Basics

Display Accessories

Standard display accessories include the following:

- Lifting tool
- Key
- Power input cable
- Signal input cable

Figure 1: *Lifting Tool*

Figure 2: *Key*

Figure 3: *Power Input Cable*

Figure 4: *Signal Input Cable*

Storage & Shipping

Panels are stored and shipped in wood crates with four panels per crate. The depth of the crate is 980 mm, and the height and width vary by panel size. Refer to the table below and **Figure 5**.

Crate Size	Panel Size
940x1240 mm	640x1120 mm
940x1400 mm	640x1280 mm
1100x1240 mm	800x1120 mm
1100x1400 mm	800x1280 mm

Figure 5: *Wood Crate*

Mechanical Installation

Panel Installation

Note: Two people are required for the steps in this section.

1. Use a pry bar to remove the crate lid, exercising caution to prevent damage to the LED panels in the crate. Refer to **Figure 6**.

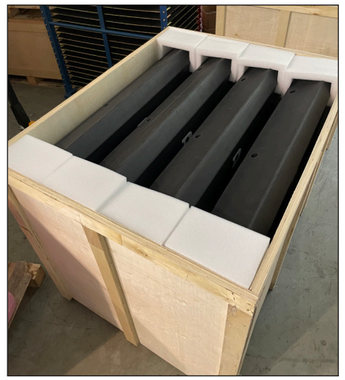

Figure 6: *Remove Crate Lid*

Figure 7: *Remove Crate Side*

2. Use a pry bar to remove the crate side, exercising caution to prevent damage to the LED panels in the crate. Refer to **Figure 7**.
3. Use the supplied lifting tool as an additional handle and remove the panel from the crate. Refer to **Figure 8**.

Figure 8: *Remove Panel from Crate*

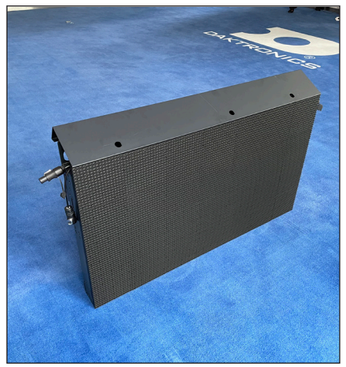

Figure 9: *Stand Panel on Ground*

4. Use the side handles on the panel to stand the panel upright on the ground. Refer to **Figure 9**.
5. Verify the existing jump cable on the panel is a female-to-male connection. Refer to **Figure 10** and **Figure 11**.

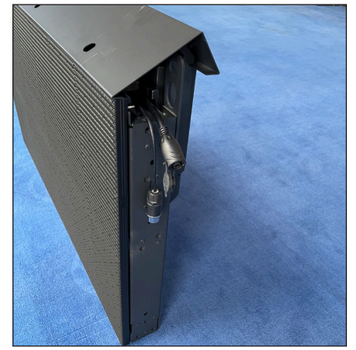

Figure 10: *Female Connector*

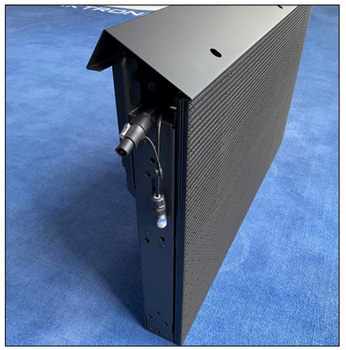

Figure 11: *Male Connector*

6. Use the supplied key to unlock the top locks and slide the top cover back to remove the cover. Refer to **Figure 12** and **Figure 13**.

