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Novanex, Inc.
Inova OnAlert® LED Display
Installation and User Guide
Firmware version 1

Novanex, Inc.

Inova OnAlert® LED Display

Installation and User Guide

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While reasonable efforts have been taken in the preparation of this document to ensure its accuracy, Novanex, Inc. assumes no liability resulting from any errors or omissions in this manual, or from the use of the information contained herein.

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1. Inova OnAlert Overview

1.1. Inova OnAlert Introduction

Real time communication is essential in dynamic environments such as customer service operations and nothing matches the ability of LED displays to give vital information high visibility in large group settings. Inova OnAlert®, the next generation LED display in Inova's display family, makes this productivity-enhancing technology more cost-effective and resourceful than ever.

The Inova OnAlert display is an LED display designed to present real-time informational and statistical information in office environments. OnAlert provides the capability to show text and graphics in red, green or yellow and to communicate via 10/100 BaseT Ethernet.

The M-series Inova OnAlert models are AC powered, but the smaller X2 model is powered via IEEE 802.3af Power Over Ethernet (PoE).

This document covers the following for the Inova OnAlert displays:

- Safety
- Specifications
- Physical Installation
- Network Configuration
- Warranty and Maintenance

1.2. About Power over Ethernet

Standard Ethernet Cat-5 cabling has unused conductors, which allow product developers to power small network devices remotely. PoE is now used in wireless access points, IP telephones, and digital clocks.

PoE is a network standard based on IEEE 802.3af that provides a means of delivering DC power to Ethernet connected devices. This technology eliminates numerous wall transformers, allows centralized UPS backup, and is fully compatible with both powered and non-powered 10/100BaseT Ethernet devices.

Adding PoE to a network can be accomplished by placing simple multiport midspan solutions in a switch room or endpoint without replacing the switch or hub. Midspan PoE power injectors are available from most network equipment vendors.

2. Safety Instructions

Read and understand all instructions before installing or operating the Inova OnAlert display. This product is safe when installed and operated as described in this user guide.

Warning: Electrical Shock Hazard

LED displays contain electrical components.

Read these instructions carefully before applying power to the displays or attempting to perform maintenance.

Opening the displays will void the warranty and expose the operator to electrical shock hazard.

- To prevent injury, damage to the unit, or other harm, read this manual in its entirety before installing or operating the display.
- Only properly trained and licensed individuals should install the display.
- These signs are for indoor, dry area installation only.
- Observe normal safety precautions and use appropriate safety equipment (safety glasses, gloves, ladders, etc.) when installing this product.
- Never install wiring during a lightning storm.
- Never install data jacks or electrical wiring in wet locations unless the equipment is specifically designed for that purpose.
- Be sure that mounting hardware is suitable for the mounting surface and sufficient to support the weight of the display unit.
- This product is not a toy! Please keep it out of the reach of children.
- Operation of this product in a manner inconsistent with the instructions in this manual may result in personal injury and/or damage to the product and will void the warranty.
- Do not use harsh cleaners or aerosol cleaners. Use a damp cloth for cleaning.
- Do not place this product on an unstable cart, stand, or table. The product may fall, causing injury or damage.
- There are no field serviceable components on the sign. Return the device to the factory for any service needs.

3. Specifications

Specifications and design are subject to change without notice.

3.1. Display Specifications

Specification	Description
LED Characteristics	3 colors (red, yellow, green) 5mm (0.2") diameter 7.62mm (0.3") spacing
Character Height	2" standard
Network Interface	10/100 Base T Ethernet NIC Web Browser Configuration SNMP MIB II Identification DHCP or Static IP Addressing
Timekeeping	Standard Time of Day & Date message SNTP Timekeeping Option
Operating Voltage	X-Series: IEEE 802.3af Power over Ethernet (PoE) compatible, 15.4 Watts maximum
	M-Series: 100-240 VAC, 50/60 Hz 5A Fuse Detachable Standard IEC power cord Power consumption given in model number table below
Operating Temperature	32° to 104° F (0° to 40° C)
Operating Humidity	95% maximum, non-condensing
Certifications	UL/CSA 60950-1, ETL Listed, CE Marked, RoHS Compliant
Case Material	Black molded plastic
Options	Tilt wall mount bracket
Warranty	1 Year Standard. Refer to Section 6 for information on Extended Warranty support.

Table 1: Display Specifications

3.2. Display Characteristics by Model

Display Model	LED Array	Enclosure Dimensions	Software Compatibility	Character Height Support		Mounting Options				Weight	Power
				# of lines	# of characters	Height	Ceiling Mount Using Eyebolts	Wall Mount Brackets	VESA Mounting Pattern		
OAX2	16 x 96	30.9″ x 6.9″ x 2.3″ 78.5 cm x 17.5 cm x 6 cm	OEM	1	8	4.1"	X	X	100mm	6 lbs 2.7 kg	15.4 Watts
				2	16	2.0"					
OAX2-24V	16 x 96	30.9″ x 6.9″ x 2.3″ 78.5 cm x 17.5 cm x 6 cm	OEM	1	8	4.1"	X	X	100mm	6 lbs 2.7 kg	12 Watts
				2	16	2.0"					
ONTX2-096	16 x 96	30.9″ x 6.9″ x 2.3″ 78.5cm x 17.5 cm x 6 cm	LightLink	1	8	4.1"	X	X	100mm	6 lbs 2.7 kg	15.4 Watts
				2	16	2.0"					
ONTM2-192	16 x 192	59.7″ x 6″ x 2.7″ 151.6cm x 15.2cm x 6.9cm	LightLink	1	16	4.1"	X	X	100mm	16 lbs 7.3 kg	50 Watts
				2	32	2.0″					
ONTM4-192	32 x 192	59.7″ x 11.75″ x 2.7″ 151.6cm x 29.8cm x 6.9cm	LightLink	1	8	8.3"	X	X	100mm	23 lbs 10.4 kg	100 Watts
				2	16	4.1"					
				4	32	2.0"					
ONTM6-256	48 x 256	78.8″ x 16.4″ x 2.7″ 200.2cm x 41.7cm x 6.9cm	LightLink	1	11	8.3"			200mm	36 lbs 16.3 kg	200 Watts
				3	21	4.1"					
				6	42	2.0"					
ONTM8-256	64 x 256	87.8″ x 21″ x 2.7″ 223cm x 53.3cm x 6.9cm	LightLink	1	11	8.3"			200mm	45 lbs 20.4 kg	300 Watts
				4	21	4.1"					
				8	42	2.0"					

