



United States Election Assistance Commission

Certificate of Conformance

Hart Verity Voting 2.7



The voting system identified on this certificate has been evaluated at an accredited voting system testing laboratory for conformance to the *Voluntary Voting System Guidelines Version 1.0 (VVSG 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: Verity Voting

Model or Version: 2.7

Name of VSTL: SLI Compliance

EAC Certification Number: HRT-Verity-2.7

Date Issued: June 7, 2022

Executive Director

Scope of Certification Attached

Manufacturer: *Hart InterCivic*
System Name: *Verity Voting 2.7*
Certificate: *HRT-Verity-2.7*

Laboratory: *SLI Compliance*
Standard: *VVSG 1.0*
Date: *6/7/2022*



Scope of Certification

This document describes the scope of the validation and certification of the system defined above. Any use, configuration changes, revision changes, additions or subtractions from the described system are not included in this evaluation.

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.

System Overview:

The **Verity Voting 2.7** system represents a set of software applications for pre-voting, voting and post-voting election project activities for jurisdictions of various sizes and political division complexities.

Verity Voting 2.7 functions include:

- Defining the political divisions of the jurisdiction and organizing the election with its hierarchical structure, attributes, and associations.

- Defining the election events with their attributes such as the election name, date, and type, as well as contests, candidates, referendum questions, voting locations and their attributes.
- Preparing and producing ballots for polling place and absentee voting or by-mail voting.
- Preparing media for precinct voting devices and central count devices.
- Configuring and programming the **Verity Scan** digital scanners for marked paper ballots and Verity Touch Writer printed vote records.
- Configuring and programming the **Verity Touch Writer** BMD devices.
- Configuring and programming the **Verity Touch Writer Duo Standalone** BMD devices.
- Configuring and programming the **Verity Controller** with **Verity Touch Writer Duo** BMD devices.
- Configuring and programming the **Verity Print** on-demand ballot production device.
- Transmission of the election results via **Verity Relay**.
- Transmission of the election results via **Verity Transmit**.
- Producing the election definition and auditing reports.
- Providing administrative management functions for user, database, networking, and system management.
- Import of the Cast Vote Records from **Verity Scan** devices and **Verity Central**.
- Preview and validation of the election results.
- Producing election results tally according to voting variations and election system rules.
- Producing a variety of reports of the election results in the desired format.
- Publishing of the official election results. Auditing of election results including ballot images and log files.

Verity Scan is a digital scan precinct ballot counter (tabulator) that is used in conjunction with an external ballot box. The unit is designed to scan marked paper ballots or Verity Touch Writer Duo printed vote records, interpret and record voter marks on the marked paper ballot or record voter selections on the printed vote records, and deposit the ballots into the secure ballot box.

Verity Relay provides remote transmission capability. Utilizing an optional modem with **Verity Scan**, at close of polls, results are transmitted from the polling place device to the **Verity Relay Receiving Station** workstation.

Verity Transmit provides remote transmission capability. Utilizing an optional modem, Wi-Fi, or Ethernet accessory kit. Results from the **Verity Scan** and **Verity Central** are transmitted to the **Verity Transmit Receiving Station** workstation.

The **Verity Touch Writer** is a standalone precinct level Ballot Marking Device (BMD) which also includes an Audio Tactile Interface (ATI), which allows voters who cannot complete a paper ballot to generate a machine-readable and human readable paper ballot, based on vote selections made, using the ATI.

The **Verity Touch Writer Duo** is a daisy chained configuration of a **Verity Controller** device configured with up to twelve **Verity Touch Writer Duo** BMD devices, which allows voters to

utilize the touchscreen or optional Audio Tactile Interface to generate a machine-readable and human readable printed vote record, based on vote selections made.

The **Verity Touch Writer Duo Standalone** is a standalone BMD device, which allows voters to utilize the touchscreen or optional Audio Tactile Interface to generate a machine-readable and human readable printed vote record, based on vote selections made.

Verity Print is an on-demand ballot production device for unmarked paper ballots.

Verity Election Management allows users with the Administrator role to import and manage election definitions. Imported election definitions are available through the Elections chevron in Build. Users can also delete, archive, and manage the election definitions.

Verity User Manager enables users with the correct role and permissions to create and manage user accounts within the **Verity Voting** system for the local workstation in a standalone configuration, or for the network in a networked configuration.

Verity Desktop enables users with the correct roles to set the workstations' date and time, gather **Verity** application hash codes (in order to validate the correctness of the installed applications), and access to Windows desktop.

Verity Data provides the user with controls for entering and proofing data and audio. **Verity Data** also performs validation on the exported information to ensure that it will successfully import into **Verity Build**.

Verity Build opens the election to proof data, view reports, and print ballots, and allows for configuring and programming the **Verity Scan** digital scanners, and **Verity Touch Writer** and **Controller/Touch Writer Duo** BMD devices, **Verity Print**, as well as producing the election definition and auditing reports.

