rear isometric views

MD-1002 Specifications

MD-1002 Specifications	
Dimensions with backbox (HWD)	6 13/16" x 10 1/16" x 2" (174mm x 255mm x 51mm) Note: See FIG. 9 on page 16 for details.
Weight	<ul style="list-style-type: none"> • 1.95 lbs (.885 Kg), with Backbox • 1.5 lbs (.680 Kg), without Backbox
Power Consumption	<ul style="list-style-type: none"> • Full-On: 14.5 W • Standby: 5.8 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): <ul style="list-style-type: none"> • PS-POE-AT-TC, PoE Injector, 802.3AT Compliant (FG423-84) • NXA-ENET8-POE+, Gigabit PoE Ethernet Switch (FG2178-64)
Certifications	<ul style="list-style-type: none"> • FCC Part 15 Class B • AUS/NZ • EN 55032:2012/AC:2013 Class B • CISPR32:2015 • IEC/EN-60950 • KN32 Class B • CAN-ICES-3(B)/NMB-3(B) • UL 60950-1 • RoHS/WEEE compliant

MD-1002 Specifications (Cont.)	
Touch Screen Display	<ul style="list-style-type: none"> • Display Type: TFT Active Matrix Color LCD • Display Size (WH): Landscape: 9.1" x 5.9" (230mm x 149mm), 10.8" (274mm) diagonal • Viewable Area (WH): Landscape: 8.5" x 5.4" (217mm x 136mm), 10.0" (256mm) diagonal • Resolution: Landscape: 1280x800 • Aspect Ratio: Landscape: 16:9 • Brightness: 350 cd/m2 • Contrast Ratio: 800:1 • Color Depth: 16.7M colors • Illumination: LED • Touch Overlay: Projected capacitive, multi-touch support, 3 simultaneous max <p>Note: <i>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.</i></p>
Viewing Angle	85°/85°/85°/85° (Up/Down/Left/Right)
Memory	<ul style="list-style-type: none"> • SDRAM: 2 GB • Flash: 16 GB • Maximum Project Size: 12 GB flash, available for apps and touch panel files
Communications	<ul style="list-style-type: none"> • Ethernet: 10/100 Auto MDI-X port, RJ-45 connector. Supported IP and IP-Based Protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, SSH, 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, document and image viewing, HID Peripherals • Bluetooth*: Mouse/Keyboard: HID Profile v1.1 Handset: Hands Free Profile v1.5, Headset Profile v1.2
Video	<ul style="list-style-type: none"> • Supported Video Codecs: 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 Transport Streams: MPEG-TS for MPEG2 and H.264; HTTP for MJPEG • Max Number of Active Video Streams: 2 (720dpi/30fps)
Audio	<ul style="list-style-type: none"> • 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) Suggested max packet size for G.711 Voice: 20ms • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom*: Full Duplex VoIP, SIP v2.0
Graphics Engine	AMX G5: G5 enhanced feature set supporting multi-touch and gestures, scrolling, transitions, applications - See TPD5 Operations Guide for more information
Embedded Applications	<ul style="list-style-type: none"> • Viewer Applications: PDF, JPEG, BMP, PNG, TIFF, GIF • Remote Management: VNC Server • Audio Conferencing: Audio (Full Duplex Intercom*)
Front Panel Components	<p>Sleep Button: Sleep button to activate sleep mode and power off. Also provides access to setup pages (can be disabled)</p> <p>Programmable Red/Green LEDs: Programmable red/green LED in the front, left and right sides of the panel, LEDs are beautifully recessed and nearly invisible when not lit</p>
Connections	<ul style="list-style-type: none"> • Ethernet: 10/100 port, RJ-45 connector • USB: (1) USB host 2.0, type A port • Power: PoE (Power over Ethernet), 802.3at, class 0
Environmental	<ul style="list-style-type: none"> • 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: 49.5 BTU/hr Standby: 19.8 BTU/hr
Included Accessories	<ul style="list-style-type: none"> • Installation Template 10.1" S Series (68-2265-03) • Backbox, Wall Mount, 10.1" (5095919-00)
* This feature will be available upon release of a future firmware update.	

MD-1002 Specifications (Cont.)

Optional Accessories

- CB-MSA-10, Rough-In Box and Cover Plate (FG2265-08)
- MSA-MMK2-10, Multi Mount Kit, for use with MSD-1001-L2, RMBK-1001 (FG2265-21)
- MSA-AMK2-10, Any Mount Kit, for use with MSD-1001-L2, RMBK-1001 (FG2265-36)
- MSA-RMK-10, Rack Mount Kit for 10" Modero Wall Mount Touch Panel (FG2265-14)
- MXA-MPL, Modero Multi Preview Live (FG5968-10)
- PS-POE-AT-TC, PoE Injector, 802.3AT Compliant (FG423-84)
- NXA-ENET8-POE+, Gigabit PoE Ethernet Switch (FG2178-64)
- MXA-CLK, Modero Screen Cleaning Kit (FG5968-16)