Table 2: Display Characteristics by Model

4. Installation

4.1. Pre-Installation

Before installing any display, you should:

- Obtain all necessary permissions from facilities managers or property owners.
- Develop a LAN diagram showing the desired location of each display unit.
- Plan for either AC outlets or a Power over Ethernet (PoE) power solution.
- Complete any required electrical work in compliance with local codes.
- Select a mounting method for the display.
- Acquire tools and materials including assorted screwdrivers, 3/32" hex driver, power drill, VESA mounting brackets (as appropriate), and other materials necessary to ensure that mounting brackets are installed in compliance with building codes and restrictions.

4.2. Unpack the Displays

For the installation to proceed smoothly, it is important to make a comprehensive inspection of the quality materials you receive from Novanex.

- When the display arrives, inspect all packing boxes for damage.
- Unpack all display units and examine them for damage. You will find an **Out of the Box Inspection Report** packed with each display.
- Please complete the Out of the Box Inspection Report for any damaged displays and fax this report to (434) 817-8002.

4.3. Electrical and Cabling Plan

All electrical work and cabling work must be in accordance with local electrical codes.

For easy data cabling access to wall-mounted devices, install a separate, empty receptacle box for the data wire, with a conduit ½" or bigger into the drop ceiling area (or other path for the data wire).

4.3.1. Surge Protection

To protect against surge damage, do not leave PoE devices connected to any significant length of cable that is unterminated on the far end. Such

unterminated cable can act as a source of surge voltage in storms or other events if it is not connected to grounded Ethernet PSE (Power Source Equipment). Even PSE equipment that is powered down but still connected to AC ground via the power cord offers some protection.

Surge Suppression and PoE powered devices: The PoE devices manufactured by Novanex are designed for surge suppression and control, but PoE devices are at a distinct disadvantage when it comes to surge suppression because they have no ground connection such as the third grounding prong in an AC power outlet. This can be best understood with an example. If a voltage spike is impressed upon an Ethernet cable, it propagates in both directions towards the endpoints. The PD (powered device) side contains some surge suppressors which will attempt to protect the electronics, but the surge can really only be reflected back upon the Ethernet cable. The PSE (power source equipment), such as the Ethernet switch, is typically grounded and can actually dissipate the surge to ground. This is the reason for the installation note suggesting that PoE devices not be left connected to unterminated Ethernet cables. They should be connected to an Ethernet PSE (even powered off) or the Ethernet cable should be disconnected at the PoE device.

4.3.2. X-series PoE Displays

The X-series displays require connection to a PoE enabled LAN. PoE power is usually injected into the LAN using either PoE enabled Ethernet switches or Mid Span power injectors.

4.3.3. M-series AC Powered Displays

The M-series displays require a connection to AC power and a standard Ethernet LAN using the appropriate twisted pair data wire.

M-series displays come with six foot long, detachable standard IEC power cords. The appropriate power cord plug type is selected for the customer's country based on published information. Novanex currently supplies several different types of power cords. These types include:

- USA 120 VAC NEMA 5-15P
- USA 240 VAC NEMA 6-15P
- UK and Ireland BS 1363
- Continental Europe CEE 7/7

Select the appropriate AC receptacle and install it in conformance with local electrical codes. Be sure that the receptacle is within reach, normally within five

feet of the center of the display or directly behind it for wall mounted displays. Display power consumption figures are given in Section 3.

4.4. Select a Mounting Method

Before you begin the installation, remember that specific materials and methods of attaching to walls and ceilings depend on the type of wall or ceiling material, local building codes, and corporate rules and practices.

There are three ways to mount the Inova OnAlert display:

- **Ceiling Mount** – The display is provided with two eyebolts for suspending the display from the ceiling using your own hardware (i.e. - hanging mounts, chain, cable). [Supplied with the X2, M2, and M4 displays]
- **Wall Mount Bracket –** This pair of identical brackets can be attached to the rear of the display to provide keyhole mounting cutouts and a fixed 10 degree tilt. [Supplied with the X2, M2, and M4 displays]
- **VESA Mount** – VESA mounts are available commercially for virtually any mounting situation, so this is the most flexible mounting method. Many of these mounts allow tilt angle adjustment. The mount that you select must be able to handle the weight of the display (refer to Table 2).
  - X2, M2, and M4 displays accept a 100mm VESA mount. Note that the display can be damaged by inserting a VESA mounting screw that is too long. The best way to avoid damage is to install the four supplied screw-in standoffs (see Figure 6 – View of VESA mount standoffs) and then screw the VESA mount into the standoffs, or compare the length of your VESA mount screws to the length of the screw threads on the standoffs. Do not insert a screw that has a greater thread length.
  - M6 and M8 displays will directly accept a 200mm VESA mount of the type suitable for a flat screen television. The weight will almost never be a problem with this type of mount, but note that some television mounts have vertical struts, which are taller than the display, and may be visible.
- **Tilt Wall Mount Bracket -** The *optional* Tilt Wall Mount Bracket mounts the display using keyhole cutouts that can be installed on a wall using the appropriate screw anchors. This bracket is identical to the normally supplied wall mount bracket but can be adjusted to vary the angle of the display.