Verity Central is a high-speed, central digital ballot scanning system used for high-volume processing of ballots (such as vote by mail). The unit is based on COTS scanning hardware coupled with custom **Hart**-developed ballot processing application software which resides on an attached workstation.

Verity Count is an application that tabulates election results and generates reports. **Verity Count** can be used to collect and store all election logs from every **Verity** component/device used in the election, allowing for complete election audit log reviews.

Verity Relay Receiving Station is a remote transmission software application that receives election data transmissions sent by Verity Scan devices equipped with an optional Relay modem accessory.

Verity Transmit Receiving Station is a remote transmission software application that receives election data transmissions sent by Verity Transmit devices.

Certified System before Modification (If applicable):

Verity Voting 2.6

Anomalies and/or Additions addressed in Verity Voting 2.7:

The following anomalies found in previous Verity releases are corrected in the Verity Voting 2.7 modification:

1. Verity Data/Build
Help screen for: "Shared Device Behaviors" is inaccurate. The help screen states, "Require user to view all choices in each contest" however what is displayed is "Require voters to view all choices in each contest."
2. Verity Scan
Scanner multi-feed calibration can get stuck on a spinner and not show the results screen, requiring a lock and unlock of the tablet to exit the screen.
3. All Verity Devices
Physical keyboard input of "Alt-ESC" returns to the user to the Verity launcher splash screen.
4. Verity Count
If the number of columns in contest are less than or equal to 14 in the Canvass Results Report, then a blank page will follow the contest on the PDF export.

The following additions were made:

Features for all devices and workstations

- When using the System Validation Tool on devices or workstations, the system exports hashes for all Verity-related system files, as well as the files themselves.
- Verity supports adding new languages to devices and workstations via the "Language Pack" functionality.
- Verity supports the following additional languages:
 - Gujarati
 - Hmong
 - Lao
 - Hawaiian
 - Cantonese
 - Punjabi
 - Bengali

COTS updates

- Added support for the Brother HL-L6400DWVS laser printer. This printer now replaces the OKI Data B432 printer for use on Verity Touch Writer, Verity Printer, Verity Build, and for report printing on all Verity workstation software.
- Added the Duracell DR660PSS UPS for battery backup for the new Brother HL-L6400DWVS printer when used with the Verity Touch Writer laser printer.

- Added support for the IntoPrint SP1360 laser printer, which is a brand of the OKI Data C931 printer that it replaces on Verity Build.
- Added additional CFast card vendor.
- Added magnifying devices for use with ballots in the polling place.

Hawaii-specific Features

- Supports General and Open Primary elections only.

Verity Count Reporting

- Now allows users to set a custom order for contests on results reports across all Tasks in an election.
- Includes the following new reports and exports:
 - Three-Column Summary Results Report
 - Three-Column Precinct Results Report (export only)
 - Statement of Vote Report
 - Precinct Detail Export
 - Summary Export
- Adds support for adding a Run ID to the report header of the following reports:
 - Three-Column Summary Results Report
 - Three-Column Precinct Results Report
- Adds support for identifying the following reports as “zero reports”
 - Three-Column Summary Results Report
 - Three-Column Precinct Results Report
- Added support for calculating ballots cast in a multi-sheet election using the highest recorded sheet count for the following reports:
 - Three-Column Summary Results
 - Three-Column Precinct Results
 - Statement of Vote Report
 - Precincts Reporting
 - Summary Export
 - Precinct Detail Export
- Added an Election Preference to “Enable Hawaii results reports and exports”.
- Manual vote recording now allows users to enter sheet counts for each sheet that exists in the ballot for the precinct-split/party being adjusted.

Paper Ballot Features

- Paper ballots support a maximum paper size of 8.5”x22”, without stub capability.
- Paper ballot stubs support adding a customizable prefix to the stub number display.
- Verity now supports 80lb Text paper weight for ballots.

- Added targeting landmarks to ballot corners for option box triangulation.

Grid Ballot Features

- Verity now supports grid-based paper ballots, where office contests appear in columns and parties in rows on odd-numbered pages, and propositions appear in a column-based layout on even-numbered pages.
 - Proposition-only ballots can utilize both sides of a sheet.
- Grid-based paper ballots support all paper sizes in a landscape orientation (short edge on left):
- Grid-based paper ballots support the same stub sizes and options as column-based paper ballots.
 - 8.5" x 22" ballots do not support a stub
- Grid-based paper ballots support all paper ballot election definition elements EXCEPT:
 - Party Selector contests
 - Open Primary Party Selector contests
 - "Ranked Choice", "Cumulative", or "Fractional Cumulative" contests
 - Ballot Additional Text
 - Rotation
 - Column or page forcing on Office type contests
 - Column or page forcing is allowed for contests appearing on the Proposition side of the ballot.
 - Contest images
 - Dependent contests
 - Two-line write-ins
 - Uncommitted choices
- Grid-based ballots support candidate cross-filing, where if a voter marks multiple boxes for a cross-filed choice, it will be recorded as a single vote for the choice.
- Added support for Slate Choices, where two choice names can be treated as a single votable option.

