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Operational Guide

6640001 A13



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1.	IMPORTANT SAFEGUARDS	8
	Read Instructions	8
	Retain Instructions	8
	Water and Moisture	8
	Power Sources	8
	Servicing	9
	Verity Tablet Battery	9
	Cleaning Case or Tablet	10
	Carts and Caddies	10
2.	INTRODUCTION	11
3.	BRIEF DESCRIPTION	11
	Verity Voting 1.0 - Abstract	11
	Verity Voting Configurations	
4.	PRE-VOTING - VERITY BUILD	15
	Personnel Requirements	15
5.	VOTING - VERITY POLLING PLACE EQUIPMENT	16
	Verity Voting Devices	16
	Introduction	16
	Performance	16
	Accessibility	16
	Reliability	16
	Security	
	Security Maintainability	
	Security Maintainability Verity Firmware Validation	
	Security Maintainability Verity Firmware Validation Personnel Requirements	
	Security Maintainability Verity Firmware Validation Personnel Requirements Verity Touch Writer (I/N 3005352)	

	Verity Touch Writer Printer (I/N 3005370)	20
	Verity Touch Writer UPS (I/N 3005362)	20
	Verity Scan (I/N 3005350)	20
	Verity Tablet (I/N 2005302)	21
6.	VERITY HARDWARE COMPONENTS	21
	Verity Ballot Box (I/N 3005357)	21
	Personnel Requirements	22
	Verity Standard Booth (I/N 3005358)	22
	Personnel Requirements	23
	Verity Accessible Booth (I/N 3005359)	23
	Personnel Requirements	23
	Verity Access (I/N 2005010)	24
	Personnel Requirements	24
	Verity Key (I/N 2001586)	24
	Personnel Requirements	25
	vDrive (I/N 1004781)	25
	Personnel Requirements	25
		20
	Verity Parts List	26
7.	POST-VOTING - VERITY CENTRAL	26 27
7.	Verity Parts List POST-VOTING - VERITY CENTRAL Personnel Requirements	26 27 27
7 . 8 .	Verity Parts List POST-VOTING - VERITY CENTRAL Personnel Requirements POST-VOTING - VERITY COUNT	26272727
7. 8.	Verity Parts List POST-VOTING - VERITY CENTRAL Personnel Requirements POST-VOTING - VERITY COUNT Personnel Requirements	2627272728
7. 8. 9.	Verity Parts List POST-VOTING - VERITY CENTRAL Personnel Requirements POST-VOTING - VERITY COUNT Personnel Requirements STORAGE AND DEPLOYMENT	26272727282828
7. 8. 9.	Verity Parts List POST-VOTING - VERITY CENTRAL Personnel Requirements POST-VOTING - VERITY COUNT Personnel Requirements STORAGE AND DEPLOYMENT Storage Procedures	2627272728282828
7. 8. 9.	Verity Parts List POST-VOTING - VERITY CENTRAL Personnel Requirements POST-VOTING - VERITY COUNT Personnel Requirements STORAGE AND DEPLOYMENT Storage Procedures Personnel Requirements	262727272828282828
7. 8. 9.	Verity Parts List POST-VOTING - VERITY CENTRAL Personnel Requirements Personnel Requirements STORAGE AND DEPLOYMENT Storage Procedures Personnel Requirements Delivery Procedures	26 27 27 28 28 28 28 28 28 28
7. 8. 9.	Verity Parts List POST-VOTING - VERITY CENTRAL Personnel Requirements POST-VOTING - VERITY COUNT Personnel Requirements Storage AND DEPLOYMENT Storage Procedures Personnel Requirements Delivery Procedures Transportation and Storage	26 27 27 28 28 28 28 28 28 23
7. 8. 9.	Verity Parts List POST-VOTING - VERITY CENTRAL Personnel Requirements POST-VOTING - VERITY COUNT Personnel Requirements Storage Procedures Personnel Requirements Delivery Procedures Transportation and Storage Polling Place Deployment	26 27 27 28 28 28 28 28 28 23
7. 8. 9.	Verity Parts List POST-VOTING - VERITY CENTRAL Personnel Requirements POST-VOTING - VERITY COUNT Personnel Requirements STORAGE AND DEPLOYMENT Storage Procedures Personnel Requirements Delivery Procedures Transportation and Storage Polling Place Deployment Verity Scan	26 27 27 28 28 28 28 28 28 28 23
7. 8. 9.	Verity Parts List POST-VOTING - VERITY CENTRAL Personnel Requirements POST-VOTING - VERITY COUNT Personnel Requirements Storage Procedures Personnel Requirements Delivery Procedures Transportation and Storage Polling Place Deployment Verity Scan Verity Touch Writer	26 27 27 28 28 28 28 28 28 28 23