4.5. Ceiling Mount

[Applies to the X2, M2, and M4 displays]

Note that there is a difference in the distance between the eyebolts for the X-series and the M-series displays.

For a ceiling mount, threaded inserts sized to accept 8-32 threaded eyebolts are provided on top of the display enclosures. Eyebolts are provided as the default mounting means.

1. Determine mounting location.
    a. X-series: The distance between the chains or cables is 16".
    b. M-series: The distance between the chains or cables is 45".

2. Install eyebolts on sign as shown in Figure 1.

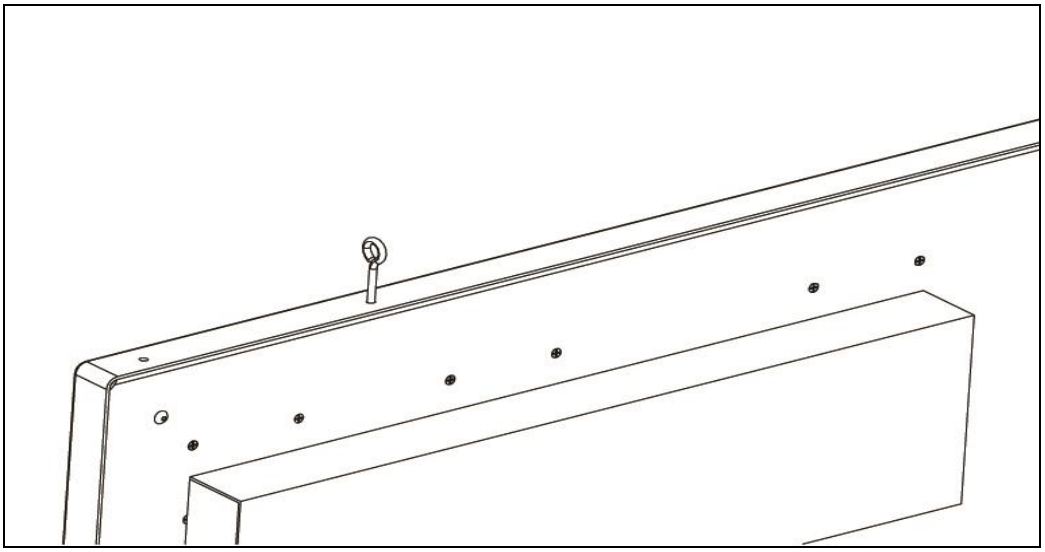

Figure 1 – Eyebolt Installation

3. Once you have installed the eyebolts, complete the installation by referring to Figure 2.

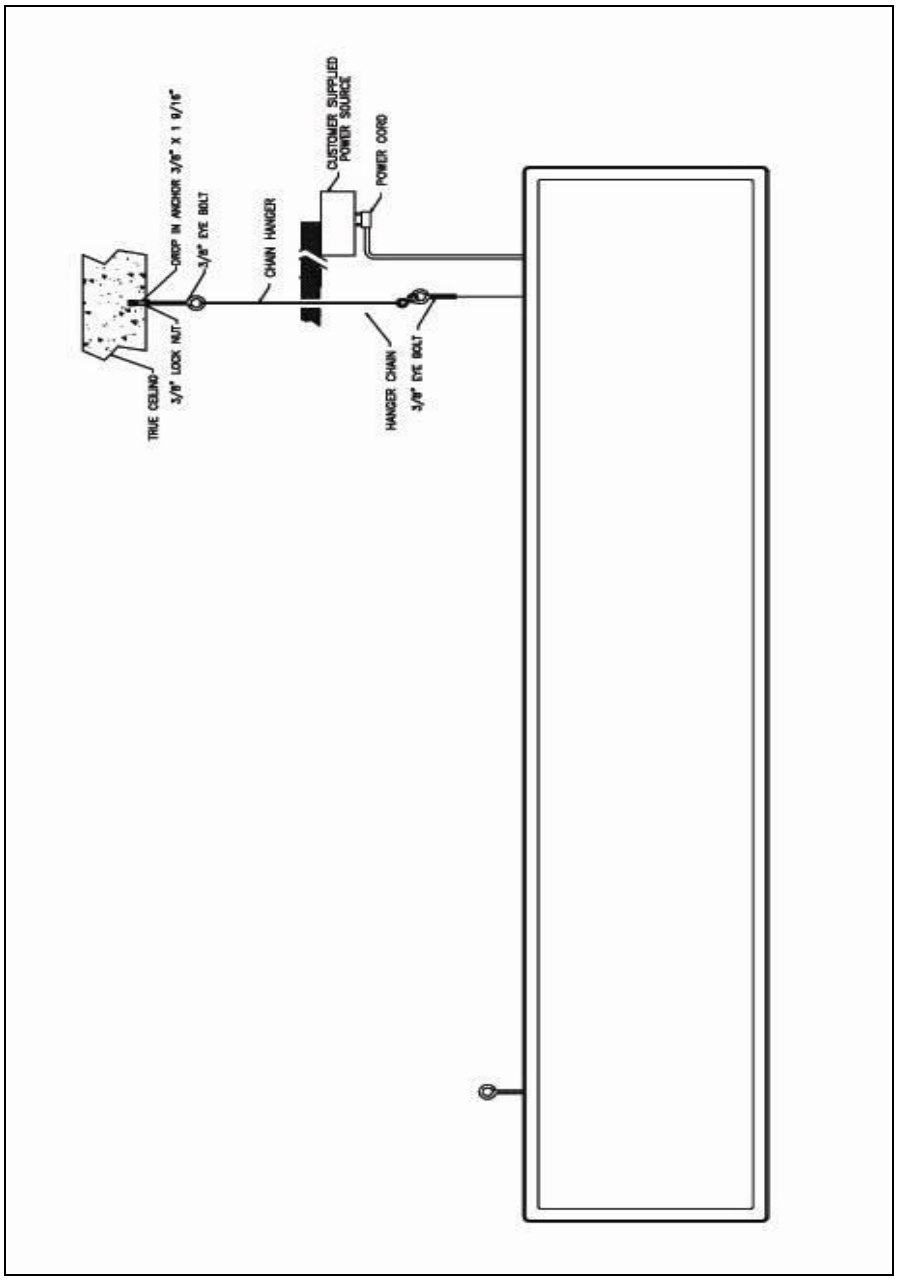

Figure 2 – Typical Ceiling Mount Installation

4.6. Wall Mount Bracket Method

[Applies to the X2, M2, and M4 displays]

The Wall Mount Bracket method uses optionally available brackets with keyhole cutouts that can be installed on a wall using the appropriate screw anchors.

Note that there is a difference in the distance between the wall anchors for the X-series and the M-series displays.

4.6.1. Install Wall Anchors and Screws

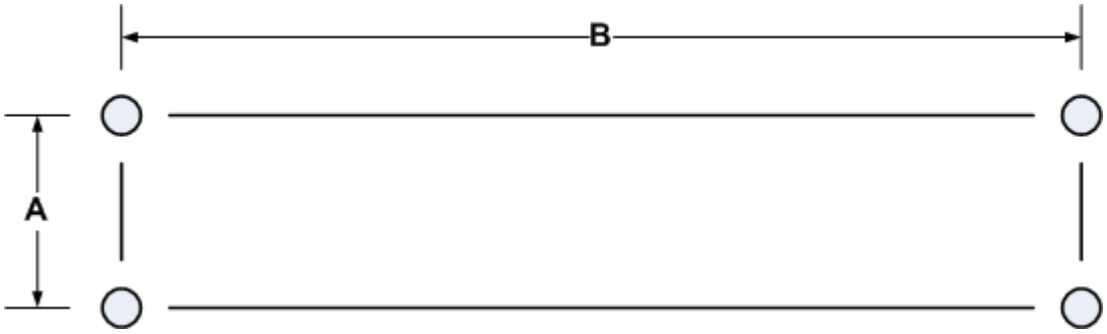

Figure 3 – Wall Anchor Mounting Pattern

1. Determine mounting location.