Features for all devices

- Updated model for each Verity device
 - A single standardized circuit board replaces baseboard and I/O board combinations found in all Verity devices, with no change to functionality. Electronic components from the existing Tally Tape Thermal Printer are added directly to the baseboard.
 - Tally Tape thermal printer for report printing now uses Hart built plastics and firmware.
 - Rear panel connectors now recessed to increase ruggedness and reduce cable strain if a device is handled while cables are installed.

- Power input connector no longer contains to slide to release cable retention feature.
- Tamper evident seal now serialized
- All Verity devices now show the first three sections (XX.XX.XX) of the system version number in the user interface, without needing to reboot the device.
- All Verity devices now follow these optional VVSG 1.0 user-interface conventions:
 - If an unrecoverable error occurs on a polling place device, the device suspends voting operations and presents a clear indication to the user of the malfunction.
 - Warnings and alerts issued to a voter on a device shall state the nature of the problem; the set of responses available to the voter; and whether the voter has performed or attempted an invalid operation, or the voting equipment itself has malfunctioned in some way.
 - When color is used to indicate status in the system, the user interface uses green, white, or blue for normal status; amber or yellow for marginal status; and red for an error status.
 - When color is used to indicate the type of information displayed, the user interface uses green, white, or blue for general information; amber or yellow for warnings; and red to indicate problems that require immediate attention.

Features for Verity Scan

- Added support for Write-in Mark Detection, where Scan can return the ballot for second-chance voting input if a mark is detected in the write-in area, but the option box is not marked.
 - If the ballot is accepted as-is, unmarked write-ins will count only if the Build setting for default counting behavior is enabled, except for ranked-choice or cumulative contests
- Performance improvements that reduce ballot processing time. This change is applicable to all Verity Scan models.

Features for Verity Scan with Relay only

- Device startup reports are now labeled "Verity Scan with Relay," not "Verity Scan."
- Voter-facing screens now do not display the product name "Verity Scan with Relay."

Features for Verity Transmit

- Transmit supports transmitting vDrives written by:
 - Verity Central
 - Verity Scan
 - Verity Scan with Relay
- For Central vDrives, Transmit now displays "Central vDrive" in lieu of the vDrive polling place.

Features for all Workstations

- Secure Boot now enabled on workstations.
- Full Disk Encryption now required for all deployments.

Features for Election Management

- Added new feature “Configuration Control”, which supports limiting election variations based on what equipment and ballot types are used by a jurisdiction, eliminating unnecessary work for the user.

Features for Verity Data

- The Contest Title field limit is increased to 250 characters.
- Verity Data now supports entering separate contest instructions for devices and paper ballots.
 - Verity Data proofing reports containing contest instructions display both electronic instructions and paper instructions.
- Added support for defining Candidate Slate choices on grid-based ballots.
- Added additional rich-text formatting options for Ballot Additional Text.
- The Ballot Additional Text field limit increased to 3000 characters.
- Verity Data validates that fold lines do not intersect ballot landmarks, in addition to barcodes and option boxes
- The default PVR paper size changed to 8.5” x 11”.

Features for Verity Build

- Verity Build includes a new setting to print single language ballots on Touch Writer.
- Added support for Write-in Mark Detection, including:
 - New options to control second-chance voting behavior for unmarked write-ins on Scan devices.
 - New option to control the default counting behavior for unmarked write-ins on Scan devices.
- Added a note that “Setting the default Voting Method will also apply to Verity Reader”.

Features for Verity Central

- Added support for Write-in Mark Detection, including:
 - A new adjudication condition called “Unmarked Write-in”.
 - An election Preference to count unmarked write-ins as if they were marked; off by default.
 - An election setting to count unmarked write-ins as if they were marked.
 - An election preference and setting to allow automatic acceptance of unmarked write-ins during scan, or when accepting at the batch, ballot, or page level.

- Allowing the user to filter voter intent issues by “Unmarked Write-ins”.

Features for Receiving Stations

- Renamed “Verity Relay” application for clarity; now called “Verity Relay Receiving Station.”
- Features for Verity Transmit support added to a new “Verity Transmit Receiving Station” with the following modifications from the “Verity Receiving Station”:
 - Application supports receiving vDrives written by:
 - Verity Central
 - Verity Scan
 - Verity Scan with Relay
 - vDrives written from Verity Transmit Receiving Station support at least the same number of ballots as vDrives written from Verity Central, Scan, or Scan with Relay.
 - The Receiving Dashboard displays the status of Central vDrive data separately from the status of device vDrive data.
 - The vDrives Written Report displays, after the “ID of the transfer vDrive” field, the type of device that wrote the CVR data (“Central” or polling place device type) for each child vDrive written to a transfer vDrive.
 - The Received vDrives Report displays, before the “Polling place name” field, the type of device that wrote the CVR data (“Central” or polling place device type) for each received vDrive.

