

## Electronic Voting Machine Information Sheet

### ES&S Model 100 Optical Scan System

**Name/Model:** ES&S Model 100 Optical Scan System

**Maker:** Election Systems & Software

**Voter-Verifiable Paper Trail Capability:** Uses paper ballots



**Brief Description:** The ES&S Model 100 is a precinct-based, voter-activated paper ballot counter and vote tabulator. It is one of two computer voting systems used in DC polling places in 2010, the other being the iVotronic touch screen. The ES&S M100 uses visible light scanning to count and record voter information from paper ballots. The ES&S possesses the capability to recognize and alert voters to over and undervoting errors, allowing them to make changes to their ballots. When the polls close, the ES&S Model 100 prints out the voter logs so election officials can have a paper tally.<sup>1</sup>

**Detailed Voting Process:** The ES&S Model 100 functions much like a traditional paper ballot system. Upon entering the voting precinct, the voter will receive a paper ballot; the voter then shades in the paper ballot with any standard pen or pencil and inserts the ballot into the ES&S Model 100, where they are given a chance to review their votes. As votes are entered, the ES&S Model 100 stores the vote tallies on its internal memory card. When the polls close, the ES&S Model 100's internal printer prints out the precinct's vote report on paper.<sup>2</sup>

### What to Look For

- Security Seals. Ideally, the M100's exposed ports, memory card access areas, ballot box doors and case seams would be covered with tamper-evident security seals. The integrity of these seals should be maintained at all times, and only

<sup>1</sup> From the manufacturer's website, available at: <http://www.essvote.com/HTML/products/m100.html>

<sup>2</sup> From the manufacturer's product brochure, available at:  
<http://www.essvote.com/HTML/docs/Model100.pdf>

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breached under controlled, explained circumstances. A voided seal looks like this: <http://www.flickr.com/photos/joebeone/2247733620/> . Seals should be logged to maintain chain of custody of sensitive materials.

- **Ballot Box Access.** Optical scan systems have at least one and possible more ballot boxes. Each ballot box should be inspected by a voter at the beginning of voting to make sure that they are empty. These ballot boxes should be locked and/or be sealed with tamper-evident tape.
- **The Memory Card is Sensitive.** Corrupt memory cards may be able to introduce viruses, cause the main election server to crash and falsify votes. Access to the memory card should be controlled, monitored and logged at all times.
- **Correct Inks.** Some Optical Scan systems have trouble reading red inks or inks with red in them. Voters should use the writing instrument provided at the polling place or, if voting at home, a black ballpoint pen that does not bleed through paper.
- **Keys.** The keys for the M100 are the same for all M100 machines and are easily pickable with readily available tools. Care should be observed around the ballot box lock and the scanner key lock (turns the system off and on).
- **Counterfeit ballots.** It is fairly easy to frustrate the counterfeit ballot detection mechanism on the M100. People who produce counterfeit ballots could cast multiple votes and the detectability of these ballots would only depend on how close they appeared to be like the real ballot cards.

### Past Problems:

The ES&S Model 100 has many reported problems, ranging from unidentifiable malfunctions in a Hawaii election, to missing votes in 98% of precincts in a Texas election, to substantial delays in accepting ballots and returning election results in Rhode Island, to flawed ballot data causing serious election irregularities in another Texas election. These problems have been encountered across multiple versions of the machine and its operating system and after multiple certification processes.<sup>3</sup>

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<sup>3</sup> From the VotersUnite webpage, available at: <http://www.votersunite.org/info/ES&Sinthenews.pdf>