MD-1002 Dimensions

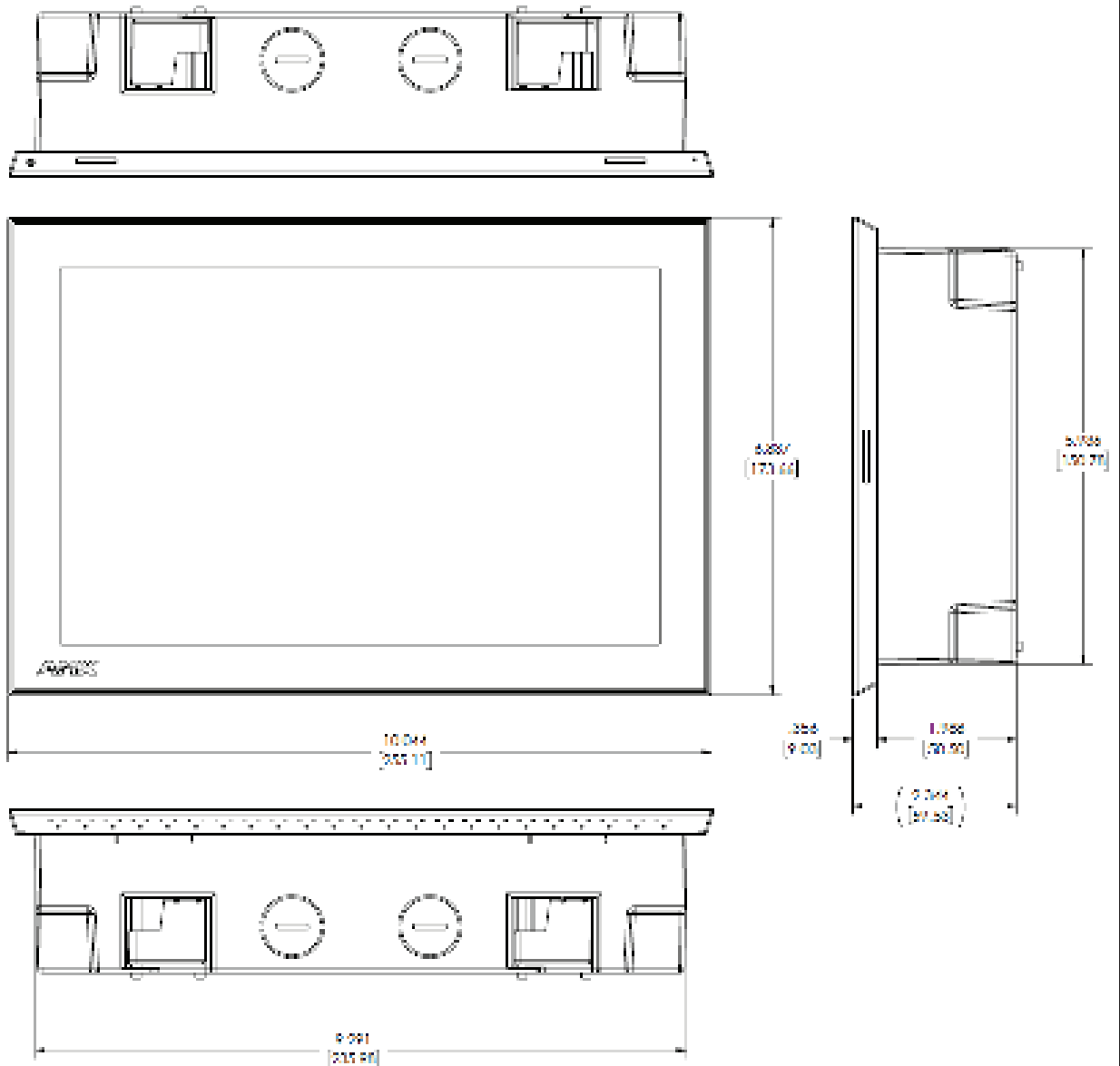


FIG. 9 MD-1002 Dimensions

NOTE: Detailed specifications drawings for the MD-1002 are available to download from www.amx.com.

MT/D-702 – 7” G5 Touch Panels

MT-702 (Tabletop)



FIG. 10 MT-702

MT-702 Specifications

MT-702 Specifications	
Dimensions (HWD)	4 1/2" x 7 3/8" x 3 3/16" (115mm x 188mm x 81mm)
Weight	1.4 lbs (.635 Kg)
Power Consumption	<ul style="list-style-type: none"> • Full-On: 14.5 W maximum • Standby: 5.8 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): <ul style="list-style-type: none"> • PS-POE-AT-TC, PoE Injector, 802.3AT Compliant (FG423-84) • NXA-ENET8-POE+, Gigabit PoE Ethernet Switch (FG2178-64)
Certifications	<ul style="list-style-type: none"> • FCC Part 15 Class B • CE EN 55032, 55035, 60950-1 • IEC 60950-1 • AS/NZS CISPR 32 Class B • IC CISPR 22 Class B • UL 60950-1 • VCCI CISPR 22 Class B • RoHS • WEEE
Touch Screen Display	<ul style="list-style-type: none"> • 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: Landscape: 1024x600 • Aspect Ratio: 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 <p>Note: 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.</p>
Viewing Angle	89°/89°/89°/89° (Up/Down/Left/Right)
Memory	<ul style="list-style-type: none"> • SDRAM: 2 GB • Flash: 16 GB • Maximum Project Size: 12 GB flash, available for apps and touch panel files

MT-702 Specifications (Cont.)	
Communications	<ul style="list-style-type: none"> Ethernet: 10/100 Auto MDI-X port, RJ-45 connector. Supported IP and IP-Based Protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, SSH, 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, document and image viewing, HID Peripherals Bluetooth*: Mouse/Keyboard: HID Profile v1.1 Handset: Hands Free Profile v1.5, Headset Profile v1.2
Video	<ul style="list-style-type: none"> Supported Video Codecs: <ul style="list-style-type: none"> 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: 2 (720dpi/30fps)
Audio	<ul style="list-style-type: none"> 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) Suggested max packet size for G.711 Voice: 20ms File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) Intercom*: Full Duplex VoIP, SIP v2.0
Graphics Engine	AMX G5: G5 enhanced feature set supporting multi-touch and gestures, scrolling, transitions, applications - See TPD5 Operations Guide for more information
Embedded Applications	<ul style="list-style-type: none"> Viewer Applications: PDF, JPEG, BMP, PNG, TIFF, GIF Remote Management: VNC Server The MXT-701 receives audio/video and returns audio Audio Conferencing: Audio (Full Duplex Intercom*)
Front Panel Components	Sleep Button: Sleep button to activate sleep mode and power off. Also provides access to setup pages (can be disabled)
Connections	<ul style="list-style-type: none"> Ethernet: 10/100 port, RJ-45 connector USB: (1) USB host 2.0, Type A port Power: PoE (Power over Ethernet), 802.3at, class 3
Environmental	<ul style="list-style-type: none"> 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: <ul style="list-style-type: none"> On: 49.5 BTU/hr Standby: 19.8 BTU/hr
Included Accessories	<ul style="list-style-type: none"> MXA-USB-C, USB Port Cover Kit, Modero Touch Panel (60-5968-29) Cat5e Ethernet Cable, Flat Black (ECA2265-10) UTP CAT.5E Snap In Coupler, Black (64-5968-01)
Optional Accessories	<ul style="list-style-type: none"> MSA-STMK-07, Secure Table Mount Kit for 7" Modero Tabletop Touch Panel (FG2265-17) MXA-MPL, Modero Multi Preview Live (FG5968-10) PS-POE-AT-TC, PoE Injector, 802.3AT Compliant (FG423-84) NXA-ENET8-POE+, Gigabit PoE Ethernet Switch (FG2178-64) HPG-10-10K, 3/4" Mini-Grommet, 10-Pack (FG570-01-10K) MXA-CLK, Modero Screen Cleaning Kit (FG5968-16) MXA-USB-C, USB Port Covers for the Modero Touch Panels (FG5968-18)
* This feature will be available upon release of a future firmware update.	

MD-702 (Landscape Wall Mount)



