

Quick Guide: 3000 Series Valo® Digital Billboard Service 1 of 8

This quick guide outlines basic troubleshooting and repair steps for the Valo® 3000 Series digital billboards. Always contact the Network Operations Center (NOC) at 1-877-DAK-HELP (325-4357) before performing display service in order to provide a time stamp and get NOC assistance if needed.

Field Replaceable Units

The spare parts box contains the most frequently needed parts for display repair. The number of and exact inventory or spare parts in the box will vary by display size.

Part	Location
Module	In the display
Data Distributor (DD)	In the display
Power Supplies (PS)	In the display
Power Harness/Cables	In the display
Short Ribbon Cables	In the display
Long Ribbon Cables	In the display
Multi-Line Controller(MLC)	In the display
Valo®Play Card	In the remote enclosure

Replacing Modules

Rear-Access

To remove a module from a rear-access display, complete the following steps:

Note: Depending on display configuration, you may need to remove internal display components to remove modules from the rear.

1. Open the display door to access the module.
2. Disconnect the power and signal cables from the rear of the module.
3. Attach a safety lanyard to the rings on the module.

Note: A safety lanyard secured to another area of the display, such as a wire support bar or upright, guarantees that the module will not fall if dropped.

4. Disengage the module upper and lower latch release with a $\frac{1}{8}$ " Allen wrench and turning the release approximately $\frac{1}{2}$ turn clockwise. Refer to **Figure 1**.

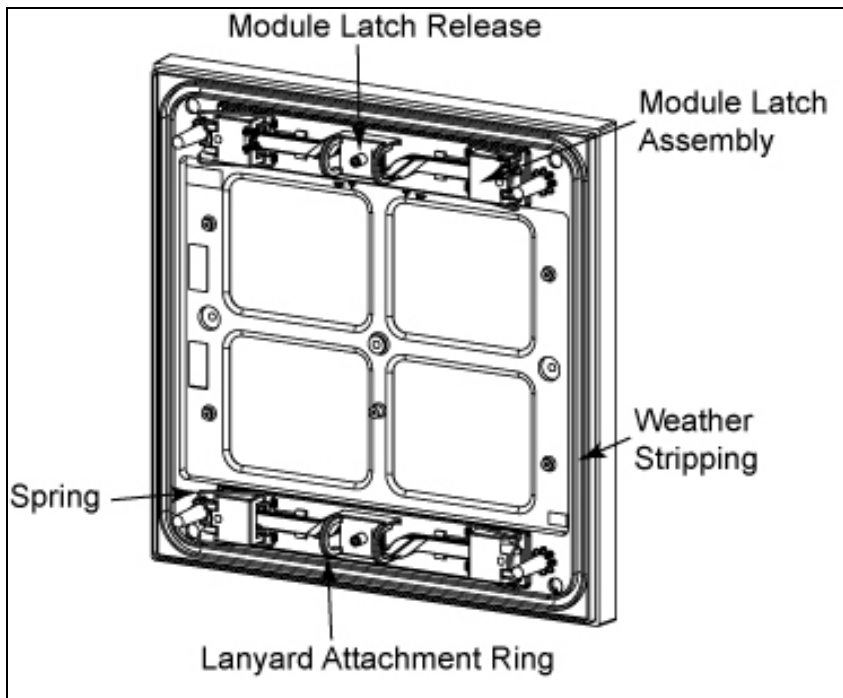


Figure 1: Module Rear

Note: With the releases disengaged, the module is free to fall from the display face so maintain a firm grip on the module and use a safety lanyard.

5. Maintain a firm grip on the module, push it through the front of the display, and rotate it in a manner that allows it to pull back through the frame opening.

Reverse the above steps to reinstall a module.

After removing a module from the display, take a moment to inspect the weather stripping on the rear of the module. When the module is properly secured to the display frame, this weather stripping prevents moisture from seeping into the display. Deteriorated weather stripping may lead to water-related display damage.

Front-Access

Most display components are rear accessible. Occasionally a display component may need to be removed from the front. To remove a module from a front-access display:

1. Disconnect display power.
2. With a $\frac{1}{8}$ " hex head driver, turn the top and bottom latch releases approximately $\frac{1}{2}$ turn counter-clockwise. Refer to **Figure 2**.

