Installation Instructions

Endura®15V
Model 9320-150 V-NET
Order Confirmation Display

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1 Introduction

This document describes the installation procedures for the Endura® 15V Model 9320 V-Net Order Confirmation Display Module, including instructions on the connections, all cabling and any additional hardware required for installation.

2 Endura® 15V Model 9320-150 V-Net Display Specifications

Input power	Voltage	100-240 VAC (auto sensing)
	Frequency	50-60 Hz
	Power	44 Watts Typical (full brightness, heater off)
Display	Type	Color AM/TFT Liquid Crystal Display (LCD)
	Size	15in (38.1cm) Diagonal, 12.0"w x 9.0"h (30.5cm x 22.9cm)
	Backlight Type	White LED with replaceable LED rails
	Luminance	1,600 Cd/m2 (Nits)
	LC D Resolution	1024w x 768h Pixels (XGA)
	VGA Input Resolution	640x480 to 1024x768 @ 75 Hz. (max.)
Interface	VGA Input (VNET™ Interface)	RJ-45 (requires VNETTM 1600-VNET-TX-R Video Transmitter)
Reliability	System (excluding backlight)	>53,000 hours (MTBF)
	LED Backlight	70,000 hours (MTTH)
Construction	Enclosure	IP65 / NEMA 4X, Environmentally Sealed, Conduction Cooled, High-impact ABS for lighter weight Powder
	Finish	Coat and Anodized
	Glass	Safety glass with UV and IR blocking filters, anti-glare (AG)
Environmental	Operating Temperature	-40°F to +140°F (-40°C to +60°C) ambient
	Heater	60 Watts
Physical (Display Only)	Dimensions (Display Module)	15½"w x 12¾"h x 4½"d (39.4cm x 32.4cm x 11.1cm)
	Weight (Display Module)	16 lbs. (7.3 kg)
Compliance	RoHS/WEEE	Yes
Agency Approvals	UL Approvals	UL60950-1, 2nd Edition, 2007-10-31 (Information Technology Equipment Safety–Part 1: General Requirements)
	EMC Radiated Emissions	AS/NZS CISPR 22:2009 Class A; Test method – AS/NZS CISPR 22:2009 FCC Part 15.109(g) (CISPR 22:1997):2010 Class A; Test method - ANSI C63.4:2009 ICES-D03:2004 Class A; Test method – CISPR 22:2005 (Amended by A1:2005 and A2:2006) VCCI:2009-04 Class A; Test method – VCCI:2009-04
	EMC Conducted Emissions	AS/NZS CISPR 22:2006 Class A; Test method – CISPR 22:2005 (Amended by A1:2005 and A2:2006) FCC 15.107:2010 Class A; Test method – ANSI C63.4:2009 ICES-D003:2004 Class A; Test method – CISPR 22:2005 (Amended by A1:2005 and A2:2006) VCCI:2009-04 Class A; Test method – VCCI:2009-04
	International Certifications	CUL (U.S. and Canada), VCCI (Japan), C-TICk (Australia), KCC (Korea), CE (Europe)

3 System Overview

The model 9320 V-Net display functions as a remote ruggedized outdoor and utilizes a VGA video signal supplied by an external PC or server device. The V-Net video transmitter converts the VGA signal to a format that is distributed over standard CAT5 ethernet cable up to distances of 200 ft. Additionally, the health status and various system parameters of the display can be monitored via a serial connection on the V-Net transmitter over the same CAT5 cable.

3.1 Front of Display

The front of the display is shown in the figure below. The light sensor and power indicator display is located in the lower left hand corner of the display. The serial number is located on the front edge of the upper left corner of the LCD behind the black bezel.