Decommissioning Equipment for Return to Warehouse	36
Verity Scan	
Verity Touch Writer	
10. PREVENTIVE MAINTENANCE PROCEDURES	
Personnel Requirements	
Voting Device Maintenance	40
Maintenance for Commercial Printers	40
During Ballot Printing	
Reducing Paper Dust	
Cleaning Rollers Contaminated With Paper Dust	
Maintenance for Commercial Scanners	42
During Ballot Scanning	
Reducing Paper Dust	
Cleaning Rollers Contaminated With Paper Dust	
Scanner Cleaning Frequency	
Scanner components that require particular attention:	
How to detect that the scanner requires cleaning:	
How to practice proper scanner usage, maintenance, and cleaning:	
Maintenance of Verity Workstation	45
Generating File Listings on Verity Applications on Workstations	45
Voting Device Storage	46
Paper Storage	46
Conditioning Paper	47
Cleaning the Equipment Screens	47
Verity Tablet Battery Maintenance	48
Cleaning the Verity Scan Scanner Path	49
Verity Scan Bitonal Test	49
Calibrating the Verity Scan Scanner	50
11.SECURITY	50
Quality Certified	50
Layered Defense	50
Tamper Evident	50
DOCUMENT NUMBER: 6640001	Page 5 of 82

CVR Protection	51
Audit Logs	51
General Security Best Practices	51
Computer Security Best Practices	52
Voting Device Security Best Practices	53
vDrive Security Best Practices	55
12. SPECIFICATIONS	56
Verity Scan Specifications, I/N 3005350	56
Verity Scan Paper Specifications	57
Verity Scan Ballot Box Specification, I/N 3005357	58
Verity Touch Writer Specifications, I/N 3005352	59
Verity Touch Writer Thermal Paper Specifications	60
Verity Touch Writer Printer Specifications, I/N 3005370	60
Verity Touch Writer Printer UPS Specifications, I/N 3005362	61
Verity Touch Writer Ballot Paper Specifications	61
Standard Verity Touch Writer Booth Specification, I/N 3005-358	
Accessible Verity Touch Writer Booth Specifications, I/N 3005-359	63
13. TROUBLESHOOTING PROCEDURES FOR SUPPORT PERSONNEL	64
Personnel Requirements	64
Help Desk Personnel Requirements	64
Spare Equipment Requirements	64
Taking a Systematic Approach to Troubleshooting	65
Verity Scan Troubleshooting Guide	66
Restarting Scan	
Power Fails	67
Scan Does Not Work	68
Scan Replacement	
vDrive Removal	70
Ballot Jam	70
Invalid Password	71
Thermal Printer Error	71
Changing the Thermal Printer Paper	72

Printing Reports	72
Verity Touch Writer Troubleshooting Guide	72
Personnel Requirements	72
Restarting Touch Writer	73
Power Fails	74
Touch Writer Does Not Work	74
Touch Writer Replacement	76
vDrive Removal	77
Ballot Jam in Printer	77
Invalid Password	78
Thermal Printer Error	78
Changing the Thermal Printer Paper	79
Printing Reports	79
COTS Scanner Troubleshooting	80
COTS Printer Troubleshooting	80
Verity Touch Writer Printer UPS Specifications, I/N 3005362	80
Verity Workstation Troubleshooting	81
Verity Networked Workstations Troubleshooting	81

1. IMPORTANT SAFEGUARDS

In addition to the related material presented in this document, follow all warnings and instructions marked on the equipment and in this section.

Read Instructions

All of the safety and operating instructions must be read before operating this voting system.

Retain Instructions

These safety and operating instructions should be retained for future use.

Water and Moisture

Do not use this product near water. For example, many polling places are setup in schools that may have swimming pools. It is suggested that the equipment not be setup near a swimming pool or other areas where there is excessive moisture.

Power Sources

Use only Hart InterCivic (Hart) approved power supplies, uninterruptable power supplies, and tablet batteries specified by Hart for use with the equipment.

Do not overload wall power outlets or extension cords as this may cause a fire.

If you are not sure of the type of power supplied to a polling location, call the local power company before proceeding.