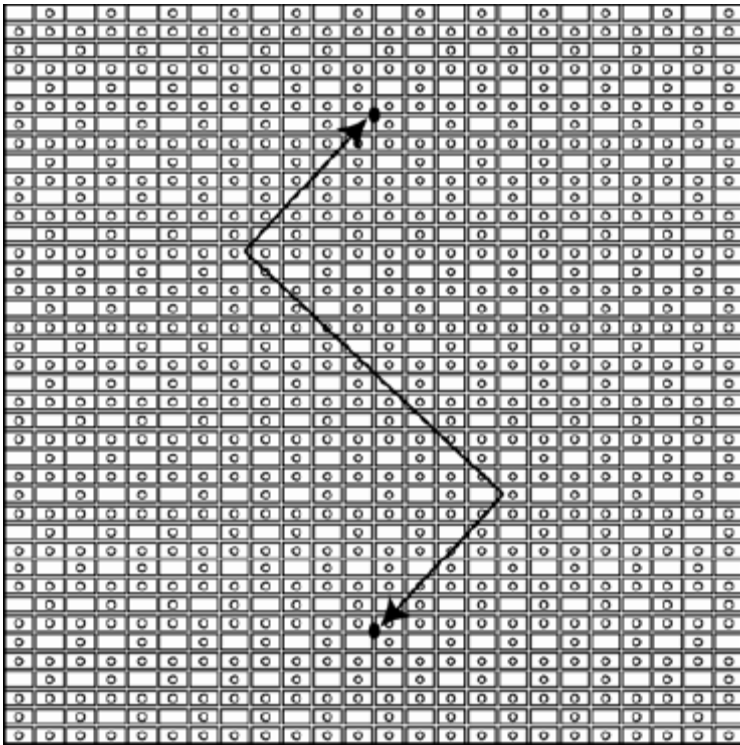


Figure 2: Module Latch Releases

3. Pull the module from the display just far enough to reach around to the back of the module. Attach one end of the safety lanyard to the rings on the module, and attach the other end of the lanyard to a wire support bar or upright.

Note: Attaching a safety lanyard to another area of the display, such as a wire support bar or upright, ensures the module will not fall if dropped.

4. Disconnect the power and signal cables from the rear of the module.

Reverse the above steps to install a module in the display. Give the module a light pull to ensure it is properly seated.

Replacing Multi-line Controllers (MLC)

To remove a MLC from the display:

1. Access the interior of the display.
2. Disconnect all power and signal connectors from the MLC.

3. Pull the finger tab and lift the MLC assembly. Refer to **Figure 3**.

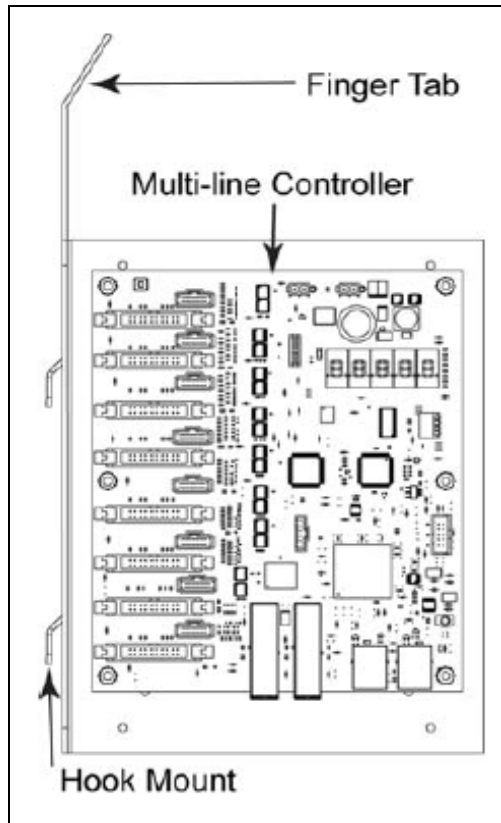


Figure 3: MLC Assembly

4. Remove the MLC assembly from the display cabinet.

Reverse the above steps to replace the MLC.

Replacing Power Supplies

To remove a power supply from the display:

1. Access the interior of the display.
2. Disconnect all power and signal connectors from the power supply.
3. Remove the $\frac{5}{16}$ " TEK screw holding the bracket in place.
4. Pull the finger tab and lift the power supply assembly. Refer to **Figure 4**.

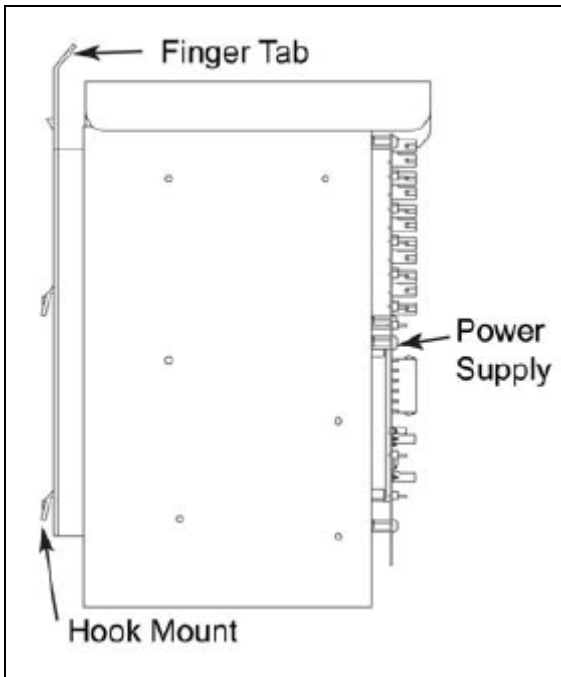


Figure 4: Power Supply Assembly

5. Remove the power supply assembly from the display cabinet.

Reverse the above steps to replace the power supply.

