United States Election Assistance Commission

Certificate of Conformance

VVSG 2005 VER. I

EAC

CERTIFIED

MicroVote EMS 4.1
(Modification)

The voting system identified on this certificate has been evaluated at an accredited voting system testing laboratory for conformance to the *2005 Voluntary Voting System Guidelines Version 1.0*. Components evaluated for this certification are detailed in the attached Scope of Certification document. This certificate applies only to the specific version and release of the product in its evaluated configuration. The evaluation has been verified by the EAC in accordance with the provisions of the EAC *Voting System Testing and Certification Program Manual* and the conclusions of the testing laboratory in the test report are consistent with the evidence adduced. This certificate is not an endorsement of the product by any agency of the U.S. Government and no warranty of the product is either expressed or implied.

Product Name: MicroVote EMS 4.1 (Modification)

Model or Version: Version 4.1

Name of VSTL: NTS Huntsville

EAC Certification Number: MVTEMS41

Date Issued: July 16, 2015

Chief Operating Officer & Acting Executive Director

Scope of Certification Attached

Scope of Certification

Manufacturer: **MicroVote General Corporation**   *Product*: **EMS 4.1 (Modification)**

VSTL: **NTS Laboratories**   *Certification #*: **MVTEMS41**   *Standard*: **VVSG 2005**   *Date*: **07/16/2015**

This document describes the scope of the certification of the modified system identified above, which is the system certified under certificates MVTEMS4 and MVTEMS40B (Modified) with changes modifying the system to MicroVote EMS 4.1 (Modified). Configuration changes, revision changes, additions or subtractions from the system defined in this document are not included in this certification.

Significance of EAC Certification

An EAC certification is an official recognition that a voting system (in a specific configuration or configurations) has been tested to and has met an identified set of Federal voting system standards. An EAC certification is **not**:

- An endorsement of a Manufacturer, voting system, or any of the system's components.
- A Federal warranty of the voting system or any of its components.
- A determination that a voting system, when fielded, will be operated in a manner that meets all HAVA requirements.
- A substitute for State or local certification and testing.
- A determination that the system is ready for use in an election.
- A determination that any particular component of a certified system is itself certified for use outside the certified configuration.

Representation of EAC Certification

Manufacturers may not represent or imply that a voting system is certified unless it has received a Certificate of Conformance for that system. Statements regarding EAC certification in brochures, on Web sites, on displays, and in advertising/sales literature must be made solely in reference to specific systems. Any action by a Manufacturer to suggest EAC endorsement of its product or organization is strictly prohibited and may result in a Manufacturer's suspension or other action pursuant to Federal civil and criminal law.

Language capability:

In addition to English, the voting system has the capability of presenting the ballot, ballot selections, review screens and instructions in Spanish.

Definition of Modification:

A modification is any change to a previously EAC-certified voting system's software, or firmware or hardware that is not determined to be a de minimis change. All modifications to a voting system require testing and review by the EAC in accordance to the requirements of Chapter 4 of the Voting System Testing & Certification Program Manual.

Certified System before Modification:

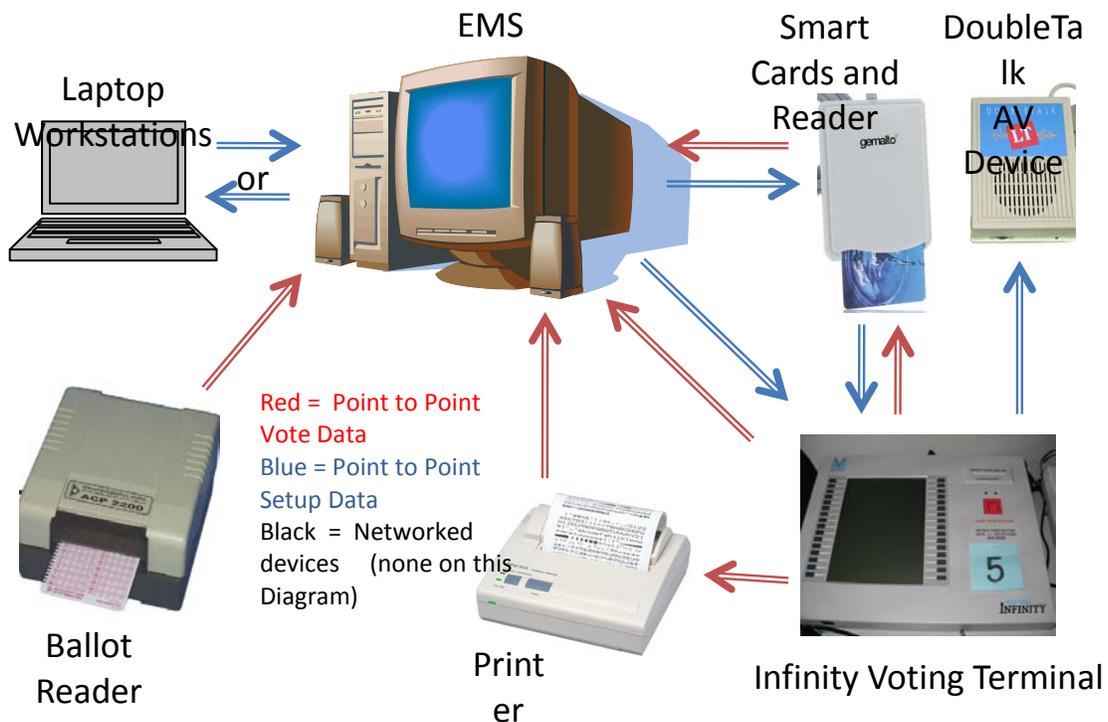MicroVote General Corporation Election Management System Release 4.0
Certificate ID: MVTEMS40

