

**C26248**  
**Road and Transport Authority**  
**VF-2360-96x560-20-RGB**  
**Site Name: \_\_\_\_\_**  
**Field Test Procedure**

**DD3931882** **Rev: 1—30 May 2018**

# DAKTRONICS

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**DD3931882**

**Contract: C26248**

**Rev: 1—30 May 2018**

## **DAKTRONICS, INC.**

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## Introduction

This test procedure describes the field tests for a LED dynamic message sign site for this project. The purpose of this test is:

1. To check that the sign and related equipment supplied by Daktronics has been installed properly.
2. To check that all sign and related equipment supplied by Daktronics is functioning. Special emphasis is placed on items that, if bad, are not expected to show up as being bad during normal operation. Example: earth grounding not connected.
3. To put the sign into the state needed so that it is ready for normal operation without the need for an additional visit before beginning normal operation.
4. As a record that all tests and setup tasks have been performed at each particular site so that it will not be necessary to re-visit sites later because of not being sure whether or not certain tests or setup items have been done.

Note that this is not a test of all software functions or hardware design limits; this would be very time consuming, and would be redundant, as those tests need to be done only once.

This test should be performed for every sign site at the completion of installation of the particular site.

The test messages to be used should be the test messages listed or messages such as "Testing; Message 1" or moving rows, moving columns, etc., that will not misdirect traffic.

This test requires the cooperation of an operator at the central controller with personnel at the sign site.

Test equipment required:

- Boom truck, or whatever is required to get up into the sign
- Digital multi-meter and Ground resistance tester
- Laptop computer, with vanguard software
- Ethernet Cable
- Common hand tools
- Flash Drive/Memory Stick

# Site Information

Daktronics Representative: \_\_\_\_\_

Contract number and name: \_\_\_\_\_

Sign assembly no.: \_\_\_\_\_

Sign serial no. top section: \_\_\_\_\_

Sign serial no. bottom section: \_\_\_\_\_

Field controller serial no.: \_\_\_\_\_

Field controller address no.: \_\_\_\_\_

Site IP address Primary: \_\_\_\_\_ Auxiliary: \_\_\_\_\_

**Important: Make sure that the firmware listed below is the most current version, if not make sure to download the latest version of the firmware from [Dakfiles.daktronics.com](http://Dakfiles.daktronics.com) and save on to flash drive.**

Sign dimension: \_\_\_\_\_

Firmware:

- 1) VFC
- 2) Player Image
- 3) Video Processor
- 4) LCD Board
- 5) Display Module micro
- 6) Display Module EPLD
- 9) Display interface micro
- 10) Display interface EPLD

Version number:

\_\_\_\_\_

\_\_\_\_\_

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## Traffic Cabinet Inspection

- \_\_\_1.0 Turn off the power to the traffic cabinet.
- \_\_\_1.1 Check that earth grounding wires are secured to earth ground rod from sign, traffic cabinet conduit grounding collars, traffic cabinet panel board, traffic cabinet case, and power source.
- \_\_\_1.2 Verify that ground wire and ground rods are connected properly per site riser.
- \_\_\_1.3 Remove the panel board cover. Check that hot wire, neutral, and earth ground wires from the 240 VAC power source are connected into the panel board main breaker terminals, neutral bus, and earth ground bus, respectively.
- \_\_\_1.4 Visually inspect the outside of the sign controller for damage, check that all necessary connectors are plugged into the outside of the sign controller, and check that the connector screws (if any) are tight.
- \_\_\_1.5 Inspect the modem panel or other communication interface panel for loose parts or wiring, and check that the wiring or fiber(s) for the communication system is terminated properly.
- \_\_\_1.6 **Applies only if TC is provided by others:** Check to see if there is surge suppression on the AC power for our equipment. If there is surge suppression, check "Yes"; if there is not surge suppression, check "No": Yes \_\_\_ No \_\_\_
- \_\_\_1.7 Terminate communication from controller to sign.