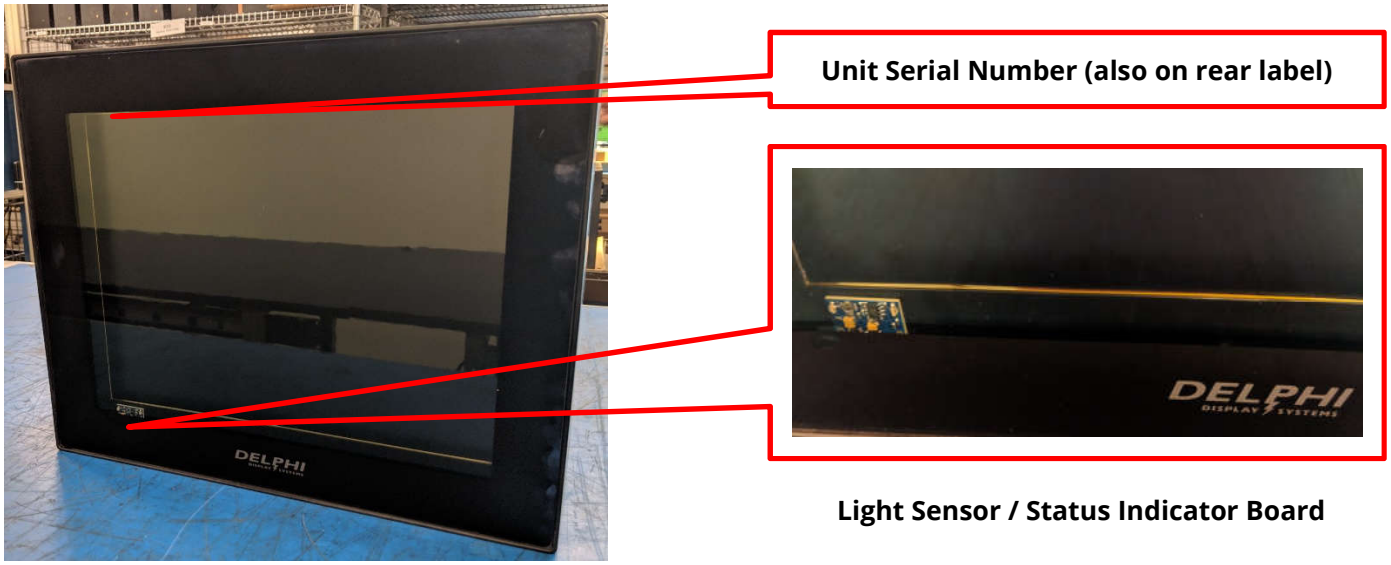


Figure 1 – Front of Display

3.2 Rear of Display

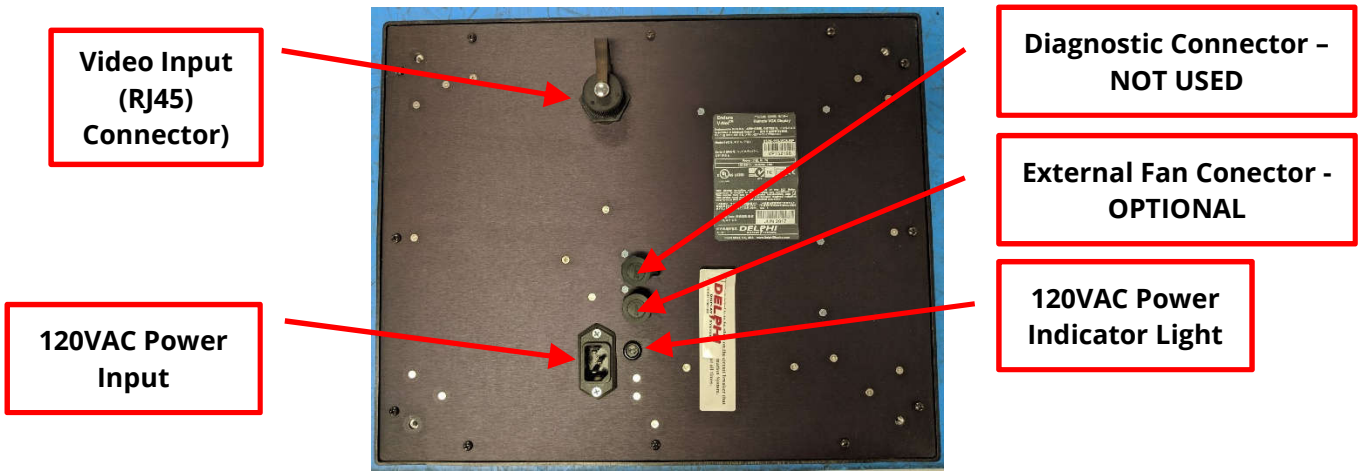


Figure 2 – Rear of Display

4 System Connections

The Endura 15V model 9320-150 V-net order confirmation display and transmitter are connected using the supplied CAT5 cable as shown in the figures below. The V-Net video transmitter is connected to the