FIG. 11 MD-702

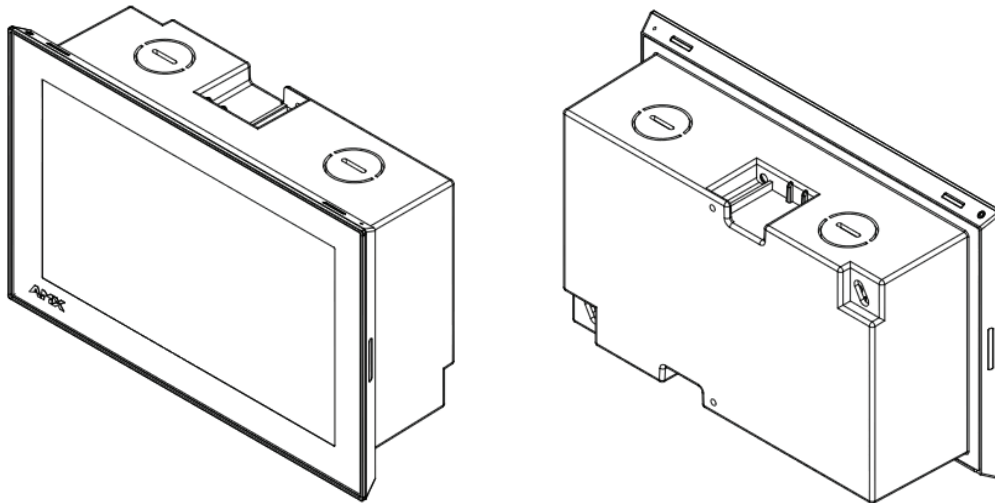


FIG. 12 MD-702 front and rear isometric views

MD-702 Specifications

MD-702 Specifications	
Dimensions with backbox (HWD)	4 7/8" x 7 3/8" x 2 1/4" (123.9mm x 187.5mm x 58mm), with Backbox See FIG. 13 on page 21 for details.
Weight	<ul style="list-style-type: none"> • 1.05 lbs (.680 Kg), with Backbox • 0.8 lbs (.363 Kg), without Backbox
Power Consumption	<ul style="list-style-type: none"> • Full-On: 14.5 W • Standby: 5.8 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): <ul style="list-style-type: none"> • PS-POE-AT-TC, PoE Injector, 802.3AT Compliant (FG423-84) • NXA-ENET8-POE+, Gigabit PoE Ethernet Switch (FG2178-64)
Certifications	<ul style="list-style-type: none"> • FCC Part 15 Class B • AUS/NZ • EN 55032:2012/AC:2013 Class B • CISPR32:2015 • IEC/EN-60950 • KN32 Class B • CAN-ICES-3(B)/NMB-3(B) • UL 60950-1 • RoHS/WEEE compliant

MD-702 Specifications (Cont.)	
Touch Screen Display	<ul style="list-style-type: none"> • 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" (186mm x 122mm), 8.8" (222mm) diagonal • Viewable Area (WH): Landscape: 6.05" x 3.54" (154mm x 90mm), 7.0" (178mm) diagonal • Resolution: Landscape: 1024x600 • Aspect Ratio: 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 <p>Note: 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.</p>
Viewing Angle	89°/89°/89°/89° (Up/Down/Left/Right)
Memory	<ul style="list-style-type: none"> • SDRAM: 2 GB • Flash: 16 GB • Maximum Project Size: 12 GB flash, available for apps and touch panel files
Communications	<ul style="list-style-type: none"> • Ethernet: 10/100 Auto MDI-X port, RJ-45 connector. Supported IP and IP-Based Protocols: UCP, TCP, ICMP, ICSP, IGMP, DHCP, SSH, 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, document and image viewing, HID Peripherals • Bluetooth*: Mouse/Keyboard: HID Profile v1.1 Handset: Hands Free Profile v1.5, Headset Profile v1.2
Video	<ul style="list-style-type: none"> • 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: 2 (720dpi/30fps)
Audio	<ul style="list-style-type: none"> • 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) • Suggested max packet size for G.711 Voice: 20ms • File Formats: WAV, MP3 (as part of touch panel file only - no USB storage) • Intercom*: Full Duplex VoIP, SIP v2.0
Graphics Engine	AMX G5: G5 enhanced feature set supporting multi-touch and gestures, scrolling, transitions, applications - See TPD5 Operations Guide for more information
Embedded Applications	<ul style="list-style-type: none"> • Viewer Applications: PDF, JPEG, BMP, PNG, TIFF, GIF • Remote Management: VNC Server • The MXD-701 receives audio/video and returns audio • Audio Conferencing: Audio (Full Duplex Intercom*)
Front Panel Components	<ul style="list-style-type: none"> • 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 in the front, left and right sides of the panel, LEDs are beautifully recessed and nearly invisible when not lit
Connections	<ul style="list-style-type: none"> • Ethernet: 10/100 port, RJ-45 connector • USB: (1) USB host 2.0, type A port • Power: PoE (Power over Ethernet), 802.3at, class 0
Environmental	<ul style="list-style-type: none"> • 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: 49.5 BTU/hr Standby: 19.8 BTU/hr
Included Accessories	<ul style="list-style-type: none"> • Installation Template 7" (68-2265-02) • Backbox, Wall Mount, 7" (5095917-00)
* This feature will be available upon release of a future firmware update.	

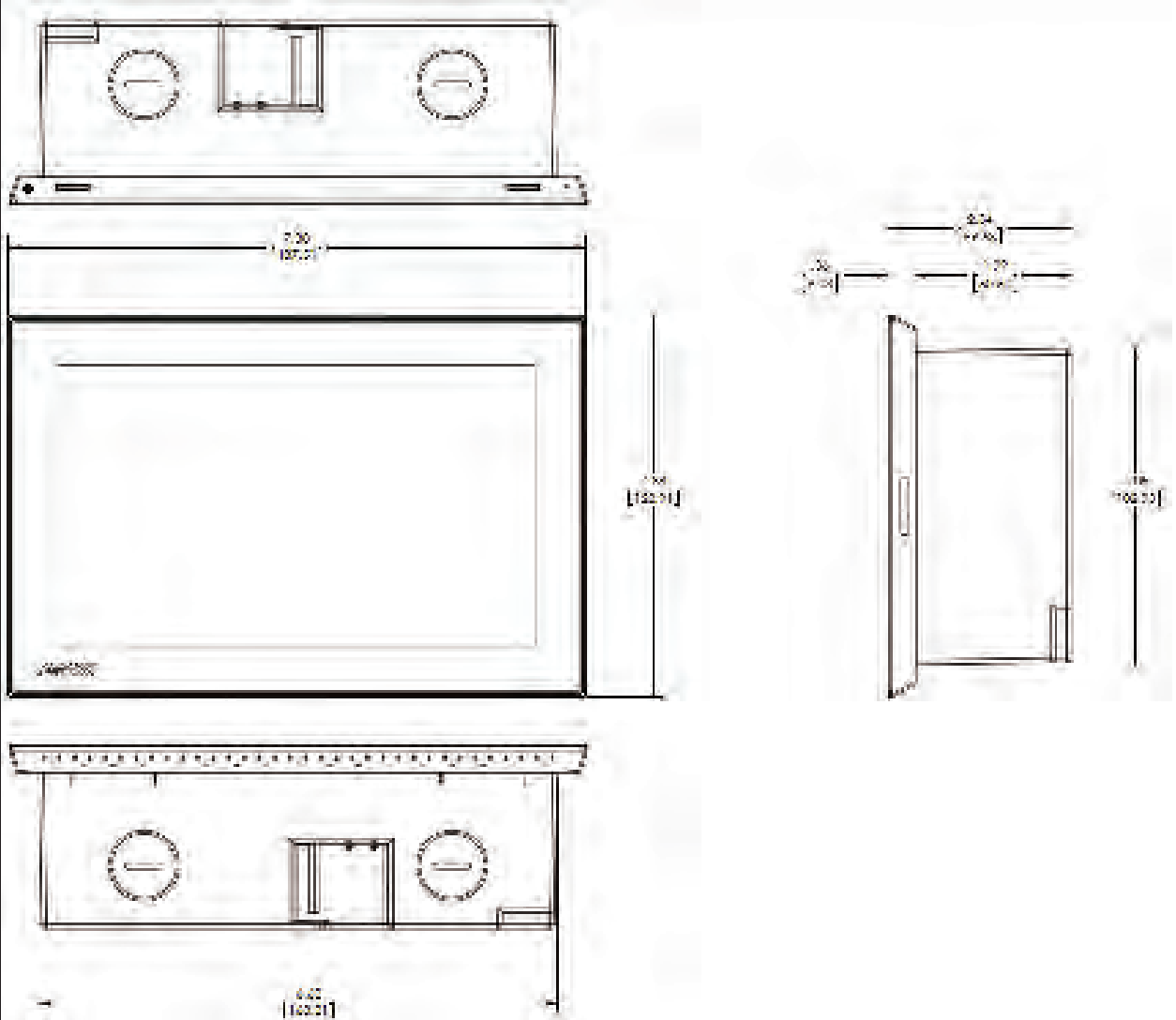
MD-702 Specifications (Cont.)

