

# SLI Compliance Engineering Change Evaluation and Review Form

<b>Vendor:</b>	Hart InterCivic	<b>Date:</b>	April 15, 2019
<b>Change ID:</b>	ECO-01325	<b>System(s):</b>	Verity Voting 2.2.2
<b>Product:</b>	Verity Scan Verity Relay Kit Modem – MTD-MNA1		

Change Summary Description
<p><b>Summary:</b> The COTS Cellular Dongle USB modem used in the Verity relay kit is obsolete, due to Verizon and AT&amp;T's end-of-support of all non-4G modems from their networks. The manufacturer, MultiTech, has recommended another modem model number that is a part of the same QuickCarrier (Cellular Dongle) series, with same form factor, as the existing modems in use in the Verity Relay kit for AT&amp;T and Verizon, the MTD-MNA1 modem. A new modem kit is created for the new modem model. Three DLL files are updated on the Verity Scan 2.2.2 CFast to support the new modem model number. The Verity Scan application itself is unchanged.</p> <p><b>Reason for Change:</b> The existing Cellular USB dongles in use in Verity Relay will no longer be supported by the AT&amp;T and Verizon networks and has been discontinued. The manufacturer, MultiTech, has recommended another modem in the same QuickCarrier series, the MTD-MNA1, as a replacement.</p> <p><b>ECO Category:</b> EOL Part Replacement</p>

Change Evaluation		Comments
<input type="checkbox"/>	The change affects the form, fit or function of the equipment and therefore requires hardware testing to be performed. The testing requirements are defined in the Hardware Test Matrix table below. Any changes made to a system under test will result in the manufacturer supplying a list and detailed description of all changes.	
<input checked="" type="checkbox"/>	<b>De Minimis change order:</b> A de minimis change order is a change to a certified voting system's hardware, software, Technical Data Package (TDP), or data, the nature of which will not materially alter the system's reliability, functionality, capability, or operation.	The requested changes do not affect the system's reliability, functionality, capability, operation or software.
<input checked="" type="checkbox"/>	<b>System documentation:</b> The manufacturer has provided a description of how this change will impact any relevant system documentation and has provided the updated documentation, if applicable.	Updated Approved Manufacturer List will not go into effect until after the EAC ruling.
<input type="checkbox"/>	The change provides closure for an issue encountered during testing.	
<input type="checkbox"/>	Requires Evaluation from a EMC/EMI Test Lab	
<input type="checkbox"/>	Requires Evaluation from a NRTL Test Lab	Safety Evaluation



## Summary Comments

The existing Cellular USB dongles used in Verity Relay will no longer be supported by the AT&T and Verizon networks and has been discontinued. The replacement MTD-MNA1 and the existing MTD-H5-2.0 have same regulatory Radio and EMC compliance certifications and environmental operating conditions.




During EMI/EMC testing the modem was activated and dialed out to the cellular carrier. After connection, the modem pings a packet to google.com continuously. The modem dials out to the cellular carrier to fully activate it, since data is being sent out to connect. Once a connection is established, activity is lost. To keep data running on it once that happens, the safest method is to send and receive data from a server that will never go down to rule out a connection error on the far end. "Google" is used because it is a safe address that is reliable. A command line is used to continuous send and receive 100 bytes of packet data from the modem to "google.com" and then has Google send that back to the modem, called an echo request. This runs until it is stopped by the operator.

To fully exercise all the features of Verity Scan with Relay, EMC diagnostic tools were used. All testing was completed in the Windows environment. The following applications were executed to run continuously during EMI/EMC testing:

- Audio Test application – Play audio (8-hour loop continuously)
- USB Media Test application - Write to vDrive (100 bytes, every 10s)
- Printer Test application - Print to the 2.5" thermal printer (8-hours, one line approximately every 20s)
- Shoeshine Test application - Shoeshine a ballot (Continuous until cancelled, approximately every 30s)
- LED Test application - Flash paper path indicator LEDs.
- Ping Test application - Connect the modem and ping Google.com continuously

SLI has assessed the hardware change in ECO 01325, including supporting documentation. The requested changes do not affect the system's reliability, functionality, capability, operation or software. SLI considers the nature of this change to be De Minimis and therefore not to affect the **Verity Voting 2.2.2** Federal certification status. SLI reviewed the **Verity Scan 2.2.2** source code and no discrepancies were observed. The code changes are to three DLL files present on the Verity Scan CFast and are fully limited to support of recognizing and operating the MTD-MNA1 modem. The complete suite of VVSG EMI/EMC test requirements performed by PTI, Hart's updated internal QA testing including security and hash validation testing is adequate, and no additional testing is required.

As required under section 3.4.3 of the EAC's Voting System Testing and Certification Program Manual Version 2.0, Hart InterCivic has provided the necessary information to verify the ECO 01325 change is De Minimis.

	Approved by/Title	Signature:	Date:
	Darrick Forester Hardware Test Engineer		15-Apr-19
	Traci Mapps Director of Operations		15-Apr-19