external PC or video server using the supplier VGA video cable as shown in the figure below.

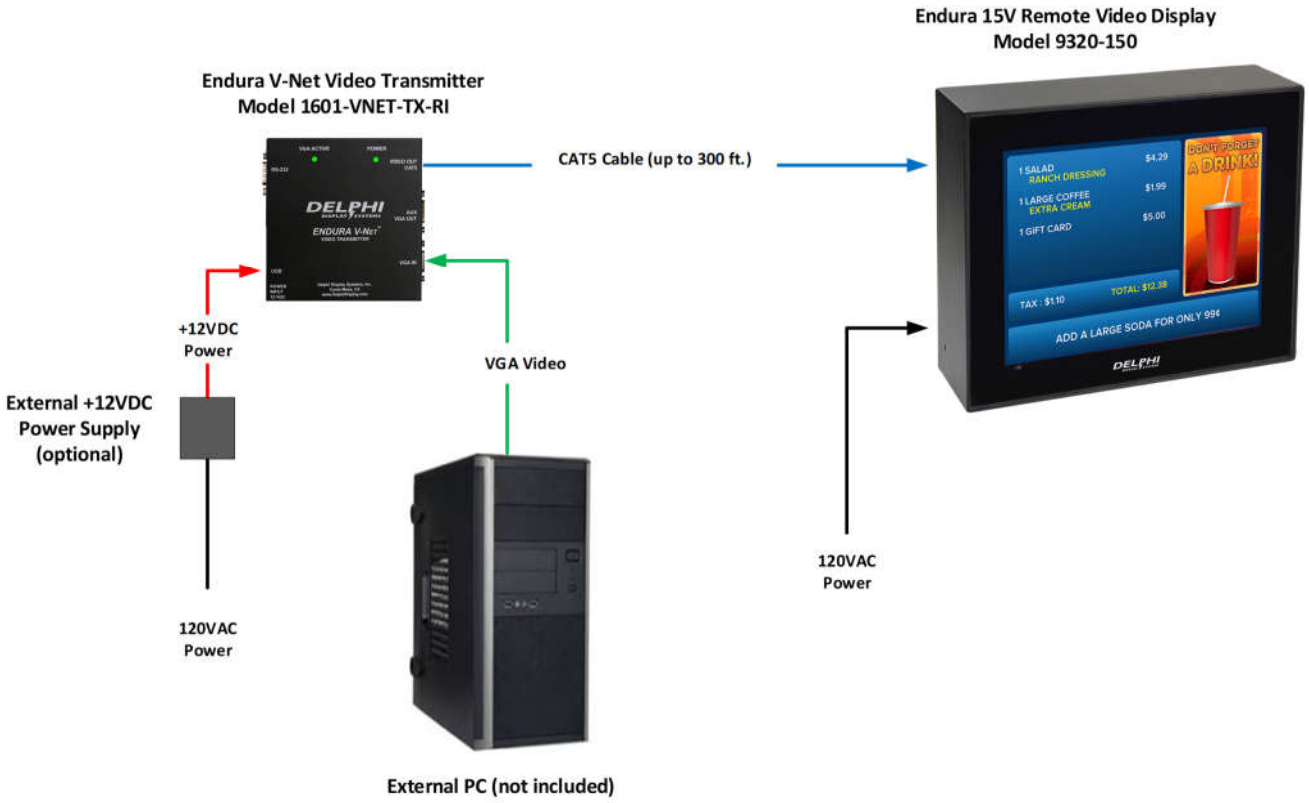


Figure 3 – System Connections

4.1 Supplied Equipment

The following components are supplied with the Endura® 15V Model 9320 V-Net Display Module. Please note that the components may vary based on the destination market and specific customer requirements.