Use only grounded, three prong outlets, and the power cord supplied with the equipment by Hart. Equipment shall be located near power outlets, and power outlets shall remain easily accessible after equipment is plugged-in and in use. Power cords should be routed so that they are not likely to be walked on or have objects placed on them.

Servicing

DANGER: Do not attempt to service this unit yourself. Opening the unit will result in exposure to electrical shock or other hazards.

Only the battery and printer doors should be opened by polling place personnel. Refer all other servicing to qualified personnel only. When replacement parts are required, be sure to use only Hart approved parts. Unplug the unit from the wall outlet and refer servicing to qualified personnel under the following conditions:

- When the power cord or plug is damaged
- If liquid has been spilled on the product
- If the product has been exposed to rain
- If the product does not operate normally after following the operating instructions

Verity Tablet Battery

DANGER: Failure to follow these instructions may present risk of explosion, fire, or high temperatures.

- Do not improperly discharge the battery.
- Do not short circuit the battery.
- Do properly dispose of battery.
 - o Batteries are considered hazardous waste.
 - Consult your local waste management office/company for guidelines on how to dispose of these batteries.

CAUTION: Proper Handling

- USE ONLY Hart Battery, Hart I/N 1005015, if replaced.
- Do not expose battery module to temperatures above 140F (60C).
- Do not mishandle or disassemble battery module.

Cleaning Case or Tablet

- Unplug the equipment from the wall outlet and any other equipment before cleaning.
- Use only isopropyl alcohol and lint-free wipes to clean Verity tablet display.
- Do not use detergent-based cleaners. Do not use aerosol cleaners. Do not spray cleaner directly on the unit.

DANGER: Never push objects of any kind into this product through openings as they may touch dangerous voltage points or short out parts that could result in fire or electric shock.

Caution: If liquid is spilled or sprayed on the product, turn it off immediately, wipe away the liquid, and then return the unit to local election officials for servicing.

Carts and Caddies

DANGER: Do not place this product on an unstable cart, caddy, stand, tripod, bracket, or table. The product may fall, causing serious injury and serious damage to the product.

The product and cart (caddy) combination must be moved with care. **Quick stops**, **excessive force**, and uneven surfaces may cause the product and caddy combination to overturn, causing serious injury.

2. INTRODUCTION

Welcome to the Verity Voting system, an election creation and management system. Verity Voting comprises hardware and software tools.

The Verity Operational Readiness Guide introduces Verity Voting System hardware components used for voting. This guide also discusses maintenance, setup, troubleshooting, and other relevant topics needed by those who store, maintain, set up, and troubleshoot hardware components of the Verity Voting system.

This guide provides information for election officials, support personnel, and warehouse staff. In the following chapters, we introduce polling place system hardware, Verity security, the Verity work flow and device configuration, and some very important safeguards.

3. BRIEF DESCRIPTION

Verity Voting 1.0 - Abstract

The Verity Voting system includes software, hardware, device, and peripheral components that allow election professionals to accomplish the following high-level tasks:

Pre-voting tasks:

- Ballot definition and production
- Voting machine configuration and use

Voting tasks:

- Polling place ballot marking device
- Polling place digital scanning for paper ballots

Post-voting tasks:

- High-speed, large-volume ballot scanning
- Ballot adjudication
- Counting of votes
- Consolidation and reporting of results and audit logs

Verity Voting Configurations

The following image is a general workflow of all Verity Voting system components working together. Different system configurations are available depending on the size of voting centers, the expected support for the number of voters, and polling place needs.



Figure 1 - Verity Voting System Component Abstract Diagram

Overview of the diagram:

- Components are displayed as touch points of data access, transfers, and verification.
- Dotted lines show the flow of data and air gaps using vDrives.
- The Verity Touch Writer and Verity Scan components are part of the Polling Place setup.
- Verity Key (not shown) is required for user access to components to load election elections, use features, and generate reports. Feature access depends on the roles applied to user accounts.
- The diagram does not include the Election Management or User Management components available through all Verity Voting systems.

The system in Figure 1 supports the following workflow.

Pre-Voting

- Verity Build provides capabilities to create an election definition, including all contests, parties, and options. Verity Touch Writer, Verity Scan, Verity Central, and Verity Count can all receive the election definition generated and locked for usage from Verity Build.
- Verity Build provides the capabilities to securely transfer the election definition by generating Verity Key devices for authenticating election definitions for Verity Touch Writer, Verity Scan, Verity Central, and Verity Count.
- Verity Build provides the capabilities for an election's paper ballot production.
- Verity Build provides the capability to create vDrives.

