24x352

Florida

VM-1020

Field Test Procedure

DD3918882   **Rev:1—10 May 2018**

DAKTRONICS

DAKTRONICS, INC.

Introduction

This test procedure describes the field tests for a VM 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
- Laptop computer, with central controller software, miscellaneous software, and null modem cable.
- Common hand tools
- Ground resistance tester
- Cellular telephone or other means of communication with the central controller operator.

Site Information

Daktronics Representative: **David Joy**

Contract number and name: **C27641**

Field test procedure addendum ED number, if any ("NA" if not applicable):
_____

Sign site: _____
(Typically highway number, direction, and mile-post number or intersection)

Sign model no.: **0A-1447-6694**

Sign 1 serial no.: **1009**

Field controller serial no.: **4177**

Field controller address no.: **1**

Site telephone number: _____

Site IP address: **172.21.11.126**

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.
Sign dimension: _____ **24x352** _____

Firmware:	Version number:
1) VFC	**20191008-v8.34.0.105**
2) Player Image	**20171219-v03**
3) Video Processor	**20190610-vb2323**
4) LCD Board	**20160205-v0001.1763**
5) Display Module micro	**20190201-v2096.1BBB**
6) Display Module EPLD	**N/A**
7) ACP Micro	_____
8) ACP EPLD	_____
9) Display interface micro	**20181121-v1fa0.1b72**
10) Display interface EPLD	**20170711-v1fc0.1978**

Traffic Cabinet Inspection

✓ 1.0 Turn off the power to the traffic cabinet.

✓ 1.1 Inspect the inside and outside of the traffic cabinet for damage and check for loose parts or connections. Also check that the nuts are installed on the anchor bolts (if ground-mounted traffic cabinet).

✓ 1.2 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.

✓ 1.3 Verify that ground wire and ground rods are connected properly per site riser.

✓ 1.4 Remove the panel board cover. Check that the 2 hot wires, neutral, and earth ground wires from the 120/240 VAC power source are connected into the panel board main breaker terminals, neutral bus, and earth ground bus, respectively.

✓ 1.5 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.

✓ 1.6 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.

✓ 1.7 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 105 and 125 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: __121.3__   L2 to neutral: _____   Neutral to earth ground: __0__

✓ 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 the control equipment outlet strip is plugged into the surge-protected AC outlet labeled "For Control Equipment Outlet Strip Only".

✓ 2.5 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).

✓ 2.6 Check that the traffic cabinet light(s) are on and that all AC outlets inside the traffic cabinet are live. **If equipped with two doors:** Close the door that is currently open and open the other door, and check that the traffic cabinet light(s) are on.

✓ 2.7 Press the intake fan override button; the fan should turn on. Check that air blows out of the exterior roof vents. Release the intake fan override button; the fan should turn off. **If it's a thermostat** turn the vent fan thermostat down below the ambient air temperature; the fan should turn on. Check that air blows out of the exterior roof vents. Turn the thermostat up above the ambient air temperature; the fan should turn off. Set the thermostat to 90° F.

Sign Panels Exterior Inspection

✓ 3.0 Visually inspect the outside of the sign panels.

✓ 3.1 Check that the light sensors are unobstructed.

Power Connection Inspection

✓ 4.0 Turn off the power to the sign panels.

✓ 4.1 Check that the positive, and negative wires are landed into the DC power in and are landed on the correct polarity on the TB1.

✓ 4.2 Check that the signal wiring is terminated on TB1 signal in and out block. Verify that connections are tight, clean, and landed correctly. **Note: This is if the VCB in mounted in an enclosure outside of the panel.**

✓ 4.3 Check that the earth grounding wire is secure from the case of the panels (inside or outside) to the earth ground rod(s) near the base of the sign panels.

Display Panel Interior Inspection

✓ 5.0 Make sure the Site Information is filled out for each display panel: sign serial number, sign model number, sign assembly number, etc.

✓ 5.1 Inspect the inside of each display panel for damage and signs of water intrusion. Check for loose parts, connections, and wiring.

✓ 5.2 Check that the DCIO boards in each sign panel are addressed properly.
    NOTE: Refer to the manual.

✓ 5.3 Check that the airflow sensors are addressed properly.
   Note: Refer to manual for addressing.

✓ 5.4 Verify that the fiber-optic are connected to the proper location on the VCB.

✓ 5.5 Check that all conduits that enter the sign panels are sealed.

Sign Power Test

✓ 6.0 Apply power to the sign panels.

✓ 6.1 Using a safe procedure, measure the DC voltage at the far left most module of the sign it should measure 24 VDC (+/- 10%). Record below.
   a.   Voltage Reading __24.5__

✓ 6.2 Verify that VCB, modules, and Sensors power indicator lights are on

Functional Test

✓ 7.0 Turn on the sign controller power switch.

✓ 7.1 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 site configuration sheet.

✓ 7.2 **Note: If testing at night turn fans on manually from the controller**. Display the "**All On 100% Burn**" test pattern; check that all fans turn on for each sign panel. Once complete set test pattern to "**None**".