Features for Verity Count

- Count results reports containing contest instructions display electronic instructions only.
- Slate Choices: On results reports, both choice names are displayed next to a single vote counter.
- Count now includes a digital signature for any exported collection of CVRs.
 - The digital signature is user-verifiable using a separate utility.
- Improved Alias functionality:
 - Aliases Groups and Sets (collections of Alias Groups) can be exported or imported to/from removable media.
 - Alias Groups can be imported into any elections containing the same strings.
 - Alias Sets can only be imported into the election with the same Election ID from which they were generated.
 - Alias Sets can be used for reports and results exports, including the Detailed Vote Total export.
- Visually updated the Verity Count dashboard.

Modifications to Verity 2.7.1:

- Change the contest screen on Touch Writer to require voters to select a specific combination of candidate and party when voting for a cross-endorsed candidate.
- Change the review screens on Touch Writer and Reader to reflect only the specific party association(s) selected by the voter.
- Add a device report that includes vote totals for each party association for cross-filed candidates.
- Add a Count report that includes vote totals for each party association for cross-filed candidates.

Mark definition:

System supports marks that cover a minimum of 4% of the rectangular marking area.

Tested Marking Devices:

System supports Black and Blue ballpoint pens; testing was performed with black, blue, dark blue, pink, light green, green, orange, and red pens, as well as #2 pencil lead.

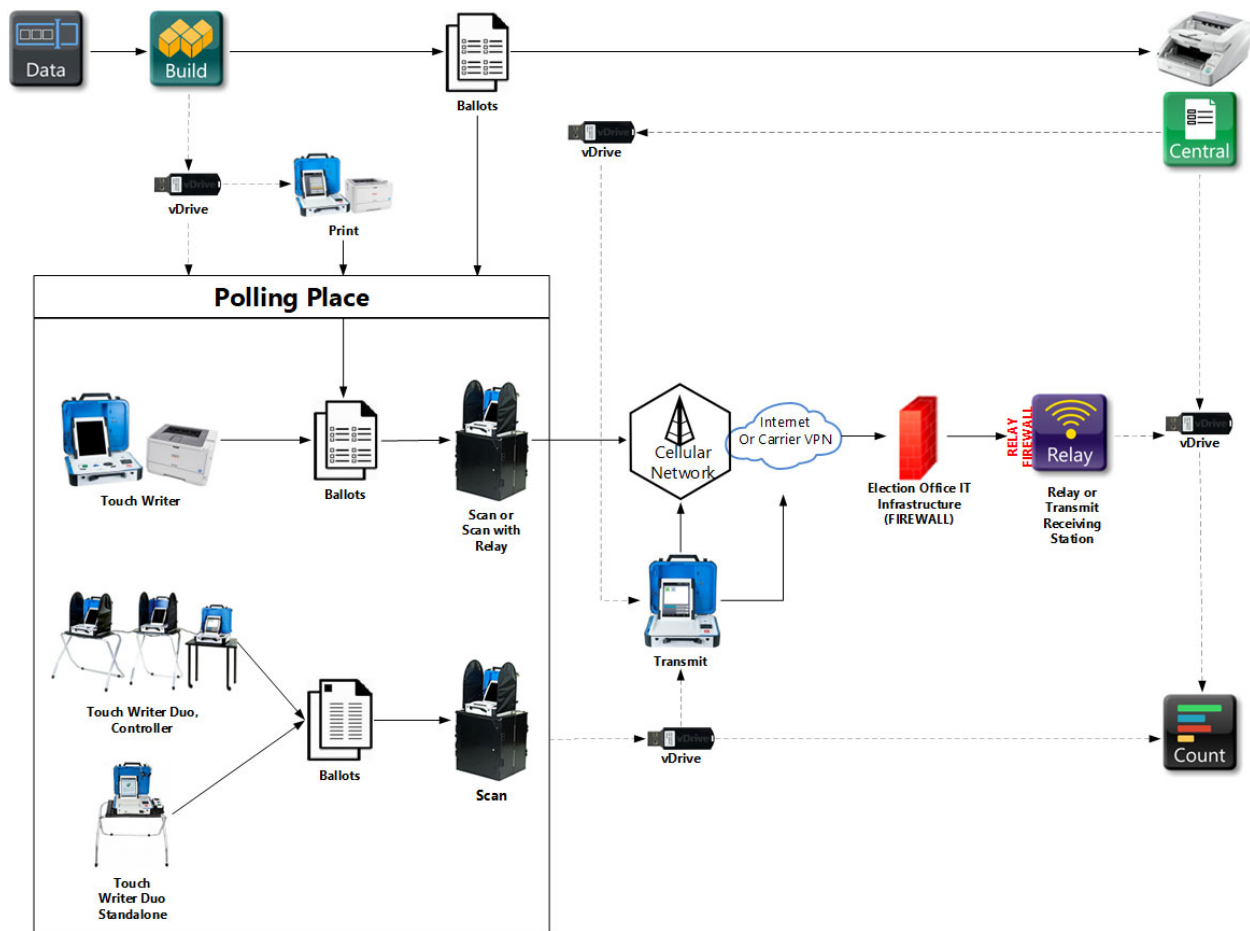
Language capability:

System supports English, Spanish, Chinese, Japanese, Korean, Khmer, Thai, Vietnamese, Tagalog, Ilocano, Hindi, Haitian Creole, Gujarati, Hmong, Lao, Hawaiian, Cantonese, Punjabi, and Bengali.

Components Included:

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

System Diagram



Proprietary Software

System Component	Software or Firmware Version	Comments
Verity Data	2.7.1	Data management software
Verity Build	2.7.1	Election definition software
Verity Central	2.7.1	High speed digital scanning software
Verity Count	2.7.1	Tabulation and reporting software
Verity Relay Receiving Station	2.7.1	Data transmission software (receiving station)
Verity Transmit	2.7.1	Data transmission software
Verity Transmit Receiving Station	2.7.1	Data transmission software (receiving station)
Verity Print	2.7.1	On-demand ballot printing device firmware
Verity Scan	2.7.1	Digital scanning device firmware
Verity Scan with Relay	2.7.1	Digital scanning device firmware with optional Relay functionality
Verity Touch Writer	2.7.1	Ballot marking device
Verity Touch Writer Duo	2.7.1	Ballot marking device, with internal COTS ballot summary printer and optional audio tactile interface
Verity Touch Writer Duo Standalone	2.7.1	Ballot marking device, with internal COTS ballot summary printer and optional audio tactile interface
Verity Controller	2.7.1	Polling place management device

COTS Software and Firmware

Description	Version
Verity Data, Build, Count, Relay Receiving Station, Transmit Receiving Station	
Microsoft Windows 10 Enterprise 2019 LTSC	10.0.17763
Microsoft SQL Server Standard 2019	15.0.4153.1
McAfee Application Control for Devices (McAfee Solidifier)	8.2.1-143
Verity Central – Central Count Paper Ballot Scanner	
Microsoft Windows 10 Enterprise 2019 LTSC	10.0.17763
Microsoft SQL Server Standard 2019	15.0.4153.1
McAfee Application Control for Devices (McAfee Solidifier)	8.2.1-143
Nuance Western OCR, Desktop, OEM	V20
Verity Print, Touch Writer – Electronic BMD Device, Touch Writer Duo – Electronic BMD Device, Touch Writer Duo Standalone – Electronic BMD Device, Controller, Transmit	
Microsoft Windows 10 Enterprise 2019 LTSC	10.0.17763
Microsoft SQLite	3.36.0
McAfee Application Control for Devices (McAfee Solidifier)	8.2.1-143
Verity Scan – Precinct Paper Ballot Scanner	
Microsoft Windows 10 Enterprise 2019 LTSC	10.0.17763
Microsoft SQLite	3.36.0
McAfee Application Control for Devices (McAfee Solidifier)	8.2.1-143
Nuance Western OCR, Desktop, OEM	V20

Hardware

Description	Version
Verity Print – Ballot Printer	3006095 Rev A
Verity Print – Ballot Printer	3005356 Rev E
Verity Print – Ballot Printer	3005856 Rev B
Verity Scan – Paper Ballot Scanner	3006080 Rev A
Verity Scan – Paper Ballot Scanner	3005350 Rev I
Verity Scan – Paper Ballot Scanner	3005800 Rev B
Verity Touch Writer – Electronic BMD Device	3006090 Rev A
Verity Touch Writer – Electronic BMD Device	3005352 Rev H
Verity Touch Writer – Electronic BMD Device	3005852 Rev B
Verity Touch Writer Duo – Electronic BMD Device	3006070 Rev A
Verity Touch Writer Duo – Electronic BMD Device	3005700 Rev B
Verity Touch Writer Duo Standalone – Electronic BMD Device	3006075 Rev A
Verity Touch Writer Duo Standalone – Electronic BMD Device	3005730 Rev A
Verity Controller – Networked Centralized Management Device	3006085 Rev A
Verity Controller – Networked Centralized Management Device	3005825 Rev B