Voting

- Election definitions have been properly loaded onto all Verity Touch Writer and Verity Scan devices. Verity Touch Writer and Verity Scan are used for voting and scanning voted ballots, and both are locked and ready for voting during open polls.
- Touch Writer provides digital voting through a touchscreen tablet system or accessibility interface (Verity Access using audio-tactile interface, jelly buttons, and sip-and-puff devices).
- Verity Scan scans completed, printed ballots that are provided by voters marking their ballot sheets manually or by printed ballots generated from Touch Writer. Scanned ballots become Cast Vote Records (CVRs) on vDrives for transfer into the central voting office/center.
- Verity Touch Writer and Verity Scan have properly closed polls.

Post-Voting

- Verity Central provides capabilities to scan ballot batches through a high-volume scanner, review all ballots, and resolve any ballots marked as having an issue.
 Ballots have an issue if they contain overvotes, undervotes, or write-ins.
- Verity Count enables final collection and tabulation of ballots and provides election and contest results. Count also provides adjudication of Verity Scan write-in votes and allows manual vote adjustment. Count provides an array of reports from election auditing and ballot production to voting-device activities and Central and Count activities.

Verity Voting system components can be purchased and installed in different configurations depending on the size of jurisdictions and voting needs. All installations do require Verity Build, Verity Scan, and Verity Count to create election definitions, print ballots, scan ballots into CVRs, resolve ballots, and tabulate votes. Additional configurations are possible with the Verity Voting system.

• Verity Build and Verity Count stand-alone components can be on the same workstation. All other components must be on their own workstations.

- Verity Build can include a client/server configuration with multiple Build workstations on a LAN. These workstations cannot have an installation of Verity Count sharing the same system. A database should be installed as the "server" on one of the LAN-connected Build workstations, which is then accessed by all of the workstations. The LAN should not access other LANs of Verity Voting system workstations.
- Verity Count can include a client/server configuration with multiple Build workstations on a LAN. These workstations cannot have an installation of Verity Build sharing the same system. A database should be installed as the "server" on one of the LAN-connected Count workstations, which is then accessed by all of the workstations. The LAN should not access other LANs of Verity Voting system workstations.
- The Verity Central workstation allows officials to scan large volumes of ballot batches and to resolve ballots for write-ins, undervotes, overvotes, or oddly placed marks. Once all ballots are resolved, they are converted into CVRs and transferred to vDrives for reading into Count.
- Verity Central can include a client/server configuration with multiple Central workstations on a LAN. A database should be installed as the "server" on one of the LAN connected Central workstation, which is then accessed by all of the workstations. The LAN should not access other LANs of Verity Voting system workstations.
- Depending on the needs and size of a voting jurisdiction, the installed and deployed Verity Voting system may include multiple Central workstations to handle large volumes of ballots for scanning and resolution.
- Depending on the laws of each state, customers may be required to purchase both Touch Writer and Scan. Smaller jurisdictions (such as cities, towns, and so forth) may buy only Touch Writer or only Scan devices.

Verity Voting Software Components

This section provides a high-level introduction to the components of the Verity Voting system, including hardware and peripherals.

- Verity Build Election and ballot definition software with options to configure contests, voting, and devices
- Verity Central Ballot scanning and resolution software stations
- Verity Count CVR tabulation and election auditing software
- Verity User Management User account and access management for all Verity Voting system applications
- Verity Election Management Election-definition and data loading and management for all Verity Voting system components

4. PRE-VOTING - VERITY BUILD

For a complete description of Verity Build user activities and outline of the pre-voting functionality for this application, refer to *Verity Build Quick Reference Guide* (I/N 6620002).

Personnel Requirements

Personnel operating Verity Build workstations must receive training from Hart on both application and hardware in order to obtain the skill level required to successfully operate Verity Build.