Optional Accessories

- CB-MXSA-07, Rough-In Box and Cover Plate for Modero Touch Panel, 7" (FG2265-09)
- MSA-MMK2-07, Multi Mount Kit for 7" Modero Wall Mount Touch Panel (FG2265-22)
- MSA-AMK2-07, Any Mount Kit for 7" Modero Wall Mount Touch Panel (FG2265-35)
- MSA-RMK-07, Rack Mount Kit for Modero Touch Panel, 7" (FG2265-15)
- MXA-MPL, Modero Multi Preview Live (FG5968-10)
- PS-POE-AT-TC, PoE Injector, 802.3AT Compliant (FG423-84)
- NXA-ENET8-POE+, Gigabit PoE Ethernet Switch (FG2178-64)
- MXA-CLK, Modero Screen Cleaning Kit (FG5968-16)

MD-702 Dimensions


FIG. 13 MD-702 Dimensions



NOTE: Detailed specifications drawings for the MD-702 are available to download from www.amx.com.

Powering The Modero Touch Panel

Power via 12V

The MT-2002 uses a 12V  -compliant power supply to provide power to the panel via the 2-pin 3.5mm captive wire PWR connector. The incoming PWR and GND wires from the power supply must be connected to the corresponding locations within the PWR connector.

NOTE: *Connecting power to the panel should be done using the included 2-pin 3.5mm captive wire connector included with the device. This connector is retained within its port with locking screws instead of the pins on each side of standard captive wire connectors, and using force to insert a standard captive wire connector may damage the device.*

Power via PoE

Power for the MT/D-1002 and MT/D-702 is supplied via PoE (Power Over Ethernet), utilizing an AMX-certified, capacitive touchcompliant 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.

Installing Tabletop (MT) Panels

MT-2002

Detailed specifications drawings for the MT-2002 are available to download from www.amx.com.

Connector Locations - MT-2002

Two Type A USB ports are located on the rear right corner of the panel (FIG. 14). USB peripherals (i.e. mouse, keyboard) may be connected to either of the two USB ports on the rear of the device. Updates to the device's firmware can also be made via the USB ports (see the *Modero G5 Configuration and Programming Guide* for details).

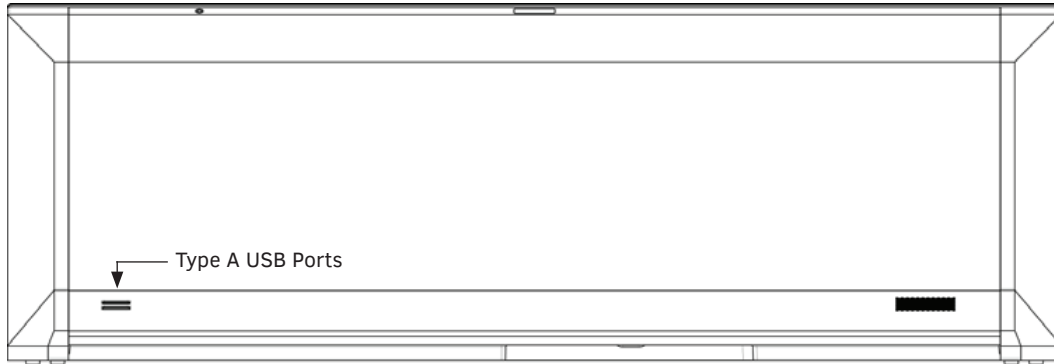


FIG. 14 MT-2002 - rear view

The Power and Ethernet connectors, as well as an additional USB port are located on the bottom of the device (FIG. 15).

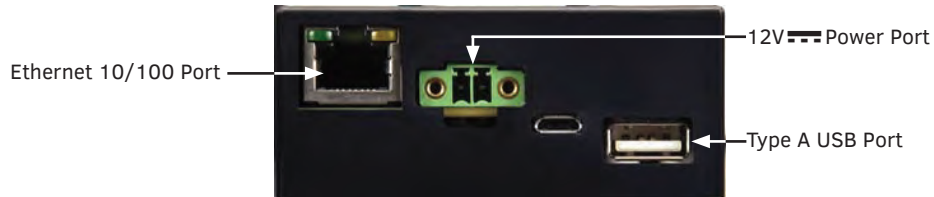


FIG. 15 MT-2002 - underside connectors

NOTE: Refer to the *Power via 12V* section on page 32 for details on wiring a power connection.

The underside USB port, as well as the two rear USB ports, may be used with a flash drive for page transfers or firmware upgrades. The MT-2002 has a slot at the base with channels for securing power and Ethernet cables, to allow options for cable configuration (FIG. 16).

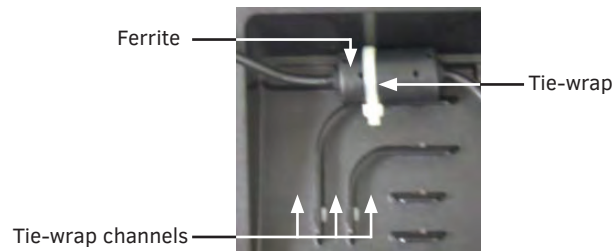


FIG. 16 Tie-wrap for power connector ferrite

Each channel side has slots for attaching tie-wraps to secure each cable.

- The ferrite on the power cable must be secured with the included tie-wrap during installation to prevent the possibility of the panel not sitting flush on the table.
- Other cables may be secured with tie-wraps if desired.

MT-1002/702

- Detailed specifications drawings for the MT-1002 are available to download from www.amx.com.
- Detailed specifications drawings for the MT-702 are available to download from www.amx.com.

Connector Locations

USB peripherals (mouse, keyboard, etc.) may be connected to the USB port on the rear of the device. Updates to the device's firmware can also be made via the USB port.