Item Description	Part Number	Optional Part Number
Endura 15V Display Module	9320-150-VC5-RP	
Video Transmitter Kit	1601-VNET-TX-RI (International, without Power Supply)	1601-VNET-TX-R (Domestic US with Power Supply)
CAT5 Cable Kit	3232-200-CAT5 (White CAT5 Cable, 200 ft., RJ45 Field Connector	DCN1546440-1 (RJ45 Field Connector only)

4.2 Display Mounting Options

The Model 9320 V-Net Display Module can be mounted using a variety of different mounting enclosures. Depending on the type of mounting option (canopy, speaker stand, menu board, etc.), Delphi may either supply part or all of the necessary equipment. Please refer to the appropriate manual for the different mounting options.

5 Installation Procedures

5.1 Display Installation

Install the 9320 V-Net Display Module into the applicable mounting option utilizing the supplied mounting instructions. Once the Display is installed, pull the supplied CAT5E cable from the display to the location of the external PC or video server.

5.2 CAT5 Cable Termination at the Display

The CAT5E cable should be terminated and connected to the back of the display using the supplied waterproof RJ45 Field Connector Kit as seen in the figure below. **Note: Failure to use the supplied waterproof connector will void the system warranty!**

Figure 4 - Detail of Watertight Field Connector Kit

Very Important

The Field Connector Kit contains a **SHIELDED** RJ45 connector as shown on the right below. This connector **MUST** be used on the back of the display. Use of any other type of connector on the back of the display will result in a loose connection, and will void the customer's warranty. Although the shielded connector is necessary, it is not actually used as a shield, so shield wires will **not** be connected to it.

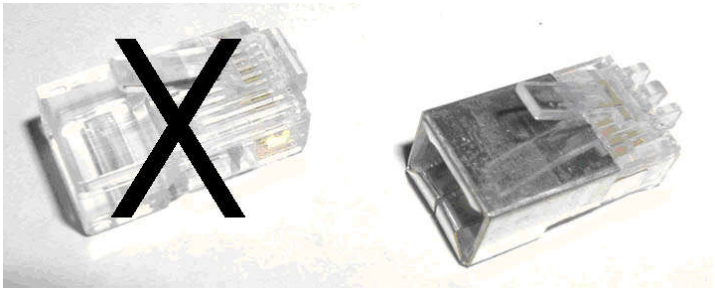


Figure 5 - Detail of Non-Shielded vs. Shielded RJ45 Connector

Terminate the CAT5E cable using the standard 568B wiring pin-out as shown in the figure below.

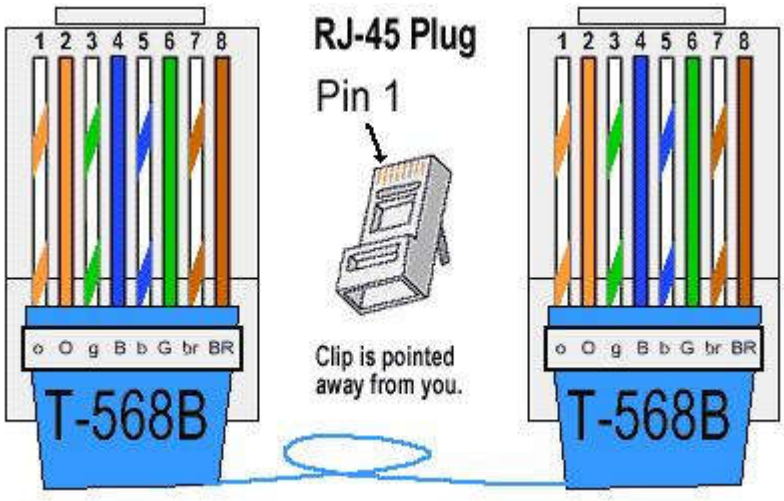


Figure 6 - Standard 568B Pinout Detail

To begin the process of assembling the Field Connector kit for connection to the back of the display; First, place the small compression nut, the grommet, the large compression nut, the o-ring and the housing on the cable as seen in the figure below.

