



United States Election Assistance Commission



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Certificate of Conformance

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**MicroVote EMS 4.0B  
(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 4.0B (Modification)

Model or Version: Version 4.0B

Name of VSTL: Wyle Laboratories, Inc.

EAC Certification Number: MVTEMS40B

Date Issued: August 23, 2010

*Executive Director, U.S. Election Assistance Commission*

**Scope of Certification Attached**



# Scope of Certification: System Modification

Manufacturer: **MicroVote General Corporation**

Product: **MicroVote EMS 4.0B (Modification)**

Laboratory: **Wyle Laboratories**

Certificate: **MVTEMS40B**

Standard: **VVSG 2005**

Date: **08/18/2010**

This document describes the scope of the certification of the modified system identified above, which is the system certified under certificate MVTEMS4 with changes modifying the system to MicroVote EMS 4.0B (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.

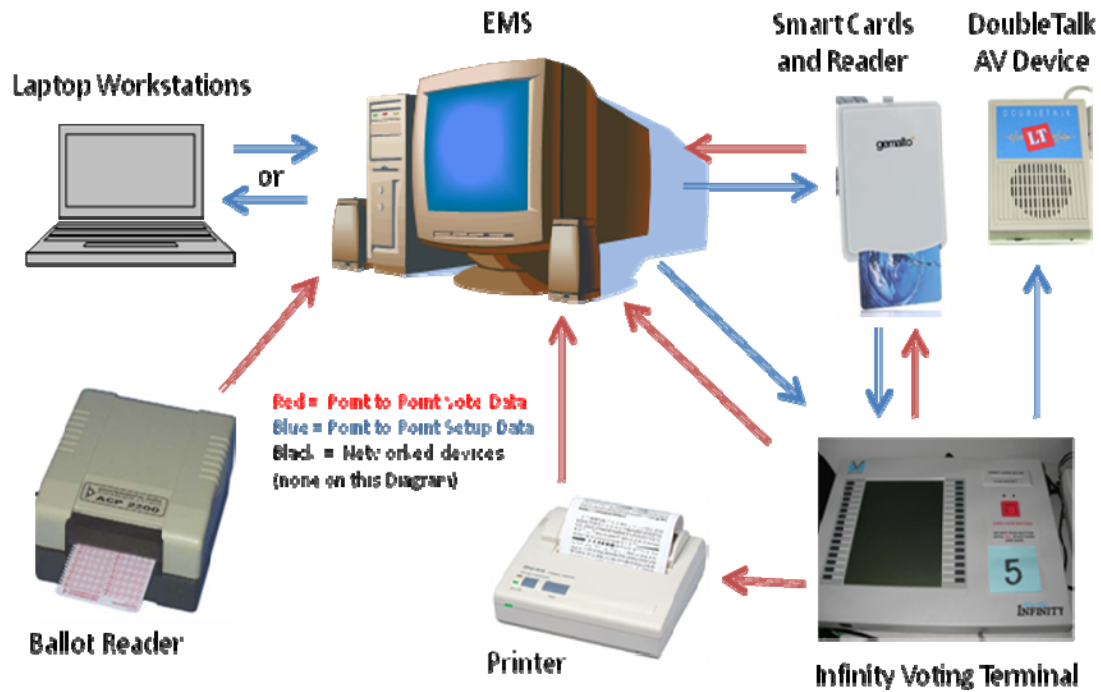
**Certified System before Modification:**

**MicroVote General Corporation Election Management System Release 4.0**

Certificate ID: **MVTEMS40**

**Components Included:**

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



<i>System Component</i>	<i>Software or Firmware Revision</i>	<i>Hardware Revision</i>	<i>COTS Information</i>	<i>Dependency Notes</i>
<b>EMS Software</b> MicroVote 4.0B	<b>Firmware</b> 4.0.26.0	-----	-----	MicroVote EMS 4.0B
<b>EMS Server</b> Dell Desktop	<b>COTS</b> MS SQL 2000	<b>COTS</b> Model DHM	Windows XP Profession SP2	Both Certified Systems
<b>Laptop(s)</b> Dell	-----	<b>COTS</b> Model PP17L	Windows XP Profession SP2	Both Certified Systems
<b>Infinity</b> Model VP 1 Voting Panel	<b>Firmware</b> 4.00B	Rev C  See Certified Configuration Notice	-----	Both Certified Systems  <i>See Certified Configuration Notice</i>

<b>System Component</b>	<b>Software or Firmware Revision</b>	<b>Hardware Revision</b>	<b>COTS Information</b>	<b>Dependency Notes</b>
<b>Scanner Dual Sided</b> Chatsworth ACP 2200	COTS	COTS Model 605000-190	-----	Both Certified Systems
<b>Printer</b> Seiko	COTS	COTS Model DPU – 414 or Model DPU – 3445	-----	Both Certified Systems
<b>Printer</b> Dell	COTS	COTS	-----	MicroVote EMS 4.0B
<b>Doubletalk</b> Model LT3	<b>Firmware</b> BIOS0212	V1.0 LT RC8650	-----	Both Certified Systems
<b>Smartcard Reader</b> Gemplus	COTS	COTS	-----	Both Certified Systems
<b>Mark Products</b> LM64K83 LCD Display	COTS	COTS	COTS	Both Certified Systems
<b>Smart Cards</b>	-----	COTS	-----	Both Certified Systems
<b>Voting Booth</b>	-----	Model 2000	-----	Both Certified Systems

**Certified Configuration Notice:**

The manufacturer of the MicroVote EMS 4.0B voting system uses the term Engineering Change Number (ECN), which is equivalent to the term Engineering Change Order (ECO). All applicable ECO’s must have been applied to the MicroVote EMS 4.0B (Modification) in order for it to be considered in a certified configuration.