2. Refer to the figure and table of dimensions for the hole pattern. Note that there are differences in the horizontal distance between the anchors for the various models as shown in Table 3.

Display Model	Vertical Dimension	Horizontal Dimension
X2	4 13/32″ or 11.2cm	28 ⅝″ or 47.3cm
M2 & M4		56 $^{15}/_{16}$″ or 144.6cm

Table 3: Display Model Dimensions

3. Mark the location on the wall where the sign is to be mounted.
4. Drill the appropriately sized holes at the marked locations, following the anchor instructions.
5. Install the anchors and screws, leaving about ¼″ of thread showing so that the keyhole cutout can be placed over the screw heads.

4.6.2. Install Bracket on Display

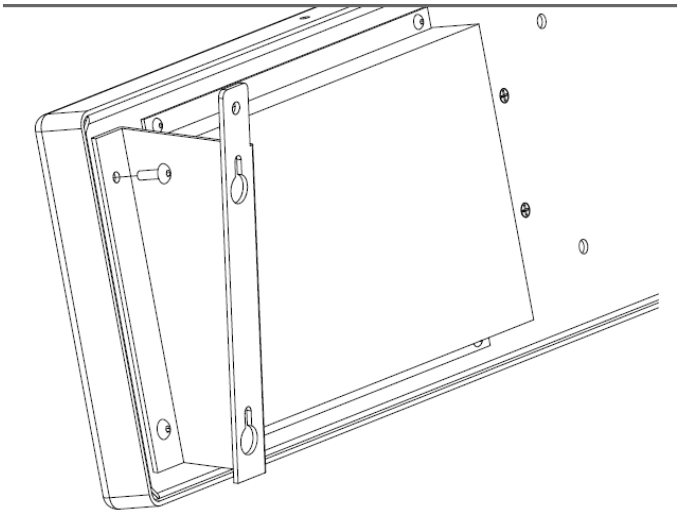

Figure 4 – Wall Mount Bracket Installation

1. Install the mounting bracket as shown in the figure using the screws provided. Loosely tighten each screw in place.
2. Tighten all screws with a 3/32″ hex driver.
3. Complete the installation by mounting the sign on the wall. Refer to Figure 5.

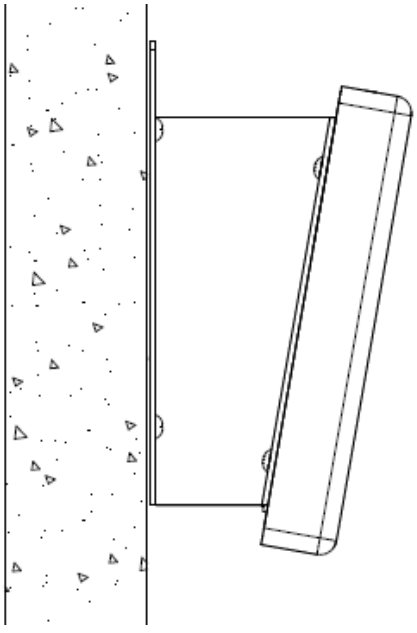

Figure 5 – Wall Mount Bracket, Installed

4.7. VESA Mount

VESA mounts are available commercially for virtually any mounting situation. Many of these mounts offer tilt angle adjustment. The mount that you select must be able to handle the weight of the display (refer to Table 2 for model specifications). For additional information about selecting a VESA mount for your display, refer to section 4.4 - Select a Mounting Method.