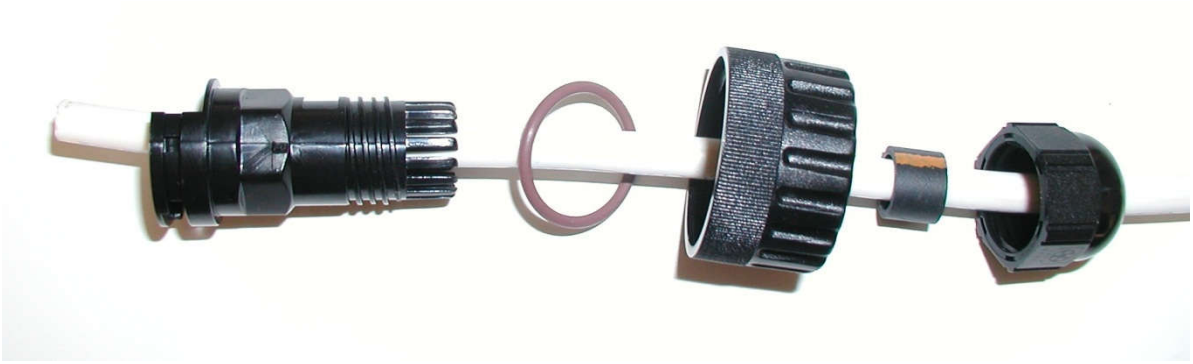


Figure 7 – Field Connector Assembly Step 1

Next, strip the jacket from the end of the CAT5E cable, and put the parts together loosely (do not tighten) as shown below.

Figure 8 - Field Connector Assembly Step 2

Next, untwist the wires and place them into the correct order for **568B** termination. Cut the length of the wires down to approx ½ ” (13mm), then terminate the cable with the supplied shielded RJ45 connector as shown below.

Figure 9 - Field Connector Assembly Step 3

Slide the housing up the cable until the RJ45 connector is seated into the housing. Place one of the two supplied retainer clips (the other one is a spare) into the slot and ensure it is clipped into place as shown below.

Figure 10 - Field Connector Assembly Step 4

Lastly, tighten the compression nut and the assembly is complete. The completed connector should look like the one pictured below.

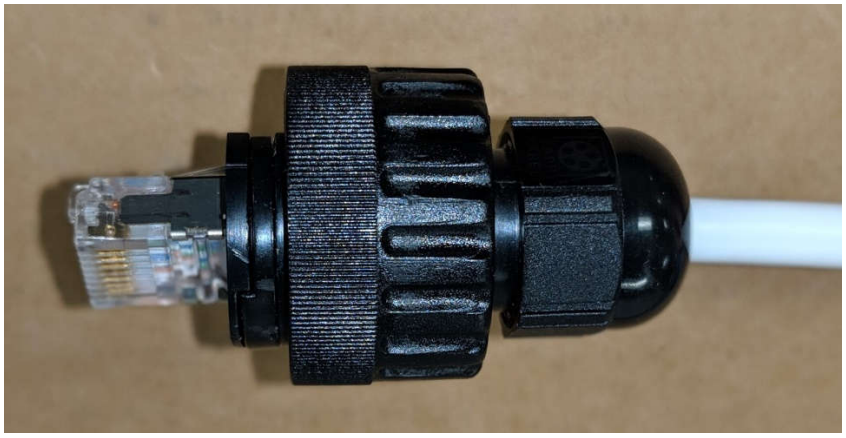


Figure 11 - Field Connector Assembly Step 5

The water-proof RJ45 connector is now ready for connection to the display. Plug the connector to the back of the display at the RJ45 receptacle. Once connected, screw the "Connector Nut" into the back of the display until it is tight. Refer to the figure below for an example of a proper connection.