Note that FIG. 17 shows a MT-1002, but the connector locations are similar for all MT panels:

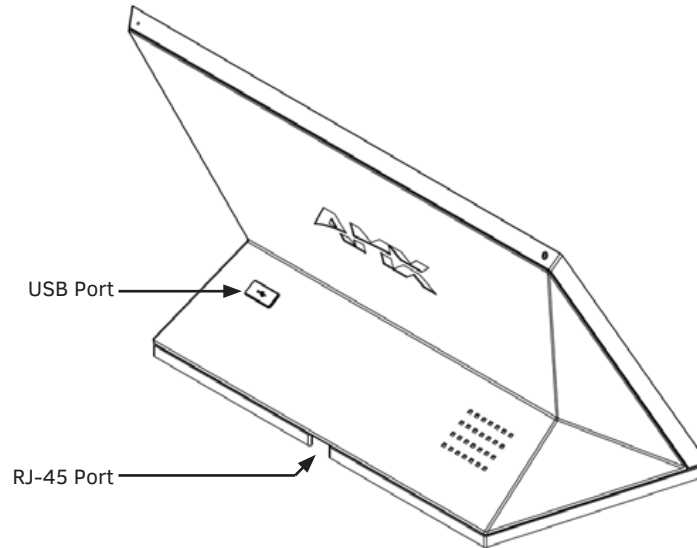


FIG. 17 MT-1002 Connector Location

Installing Wall-Mount (MD) Panels

Overview

Modero wall mount touch panels can be installed via several mounting options.

- Use the included clear plastic Backbox to attach the panel to most standard wall materials, or in tandem with the MSA-RMK-xx Rack Mount kit.
- Other optional AMX mounting solutions include the MSA-MMK-xx Multi Mount Kit, the MSA-AMK-xx Any Mount Kit, and the CB-MXSA-xx Rough-In Box. Refer to the Quick Start Guide included with each mounting kit for instructions.

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. 18 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.

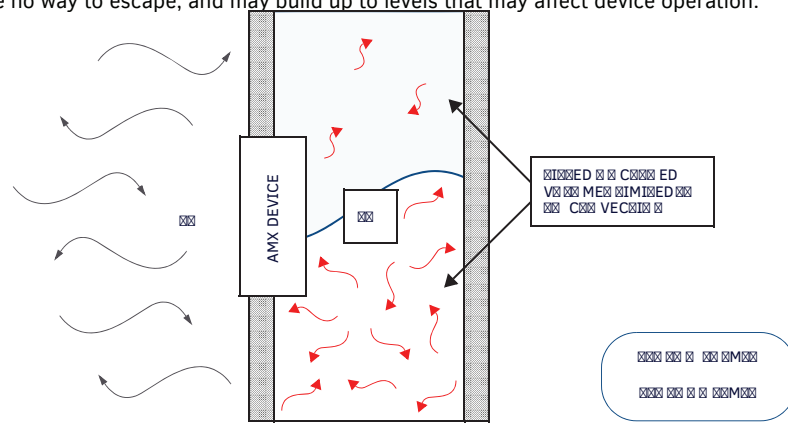


FIG. 18 Heat convection in filled or closed volume, limited or no convection

In FIG. 19, 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.

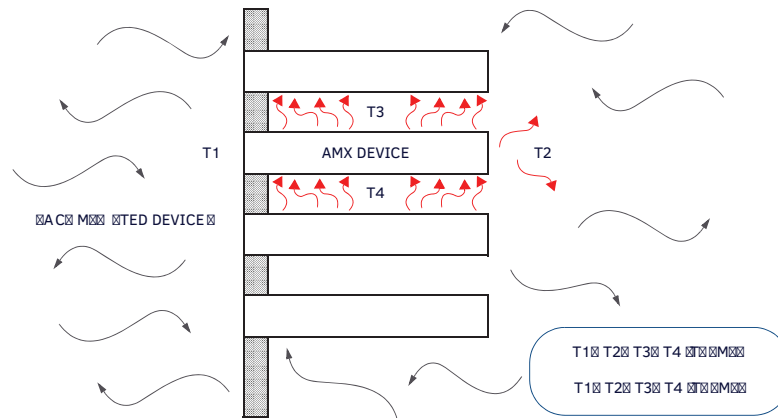


FIG. 19 Heat convection in rack-mounted devices

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.

Mounting Options

Use the included clear plastic Backbox to attach the panel to most standard wall materials.

NOTE: Other optional AMX mounting solutions include the MSA-MMK-07/10 Multi Mount Kits, and the MSA-AMK-07/10 Any Mount Kits, and CB-MXSA-07/10 Rough-In Boxes. Refer to the Quick Start Guide included with each mounting kit for instructions.

Plastic Backbox

Modero wall mount panels comes with a clear plastic Backbox. This Backbox can be used to mount the touch panel into most standard wall materials. The Backbox can also be used to mount the panel into other mounting options.

- FIG. 20 shows the Backbox for the MD-1002:

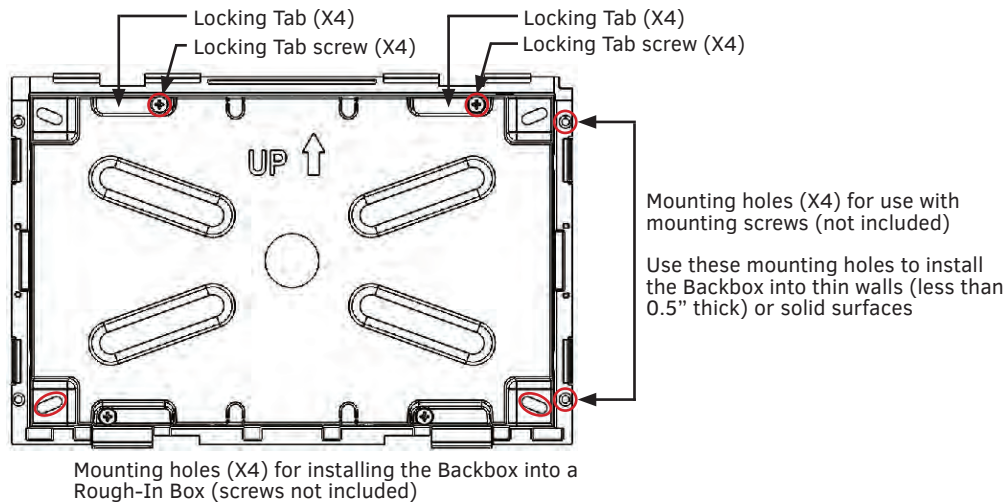


FIG. 20 10.1" MODERO Backbox (Front View)

- FIG. 21 shows the Backbox for the MD-702:

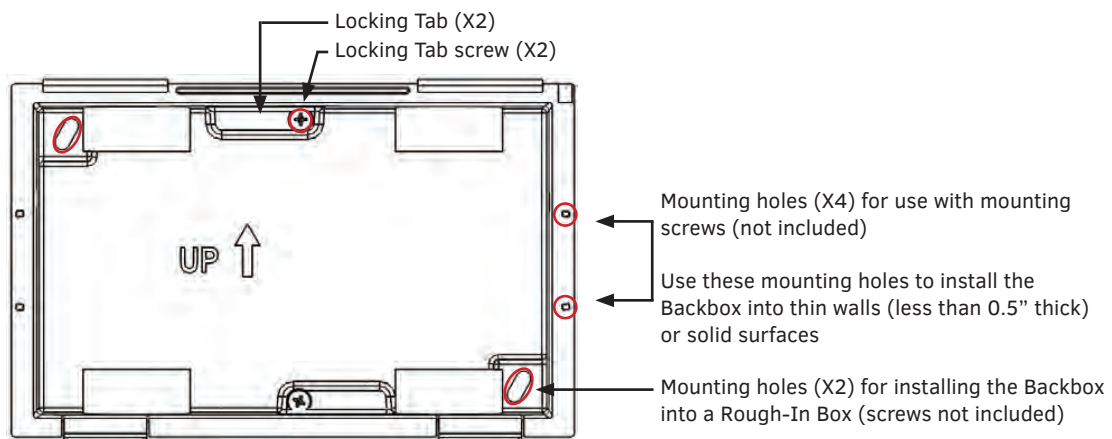


FIG. 21 7" MODERO Backbox (Front View)

