



SAES1800

Powered by Dominion Voting.

Accuracy, Accountability and Accessibility are the defining advantages of the SAES1800 Precinct Tabulator. This third generation ballot scanning device is a Precinct-based Optical Unit designed to register and tally votes entered on a paper ballot.

Key Benefits Of SAES1800

- Over 99.99999% accurate.
- 100% transparent - the PCOS stores a digital image of every ballot cast, and appends to each image an audit record that clearly indicates how that ballot was interpreted by the system, leaving no room for error or doubt. Supports duplex scanning so that both sides of the paper ballot can be read in a single pass.
- Ballots can be inserted in any orientation, reducing the time required to feed the ballots
- Runs on a main power source of 220VAC and has a backup battery so the equipment will continue operating in the event of a main power failure.

Technical Features

- Weight:** approximately 14lbs (including the backup battery)
- Dimensions:** 17" wide x 13" deep x 3.5" high
- Paper-ballot size:** 8.5" wide x 11" - 30 + " long
- Paper-ballot weight:** 110 pound text or 60 pound cover, Opaque 161.78 gsm
- Implements a state-of-the-art encryption algorithm to protect all electoral data, along with digital signatures for both data and software
- Full ballot-level audit log of each scanned ballot. This patented technique, known as the 'watermark' demonstrates beyond a doubt, the accurate interpretation of each and every ballot cast.
- Audit logs are immutable since they are protected with encryption and digital signatures.
- The SAES 1800 is Election Markup Language (EML) compliant
- Can be fully integrated with CCOS solutions
- The LCD display can be configured to provide real-time feedback to the voter on the choices selected
- The SAES1800 can also feature a tethered Audio Tactile Interface (ATI) device, which is designed to allow people to vote through the multi-lingual audio interface.

Ballot Design And Handling

- Supports any mark type, such as shaded circles (full and partial), checkmarks and/or crosses.
- Supports multiple ballot layouts, such as portrait, landscape, multi-column and multi-page.
- Design of paper ballot supports bar coding, invisible ink, security paper and more, to guarantee ballot authenticity.
- Treatment of fake, invalid or previously scanned ballots:** The SAES1800 Precinct Tabulator can be configured to reject unacceptable ballots automatically by diverting them to an alternative container.
- Treatment of over- and under-voting:** The SAES1800 Precinct Tabulator can be configured to alert voter in these instances, or to automatically apply the counting rules defined by the election authority without feedback messages.



> Technical Sheet SAES1800

Precinct Tabulator

Hardware specifications	
Scanning speed	› Scanning speed of approximately 12 inches per second.
Scanning resolution	› 200 dpi, 4-bit greyscale scanning with integrated tracking digitizer
Scanning color	› Supports red light scanner (filters red), or white light scanner (no filter, scans all colors)
Sensor technology	› Contact Image Sensor
Duplex scanning	› One-pass both sides
Ballot feeding orientation	› All four orientations
Display type	› LCD
Display size	› Quarter VGA (320x240)
Document feeder type	› Manual single ballot
Transmission options	› Ethernet, dial-up, or GPRS modem
Printing options	› 2.25" thermal printer
Storage options	› Onboard memory and removable memory card
Accuracy	› Tested to stringent accuracy levels of U.S. Federal 2005 VVSG Vol 1 and Vol 2 by Systest Labs, a certified federal testing lab
Failure rate (MTBF and MTTR)	› MTBF of 900 hours, and MTTR of 0.54 hours, and Availability of 99.94%
Data preservation/recovery in event of failure	› Full redundancy with results stored internally and backed up on removable memory card.
Main power source	› 220V AC
Alternative power source	› External lead-acid battery
Weight	› 14 lbs (including battery)
Dimensions	› 17" x 13" x 3.5" (Width x Depth x Height)
Ruggedness (vibration/fall resistance)	› Bench Handling Test: 24 drops from corners raised to 4 inches, plus one 10-foot drop in storage case Vibration Test: one hour of MBST following 10Hz for 30 minutes on each axis (3 times) while item was within box

Paper	
Supported paper sizes	› Width: 8.5", length: 7" - 22"
Supported paper specifications	› 110 pound text or 60 pound cover, Opaque, 161.78 gsm Grade: Offset Opacity: Minimum C0.89 = 100 Color: White Brightness: Tappi T 452 ELrepho without Filter 82, or ELrepho without Filter 72, Minimal or No Optical Brighteners Brightness (%ref): >80 Fluorescence: Must be UV Dull (i.e. showing no fluorescence under ultraviolet light)
Mark type	› Any
Supported ballot layouts	› Portrait, landscape, multi-column, multi-page
Ballot box options	› Foldable cardboard, plastic or metal ballot box acts as a podium for the PCOS unit

Imaging	
Image file type	› BMP, TIFF
Image file size (per ballot)	› BMP (250KB to 470KB). TIFF (Compressed)

Software	
Operating system	› uClinux

Security	
Data encryption	› Various encryption algorithms utilized
Software and data protection	› Digital signatures & encryption
Integrity	› Answered above
Audit log contents and immutability	› Full audit log is encrypted and signed
Security marks	› Bar code, invisible ink, paper, security paper, etc.
Treatment of fake, invalid or unreadable ballots	› Fake, spurious or previously scanned ballots can be rejected, or automatically diverted into a separate compartment of the ballot box. This option is configurable to suit the preferences of the election authority.

Tabulation Options	
Treatment of over- and under-voting	› PCOS can be configured to alert voters with "2nd chance" voting opportunities, if desired.
Consolidation options	› Automatically transmits results to CCS via external modem.

Compliances & Integration	
Election Markup Language (EML) compliance	› Yes
Integration of PCOS/CCOS solutions	› Yes

Additional Functionalities	
Audio Voting	› Tethered Audio Tactile Interface (ATI) device as an optional feature

..... About Smartmatic

Smartmatic is a multinational company that designs and deploys technological solutions aimed at helping governments fulfill, in the most efficient way, their commitments with their citizens. It is one of the largest cutting-edge technology suppliers, with a wide and proven experience in the United States, Latin America, Asia and the Caribbean.