VL-671X Series

Field Test Procedure Instructions

DD5097492 **Rev: 1— 27 June 2022**

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DAKTRONICS, INC.

Introduction

This instructions document describes how to complete the field tests for a LED dynamic message display site for Daktronics Vanguard Displays. The purpose of this test is:

1. To check that the display and related equipment supplied by Daktronics has been installed properly.
2. To check that all display 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 display 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.

    a. Document all testing results on the Vanguard displays checklist as a record of completing the testing

    https://dakfiles.daktronics.com/downloads/Transportation/Contract_Documents/Field_Test_Procedures/VL-671X%20Series%20Display%20FTP.pdf

Note:

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.

Depending what display you are working on, some of the tests listed on this instruction sheet will not be tested on some display types. Use the checklist to ensure that you complete the applicable tests for your display (example; displays that don't support pixel test will not have test S8 Pixel testing listed on the check sheet).

The test messages to be used should be the test messages listed or messages such as "Testing; Message 1" or "Testing in Progress", that will not misdirect traffic. If the customer is present during commissioning, it is recommended to have them preview and approve the test message before displaying it.

Test equipment required:

- Boom truck, or whatever is required to get up into the display
- Digital multi-meter
- Laptop computer, with vanguard software
- Ethernet Cable
- Common hand tools
- zFlash Drive/Memory Stick

Sign Inspection

S1 Transport-

A. Visually inspect the outside of the sign for damage from transport and installation. Ensure light sensor is unobstructed.
B. Inspect the inside of the sign for damage and signs of water intrusion. Check for loose parts, connections and wiring, inside of the sign.
C. Ensure all is mounted properly with approved mounting hardware.
D. Check that all conduits that enter the sign are sealed inside at the end that enters the sign.
E. Verify that doors open and close properly.

S2 Sign Power Termination-

A. Check that hot (black), neutral (white), and ground (green) wires from 120 VAC power source are properly secured on the main termination block within the display.

B. Grounding-

a. Check that earth grounding wires are secured to earth ground rod(s) at the display(s), cabinet and/or power source.
b. Verify that earth ground wire and ground rods are connected properly per site riser.
    i. Note: Earth ground wire must be a different wire than the power ground wire.

S3 Sign Power-

A. AC Power testing:
    a. Check that all sign Termination Block circuit breakers are off.
    b. Using a safe procedure, measure the AC voltage from the 120 VAC power source at termination block. Also, check the voltage from neutral to earth ground. It should measure less than 10 VAC. Record values.
    c. Apply power to the sign by switching the circuit breaker(s) on at the terminal block.

S4 Setting up controller-

A. Configure the controller for sign control; address, module type, sign height, sign width, sign type, access type, and peripherals. See contract site config sheet for details.
    - Download the contract Site config from Dakfiles (files are listed by Contract #).
        - /Transportation/Contract_Documents/SiteConfigs
B. Set the time, date, and correct time zone.
    - Login to the DMP UI using a computer and set the time on the DMP
    - Set Time on the VFC LCD screen or NTCIP icon on the DMP UI
        - https://www.daktronics.com/support/kb/Pages/DD4078750.aspx

S5 Display testing

A. Activate Test Patterns

   a. On each cluster controller turn on address 7.
   b. Each section will run test patterns verify that no pixels are out or swapped.
   c. Turn off address 7 on each cluster and verify the test patterns turn off. https://www.daktronics.com/support/kb/Pages/DD3949524.aspx

B. Diagnostics test

   a. Enter the IP address of the controller into web browser.
   b. Click on the car icon on left hand side.
   c. Log into the controller and go to view peripherals under diagnostics.
   d. Verify that peripherals are passing which this sign only has light sensor.

S6 NTCIP test message

A. Using Vanguard or NTCIP software run a test message (with beacons if applicable) and verify that the sign size is correct and the brightness it good.
   a. Create sign in Vanguard or other NTCIP software, create message to display on the sign that will fill entire sign and does not mislead traffic.
   b. If sign has beacons, then include beacons in the test message.
   c. Play message on sign using Vanguard or other NTCIP software.
   d. Remove message from display and delete the message from the controller's memory

S7 Display Brightness-

A. Verify display's brightness level is appropriate for ambient light conditions.
B. Blank display.

Final check

F1 Close all the doors.

F2 Record firmware and site information.

A. Record the installed firmware version numbers (from the sign controller "Version Information" page), and the dimensions of the sign. Record the information in the Site Information section:
B. Make sure site information filled is filled out: serial numbers, site location, phone number, sign dimension, firmware versions, etc.

F3 Verify all test messages are deleted.

A. Verify that any test messages you created have been deactivated and the sign is blank.