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Test Summary
for NTCIP Conformance Testing
of Solar Technology Portable LED v2 Sign

Test Summary Report Identifier

This document records the results of the second NTCIP conformance test of a 30 by 56 pixel full-matrix Solar Technology portable LED sign. The tests generally followed the test plan 056-SolarTech-NT-VMS-TP-2. The identifier for these test results is: 056-SolarTech-NT-VMS-TS-2.

Summary

Device Make: Solar Technology, Inc.
Controller Model: TRAFIX
Firmware Version: TRAFIX-2.5.2

Test Plan Identifier: 056-SolarTech-NT-VMS-TP-2
Test Log Identifier: 056-SolarTech-NT-VMS-TL-2

Trevilon Corporation, an independent corporation and under contract to Solar Technology, Inc., performed these tests using NTester 2.4.0. All tests were performed during February 21-23, 2012.

Variances

The only variances during the main test were due to either improper configuration or anomalies in the communication system, as described below. Upon full analysis, the device responded properly to all cases, even when the automated test procedures initially reported an error.

Some tests were performed remotely on a different device because the test procedures required actions that could only be taken at the manufacturers facilities. Given that the purpose of this test is to provide documentation to prove that the manufacturer has successfully implemented all of the standardized features, this change in hardware should not be a concern as the signs delivered for each project will use unique hardware.

Comprehensive Assessment

Trevilon certifies that this device passed all of the tests selected in the test plan, with the identified variances. The test results are recorded in the files:

120221-*.ntd
120123-8.ntd

The capture files of the data streams are recorded in:

120221-*.cfa
120223-8.cfa

* is a wildcard that can be replaced with any number from 1 to 14.

Summary of Results

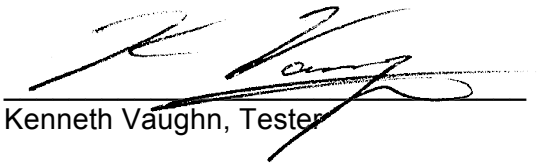
Test Name	Result	Notes
Too Big Error	PASS*	The automated test reported a failure, but an inspection of the test steps revealed that the device supported data packets that were larger than that tested by the procedure and that the response from the device properly contained all of the requested information.
Bad Value Error	PASS	
Read-only Error	PASS	
No Such Name Error	PASS	
Large Unsigned Values	PASS	
SNMP Objects	PASS	
Get with Administrator Rights	PASS*	The first time the test was performed, NTester was configured with the wrong community name
Set with Administrator Rights	PASS*	NTCIP allows a device to not respond to a request containing an invalid community name; this provides for stronger security.
Get with Full Access User Rights	PASS	
Set with Full Access User Rights	PASS	
Change Full Access Password	PASS*	NTCIP allows a device to not respond to a request containing an invalid community name; this provides for stronger security.
Get with Read-only Access	PASS*	The device properly rejected the first attempt at this test because the community names had not been configured. The test passed once this configuration error was fixed.
Set with Read-only Access	PASS	
Change Read-only to Full Access	PASS	
Determine Sign Type and Technology	PASS	
Determine the Size of the Sign Face	PASS	
Determine Size of the Sign Border	PASS	
Determine Beacon Type	PASS	
Determine Sign Access and Legend	PASS	
Determine Sign Face Size in Pixels	PASS	
Determine Character Size in Pixels	PASS	
Determine Pixel Spacing	PASS	
Determine Max. Number of Pages	PASS	
Determine Maximum Message Length	PASS	
Determine Supported Color Schemes	PASS	
Determine Msg Display Capabilities	PASS	
Configure Current Speed Limit	PASS	
Determine Number of Fonts	PASS	
Determine Maximum Character Size	PASS	
Retrieve a Font Definition	PASS	
Configure a Font	PASS	
Attempt to Configure Font in Use	PASS	
Delete a Font	PASS	

Test Name	Result	Notes
Attempt to Delete a Font in Use	PASS*	First try attempted to delete a font that had not been configured
Determine Max. Number of Graphics	PASS	
Determine Maximum Graphic Size	PASS	
Determine Available Graphics Mem.	PASS	
Retrieve and Display Graphics	PASS	
Store a Graphic Definition	PASS	
Attempt to Store a Graphic Def. in Use	PASS	
Delete a Graphic	PASS	
Attempt to Delete a Graphic in Use	PASS	
Verify Validation of Graphic CRC Ref	PASS	
Determine Maximum Number of Light Sensor Levels	PASS	
Determine Cur. Light Output Algorithm	PASS	
Determine Num of Brightness Levels	PASS	
Verify Automatic Brightness Control	PASS	
Verify Manual Bright Control - Direct	PASS	
Configure Brightness Curve	PASS	
Verify Light Curve Gap Error	PASS	
Verify Light Curve Negative Slope	PASS	
Verify Light Curve Too Many Levels	PASS	
Configure Light Curve with Overlap	PASS	
Pixel Test – No Errors	PASS	
Pixel Test – Errors	PASS*	The shortErrorStatus takes a while to properly update
Verify Power Error Detection	PASS	
Verify Light Sensor Error Detection	PASS	
Verify Controller Software Operation	PASS	
Verify Temperature Warning - High	PASS	
Verify Temperature Warning – Low	PASS	
Verify Critical Temp Alarm - High	PASS	
Verify Critical Temp Alarm – Low	PASS	
Determine Current Power Source	PASS	
Reset the Sign Controller	PASS	
Verify Speed Detector Reading	PASS	
Determine Default Message Display Parameters	PASS*	A cable had become disconnected on first try of this test
Configure Default Flash Times	PASS	
Configure a Default Font	PASS	
Configure Default Line Justification	PASS	
Configure Default Page Justification	PASS	
Configure Default Page Times	PASS	
Configure Default Character Set	PASS	
Determine Message Storage	PASS	
Define a Message	PASS	
Define an Invalid Message	PASS	
Verify Message Deletion by Type	PASS	
Retrieve a Message	PASS	