The X2, M2, and M4 displays accept a 100mm VESA mount. Note that the display can be damaged by inserting a VESA mounting screw that is too long.

The best way to avoid damage is to install the four supplied screw-in standoffs (see Figure 6 – View of VESA mount standoffs) and then screw the VESA mount into the standoffs, or compare the length of your VESA mount screws to the length of the screw threads on the standoffs.

Do not insert a screw that has a greater thread length.

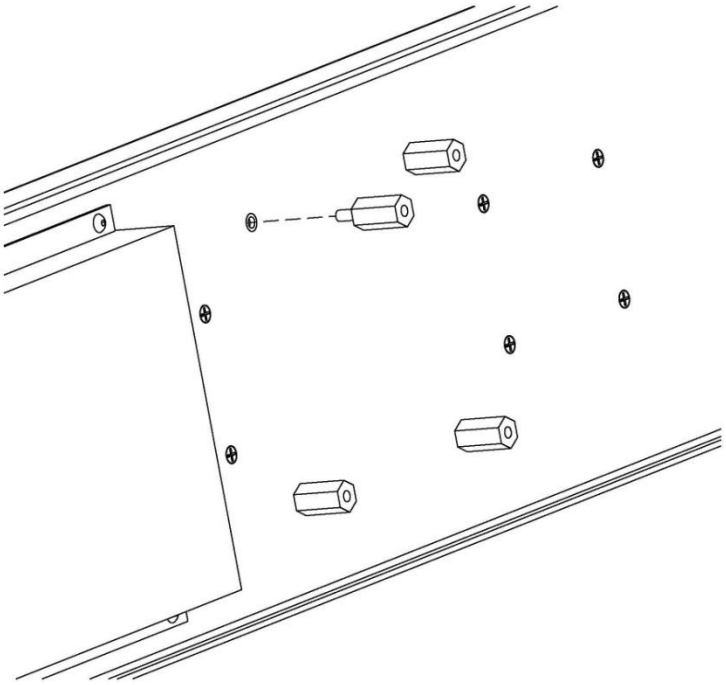

Figure 6 – View of VESA mount standoffs

Refer to the VESA mount instructions for mounting instructions for your wall or ceiling mounting situation.

4.8. Tilt Wall Mount Bracket

4.8.1. Install Wall Anchors and Screws

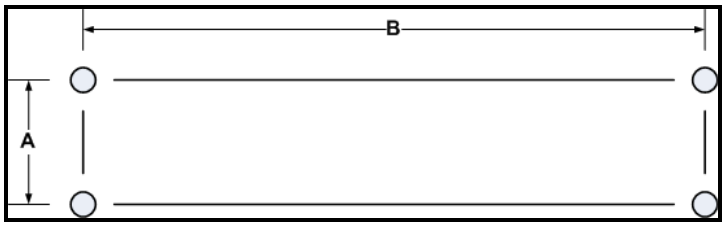

Figure 7 – Wall Anchor Mounting Pattern

1. Determine mounting location.
2. Refer to the figure and table of dimensions for the hole pattern. Note that there are differences in the horizontal distance between the anchors for the models as shown in Table 4.

Display Model	Vertical Dimension	Horizontal Dimension
X2	4 13/32″ or 11.2cm	28 5/8″ or 47.3cm
X2 Extended		38 ¼″ or 97.2cm

Table 4: Display Model Dimensions

3. Mark the location on the wall where the sign is to be mounted.
4. Drill the appropriately sized holes at the marked locations, following the anchor instructions.
5. Install the anchors and screws, leaving about ¼″ of thread showing so that the keyhole cutout can be placed over the screw heads.

4.8.2. Install Bracket on Display

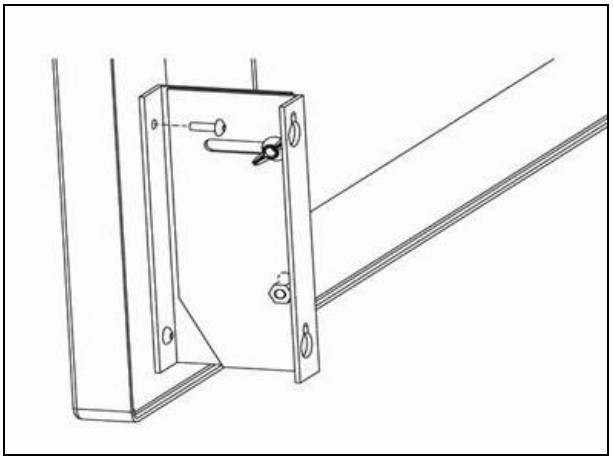

Figure 8 – Wall Mount Bracket Installation

1. Install the mounting bracket as shown in the figure using the screws provided. Loosely tighten each screw in place.
2. Tighten all screws with a 3/32" hex driver.
3. Mount the sign on the wall. Refer to Figure 5.
4. Adjust the angle of the bracket by loosening the wing nut, adjusting the display angle or pitch, and then retightening the wing nut.