COTS Equipment

Description	Version
Verity Data, Build	
Verity Data and Build Applications and Workstation Kit <ul style="list-style-type: none"> HP Z4 G4 Workstation HP Z240 Workstation supported for existing customers only 	A
OKI Data C831dn Color Printer for existing customers only	N35100A
OKI Data C844dn Color Printer	N35301A
OKI Data C911dn color Printer for existing customers only	N36100A
OKI Data C931e Color Printer	N36100A
OKI Data B432dn Mono Report and Ballot Printer	N22500A
OKI Data B431d Mono Report Printer for existing customers only	N22202A

Brother HL-L6400 Series printer	HLL6400DWVS
Into Print SP1360 printer	SP1360
HP 8-port Ethernet Switch	1405-8GV3
Vinpower Digital USB Duplicator 7-targets	USBShark-7T-BK
Vinpower Digital USB Duplicator 23-targets	USBShark-23T-BK
Verity Central	
Verity Central Applications and Workstation Kit <ul style="list-style-type: none"> HP Z4 G4 Workstation HP Z240 Workstation supported for existing customers only 	A
Canon DR-G1100 High-Speed Scanner	M111181
Canon DR-G1130 High-Speed Scanner	M111171
Canon DR-G2110 High-Speed Scanner	6130030
Canon DR-G2140 High-Speed Scanner	6130020
OKI Data B432dn Mono Printer Report Printer	N22500A
OKI Data B431d Mono Report Printer for existing customers only	N22202A
Brother HL-L6400 Series printer	HLL6400DWVS
8-port Ethernet Switch	1405-8GV3
Verity Count	
Verity Count Applications and Workstation Kit <ul style="list-style-type: none"> HP Z4 G4 Workstation HP Z240 Workstation supported for existing customers only 	A
OKI Data B432dn Mono Printer Report Printer	N22500A
OKI Data B431d Mono Report Printer for existing customers only	N22202A
Brother HL-L6400 Series printer	HLL6400DWVS
HP 8-port Ethernet Switch	1405-8GV3
Verity Relay Receiving Station	
Verity Relay Applications and Workstation Kit <ul style="list-style-type: none"> HP Z4 G4 Workstation HP Z240 Workstation supported for existing customers only 	A
OKI Data B432dn Mono Printer Report Printer	N22500A
OKI Data B431d Mono Report Printer for existing customers only	N22202A
Brother HL-L6400 Series printer	HLL6400DWVS
Verity Transmit Receiving Station	
Verity Relay Applications and Workstation Kit <ul style="list-style-type: none"> HP Z4 G4 Workstation HP Z240 Workstation supported for existing customers only 	A
OKI Data B432dn Mono Printer Report Printer	N22500A
OKI Data B431d Mono Report Printer for existing customers only	N22202A
Brother HL-L6400 Series printer	HLL6400DWVS
Verity Print	
OKI Data C831dn Color Printer for existing customers only	N35100A
OKI Data B432dn Mono Printer Report Printer	N22500A
OKI Data C844dn Color Printer	N35301A
OKI Data B431d Mono Report Printer for existing customers only	N22202A
Brother HL-L6400 Series printer	HLL6400DWVS
Optional AutoBallot Barcode Scanner Kit Includes the following 2d barcode scanner: <ul style="list-style-type: none"> Hart part number: 1003672 Motorola/Zebra part number: DS4308 or DS4608 	C
Verity Scan – Paper Ballot Scanner	
Verity Ballot Box	D

Optional Relay Accessory Kit (4G LTE Cat-M1) Includes the following COTS modem <ul style="list-style-type: none"> Hart part number: 1005248 MultiTech part number: MTD-MNA1-2.0 	A
Verity Touch Writer – Electronic BMD Device	
OKI Data B432dn Mono Printer Report Printer	N22500A
OKI Data B431d Mono Report Printer for existing customers only	N22202A
Brother HL-L6400 Series printer	HLL6400DWVS
Duracell UPS	DR660PSS
EATON UPS	5P1500
Accessible Voting Booth	D
Optional AutoBallot Barcode Scanner Kit Includes the following 2d barcode scanner: <ul style="list-style-type: none"> Hart part number: 1003672 Motorola/Zebra part number: DS4308 or DS4608 	C
Headphones <ul style="list-style-type: none"> Brand: V7, part number HA300-2NP or HA310-2NP 	2005230
Verity Touch Writer Duo – Electronic BMD Device	
Brother PJ700 Series Thermal Printer	PJ723
Accessible Voting Booth with ATI Tray	D
Standard Voting Booth	D
Optional Detachable ATI Kit	A
Optional headphones for ATI Kit Brand: V7, part number HA300-2NP or HA310-2NP	C
Verity Touch Writer Duo Standalone– Electronic BMD Device	
Brother PJ700 Series Thermal Printer	PJ723
Accessible Voting Booth with ATI Tray	A
Standard Voting Booth	D
Optional Detachable ATI Kit	A
Optional AutoBallot Barcode Scanner Kit Includes the following 2d barcode scanner: <ul style="list-style-type: none"> Hart part number: 1003672 Motorola/Zebra part number: DS4308 or DS4608 	C
Optional headphones for ATI Kit Brand: V7, part number HA300-2NP or HA310-2NP	C
Verity Controller	
Optional AutoBallot Barcode Scanner Kit Includes the following 2d barcode scanner: <ul style="list-style-type: none"> Hart part number: 1003672 Motorola/Zebra part number: DS4308 or DS4608 	C
Verity Transmit	
Optional Modem Accessory kit (4G LTE Cat-M1)Includes the following COTS modem: <ul style="list-style-type: none"> Hart part number: 1005248 MultiTech part number: MTD-MNA1-2.0 	A
Optional WiFi Accessory kit Includes the following COTS modem: <ul style="list-style-type: none"> StarTech part number: USB433ACD1X1 	A
Optional RJ-45 Ethernet Accessory kit	A