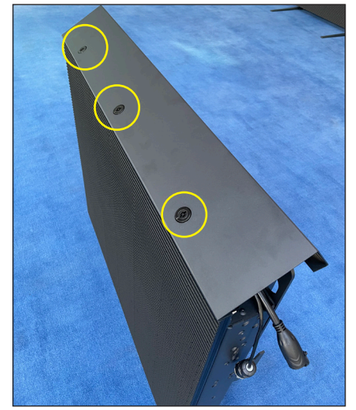

Figure 12: *Unlock Top Locks*

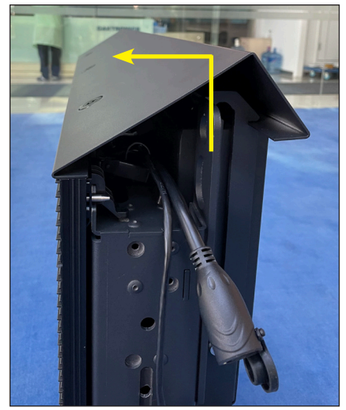

Figure 13: *Remove Top Cover*

7. Use the lifting holes to lift the panel. Refer to **Figure 14** and **Figure 15**.

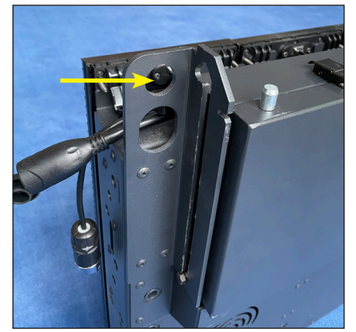

Figure 14: *Lift Panel*

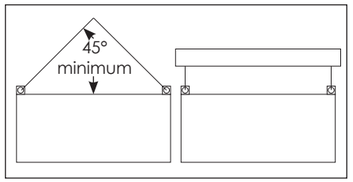

Figure 15: *Lift Panel*

8. Repeat **Steps 3-7** for any additional panels.

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Panel-to-Panel Connection

1. Place two panels side-by-side on the wall and secure the panels together with M10 screws and nuts at three fixing points on the side of each panel. Refer to **Figure 16** and **Figure 17**.

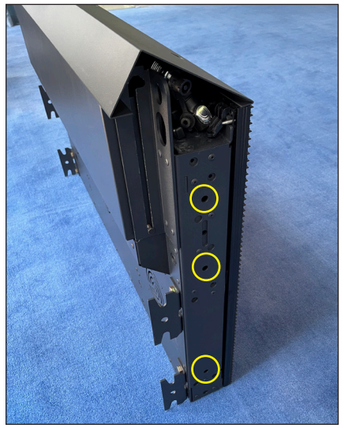

Figure 16: *Secure Panels Together*

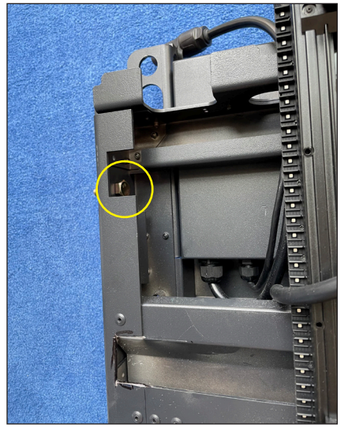

Figure 17: *M10 Fastener (Front View with Module Removed)*

2. Route power and signal cables between panels directly from the top.

Electrical Installation

Signal Connection

A DVI cable connects a computer located in the control room to a sending box. Some sending boxes may have additional signal input options, such as HDMI and SDI. The sending box passes signal via a Cat 5e/Cat 6 cable into the receiver card located inside the first panel. Each panel has a receiver card, and Cat 5e/Cat 6 cables daisy-chain the receiver cards together. The last panel can connect back to the sending box for redundant data to the receiver cards if desired.

1. Connect the sending box to the computer with a DVI cable. Refer to **Figure 18** and **Figure 19**.

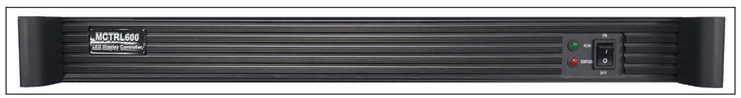

Figure 18: *Sending Box (Front)*

Figure 19: *Sending Box (Rear)*

2. Connect a Cat 5e/Cat 6 cable from the sending box RJ45 output jack to the RJ45 quick-connect jack in the first panel. Refer to the contract-specific Riser Diagram.

Note: The maximum cable distance from the sending box to the first receiver card is 328.08' [100 m]. For installations exceeding this distance, use a fiber converter to convert the Cat 5e/Cat 6 cable to a fiber cable, which offers an additional 984.25' [300 m] with multi-mode fiber or up to 9.32 mi [15 km] with single-mode fiber. Two fiber converters can be used to convert the cable to a fiber cable and then back to a Cat 5e/Cat 6 cable. The cable can connect to the first panel. Use additional cables to connect to the next panel. Refer to **Figure 20** and **Figure 21**.

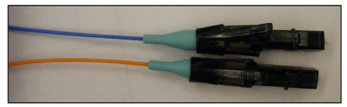

Figure 20: *Fiber Cable*

Figure 21: *Fiber Converter*

3. Route the Cat 5e/Cat 6 cable from the signal output jack to the signal input jack on the next panel. Refer to **Figure 22** and the Riser Diagram.

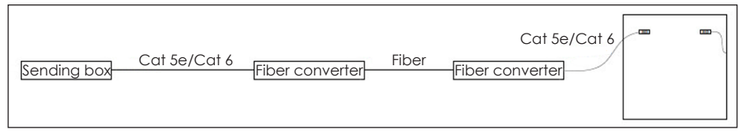

Figure 22: *Route Cables*

Note: Routing may vary based on converter type.