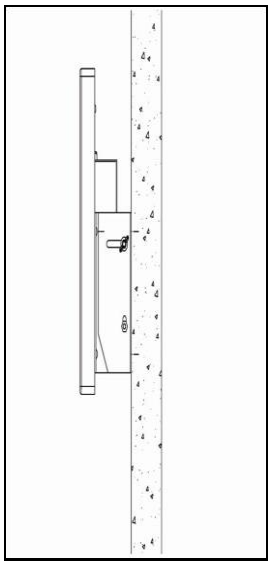

Figure 9 – Wall Mount Bracket, Installed

4.9. Power Up and Verification

Once the installation is complete, power up the units and verify that they are working correctly.

4. Connect the display to the Ethernet LAN.
5. Plug the M series displays into an AC outlet. Turn on the power switch. [M-series displays only; X-series displays have no power switch.]
6. Observe Power On LED. The status LEDs are visible from the bottom of the display. The LEDs have the following functions from left to right when facing the LED side of the display.
    - *Currently this light is unused*
    - Ethernet NIC Activity
        - Off – No Ethernet link
        - On Steady – Current Ethernet link
        - Blinking – Experiencing Ethernet traffic

- *Currently this light is unused*
- Power On

7. Observe boot sequence message. When power is applied to each display, the unit goes through a boot sequence. For the OnAlert display you will see the following:

```
Model number
Firmware version
Network configuration
Serial ID (for subnet mode OCM configuration)
Inova OUI (00-30-D1) + Serial ID = MAC Address
```

The display face will remain dark for approximately 45 seconds after power is applied.

If you experience any problems, refer to the FAQs on the support site.

5. Network Configuration

5.1. Network Configuration Requirements

Once the display is installed, the next step is to get it working on the network. Though there are a number of settings you can confirm or change on a display, you should initially concentrate on the IP Address configuration.

By default, the display is set to request DHCP service so that it automatically requests an IP Address from a DHCP server run by your IT department. If your LAN does not support DHCP, or if you simply want to change the network configuration, you can easily do so using a web browser.

5.2. Best Practices

- All displays must be configured with an IP Address, either using DHCP or a Static IP Address.
  - Novanex recommends that the displays use DHCP to obtain an IP Address; this is the factory default setting. The host name of each display should be set using the onboard website of the display. The hostname should be a unique name that references the physical location.
  - If the displays are configured with a static IP Address, time servers must also be referenced by static IP Address rather than host name.
- In a LightLink system, only the IP Address and host name of the display need to be configured. LightLink will configure other aspects as necessary.
- In a LightLink or OEM system that uses encryption, the displays may be locked down, with only the SecureShell (SSH) interface available to make changes. For this reason, make all configuration changes before connecting the displays to software that offers an encrypted connection, because the first thing that software will do is to disable the display's configuration website as a security consideration.

5.3. Initial Network Setup

1. Connect the display to an Ethernet LAN.
2. Cycle power by turning the power switch off, counting to five, and then turning the switch back to the on position.

3. Observe the boot sequence message. When power is applied to a display, the unit goes through a boot sequence and then the display requests DHCP service. At this point, one of two things happens:
    a. If the display receives an IP Address from your IT Group's DHCP server, then that IP Address, Subnet Mask, and Default Gateway will all be displayed in the boot sequence.

       An IP Address is a LAN address in the format of four sets of digits separated by periods (e.g., 192.168.4.32).

    b. If the display does not receive an IP address, the default static IP Address is applied [169.254.0.100]. Contact your IT department for further assistance.
4. If the display received an IP Address, write it down in Table 5 along with the mounting location for this display.

5.4. Record Network IP Addresses

In order to make the management of your system as easy as possible, Novanex recommends that you record the IP Address for each display in a table similar to the one below, particularly if you have elected to set a static IP Address.

If you are using DHCP, you should notify the IT department that the display is fixed equipment and request a long term lease for this address. If you are using the LightLink software to control the displays, this information will be required when adding the displays to LightLink in the Administrator section.

Display Name or Location	IP Address

Table 5: IP Address Reference Table

5.5. Change the Network Setup

5.5.1. Set up a Static IP Address

The most common reason to change the network setup is to accommodate a Static IP Address.

A Static IP Address is an address that is allocated by your IT department personnel and assigned by them to the display.

To connect a web browser to the display to change to a Static IP Address:

1. Temporarily connect the display to a network location where it will get DHCP service. Note the IP Address displayed in the boot message set. Because this IP Address is native to the LAN, most PCs will be able to connect to it.
2. Open a web browser, such as Internet Explorer or Firefox.
3. At the browser address line enter http://, followed by the IP Address from the boot message (e.g., http://192.168.12.18). The Inova OnAlert display website appears. Notice that the hostname and IP Address are identified at the top right corner of the page.
4. Click on the Settings tab on the top of the banner.
5. Log in using the ontrack-web user name. The default password is: 1n0v@ (one – n –zero – v - @).

   Note that the OnTrack product name appears in several menus and commands.
6. If you want to disable DHCP, enter the Static IP Address, Subnet Mask, and Default Gateway that you received from your IT department. You can also specify a host name to identify this display in a list of display host names. Adding a description of the physical location of the display can make identification easier (e.g., Inova-OnAlert-room34east).
7. Unclick the DHCP Enabled checkbox and verify all information.
8. Click the *Submit* button to save changes.
9. Power cycle the display to verify that the changes have been applied by watching the boot sequence messages.

If you cannot establish a web browser connection, consult your IT department.

5.5.2. Set up DHCP service

The default setting for the display is DHCP enabled. However, if this has been changed, use the following steps to return the display to the default settings:

1. Open a web browser, such as Internet Explorer or Firefox.
2. At the browser address line enter http://, followed by the IP Address from the boot message (e.g., http://192.168.12.18). The display website appears. Notice that the hostname and IP Address are identified at the top right corner of the page.