STEP 1: Install the Plastic Backbox Installation Template (Included)

Each Modero wall mount panel comes with an Installation Template that makes it easy to position the panel for mounting and establish the size of the cutout hole required for each panel type. Use the included Installation Template to determine the placement of the Backbox in the mounting surface. 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 Modero installation templates are shown in FIG. 22:

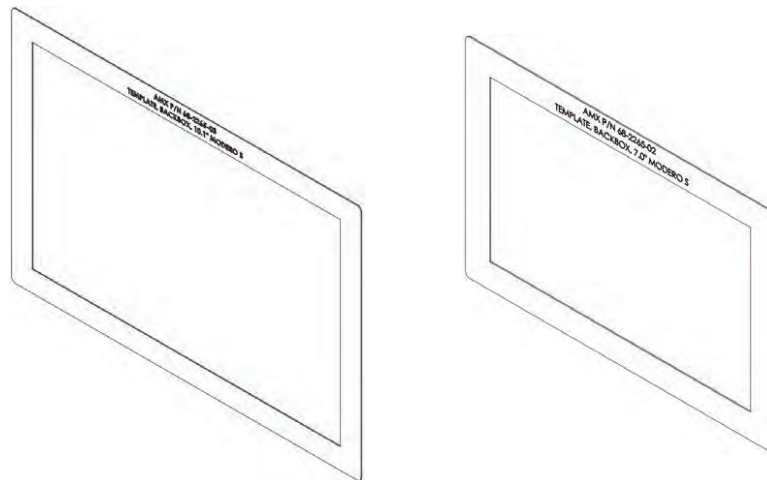


FIG. 22 Modero Wall Mount Installation Templates

NOTE: Prepare the area by removing any screws or nails from the drywall before beginning the cutout process.

- **MD-1002** - Template, Backbox, 10.1" Touch Panel (**68-2265-03** - see FIG. 23 on page 28)
- **MD-702** - Template, Backbox, 7.0" Touch Panel (**68-2265-02** - see FIG. 24 on page 28)

The templates are marked to ensure that the touch panel and Backbox are properly aligned.

Cutouts

1. After ensuring proper placement, cut an opening in the mounting surface for the Backbox, using the included Installation Template as a guide. For reference purposes, the cutout dimensions for each Modero wall mount panel is indicated below:

NOTE: Consider making the actual cutout opening slightly smaller than the provided dimensions. This provides a margin of error if the opening needs to be expanded. Too little wall material removed is always better than too much.

MD-1002 - Cutout Dimensions

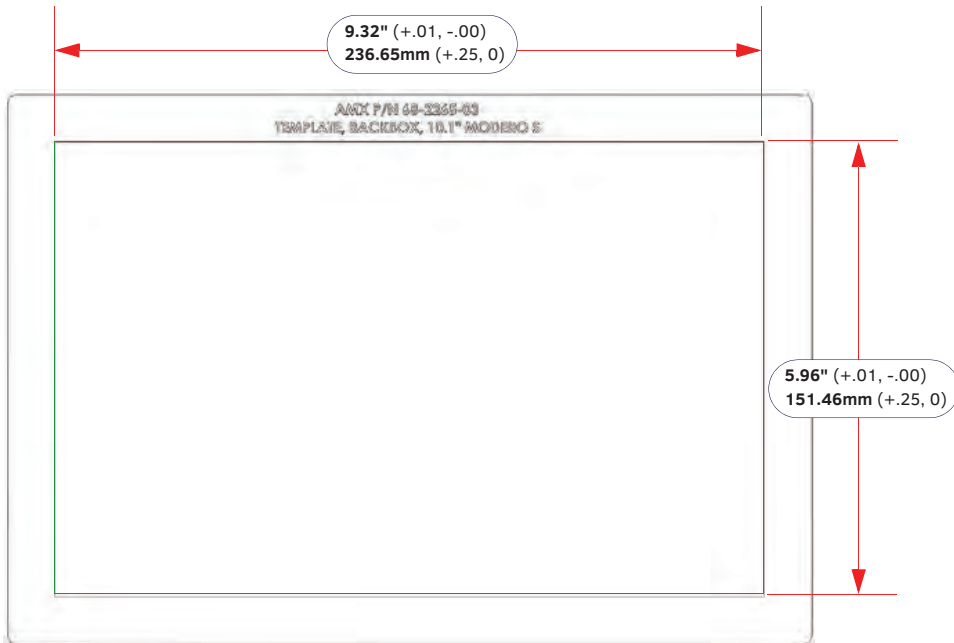


FIG. 23 MD-1002 Cutout Dimensions

MD-702 - Cutout Dimensions

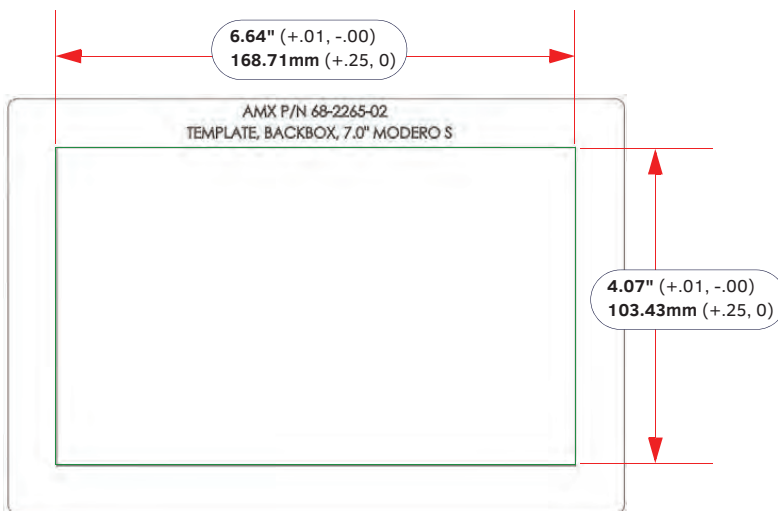


FIG. 24 MD-702 Cutout Dimensions

NOTE: 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.