Figure 12 – Connecting the RJ45 connector to the Display

5.3 V-Net Transmitter Installation

Route the CAT5 cable from where the display is mounted to the area where the video server or PC that will be providing the VGA signal is located. The V-Net transmitter should be installed close to the video server, preferably permanently mounted using provided mounting screws to minimize movement of the transmitter device and potential damage to the attached cables. The transmitter should be within 3ft. or 1 meter of the video server and an available wall outlet (to supply power to the Transmitter). Terminate the end of the Cat5e cable with a standard RJ45 connector wired exactly the same way as the other end was done. Note: the power supply MUST be attached to the transmitter to insure functionality. Though some

lights may be visible on the transmitter without the power supply connected, failure to use the power supply may prevent functionality. Always use the power supply.

5.3.1 V-Net Transmitter Detail

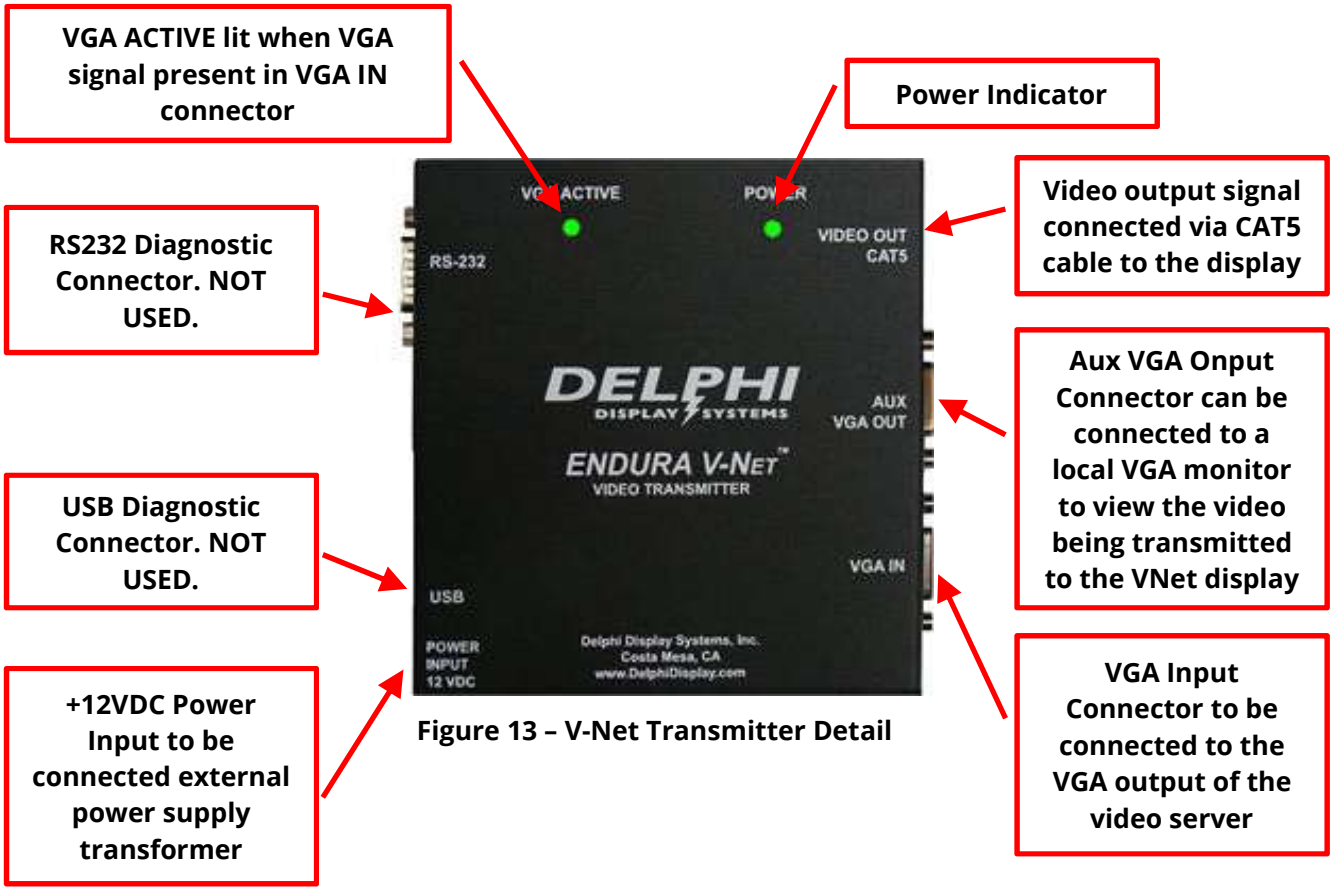


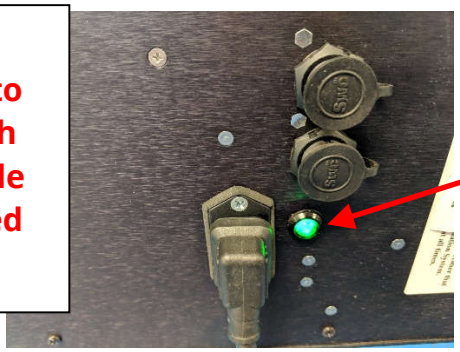
Figure 13 – V-Net Transmitter Detail

5.4 Connecting Power to the Display

Connect the 120VAC power cable to the power input connector on the rear panel of the display as shown below. Verify that the power indicator lights up.

*****WARNING*****

Do not apply power to the display until both ends of the CAT5 cable have been terminated and connected.



Verify that the power indicator light is on when power is applied

Figure 14 – Display Power Connection

6 System Test

Apply power to the V-Net display and the V-Net Transmitter.

6.1 V-Net Transmitter Test

Verify that the V-Net transmitter has power and that there is an active VGA video signal on the VGA IN video input. Both indicator lights should be illuminated as shown below.