4. Connect the last panel back to the sending box for redundant signal connection if desired.
5. Refer to the **NovaStar® LED Display Control System M3 User's Manual** for details on how to configure the system and run the display.

Refer to **Figure 23** for an example of six panels connected together.

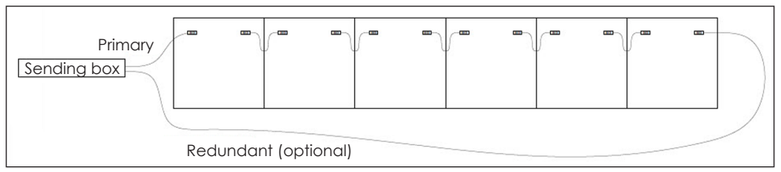

Figure 23: *Connect Signal*

Power Connection

Most standard panels come with power quick connects with pre-terminated connectors at each end.

The gender is different for the power input and output ends. Power interconnect cables are shipped with the displays. Typically, every six panels needs a new power input cable. Refer to the contract-specific Riser Diagram for more details.

The main power input cable has a pre-terminated connector at one end and bare wires at the other end. Only horizontal interconnects are available. Refer to **Figure 24**.

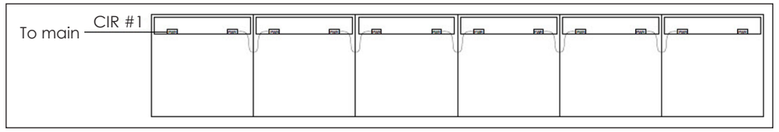

Figure 24: *Route Power Cables*

Service

Note: Avoid exposing the contents of the power/signal box to moisture, as the components are not sealed for water exposure.

Module Removal

1. Disconnect power to the display.
2. Unlock the top locks and slide the cover back to remove the top cover. Refer to **Figure 12** and **Figure 13**.
3. Use the handle at the top of the module to slide the module up and out of the panel. Refer to **Figure 25** and **Figure 26**.

Figure 25: *Slide Module Up*

Figure 26: *Slide Module Out*

4. Use a screwdriver to remove the four screws connecting the module cable and then disconnect the cable. Refer to **Figure 27** and **Figure 28**.

Figure 27: *Remove Module Cable Screws*

Figure 28: *Disconnect Module Cable*

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5. Remove the module. Refer to **Figure 29**.

Figure 29: *Remove Module*

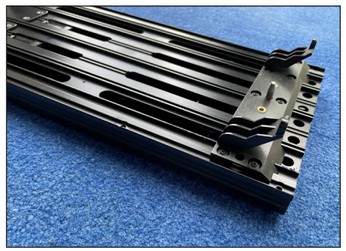

Figure 30: *Module Connectors*

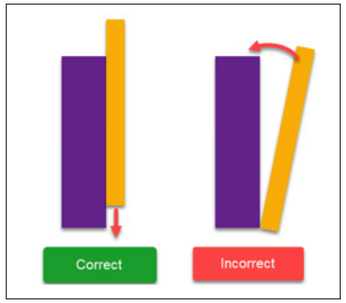

Figure 31: *Install Module*

Reverse these steps to install a module, aligning the connector on the module with the corresponding slots on the panel and reconnecting the cable connector on the module. Refer to **Figure 30** and **Figure 31**.

Receiver Card Removal

1. Disconnect power to the display.
2. Use the handles to pull the power box up and disengage the three latches on the power box. Refer to **Figure 32** and **Figure 33**.

Figure 32: *Use Handles to Pull Power Box Up*

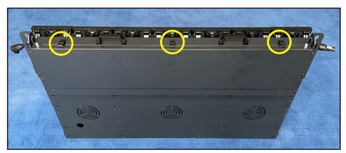

Figure 33: *Disengage Latches on Power Box*

3. Rotate the box over the top of the panel and open the box. Refer to **Figure 34** and **Figure 35**.

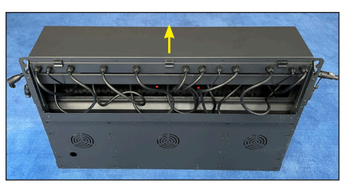

Figure 34: *Rotate Power Box*

Figure 35: *Open Power Box*

4. Remove the screws securing the receiver card to the hub board. Refer to **Figure 36**.
5. Pull the receiver card gently outward to remove it from the hub board.