2. Thread the incoming cables (Ethernet and Micro-USB) from their terminal locations through the surface opening, leaving enough slack in the wiring to accommodate any re-positioning of the panel.
3. Remove the Backbox knockouts and thread incoming cables through the knockout holes.
4. Gently push the Backbox into the mounting surface.
 - This Backbox uses two Locking Tabs to secure the Backbox to the wall. For typical mounting surfaces, such as drywall, the locking tabs are the primary method for securing the Backbox to the wall.
 - To ensure a stable installation, 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. For thin walls or solid surfaces, use mounting screws (not included) - see FIG. 20.
5. Extend the Locking Tabs by tightening the Locking Tab screws until snug. FIG. 25 and FIG. 26 show the Locking Tabs on the Modero Wall Mount Backboxes:

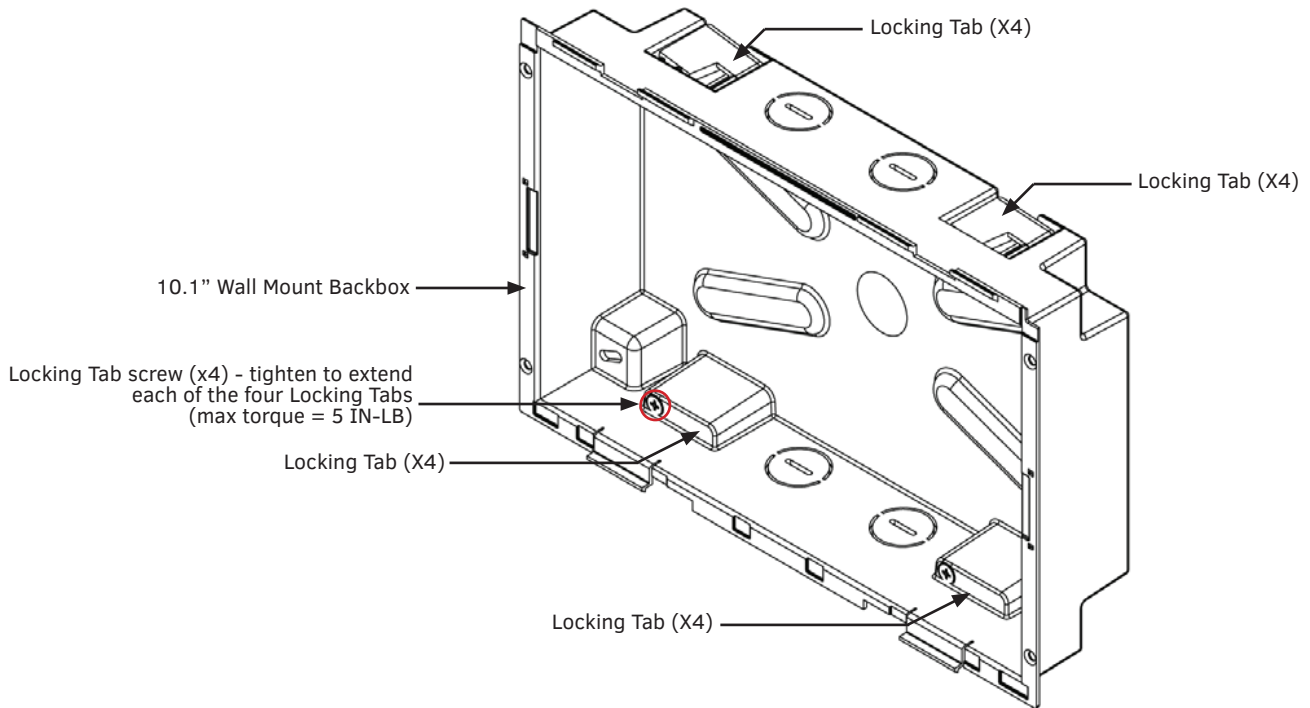


FIG. 25 MD-1002 Backbox - Locking tab and locking tab screws (X4)

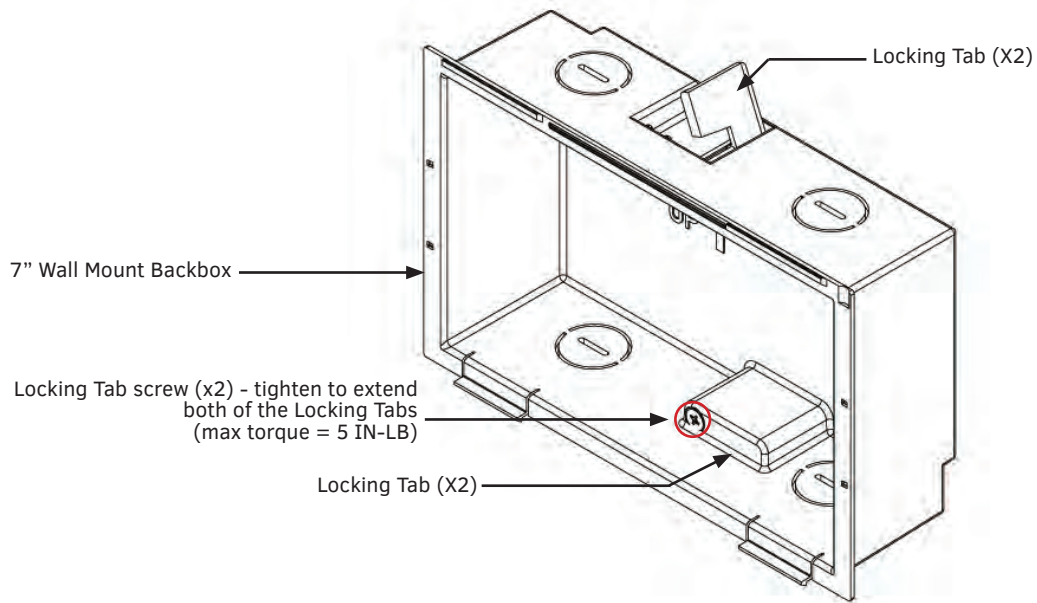


FIG. 26 MD-702 Backbox - Locking tab and locking tab screws (X2)

CAUTION: *The maximum recommended torque to screw in the locking tabs on the plastic Backbox is 5 IN-LB [56 N-CM]. Excessive torque on the tab screws can strip out the locking tabs or damage the Backbox.*

- Extend the Locking Tabs only AFTER the Backbox is inserted into the wall.
- When installing the Backbox, make sure that it is positioned correctly.
- 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.

STEP 2: Insert Connectors on the Touch Panel

1. Before installing the touch panel into the Backbox, connect the Ethernet and USB cables to the rear of the panel.
2. Remove power at the terminal end before continuing with the installation.

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

STEP 3: Secure the Touch Panel To the Backbox

The Backbox uses notches and tabs on the front edges (top and bottom) to secure the panel into place. Follow the steps below to install the panel into the Backbox, starting the upper edge of the touch panel:

Upper Tabs First

1. Center the top edge of the touch panel against the upper outside edge of the Backbox and latch the top of the panel onto the Backbox top-hooks (FIG. 27):

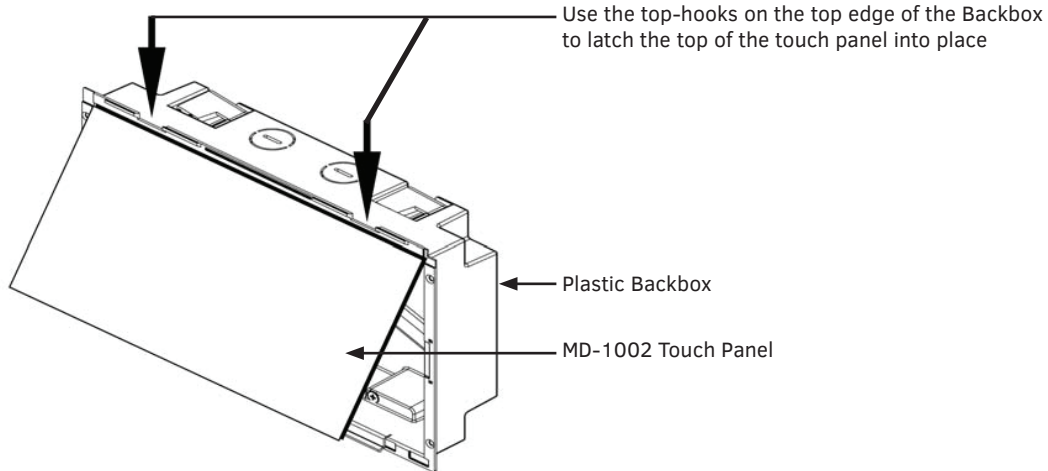


FIG. 27 Engaging the top edge of the panel with the top hooks on the Backbox

2. Gently press the top edge of the touch panel into place to engage the panel's notches and the top-hooks on the Backbox.