Includes the following COTS modem:	
<ul style="list-style-type: none"> StarTech part number: USB31000SW 	

System Limitations

This table depicts the limits the system has been tested and certified to meet.

Election Data Limits	Testing Limit/Requirement Z240 or Z4 G4 Systems (all supported workstations except Data/Build/Count combined system)	Testing Limit/Requirement Data/Build/Count combined system)
Languages in a single election	19	19
Precincts in an election	3,000	2000
Splits per Precinct	20	20
Total Precincts + Splits in an election	3,000	2000
Districts for voting devices and applications	400	75
Polling places in an election	3,050	1200
Parties in a General Election	24	24
Parties in a Primary Election	10	10
Contests in an election (including propositions)	2,000	200
Contest choices (voting positions) in a single contest	300	75
Total number of Contest Choices in an Election (independent from ballot size)	5,000	600
Unique write-in values per contest (Count)	500	500
Unique write-in values per task (Count)	40,000	40,000
Voting Types in an Election	10	10
Tasks per Election (Central, Count)	15	15
Registered Voters per Precinct (Count)	99,999	99,999
Maximum Sheets per ballot	4	4
Ballot Stubs per ballot	2	2
Ballots per vDrive (Scan, 1 sheet ballot)	25,000*	25,000*
Ballots per vDrive (Controller)	20,000	20,000
Ballots per vDrive (Central)	20,000	20,000
Ballots per <i>election</i> (Central & Count)	1,750,000	1,750,000
vDrives per <i>election</i> (Count)	3,050	3,050
Ballot Sizes (Build, Central, Print, Touch Writer, Scan)	8.5"x11", 8.5"x14", 8.5"x17", 8.5"x20", 8.5"x22"***	8.5"x11", 8.5"x14", 8.5"x17", 8.5"x20", 8.5"x22"***
Ballot Sizes (Build, Central)	11"x17"	11"x17"

* This is a recommended limit for the number of single-sheet ballots scanned on an individual Verity Scan during a single election. For a two-sheet ballot, divide this number by two; for a four-sheet ballot, divide this number by four.

** Older printer models may not support a 22" ballot.

Functionality

VVSG 1.0 Supported Functionality Declaration

Feature/Characteristic	Yes/No	Comment
Voter Verified Paper Audit Trails		
VVPAT	No	
Accessibility		
Forward Approach	Yes	
Parallel (Side) Approach	Yes	
Closed Primary		
Primary: Closed	Yes	Supports standard closed primary and modified closed primary
Open Primary		
Primary: Open Standard (provide definition of how supported)	Yes	Open Primary
Primary: Open Blanket (provide definition of how supported)	Yes	General "top two"
Partisan & Non-Partisan:		
Partisan & Non-Partisan: Vote for 1 of N race	Yes	
Partisan & Non-Partisan: Multi-member ("vote for N of M") board races	Yes	
Partisan & Non-Partisan: "vote for 1" race with a single candidate and write-in voting	Yes	
Partisan & Non-Partisan: "vote for 1" race with no declared candidates and write-in voting	Yes	
Write-In Voting:		
Write-in Voting: System default is a voting position identified for write-ins.	No	By default, the number of write-ins available in a contest is zero, users may increment as necessary
Write-in Voting: Without selecting a write in position.	Yes	Support is configurable per election.
Write-in: With No Declared Candidates	Yes	
Write-in: Identification of write-ins for resolution at central count	Yes	
Primary Presidential Delegation Nominations & Slates:		
Primary Presidential Delegation Nominations: Displayed delegate slates for each presidential party	Yes	
Slate & Group Voting: one selection votes the slate.	Yes	
Ballot Rotation:		
Rotation of Names within an Office; define all supported rotation methods for location on the ballot and vote tabulation/reporting	Yes	Rotation by precinct and precinct split
Straight Party Voting:		
Straight Party: A single selection for partisan races in a general election	Yes	
Straight Party: Vote for each candidate individually	Yes	
Straight Party: Modify straight party selections with crossover votes	Yes	