3. Click on the Settings tab on the top of the banner.
4. Log in using the ontrack-web user name. The default password is: 1n0v@ (one – n –zero – v - @).

   Note that the OnTrack product name appears in several menus and commands.

5. Select the checkbox to enable DHCP.
6. After rebooting the display, the display will use DCHP to lease an IP address and retrieve network settings.

5.6. Troubleshooting

5.6.1. Connecting to a display for configuration

If the display is installed on a LAN with a static address and can be pinged from a PC on the LAN, you can connect to the browser using the previous steps outlined.

If the display has a static address which is not compatible with the LAN, is not connected to the LAN, or cannot be pinged from a PC on the LAN, then you will need to set up a PC with a compatible network connection and directly connect it to the display. Use a LAN cable to connect directly from the PC to the display. A crossover cable is not required.

The web browser method is the recommended way to make configuration changes. Refer to To obtain service under this Warranty, contact Novanex at (434) 509-1108 during the Warranty period to receive a Return Material Authorization (RMA) number and shipping instructions. Then ship the product believed to be defective, transportation prepaid, for inspection.

Typical equipment repair or replacement time is seven (7) business days, plus shipping times. One-way shipping is the Customer's responsibility. Novanex will return ship the equipment by the same means it was received.

Novanex will not be responsible for dismounting and remounting of the Inova OnAlert display, for unauthorized returns, or for returns that do not list the RMA number and quantity returned on a packing list attached in plain view on the outside of the shipping container.

Extended warranty and service agreements are available.

Appendix A: for instructions about using Telnet or SSH to make configuration changes.

If you need further assistance, consult your IT department or check the support site.

5.6.2. Displays that have been connected to LightLink or OEM Systems that Use Encryption

Displays that have been connected to encrypted LightLink or OEM control systems are typically managed into a locked down state by those systems for security reasons. This means that the Telnet and Web configuration options have been disabled and the only path into the display is via SSH. If you have the SSH password and can connect, you can re-enable web configuration using the config command as described in Appendix A.

6. Repair and Service

To obtain service under this Warranty, contact Novanex at (434) 509-1108 during the Warranty period to receive a Return Material Authorization (RMA) number and shipping instructions. Then ship the product believed to be defective, transportation prepaid, for inspection.

Typical equipment repair or replacement time is seven (7) business days, plus shipping times. One-way shipping is the Customer's responsibility. Novanex will return ship the equipment by the same means it was received.

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Extended warranty and service agreements are available.

Appendix A: Using Telnet or SSH Console Commands

Available Configuration Commands

After you have logged on, the Inova OnAlert display supports the commands described below.

Command	Parameters	Description
help	none	Displays a list of all supported commands
report	none	Shows an overview of the active display settings
versions	none	Shows the software versions currently running
config	edit – allow the configuration to be modified	Shows the display configuration
update	none	Updates the display software. Requires an external TFTP server
reboot	none	Reboots the display
exit	none	Disconnects current Telnet of SSH session
ipconfig	none	Shows the detailed IP configuration
route	none	Shows the detailed IP routing configuration
ping	**-c** Send only the specified number of pings. (default is continuous; use ctrl -c to stop) **-s** Send pings of the specified size (default 56 bytes) **-q** Quiet mode; displays output at start and end of ping process	Allows a remote IP Address to be pinged
logs	**0** – Quit Log Viewer **1** – View the display log from beginning **2** – View last 20 lines of the display log **3** – Watch the display log (use ctrl- c to stop watching)	Shows the Display Log Files. Note: Primarily used by Novanex support staff
localmsgs	<default> - List local messages **List** – same as default	Lists, loads or deletes local messages.

Command	Parameters	Description
	Add – Add a new message **Delete** – Delete a message **Copy**- Copy a file to another directory **Rename** – Rename a message file **Compose** – Compose a message **Props** – Display the properties of a message	Note: Local messages are messages that are not loaded or maintained from the LightLink Software System. Therefore, this command is not required if you are using the LightLink System.
burnin	**start** – Start the factory burn in test messages playing **stop** – Stop all test messages **yellow** – Start a test message that lights all LEDs in yellow **hchars** – Start a test message filling the display with yellow H's	Controls the factory burn in test messages
webpasswd	none	Changes the password for the website login
libmsgs	**<default>** - List local messages **List** – same as default **Add** – Add a new message **Delete** – Delete a message **Copy**- Copy a file to another directory **Rename** – Rename a message file **Compose** – Compose a message **Props** – Display the properties of a message	Manages the Library Folder Note: Library messages are not loaded or maintained from the LightLink Software System. Therefore, this command is not required if you are using the LightLink System. These functions are also available at the device website and are simpler to use there.
startupmsgs	**<default>** - List local messages **List** – same as default **Add** – Add a new message **Delete** – Delete a message **Copy**- Copy a file to another directory **Rename** – Rename a message file **Compose** – Compose a message **Props** – Display the properties of a message	*Note: Startup messages are not loaded or maintained from the LightLink Software System. Therefore, this command is not required if you are using the LightLink System.* These functions are available at the device website and are simpler to use there. A startup message plays by default after the boot messages complete.

Table 6: Configuration Commands

Appendix B: Changing Network Configuration with Telnet or SSH

Novanex strongly recommends that you use the web browser to change configuration for display devices as described earlier in this document. However, you can change configuration using a Telnet or SSH connection if the LAN does not support DHCP.

Note that if the display is included in the LightLink Encrypted Channel system, the display website will be disabled, and configuring the display will be managed by the Display Connector Service. You can log in to the display using SSH with the display password as configured by the Display Connector Service.