Materials for warehouse/field technicians required for working or cleaning devices		
Hart Item Number	Item Description	
	Micro-fiber (lint-free) wipes	
	isopropyl alcohol	
2005430	OKI B431d, toner cartridge	
2005420	OKI C831dn, Black Toner cartridge	
2005421	OKI C831dn, Cyan Toner cartridge	
2005423	OKI C831dn, Magenta Toner cartridge	
2005422	OKI C831dn, Yellow Toner cartridge	
2005424	OKI C911dn , Black Toner cartridge	
2005425	OKI C911dn , Cyan Toner cartridge	
2005427	OKI C911dn , Magenta Toner cartridge	
2005426	OKI C911dn , Yellow Toner cartridge	
Mfg. MDV2TCA	Vacuum for scanner & printer clean-out; DATAVAC PRO	
Utilities	Power requirements for the devices:	
	OKI B431d Printer: 120VAC, 6A, 3-prong outlet	
	OKI C831dn Printer: 120VAC, 6A, 3-prong outlet	
	OKI C911dn Printer: 120VAC, 9A, 3-prong outlet	
	HP Workstations: 120VAC, 6A, 3-prong outlet	
Furnishings	Work table	

The number of personnel required to operate Verity Build is 1 person per workstation.

All Verity applications can be updated only by Hart personnel. Contact the Hart Customer Support Center, 866.275.4278, for details.

5. VOTING - VERITY POLLING PLACE EQUIPMENT

Verity Voting Devices

Introduction

Verity Polling Place devices are designed to meet all requirements related to performance, reliability, maintainability, physical characteristics, and environmental conditions.

Verity Touch Writer and Verity Scan provide paper-based voting and precinct count functionality.

Performance

Verity devices are designed to provide approximately 10 years of usage for the customer. Verity component life expectancies are at least 10 years.

Memory components have been selected to ensure they meet the requirements for data retention; all Verity non-volatile memory is designed to provide at least 10 years of data retention for normal usage.

Verity Scan will meet the performance and accuracy requirements for a precinct count system. This is accomplished by using a high-resolution scanner in conjunction with Hart's voting geometry software engine, providing the most advanced, accurate, and intuitive interface for both voter and poll worker.

Accessibility

Verity devices use of touch displays in conjunction with the Design for Democracyⁱ interface allows voters to understand and accurately make the choices they desire.

Verity Access provides accessibility to individuals with disabilities. The Verity Access design implements Hart's patented navigation wheel and other technologies to create the ease-of-use and trust-of-use voters require.

Reliability

Verity devices are portable, but care should be given to the devices during transportation, set-up, and teardown to maintain the system's reliability through its expected lifetime.

Verity devices are designed with safety in mind; they are small and weigh less than 29lbs per device.

All devices are designed with materials that are durable and have a life expectancy of 10 years.

Each Verity device has a back-up battery in case of loss of A/C power. Back-up batteries supply enough power to operate a Scan or Touch Writer for at least 2 hours. The Touch

Writer ballot printer requires a separate UPS to provide power during periods of A/C power loss.

Security

The devices have several physical security features to minimize access to the device during storage, transportation, and voting.

- The devices have dual case locks.
- The vDrive USB port is located inside a locked compartment inside the case.
- The tablet computer must be locked in place to be operational.
- Security policies and best practices are provided.

The *Verity Security Requirements* document provides a detailed set of requirements for Verity security.

Maintainability

Verity devices were designed with maintainability in mind from both hardware and software perspectives. This guide and the *Verity Service and Maintenance Guide* provide details regarding self-diagnosis of failures and preventative maintenance schedules.

NOTE: Only Hart personnel can upgrade software on Verity Touch Writer and Scan. Call the Hart Customer Support Center at 866.275.4278.

Verity Firmware Validation

- 1. Unlock the vDrive Bay and remove the door.
- 2. Insert (non-vDrive) USB drive into USB port in Secure vDrive Bay.
- 3. Push the blue Validation button in the Secure vDrive Bay.
- 4. Allow manifest file to be written to USB drive.
- 5. Remove USB drive.
- 6. Retrieve Verity file manifests from the NSRL reference files from the NSRL Voting website: http://www.nsrl.nist.gov/vote.html
- 7. Manually compare the Verity Manifest file provided by the NSRL to the manifest file stored on the USB drive.

The comparison should indicate that the file names, file versions, and file checksums are identical.

Personnel Requirements

Warehouse technicians and field technicians' personnel operating Verity devices (Scan and Touch Writer) must receive training from Hart or Hart-trained personnel on the device in order to obtain the skill level required to successfully operate Verity Scan and Touch Writer. The number of warehouse technicians or field technicians' personnel required to prepare and operate Verity devices for deployment to the polling place is 2 persons per 50 devices per day.