Test Name	Result	Notes
Activate a Message	PASS	
Verify Priority Activation Error	PASS	
Verify Status Activation Error	PASS	
Verify Memory Type Activation Error	PASS	
Verify Message Number Activation Error	PASS	
Verify Message CRC Activation Error	PASS	
Verify Sign Restricts Messages to Sign Dimensions	PASS	
Monitor Dynamic Field Values	PASS	
Verify Central Control	PASS	
Verify Central Override from Central	PASS	
Activate a Message with an Invalid Font Reference	PASS	
Blank the Sign	PASS	
Monitor Current Message	PASS	
Verify Support of Multi-page Message	PASS	
Verify Support of Page Just – Top	PASS	
Verify Support of Page Just – Middle	PASS	
Verify Support of Page Just – Bottom	PASS	
Verify Support of Page Specific Just	PASS	
Verify Support of Multi-line – no Space	PASS	
Verify Support of Multi-line with Space	PASS	
Verify Support of Line Just – Left	PASS	
Verify Support of Line Just – Center	PASS	
Verify Support of Line Just – Right	PASS	
Verify Support of Line Just – Full	PASS	
Verify Support of Line Just – Msg	PASS	
Verify Support of Line Just - Page	PASS	
Verify Support of Line Just – Line	PASS	
Verify Support of One Font per Msg	PASS	
Verify Support of One Font per Page	PASS	
Verify Support of One Font per Char	PASS	
Verify Support of Font Ref with ID	PASS	
Verify Rejection of Font with Invalid ID	PASS	
Verify Support of Character Spacing	PASS	
Verify Support of Custom Page Times	PASS	
Verify Support of Custom Flash (on)	PASS	
Verify Support of Custom Flash (off)	PASS	
Verify Support of Page Flashing	PASS	
Verify Support of Line Flashing	PASS	
Verify Support of Character Flashing	PASS	
Verify Support of Permanent Msgs	PASS	
Verify Support of Current Time 12	PASS	
Verify Support of Current Time 24	PASS	
Verify Support of Current Time Upper	PASS	
Verify Support of Current Day of Week	PASS	
Verify Support of Cur Day of Month	PASS	

Test Name	Result	Notes
Verify Support of Cur Month of Year	PASS	
Verify Support of Current Year 2	PASS	
Verify Support of Current Year 4	PASS	
Verify Support of Current Temp C	PASS	
Verify Support of Current Temp F	PASS	
Verify Support of Current Speed KPH	PASS*	A data packet was lost in the ether; but system gracefully recovered
Verify Support of Current Speed MPH	PASS	
Verify Support of Text Location	PASS	
Verify Support of Text Location 2	PASS	
Verify Support of Hexadecimal Char	PASS	
Verify Support of Graphic Location	PASS*	In the first few attempts, the graphic was too large
Retrieve a Schedule	PASS	
Define a Schedule	PASS	
Activate a Schedule	PASS	
Deactivate a Schedule	PASS	
Override a Schedule	PASS	
Verify Support for Num of Schedules	PASS	
Configure Msg for Short Power Loss	PASS	
Configure Msg for Long Power Loss	PASS	
Configure Msg for Controller Reset	PASS	
Configure Msg for Comm Loss	PASS	
Configure Msg for End Duration	PASS	
Determine Capabilities of Event Log	PASS	
Configure Event Log	PASS	
Retrieve Logged Data	PASS	
Clear Log	PASS	
Determine Total Num of Events	PASS	
Verify Log Limit Storage	PASS*	Failed to create enough events at first
Verify Support for On-Change	PASS	
Verify Support for Greater Than	PASS	
Verify Support for Less Than	PASS	
Verify Support for Hysteresis	PASS	
Verify Support for Periodic	PASS	
Verify Support for Bit-flag	PASS	
Determine Config of Logging	PASS	
Determine Device Component Info	PASS	
Determine Supported Standards	PASS	
Set Time	PASS	
Set Time Zone	PASS	
Verify Daylight Savings Period – Std	PASS	
Verify Daylight Savings - Absolute	PASS	

In addition to the NTester test results, all of the above communications were monitored by FTS software. When operating over direct Ethernet, the shortest response time was 37 ms, longest response time was 9.23 seconds, the mean response time was 89.4 ms and the median response time was 64.6 ms.



Kenneth Vaughn, Tester

21 - 23 February 2012
Test Date

*Note: FTS records the response time from end of packet to end of packet, device response time is measured from end of packet to start of response packet. Thus, in order to determine the device response time, the transmission time must be subtracted from the recorded FTS response time. However, with Ethernet transmission speeds, the transmission time is roughly 1 ms; thus, the FTS values are an adequate reflection of the actual device response time.