MicroVote General Corporation Election Management System Release 4.0B (revision)
Certificate ID: MVTEMS40B

Components Included:

This section provides information describing the components and revision level of the primary components included in this Certification.

Red = Point to Point Vote Data
Blue = Point to Point Setup Data
Black = Networked devices   (none on this Diagram)

System Component	Software or Firmware Revision	Hardware Revision	COTS Information	Dependency Notes
EMS Software MicroVote 4.1	Software 4.1.21.0	N/A	--	MicroVote EMS 4.1
EMS Server Dell Desktop	COTS SQL SERVER 2012 SP1	COTS Model DHM or Dell Optiplex 3010	Windows 7 Professional SP1	MicroVote EMS 4.1
Laptop(s) Dell	COTS SQL SERVER 2012 SP1	COTS Model Dell Latitude PP17L or E5440	Windows 7 Professional SP1	MicroVote EMS 4.1
Infinity Model VP 1 Voting Panel	Firmware V4.10-983	Rev C or Rev D.05	--	Rev C – All Rev D.05 EMS4.1
Scanner Dual Sided Chatsworth ACP 2200	N/A	COTS Model 605000-190	--	All Certified Systems
Printer Seiko	N/A	COTS Model DPU-414 or DPU-3445	--	All Certified Systems
Doubletalk Model LT3	BIOS0212	V1.0 LT RC8650	--	All Certified Systems
Smartcard Reader	COTS	COTS	PC/SC compatible USB contact reader/writer	MicroVote EMS 4.1
Smart Cards	N/A	16K or 115K	--	16K – All 115K-EMS 4.1
Voting Booth	N/A	Model 2000	--	All Certified Systems

System Limitations

This table depicts the limits of the system has currently been exercised and the vendor calculated design limits.

Characteristic	Limiting Component	Evaluated	EMS	Infinity	ACP 2200
Maximum Ballot Positions	Ballot Design Form	150	600	600	402
Maximum Precincts in Election	Precinct Number	559	9,999	9,999	9,999
Maximum Contests in Election	Contests in Ballot Style * Ballot Styles/Election	100	300,000	2,999,700	2,009,799
Maximum Candidates/ Counters in Election	Precinct Counters * Total Precincts	300	5,989,401	5,989,401	4,019,598
Maximum Candidates/ Counters in Precinct	Ballot Design Form	125	599	599	402
Maximum Candidates/ Counters in Activation	Ballot Design Form	125	599	599	402
Maximum Ballot Styles in Election	Ballot Style Number	270	1000	9999	1000
Maximum Contests in a Ballot Style	Ballot Design Form	50	300	300	201
Maximum Candidates in a Contest	Ballot Design Form	68	599	599	401
Maximum Count for any Precinct Element	Transact-SQL Bigint	600	Note 1	65,000	Note 1
Maximum Ballot Styles in a Precinct	Precinct Style Assignment Form	**1**	1	1	1
Maximum Activations per Ballot Style	Build Activations Form	**15**	99	30	99
Maximum Activations per Election	Act/Ballot Style * Ballot Style/Elec	1300	99,000	299,970	299,970
Maximum Number of Parties	Party Code Combinations	8	50,653	598	400
Maximum Vote For in Contest	Office Vote Limit	56	99	64	99