Straight Party: A race without a candidate for one party	Yes	
Straight Party: "N of M race (where "N">1)	Yes	
Straight Party: Excludes a partisan contest from the straight party selection	Yes	
Cross-Party Endorsement:		
Cross party endorsements, multiple parties endorse one candidate.	Yes	
Split Precincts:		
Split Precincts: Multiple ballot styles	Yes	
Split Precincts: P & M system support splits with correct contests and ballot identification of each split	Yes	
Split Precincts: DRE matches voter to all applicable races.	Yes	
Split Precincts: Reporting of voter counts (# of voters) to the precinct split level; Reporting of vote totals is to the precinct level	Yes	
Vote N of M:		
Vote for N of M: Counts each selected candidate if the maximum is not exceeded.	Yes	
Vote for N of M: Invalidates all candidates in an overvote (paper)	Yes	
Recall Issues, with options:		
Recall Issues with Options: Simple Yes/No with separate race/election. (Vote Yes or No Question)	Yes	
Recall Issues with Options: Retain is the first option, Replacement candidate for the second or more options (Vote 1 of M)	Yes	
Recall Issues with Options: Two contests with access to a second contest conditional upon a specific vote in contest one. (Must vote Yes to vote in 2 nd contest.)	Yes	
Recall Issues with Options: Two contests with access to a second contest conditional upon any vote in contest one. (Must vote Yes to vote in 2 nd contest.)	Yes	
Cumulative Voting		
Cumulative Voting: Voters are permitted to cast, as many votes as there are seats to be filled for one or more candidates. Voters are not limited to giving only one vote to a candidate. Instead, they can put multiple votes on one or more candidate.	Yes	
Ranked Order Voting		
Ranked Order Voting: Voters can write in a ranked vote.	Yes	
Ranked Order Voting: A ballot stops being counting when all ranked choices have been eliminated	N/A	Tabulation rules are unique per jurisdiction
Ranked Order Voting: A ballot with a skipped rank counts the vote for the next rank.	N/A	Tabulation rules are unique per jurisdiction
Ranked Order Voting: Voters rank candidates in a contest in order of choice. A candidate receiving a majority of the first-choice votes wins. If no candidate receives a majority of first choice votes, the last place candidate is deleted, each ballot cast for the deleted candidate counts for the second-choice candidate listed on the ballot. The process of eliminating the last place candidate and recounting the ballots continues until one candidate receives a majority of the vote	N/A	Tabulation rules are unique per jurisdiction

Ranked Order Voting: A ballot with two choices ranked the same, stops being counted at the point of two similarly ranked choices.	Yes	
Ranked Order Voting: The total number of votes for two or more candidates with the least votes is less than the votes of the candidate with the next highest number of votes, the candidates with the least votes are eliminated simultaneously and their votes transferred to the next-ranked continuing candidate.	N/A	Tabulation rules are unique per jurisdiction
Provisional or Challenged Ballots		
Provisional/Challenged Ballots: A voted provisional ballots is identified but not included in the tabulation, but can be added in the central count.	Yes	
Provisional/Challenged Ballots: A voted provisional ballots is included in the tabulation, but is identified and can be subtracted in the central count	Yes	
Provisional/Challenged Ballots: Provisional ballots maintain the secrecy of the ballot.	Yes	
Overvotes (must support for specific type of voting system)		
Overvotes: P & M: Overvote invalidates the vote. Define how overvotes are counted.	Yes	If the system detects more than the valid number of marks in a contest, it is counted as an overvote
Overvotes: DRE: Prevented from or requires correction of overvoting.	Yes	
Overvotes: If a system does not prevent overvotes, it must count them. Define how overvotes are counted.	Yes	If the system detects more than the valid number of marks in a contest, it is counted as an overvote
Overvotes: DRE systems that provide a method to data enter absentee votes must account for overvotes.	Yes	
Undervotes		
Undervotes: System counts undervotes cast for accounting purposes	Yes	
Blank Ballots		
Totally Blank Ballots: Any blank ballot alert is tested.	Yes	
Totally Blank Ballots: If blank ballots are not immediately processed, there must be a provision to recognize and accept them	Yes	
Totally Blank Ballots: If operators can access a blank ballot, there must be a provision for resolution.	Yes	
Networking		
Wide Area Network – Use of Modems	Yes	With optional Verity Scan with Relay and Relay Receiving Station or Verity Transmit and Transmit Receiving Station

Wide Area Network – Use of Wireless	Yes	With optional Verity Scan with Relay and Relay Receiving Station or Verity Transmit and Transmit Receiving Station
Local Area Network – Use of TCP/IP	Yes	
Local Area Network – Use of Infrared	No	
Local Area Network – Use of Wireless	No	
FIPS 140-2 validated cryptographic module	Yes	
Used as (if applicable):		
Precinct counting device	Yes	
Central counting device	Yes	