ECO 103 must be applied to all Infinity Voting Panels with serial numbers below 5000, and the updated Field Implementation ECO 1408 must be applied to all Infinity Voting Panels with serial numbers 5000 and above. If an Infinity Voting Panel is being fielded as an EAC certified system in an incorrect configuration, the manufacturer will be subject to the provisions in the Certification Manual and may result in a Manufacturer’s suspension or other action pursuant to Federal civil and criminal law.

**System Limitations:**

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

<b>Characteristic</b>	<b>Limiting Component</b>	<b>Evaluated</b>	<b>EMS</b>	<b>Infinity</b>	<b>ACP 2200</b>
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	<i>Note 1</i>	65,000	<i>Note 1</i>
Maximum Ballot Styles in a Precinct	Precinct Style Assignment Form	<b>1</b>	1	1	1
Maximum Activations per Ballot Style	Build Activations Form	<b>15</b>	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:**

The table below specifics the features that the system does *not* support:

<b>Function</b>	<b>Inclusion</b>
VVPAT	No
Used as a precinct counting device?	No
Local Area Network Functionality (No use if TCP/IP, No use of infrared, 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 Included in the Modification:**

The system must be configured with all the changes listed in the original certification MVTEMS40B plus the new changes listed in this table. This table does not include any de minimis changes that may be applied to the system.

<b>DATE</b>	<b>ECO Identification</b>	<b>Manufacturer</b>	<b>Description</b>
6/02/2010	# 103	Carson Manufacturing Co. Inc.	ECN 103 defines the scope, applicable documents, service history, identification, upgrade and inspection procedures in order to accommodate use of newer flash drives of 32MB or larger in older Infinity voting panels. Execution of this upgrade using a soldered bridge between pin 33 and an adjacent grounded pin will bring older panels into compliance for use in certified voting systems.
4/19/2010	# 1408 Updated Field Implementation	Carson Manufacturing Co. Inc.	Accommodates the use of newer flash drives of 32MB or larger for use in the Infinity voting panel. ECN 1408 adds a manufactured "trace" to the motherboard which connects pin 33 on the connector holding the flash drive to ground.

List of Changes to Certified System:

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

<b>Enhancement</b>	<b>System</b>	<b>Description</b>
E-01	EMS	A five minute timeout was removed and two stored procedures were improved to provide better performance when posting vote data.
E-02	EMS	Offices were wrapped if there was no room for the entire office in a column or on a page. A modification was made to move the entire office to the top of the next column if the entire contest would not fit in the previous column.
E-03	EMS	A warning was added for the "Resorting of Candidate" function to prevent unintended results.
E-04	EMS	Candidate name wrapping caused ballots to be longer than necessary. A calculation was updated to calculate the page width accounting for the fact that a two-column layout only needs space for a single gutter where the calculation previously allocated space for a gutter per column. In the EMS, the default border for the candidate box was removed and font size was modified to decrease the ballot size and provide a more accurate representation of the Infinity Panel display.
E-05	EMS	"All" option on the Precinct summary report was modified to be more useable. Page breaks and numbering were added to enhance the

		readability of the report.
E-06	EMS	A modification was made to add running mate to the "Report", "Tally", and "Phonetics" fields.
E-07	EMS	Report and Tally Names did not allow the "/" or "&" characters. A modification was made to allow these characters.
E-08	EMS	The arrow navigation keys required a double press to get to the next field. A modification was made to allow a single selection to navigate to the next field.
E-09	EMS	Activation names did not allow the dash character. A modification was made to allow the dash character in the activation name.
E-10	EMS	Text could not be added between the "Office Title" and "Candidate Names" in the ballot layout. A modification was made to allow additional text to be added between these fields.
E-11	EMS	To allow the ballot designer to observe custom text formatting by the user, the auto left and right alignment was removed for this text except for the first line of text on absentee ballots.
<b><i>Defect</i></b>	<b><i>System</i></b>	<b><i>Description</i></b>
D-01	EMS	An office placed on a ballot without enough space for the entire contest was being split into two parts with a gap. This issue has been corrected.
D-02	EMS	The "Sort By Name Within Party" function did not function properly. Non-Partisan candidate fields like "Write-in"



		and "No Candidate Filed" would appear at the top of the sorted list even after candidates were added. A modification was made to place non-party candidates (including "Writein" and "No Candidate Filed") at the end of the candidate list.
D-03	EMS	The sorting preference of "None" placed the "No Candidate" after regular candidate names and before "Write-In" candidate name. A modification was made to preserve the order of entry for candidates.
D-04	EMS	Ballot text ran across the center line on the Infinity panel. A modification was made to correct this issue.
<b>Feature</b>	<b>System</b>	<b>Description</b>
F- 01	EMS	"Merge" database option was added to the existing options to backup, restore, delete, and copy a current database. This feature shall merge a "backed up" election database into the current database.
<b>Hardware</b>	<b>System</b>	<b>Description</b>
H-01	Infinity Voting Panel	The use of Mark Products LTBSHH356JC graphic LCD Module is being replaced by the Hitachi SP24V001-A due to "end of life" for the LTBSHH356JC. The new display shall be an alternate display thus an Infinity panel can have either display.