Replacing Filters

To replace a filter in the display:

1. Depress the filter release. Refer to **Figure 5**.
2. Lower the filter door.

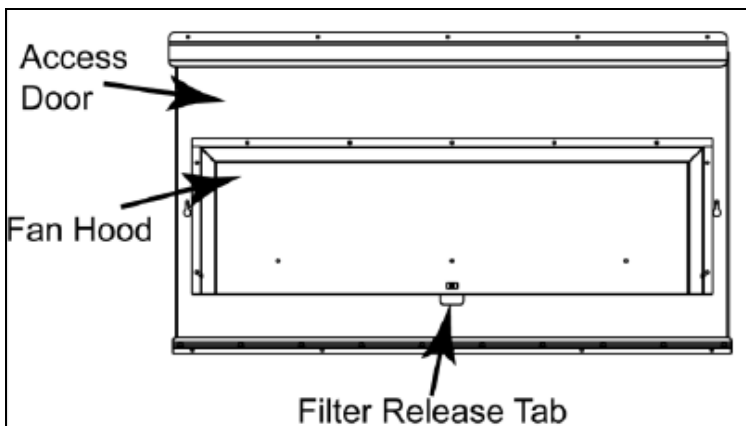


Figure 5: Filter Hood

- 3. Remove the old filter.

Reverse the above steps to replace a filter.

To check fan operation, hold a hand or a piece of light paper above the fan to detect air movement. If the operation of the fan is questionable, a fan-testing power cord is available to check it. Plug the test cord into the fan and plug the other end into a 120-volt outlet. If the fan does not turn or does not operate smoothly, replace the fan.

After replacing 10 percent of the fans, Daktronics recommends replacing all cooling fans to reduce associated maintenance costs that incur with increased heat buildup from fan failures.

Structural Inspection

Perform annual visual inspections of the display to facilitate repair and lengthen display life.

- Check for possible corrosion, especially at structural tie points and ground rods.
- Check, tighten, and replace fasteners as required.
- Check electronic components for corrosion. Repair and replace as needed.
- At least once a year check the inside of the display for signs of water intrusion. Water can enter the display where weather stripping has deteriorated or where fasteners have loosened.

Troubleshooting

This table lists some problems that may be encountered while operating the display. Next to each problem are steps that may help resolve it. While this list does not cover all possible problems that may occur, it does not cover those that occur most often.

Display Problem	Solution
Entire display is blank	<ul style="list-style-type: none">• Check that the display is receiving power and all breakers are on. With display power on, the power supply LEDs should turn on.• Check the data distributor LCD status to make sure the input signal is locked and the output is not blank.• Make sure the fiber-optic signal cable connects to the data distributor. The input signal should be locked.

<p>Section of display is blank</p>	<ul style="list-style-type: none"> • Make sure the power status LEDs on the modules, power supplies, and in the blank section are on. • Make sure RJ45 connections to the multi-line controllers in the blank section are secure. Change the connections with one another to test.
<p>16-48 high section of display is blank</p>	<ul style="list-style-type: none"> • Check the power status LED on the multi-line controller in the blank section. • Verify the status indicator digit on the multi-line controller. • Make sure RJ45 connections to the multi-line controllers in the blank section are secure. Change the connections with one another to test.
<p>16 high section of display is blank</p>	<ul style="list-style-type: none"> • Check the ribbon cable connections between modules and the multi-line controller in the blank section. Check the connection to the leftmost module first (from the front of display). • Make sure that modules are receiving logic power. Signal will not pass through a module that does not receive logic power.
<p>Module is blank</p>	<ul style="list-style-type: none"> • Check the power status LEDs on all power supplies connected to the module. If a power supply LED is off, ensure the fuse on the power supply output is intact. • Check the ribbon cable input to the module and the output from the previous module.
<p>Entire display is garbled or uncontrollable</p>	<ul style="list-style-type: none"> • Check the data distributor receiver board status LEDs to make sure the data distributor is receiving power. • Ensure the fiber-optic signal cable is connected to the data distributor. The input signal should be locked. If the input signal is not locked, check the fiber connections.

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8 high section of the display is garbled	<ul style="list-style-type: none">• Check the ribbon cable connections between modules in the garbled section. Check the connection to the leftmost (from display front) module first.
Single module is garbled	<ul style="list-style-type: none">• Check the ribbon cable input to the module and the output to the previous module.• Make sure all connections on the module power supplies are tight. A garbled module could indicate power supply failure. A module with no power is blank and does not pass signal to the next module.