Note 1: 9,223,372,036,854,770,000

Functionality

This section outlines the features that the system does not provide:

VVPAT	No
Wide Area Network Functionality (No use of modems even if included in COTS devices)	No
Used as a precinct counting device?	No
Local Area Network Functionality (No use if TCP/IP, No use of IRad, No use of Wireless even though those interfaces are present on defined equipment)	No

Primary: Open Defined in VVSG 2.1.7.2	No
Names of candidates rotation: Defined in VVSG 2.1.7.2	No
Recall: Defined in VVSG 2.1.7.2	No
Ranked Voting: Defined in VVSG 2.1.7.2 (Voters rank candidates in a contest in order of choice (1,2,3,etc.) A write in vote can be ranked)	No
Ranked Vote Tabulation: Defined in VVSG 2.1.7.2	No
Voting method exclusive to multi-member boards. (Each voter may cast as many votes as there are seats to be filled and may cast two or more of those votes for a single candidate)	No
Encryption of data (Per Federal Standards -FIPS 140-2)	No

Engineering Change Orders (ECOs) Included in the Certified Product:

The system must be configured with all the changes listed in the original certification MVTEMS40, revised certification MVTEMS40B plus for optional Rev D05 Infinity hardware the new changes listed in this table. This table does not include any de minimis changes that may be applied to the system

DATE	ECO Identification	Manufacturer	Description
2/5/2014	# 1505	Carson Manufacturing Co. Inc.	Adjusted scan delay time and clock checks for higher speed main processor
2/27/2014	# 1510	Carson Manufacturing Co. Inc.	Add AAEON PCM-3336-Bridge-A03 as an approved alternate
4/28/2014	# 1518	Carson Manufacturing Co. Inc.	Update Infinity BOM for new production
11/19/2014	#1542	Carson Manufacturing Co. Inc.	New motherboard (baseboard)
5/22/2015	# 1548	Carson Manufacturing Co. Inc.	Modification to mSATA cable to prevent EMI susceptibility
5/26/2015	# 1549	Carson Manufacturing Co. Inc.	Added support for latest Gemalto smart card reader
6/12/2015	# 1553	Carson Manufacturing Co.	New RAM and mSATA

		Inc.	chips

List of Changes to Certified System:

This section outlines the features that have been changed from the originally certified system:

Enhancement	System	Description
E-01	EMS and Infinity Panel	Added support for 115kB tally smart cards. The increased space allows larger jurisdictions to use the tally card feature instead of the direct connect option.
E-02	EMS	Increase undervote manual entry capacity. For elections which contain large numbers of undervoted contests (i.e. a large primary election with a combined absentee precinct) this enhancement will allow a single manual vote entry to input the vote totals eliminating the need to split the entry into smaller pieces.
E-03	EMS	Add tblProcessingError event log to detail audit report for enhanced audit reporting of unexpected processing errors that occur during EMS application execution.
Defect	**System**	**Description**
D-01	EMS	Audit reporting is now available within the EMS application as a standard report. Previously this was provided via multiple disk files.
D-02	EMS	Database version control has been added to prevent the opening of backup elections containing executable code from other versions of the EMS software.
D-03	EMS	Method of inserting ballot objects, informational messages, error trapping and logging for the ballot designer have all been improved to address a previously identified ballot designer deficiency.
D-04	EMS	The overall election voter turnout percentage on the Election Summary and All Precincts header was corrected.
D-05	EMS	Candidate reorder warning message is now consistently displayed.
D-06	EMS	Several changes were made to integrate Windows 7 SCAP security hardening.
D-07	Infinity	Shading was removed from contest headers to maintain 3:1 contrast ratio
D-08	Infinity	Lighten/Darken button functionality reversed
Replacement	**System**	**Description**
R-01	Infinity	Added Infinity hardware version D05 with new processor board/bridge/heat sink assembly, universal baseboard, LED display, external uninterruptable power supply and optional new smart card reader.

R-02	EMS	PC/SC compatible USB contact smart card reader
R-03	EMS	Upgraded development environment to Visual Studio 2013
R-04	EMS	Upgraded to Microsoft .Net Framework 3.5 SP1
R-05	EMS	Upgraded to Microsoft 7 Professional SP1
R-06	EMS	Upgraded to ComponentOne Ultimate library
R-07	EMS	Eliminated 3rd party Franson SerialTools library
R-08	EMS	Upgraded to Microsoft SQL Server 2012 Express SP1
R-09	EMS	Upgraded to Advanced Installer Enterprise Edition V11.1
R-10	EMS	Added new Dell desktop and laptop models