Materials for warehouse/field technicians required for working or cleaning devices			
Hart Item Number	Item Description		
2005357	Ballot Box, Scan, Verity		
2005358	Booth, Standard		
2005361	Keys for Verity device locks		
2005361	Key, Verity, Ibutton, in Holder		
1005324	vDrive		
	Micro-fiber (lint-free) wipes		
	isopropyl alcohol		
1005015	Totex battery		
2005365	Charger, 6 Bay, Verity Battery w/ AC Power Supply		
172436	Intrusion Detection Loops for Devices Touch Writer – Printer port		
	vDrive Bay Handles		
2005430	OKI B431d, toner cartridge		
Mfg. MDV2TCA	Vacuum for scanner & printer clean-out; DATAVAC PRO		
Utilities	Power requirements for the devices:		
	6 Bay Charger: 120VAC, 6A		
	Scan: 120VAC, 3A, 3-prong outlet		
	Touch Writer: 120VAC, 3A, 3-prong outlet		
	OKI B431d Printer: 120VAC, 6A, 3-prong outlet		
Furnishings	Work table		

The number of poll workers required to operate the devices at the polling place is 1 person per device.

Materials for poll workers required for cleaning devices	
Hart Item Number	Item Description
	Micro-fiber (lint-free) wipes
	isopropyl alcohol

All Verity devices can only be updated by Hart personnel. Contact the Hart Customer Support Center, 866.275.4278, for details.

Verity Touch Writer (I/N 3005352)

Verity Touch Writer is a touch-screen Ballot Marking Device (BMD) that prints votermarked ballots to a commercial off-the-shelf printer. Voters activate their ballot session by entering a unique access code that provides voter anonymity.

Voters use the electronic interface to privately and independently make their selections on the ballot. When voters finish making their selections, they print the marked ballot. Verity Touch Writer is also compatible with Verity Access, an optional interface component (with tactile buttons, audio ballot voting, and compatibility with additional two-switch adaptive devices).

Verity Touch Writer records audit log data in redundant, secure storage locations. One of these storage locations is removable electronic media. The removable election media allows the audit logs to be transferred to Verity Count's audit report generation component.



Verity Touch Writer Printer (I/N 3005370)

Verity Touch Writer Printer is a commercial-off-the-shelf (COTS) product. Verity Touch Writer can use only Hart-specified printers.

Printer	Description	Power	Interface	FCC Class B
OKIDATA 431d	Ballot Printer	120 VAC	USB	Yes
	Monochrome			
	Ballot sizes			
	8.5x11			
	8.5x11 w/ 3" stub			
	8.5x14			
	8.5x14 w/ 3" stub			
	8.5x17 (MPT)			
	8.5x17 w/ 2" stub			



Verity Touch Writer UPS (I/N 3005362)

Hart also offers an optional Uninterruptable Power Supply (UPS), I/N 3005362, for the Touch Writer printer to allow printing of ballots in case of power loss at the polling place. During a polling place power loss, the Touch Writer printer can print up to 5 (single sheet) ballots.

Verity Scan (I/N 3005350)

Verity Scan is a digital paper ballot scanner. Scan provides second-chance voting with voter instructions for mismarked ballots. Scan includes additional accessibility features and is attached to a secure ballot box.

When opening the polls, a poll worker activates the Verity Scan device and prepares it to receive marked paper ballots. Voters may privately and independently insert their marked ballots to scan and cast the ballot.

Verity Scan records ballots and audit log data in redundant, secure storage locations. One of these storage locations is removable electronic media. The removable electronic media device allows the ballots to be transferred to Verity Count for tabulation.



Verity Tablet (I/N 2005302)

The Verity Tablet is composed of the main processor board: a 12.1" display and touch panel units. Also included in the tablet is a back-up battery, non-volatile memory that is used as redundant election back-up memory, a coin battery for the Real Time Clock, an external USB port for Verity Access connections, and a docking connector to pass signals to and from the base station.

For storage purposes, the tablet is designed to detach from a base station and to be placed in the Verity case's tablet storage compartment.

6. VERITY HARDWARE COMPONENTS

Verity Ballot Box (I/N 3005357)

Verity Ballot Box is a purpose-built ballot box that allows Verity Scan to automatically deposit scanned ballots into a secure box. The ballot box also allows for manual insertion of ballots by the voter. Installing privacy screens on the ballot box ensures voter privacy throughout the voting process.

Verity Ballot Box is easily set up and collapsed to allow for the product to be easily managed for transportation and storage.



Personnel Requirements

Personnel deploying and setting up Verity Ballot Boxes must receive training from Hart or Hart-trained personnel on the device in order to obtain the skill level required to successfully deploy the ballot box.