## Traffic Cabinet Power Test

- \_\_\_2.0 Check that all traffic cabinet panel board circuit breakers are off, except for the "Panel board Surge Suppressor" breaker, which should be on. Apply power to the traffic cabinet only.
- \_\_\_2.1 Using a safe procedure, measure the AC voltage from the panel board main breaker input lugs to neutral; it should measure between 240 VAC and 218 VAC. Also, check the voltage from neutral to earth ground. It should measure less than 10 VAC. (This is a no-load test of the input voltage.) Record below.
  - a. L1 to neutral: \_\_\_\_\_ Neutral to earth ground: \_\_\_\_\_
- \_\_\_2.2 Re-install the panel board cover.
- \_\_\_2.3 Check that all control equipment is plugged into the control equipment outlet strip.
- \_\_\_2.4 Check that all control equipment inside the traffic cabinet is switched off, and turn on the main circuit breaker and all circuit breakers in the traffic cabinet except for the **sign** breaker (if equipped).

### **Sign Exterior Inspection**

- \_\_\_3.0 Visually inspect the outside of the sign for damage.
- \_\_\_3.1 Check that the multi directional light sensor is unobstructed.

### **Power Connection Inspection**

- \_\_\_4.0 Turn off the power to the sign, from outside the sign.
- \_\_\_4.1 Remove the power entrance box cover inside sign. Check that the hot, neutral, and earth ground wires from the 240 VAC power source are connected into the breaker terminals, neutral bus, and earth ground bus, respectively
- \_\_\_4.2 Check that the earth grounding wire is secure from the case of the sign to the earth ground rod(s) near the base of the sign.
- \_\_\_4.3 Check that all panel board circuit breakers are off, except for the "Panel board Surge Suppressor" breaker, which should be on. Apply power to the sign.
- \_\_\_4.4 Using a safe procedure, measure the AC voltage from power entrance enclosures main breaker input lugs to neutral; it should measure between 240VAC and 218 VAC. Also, check the voltage from neutral to earth ground; should be less than 10 VAC. (This is a no-load test of the input voltage.) Record below.  
L1 to neutral: \_\_\_\_\_ Neutral to earth ground: \_\_\_\_\_
- \_\_\_4.5 Re-install the panel board cover temporarily.
- \_\_\_4.6 Terminate Communication cable to PLR.

### **Sign Interior Inspection**

- \_\_\_5.0 Make sure the Site Information for the sign is filled out: sign serial number, sign model number, sign assembly number, etc.
- \_\_\_5.1 Inspect the inside of the sign for damage. Check for loose parts, connections and wiring, inside of the sign. Also, verify that the fiber-optic cables are connected to the proper location on the PLRs.
- \_\_\_5.2 Check that all conduits that enter the sign are sealed inside at the end that enters the sign.

### **Sign Power Test**

- \_\_\_6.0 Turn on all circuit breakers.

### **Functional Test**

- \_\_\_7.0 Turn on the sign controller power switch, check that the power indicator LED is on.

\_\_\_7.1 Verify that DS1 and DS2 LED lights illuminating white. This is verifying signal is good for fiber ports A and B.

\_\_\_7.2 Enter all the necessary data into the sign controller such as address, module type, sign height, sign width, sign type, access type, and peripherals.

- a. Reference display configuration sheet if necessary

\_\_\_7.3 **Note: If testing at night run the all on 10% test patterns and turn the fans on manually in controller menu.** Display the “All On 100% Burn” test pattern; check that all fans turn ON. Once complete set test pattern to “None”.

\_\_\_7.4 Check that all power supplies are passing in the peripheral menu.

\_\_\_7.5 Check that the value indicated by the MDLS light sensor appears reasonable for the current ambient lighting conditions. Record below:

Date: \_\_\_\_\_ Time: \_\_\_\_\_ Sky conditions: \_\_\_\_\_

Light sensor readings: 1: \_\_\_\_\_ 2: \_\_\_\_\_ 3: \_\_\_\_\_

\_\_\_7.6 Record the module temp.

Module Temp, degrees F.: \_\_\_\_\_

\_\_\_7.7 Parallel surge suppressor with remote reporting: Display the “View Peripherals” screen on the LCD, and check that the Surge Suppressor entry indicates “Pass”.

\_\_\_7.8 **Note: If testing at night turn the fans on manually in controller menu.** RPM Sensors with electronically controlled fans.

- a. Display the “All On 100% Burn” test pattern to turn on the ventilation fans. Checks that all RPM sensors indicate a number value on the sign controller; check that the same quantities of RPM sensors that exist in the sign are indicated on the sign controller.