If the display is configured for DHCP and you wish to change to a static IP, **the first step is to note the IP Address**. You can either do this through the LAN or to a single PC test network set up for this purpose by temporarily connecting it to a network location where it will get DHCP service. Note the IP Address displayed in the boot message set. Because this IP Address is native to the LAN, most PCs will likely be able to connect to it.

1. Once you have the IP Address, the next step is to make the Telnet or SSH connection by setting up a PC with a network connection configured to connect to this address by using a LAN cable to connect directly from the PC to the display.
2. Initiate a Telnet or SSH connection and proceed with the configuration.

   Before looking at the actually changing the setup, follow these steps if you can't make the Telnet or SSH connection:

   a. From a PC, get to a command prompt and try to ping the display. If the display cannot be pinged, then it cannot be configured.

   b. If the display can be pinged, try establishing a Telnet connection to the display. If this does not work, try an SSH connection (some IT departments favor the security SSH offers and have disabled some aspects of Telnet connectivity on their LANs). Note that the P-link SSH client is available on the LightLink™ installation CD.

      If you cannot establish either a Telnet or SSH client connection, consult your IT department for assistance.
3. Once you have established a Telnet or SSH connection to the appropriate display as described above, the next step is to log in and access the configuration commands. You log in to the display using the admin account ID and the appropriate password.

4. The login ID is **admin** and the default password is: **1n0v@** (one – n – zero – v - @). This password has been deliberately set to be resistant to a lucky guess, but it is published. If you decide to change this password, do so with the *Display Connector Service* setup utility scripts, and please take care to record it in a safe place.

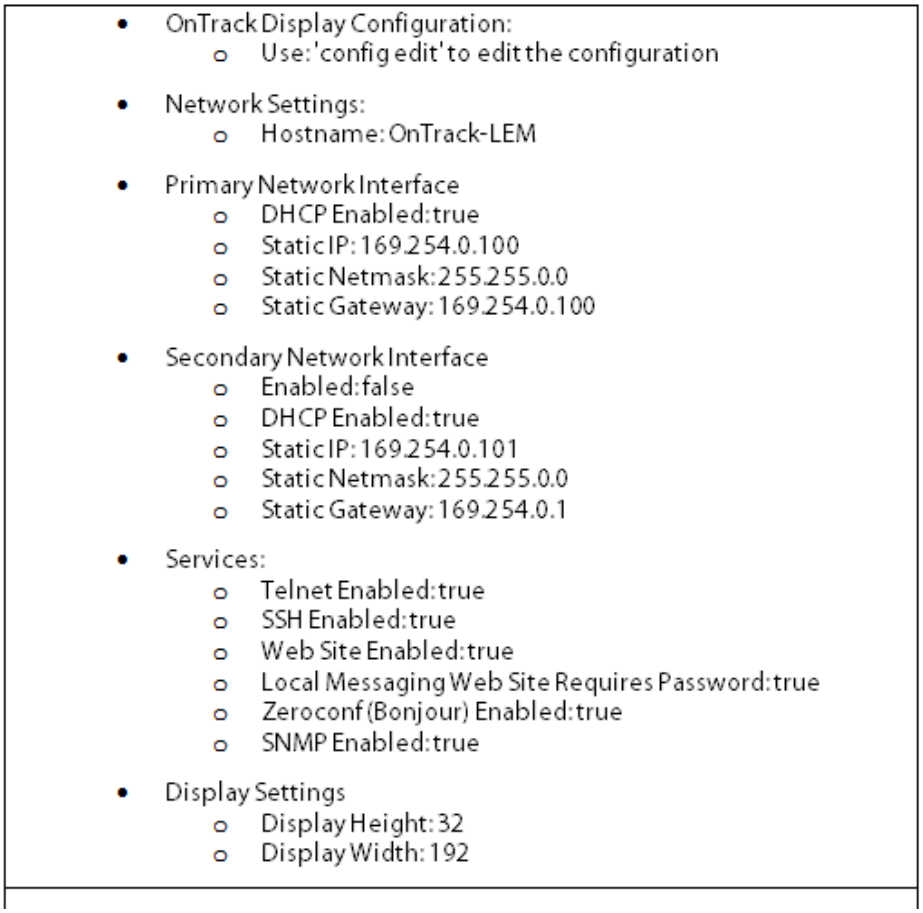
   The display will respond with a welcome screen.

5. To continue with the configuration, type the command config. This displays the current configuration settings.

6. After reviewing the current settings, identify those items that you would like to change and what the new values should be. Enter the config edit command to make the changes. The current value of each configuration item is presented line by line. Pressing the Enter key makes no changes to that item and moves to the next item. After making the changes and exiting the configuration command, the changes are executed.

The Secondary Network Interface and the Display Settings are intended for factory use only. You should not change these settings.

The information that you see will be the actual configuration information for your display. Figure 10 is a sample list of configuration settings.



- OnTrack Display Configuration:
  - Use: 'config edit' to edit the configuration
- Network Settings:
  - Hostname: OnTrack-LEM
- Primary Network Interface
  - DHCP Enabled: true
  - Static IP: 169.254.0.100
  - Static Netmask: 255.255.0.0
  - Static Gateway: 169.254.0.100
- Secondary Network Interface
  - Enabled: false
  - DHCP Enabled: true
  - Static IP: 169.254.0.101
  - Static Netmask: 255.255.0.0
  - Static Gateway: 169.254.0.1
- Services:
  - Telnet Enabled: true
  - SSH Enabled: true
  - Web Site Enabled: true
  - Local Messaging Web Site Requires Password: true
  - Zeroconf (Bonjour) Enabled: true
  - SNMP Enabled: true
- Display Settings
  - Display Height: 32
  - Display Width: 192

Figure 10 – Sample Configuration Settings