The number of personnel required to prepare the ballot box is 1 person per box.

Verity Standard Booth (I/N 3005358)

Verity Booth is a purpose-built voting booth that allows Verity Touch Writer to be used by each voter and ensures voter privacy during voting.

Verity Booth is easily set up and collapsed to allow for the product to be easily managed for transportation and storage.



Personnel Requirements

Personnel deploying and setting up Verity Booth must receive training from Hart or Hart-trained personnel on the device in order to obtain the skill level required to successfully deploy the booth.

The number of personnel required to prepare the booth is 1 person per booth.

Verity Accessible Booth (I/N 3005359)

Verity Accessible Booth is a purpose-built voting booth that allows Verity Touch Writer to be used by voters with accessibility needs and ensures voter privacy during voting.

Verity Booth is easily set up and collapsed to allow for the product to be easily managed for transportation and storage.



Personnel Requirements

Personnel deploying and setting up Verity Booth must receive training from Hart or Hart-trained personnel on the device in order to obtain the skill level required to successfully deploy the booth.

The number of personnel required to prepare the booth is 1 person per booth.

Verity Access (I/N 2005010)

Verity Access is an interface module that can be connected to Verity Touch Writer voting devices. The module has three tactile buttons, one audio port, one port for external tactile buttons, and a custom USB cable. Jacks for headphones and adaptive devices are located on the top edge of the device, and the device has grip surfaces on either side.



Personnel Requirements

Personnel deploying and setting up Verity Touch Writer with Verity Access must receive training from Hart or Hart-trained personnel on the device in order to obtain the skill level required to successfully deploy the device.

The number of polling place workers required to demonstrate Verity Access operations is 1 person per Touch Writer.

Verity Key (I/N 2001586)

Verity Key, or Key, is a small security device that is programmed for each election and generated by the Verity Build application. Key is activated once inserted into a Verity device's or Verity workstation's USB port.

Key is part of Verity's two-factor authentication process. Two-factor authentication requires each user to know something (the password associated with the Key) and physically have something (a programmed Verity Key). Both the user password and the Key must be authenticated together.

Once verified, Verity Systems read the Key before allowing operations to occur. Operations will not engage without a programmed Key. Each Key is valid for one and only one election. If a Key fails, it may not have been programmed properly for the current election.



Personnel Requirements

Personnel using Verity Keys must receive training from Hart or Hart-trained personnel in order to obtain the skill level required to use the Verity Key.

The number of personnel required is 1 person per Key.

vDrive (I/N 1004781)

vDrive is a small, portable memory device that collects and stores cast vote record (CVR) data and audit logs. CVR data includes the ballot data collected when votes are cast. Audit logs are electronic records of all activity performed in the Verity Voting system as it occurs. Each Verity component (application or device) maintains its own audit log. Audit logs are a critical part of ensuring that security is maintained by providing an audit trail.

vDrives are used in voting devices at polling places and throughout the Verity Voting system.



Personnel Requirements

Personnel installing Verity vDrives must receive training from Hart or Hart-trained personnel in order to obtain the skill level required to install the vDrive.

The number of personnel required is 1 person per device.

Verity Parts List

Materials for warehouse/field technicians required for working or cleaning devices				
Hart Item Number	Item Description			
2005357	Ballot Box, Scan, Verity			
2005358	Booth, Standard			
2005361	Keys for Verity device locks			
2005361	Key, Verity, Ibutton, in Holder			
1005324	vDrive			
	Micro-fiber (lint-free) wipes			
	isopropyl alcohol			
1005015	Totex battery			
2005365	Charger, 6 Bay, Verity Battery w/ AC Power Supply			
172436	Intrusion Detection Loops for Devices Touch Writer – Printer port vDrive Bay Handles			
2005430	OKI B431d, toner cartridge			
2005420	OKI C831dn, Black Toner cartridge			
2005421	OKI C831dn, Cyan Toner cartridge			
2005423	OKI C831dn, Magenta Toner cartridge			
2005422	OKI C831dn, Yellow Toner cartridge			
2005424	OKI C911dn , Black Toner cartridge			
2005425	OKI C911dn , Cyan Toner cartridge			
2005427	OKI C911dn , Magenta Toner cartridge			
2005426	OKI C911dn , Yellow Toner cartridge			
Mfg. MDV2TCA	Vacuum for scanner & printer clean-out; DATAVAC PRO			
Mfg. SKU 8262B001 (Canon)	Canon, Roller Replacement Kit for G1100/1130			
(qty.4)				
Mfg. SKU 1690783 (Kodak)	Transport Cleaning Sheets to be used on any image guide			
(qty. 10)				
Mfg. SKU 8327538 (Kodak)	Feeder Consumables Kit, Kodak			
(qty. 2)				
Mfg. SKU 8535981 (Kodak)	Roller Cleaning Pads to be used on any image guide			
(qty. 2)				

7. POST-VOTING - VERITY CENTRAL

For a complete description of the Verity Central activities that outline the post-voting functionality for this application, refer to *Verity Central Quick Reference Guide* (I/N 6620004).