Reverse these steps to install a receiver card, sending the config file from the sending box after the new receiver card is installed.

Hub Board Removal

Figure 36: *Remove Screws*

1. Disconnect power to the display.
2. Disengage the three latches on the power box to open the box. Refer to **Figure 33**.
3. Remove the receiver card. Refer to **Step 4** and **Step 5** in **Receiver Card Removal (p.3)** and **Figure 37**.

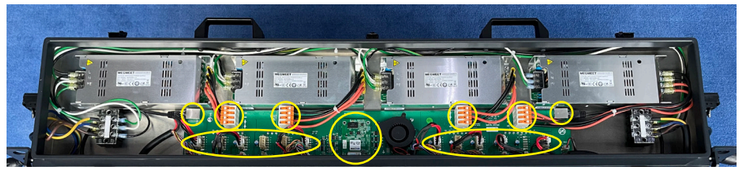

Figure 37: *Remove Receiver Card & Disconnect Power & Signal Cables*

4. Disconnect the power and signal cables from the hub board. Refer to **Figure 37**.
5. Use a screwdriver to remove the screws securing the hub board to the power box. Refer to **Figure 38**.

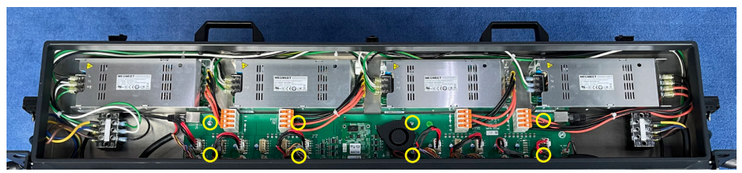

Figure 38: *Remove Screws from Hub Board*

6. Pull the hub board gently outward to remove it from the power box.

Reverse these steps to install a hub board.

Fan Removal

1. Disconnect power to the display.
2. Disengage the three latches on the power box to open the box. Refer to **Figure 33**.
3. Disconnect the fan cable from the hub board. Refer to **Figure 39**. The fan is mounted to the right hub board.
4. Use a screwdriver to remove the screws securing the fan to the hub board. Refer to **Figure 39**.
5. Pull the fan gently outward to remove it from the hub board.

Reverse these steps to install a fan.

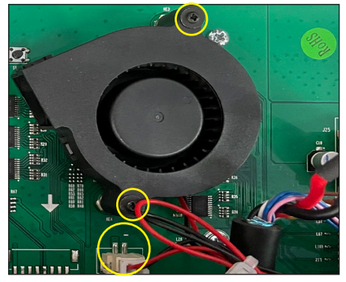

Figure 39: *Disconnect Fan Cable & Remove Screws Securing Fan to Hub Board*

Power Supply Removal

1. Disconnect power to the display.
2. Disengage the three latches on the power box to open the box. Refer to **Figure 33**.
3. Locate the power supply to be removed. Refer to **Figure 40**.

Figure 40: *Power Supplies in Power Box*

4. Remove the cables and mounting hardware from the power supply. Refer to **Figure 41** and **Figure 42**.

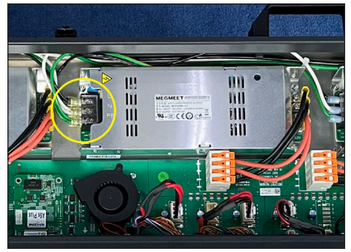

Figure 41: *Remove Cables from Power Supply*

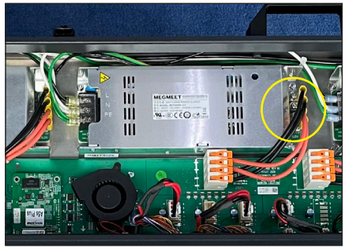

Figure 42: *Remove Hardware from Power Supply*

5. Use a screwdriver to remove the nuts securing the power supply to the power box and then remove the power supply. Refer to **Figure 43**.

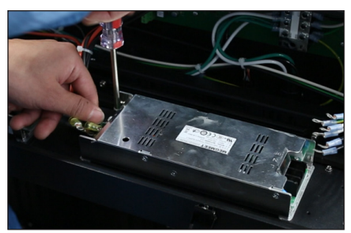

Figure 43: *Remove Nuts from Power Supply*

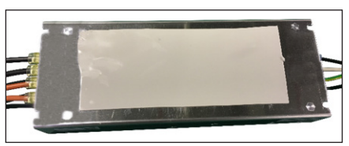

Figure 44: *Thermal Pad on Power Supply*

Reverse these steps to install a power supply, placing a thermal pad on the rear of the new power supply before mounting. Refer to **Figure 44**.

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