- b. Blank the sign to turn off the “All On 100% Burn” test pattern, and check that the fans turn off. Check that all RPM sensors aren’t reporting time out.

\_\_\_7.9 Run the following test patterns and verify that all the test patterns display properly.

- a. Alphabet
- b. Line numbers
- c. **Note if testing at night don’t do this test pattern.** Auto Test Patterns

\_\_\_7.10 Set to “Normal Mode” to exit the test pattern mode.

\_\_\_7.11 Sign door signal switches: Display the View Peripherals Menu on the LCD. Close all sign doors, and check that the LCD indicates that the doors are closed.

**Note:** It may take up to 20 seconds after the door position is changed to indicate the change

\_\_\_7.12 Using Vanguard software display a message that will not misdirect traffic and that has characters that butt up to the top, bottom, left, and right edges of the sign and verify that it displays correctly. This verifies proper message display capability for this sign size.

a. Using a test message check visually that the dimming level of the display appears reasonable for the light conditions with automatic dimming set and record the level. Dimming Level%\_\_\_\_\_

\_\_\_7.13 Set the time, date, and correct time zone.

\_\_\_7.14 **Note: If testing at night run the all on 10% test patterns.** Run the "All On 100% Burn" test pattern and leave the brightness set to 100%. Using a safe procedure, check and record the AC voltage from the signs power entrance enclosure main breaker input lugs to neutral; it should measure between 240 VAC and 218 VAC. Also, check the voltage from neutral to earth ground; it should measure less than 10 VAC. (This is a loaded test of the input voltage.) Record below.

a. L1 to neutral: \_\_\_\_\_ Neutral to earth ground: \_\_\_\_\_

\_\_\_7.15 **Note: If testing at night run the all on 10% test patterns.** Run the "All on" test pattern.

Disconnect sata cable from port A on the PLR and verify the sign is still displaying. Reconnect sata cable to the PLR, and disconnect sata cable from port B, and verify sign is displaying. Reconnect sata cable to the PLR. Perform this test on all the remaining PLRs.

\_\_\_7.16 Perform a pixel test and verify that all pixels are reported as good.

\_\_\_7.17 Reinstall all enclosure covers.

\_\_\_7.18 Record the installed firmware version numbers (from the sign controller "Version Information" page), and the dimensions of the sign. (If the dimension of the sign doesn't match the actual sign size, correctly configure the sign controller for this site.) Record the following information under the Site Information:

### **Final Details**

\_\_\_8.0 **If equipped:** Confirm that all sign and traffic cabinet thermostats are set properly, and all

\_\_\_8.1 Equipment covers are installed.

\_\_\_8.2 Verify the sign is blank.

\_\_\_8.3 Verify that any test messages you created have been removed from the sign controller.



\_\_\_\_ 8.4 Record if main breaker is left on or off: On: \_\_\_\_ Off: \_\_\_\_ Date: \_\_\_\_\_

\_\_\_\_ 8.5 Make sure the Site Information is filled out: serial numbers, site location, phone number, sign dimension, firmware versions, etc.

It is acknowledged that the following field test procedure has been completed for this site and the display is operational.

**Daktronics Technician**

_____ Printed Name	_____ Signature	_____ Date
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**Customer**

_____ Printed Name	_____ Signature	_____ Date
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DAKTRONICS PERSONNEL MUST RETURN THIS COMPLETED DOCUMENT AND QUALITY FEED BACK FORM TO THE DAKTRONICS CONTRACT PROJECT MANAGER.

# Transportation Quality Feedback form

*For Internal Daktronics use only. This is not part of the field Test Procedure. This form needs filled out and sent back to Daktronics with the Field Test Procedures*

Submitted By \_\_\_\_\_ Contract# \_\_\_\_\_

Display Type (i.e. VF2400\_27x105-66-A) \_\_\_\_\_

Location of Display \_\_\_\_\_

Display Serial # \_\_\_\_\_ nearest City and State \_\_\_\_\_

Commissioning Date \_\_\_\_\_ Project Manager \_\_\_\_\_

Did you experience any issues or unplanned work during the commission of this display? **Yes/No** (if no skip to additional comments/Punch list items)

Failed Part Description	Part Number	Part Serial #

### Describe the issues and or unplanned work

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### Additional Comments/Punch list Items

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FTP completed **Yes/No**

Site Complete **Yes/No** (if no documents punch list items above)