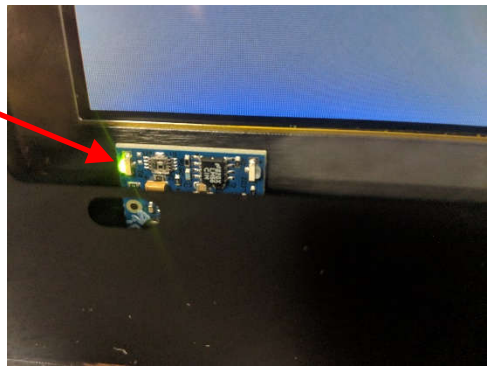
Verify that VGA Active indicator is illuminated

If there is no active VGA video signal on the VGA IN video input, the VGA ACTIVE light will not be illuminated. In this case, check the video connection to the video server. An eternal VGA monitor can be connected to the AUX VGA OUT connector to verify video is present on the VGA IN connector.

6.2 V-Net Display Test

With the active VGA signal connected to the transmitter, verify that the V-Net Display is showing the video image correctly on the screen. If the image is visible but distorted, make sure that the VGA resolution is set for 1024x768 pixels resolution (XGA). Verify that the green indicator light on the front of the display is flashing at approximately once every two seconds, indicating that the display is receiving video over the CAT5 cable from the V-Net transmitter.

Verify that green front indicator is flashing once every 2 seconds



If no video is being transmitted to the display, the screen will immediately show a “No Video” error message, after which the “No Video” message will disappear and blank screen (typically white) will display indicating that the display is awaiting a valid video input. If this is the case, please check all connections and re-test.

7 Technical Support

For technical assistance, please contact:

Delphi Display Systems, Inc.
3550 Hyland Avenue
Costa Mesa, CA 92626
In the US : 1-800-456-0060

1. Select menu **Option 1** for technical support
2. Select **Option 2** for timer support

International : +1-714-825-3400
Email: techsupport@delphidisplay.com

8 Document Revisions

Revision #	Date	Notes
C	5/13/19	Major rewrite and reformat.