✓ 7.3 Push the vent fan override button inside each sign panel for the ventilation fans and verify they turn on. Release it and they should turn off.

✓ 7.4 Check that the value indicated by each of the light sensor for each panel appears reasonable for the current ambient lighting conditions. Record below for each sign panel.

   Date: __10/24/2019__ Time: __1:30am__ Sky conditions: __Clear_____

   light sensor readings: 1: __10___

✓ 7.5 Check that the module temperature appears correct, and record below:
   Note: Temp sensors utilize digital integrated circuits, which are calibrated at the integrated circuit factory, and do not require additional calibration.

      Module Temp 1, degrees F.: __84*__

✓7.6 Check that all LED power supplies (Isolation Boards) in Traffic Cabinet indicate "OK" (figure 8 pattern of the 7 segment display). Check that each power supply indicates pass on the controller.

✓7.7 Run the following test patterns individually and verify that all the test patterns display properly.
   a. Alphabet
   b. Line ID
   c. Module ID
   d. **Note: If testing at night do not run this test.** Auto Test Pattern

✓7.8 Set the time, date, and correct time zone.

✓7.9 Display a message (not a test pattern) 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 on each sign panel. This verifies proper message display capability for this sign size.

✓7.10 **Note: If testing at night do the all on 10% test patterns**. Display the "All On 100%" test pattern, and check that the All-On 100% brightness test pattern is displaying. Turn off one Power Supply. Check in the "View Peripherals" screen that all power supplies (isolation boards) that are on indicates 24.1 to 25.2 VDC and the one off says fail. Repeat the above step for each remaining power supply.
   a. Turn on all power supply groups

✓7.11 Perform a pixel test and verify that all pixels are reported as good.

✓7.12 **Note: If testing at night turn the fans on manually from controller. If equipped:** Airflow sensors with electronically-controlled fans.
   a. Display the "All On 100% Burn" test pattern to turn on the ventilation fans. Checks that all "Airflow Sensors" indicate "pass" on the sign controller for each sign panel; check that the same quantities of airflow sensors that exist in the sign panel 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 airflow sensors indicate "pass" for each sign panel

✓7.13 **Note: If testing at night turn the fans on manually from the controller**. RPM Sensors with electronically controlled fans.
   a. Display the "All On 100% Burn" test pattern in order to turn on the ventilation fans. Checks that all RPM sensors indicate show a number value other than 0 and are not failing on the sign controller for each sign panel; check that the same quantities of RPM sensors that exist in the sign panels 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 don't report fail for each sign panel.

✓ 7.14 Sign panel door signal switches.

>   a. Display the View Peripherals Menu on the controller. Check that the LCD indicates that door is closed.

✓ 7.15 Parallel surge suppressor with remote reporting
>   a.   Display the "View Peripherals" screen on the controller, and check that the Surge Suppressor entry indicates "Pass" for each sign panel.

✓ 7.16 UPS communication with sign controller. **Note:** Not all contracts that include a UPS have this feature:

>   a.   Display the View Peripherals Menu on the LCD, and check that the UPS entry indicates "AC line".

>   b.   Note which AC outlet the UPS input AC power cord is plugged into, and unplug it. If using an alpha FXM series turn the main power breaker off in the traffic cabinet. Check that the UPS entry changes to "Battery". It may take a few seconds for the entry to change

>   c.   Plug the UPS input AC power cord back into the correct AC outlet. If using an alpha FXM series turn the main power breaker on in the traffic cabinet. Plug into a surge protected outlet, not a GFCI outlet. Check that the UPS entry changes to "AC line".

✓ 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 Confirm that all traffic cabinet thermostats are set properly, and all equipment covers are installed properly.

✓ 8.1 Verify the displays are blank of any test patterns running or messages that was created for testing.

✓ 8.2 Verify that any test messages you created have been removed from the sign controller.

✓ 8.3 Record if main breaker is left on or off: On: ✓   Off: ___   Date: __10/23/2019__
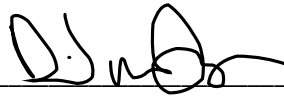
✓ 8.4 Make sure the Site Information is filled out: serial numbers, site location, phone number, sign dimension, firmware versions, etc.

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

Daktronics Technician

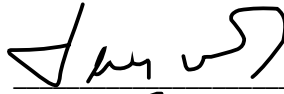|		
David Joy		10/23/2019
Printed Name	Signature	Date

Customer

Henry olano		10/23/2019
Printed Name	Signature	Date

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___**David Joy**_____ Contract#___**C27641**_____

Display Type (i.e. VF2400_27x105-66-A) ____**VM-1020-24x352-20- RGB**_____

Location of Display_____

Display Serial #_____ nearest City and State ___**Miami Florida**_____

Commissioning Date___**10/23/2019**_____ Project Manager___**Clint Barber**_____

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
_____
_____
_____
_____
_____
_____
_____
_____
_____
_____

Additional Comments /Punch list Items
_____
_____
_____
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_____
_____
_____
_____
_____

FTP completed **Yes / No**

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