Lower Tabs - Gently Snap Into Place

1. Swing the bottom edge of the touch panel into position until it rests against the lower outside edge of the Backbox.

NOTE: If a gap is observed between the panel and the Backbox, or binding is felt while locking down the panel, stop and verify there are no cables in the way. Do not force the panel into position, or the touch screen or the panel electronics may be damaged.

2. Gently press the bottom edge of the panel gently but firmly and **ONLY IN THE PLACES INDICATED BELOW** until the tabs click into place to secure the panel (FIG. 28):

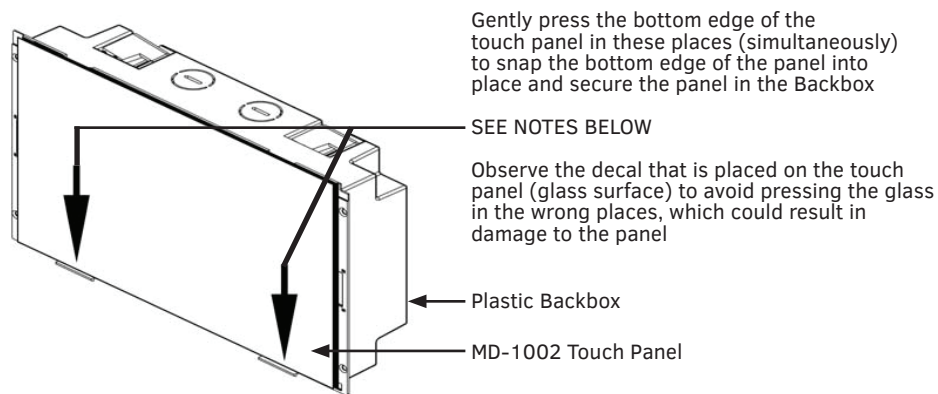


FIG. 28 Snapping the bottom edge of the panel into the Backbox

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

Removing the MD-1002 from the Backbox

The clips on the bottom edge of the Backbox lock down the MD-1002 and must be unlatched in order to re remove the touch panel from the Backbox. To do this, you ll need a thin probe such as an straightened paper clip:

1. With a straightened paper-clip, carefully press straight into the access holes indicated in FIG. 29, to disconnect the two bottom latches.

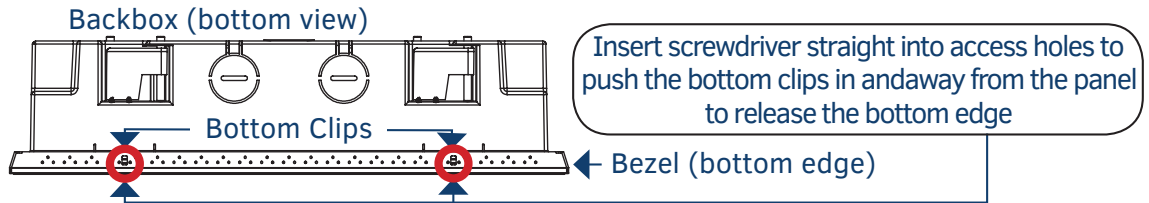


FIG. 29 MD-1002 Backbox Assembly

2. Grasp the bottom of the panel and gently pull outward until the bottom edge of the panel is free of the Backbox. Use your other hand to stabilize the front of the touch panel. Always pull on the panel's plastic bezel - NEVER pull on the glass edge (FIG. 30):

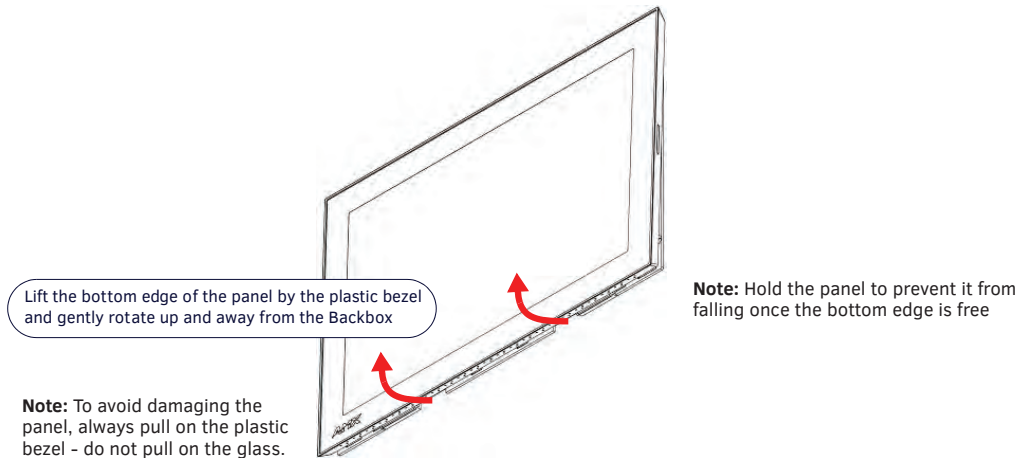


FIG. 30 MD-1002 Backbox Assembly (releasing the bottom edge of the panel)

3. With the bottom edge of the panel free, carefully lift up and out to release the tabs on the top edge of the panel.

Troubleshooting

Overview

This section describes the solutions to possible hardware/firmware issues that could arise during the common operation of a Modero 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 with a pointed instrument 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 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 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.

NOTE: *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 Indicated in My System

Symptom: I have more than one Modero touch panel connected to my System Master and only one is indicated.

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 with a pointed instrument to open the Settings page.
2. Press the **Protected** button, 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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About AMX by HARMAN

Founded in 1982 and acquired by HARMAN in 2014, AMX® is dedicated to providing AV solutions for an IT World. AMX solves the complexity of managing technology with reliable, consistent and scalable systems comprising control, video switching and distribution, digital signage and technology management. AMX systems are deployed worldwide in conference rooms, classrooms, network operation/command centers, homes, hotels, entertainment venues and broadcast facilities, among others. AMX is part of the HARMAN Professional Group, the only total audio, video, lighting, and control vendor in the professional AV market. HARMAN designs, manufactures and markets premier audio, video, infotainment and integrated control solutions for the automotive, consumer and professional markets.

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www.amx.com | +1.469.624.7400 | 800.222.0193