Personnel Requirements

Personnel operating Verity Central workstations must receive training from Hart on the application and hardware in order to obtain the skill level required to successfully operate Verity Central.

The number of personnel required to operate Verity Central is 1 person per workstation.

The number of personnel required to scan ballots with Verity Central is 2 persons per workstation/scanner.

The number of personnel required to resolve (adjudicate) ballots with Verity Central is 2 persons per workstation.

Materials for warehouse/field technicians required for working or cleaning devices		
Hart Item Number	Item Description	
	Micro-fiber (lint-free) wipes	
	isopropyl alcohol	
Mfg. MDV2TCA	Vacuum for scanner & printer clean-out; DATAVAC PRO	
Mfg. SKU 8262B001 (Canon)	Canon, Roller Replacement Kit for G1100/1130	
(qty.4)		
Mfg. SKU 1690783 (Kodak)	Transport Cleaning Sheets to be used on any image guide	
(qty. 10)		
Mfg. SKU 8327538 (Kodak)	Feeder Consumables Kit, Kodak	
(qty. 2)		
Mfg. SKU 8535981 (Kodak)	Roller Cleaning Pads to be used on any image guide	
(qty. 2)		
Utilities	Power requirements for the devices:	
	Canon G1100/1130 Scanner: 120VAC, 1A, 3-prong outlet	
	Kodak i5600 Scanner: 120VAC, 2A, 3-prong outlet	
	Eaton UPS: 120VAC, 9A, 3-prong outlet	
	HP Workstations: 120VAC, 6A, 3-prong outlet	
Furnishings	Work table	

All Verity applications can be updated only by Hart personnel. Contact the Hart Customer Support Center, 866.275.4278, for details.

8. POST-VOTING - VERITY COUNT

For a complete description Verity Count's activities that outline the post-voting functionality for this application, refer to *Verity Count Quick Reference Guide* (I/N 6620005).

Personnel Requirements

Personnel operating Verity Count Workstations must receive training from Hart on the application in order to obtain the skill level required to successfully operate Verity Count.

The number of personnel required to operate Verity Count is 1 person per workstation.

The number of personnel required to resolve (adjudicate) ballots with Verity Count is 2 persons per workstation.

Materials for Count operator required for cleaning workstations	
Hart Item Number	Item Description
	Micro-fiber (lint-free) wipes
	isopropyl alcohol

All Verity applications can be updated only by Hart personnel. Contact the Hart Customer Support Center, 866.275.4278, for details.

9. STORAGE AND DEPLOYMENT

Storage Procedures

This section reviews the storage of Verity hardware components. Recommendations are based on best practices. Where applicable, refer to hardware manufacturer recommendations.

Create a spreadsheet that shows registered voters by precinct and precincts assigned per polling place. This helps to determine the equipment requirements for each polling place. The use of the term "precinct" to also define an Election Day polling place varies by jurisdiction. Also, requirements vary by state in regard to machine allocation versus voter registration. You should maintain the polling place components in precinct sequence if at all possible. While Verity Scan and Touch Writer do not require this, it is much easier to allocate and access units stored in this manner since most assignments to the system are done by precinct.

At this time, you need your spreadsheet showing allocation of equipment to polling places. The easiest layout is to begin with the first precinct/polling place first and increment until you have all precincts/polling places accounted for. If you need one Verity Scan and 6 Verity Touch Writers in Polling Place #1, load them and other items sent to polling places together on a pallet or other type of transfer container designated for Polling Place #1. Include items such as a transfer case, cell phones, signs, tape, pens, and other items that are not dated. Continue this process until all polling places are completed. One way to identify polling place locations within the facility is by painting the numbers on the floor to ensure the proper placement when the polling place equipment is being moved.

The Verity Scan and Touch Writer printer paper purchased through Hart has a shelf life of seven years after it has been imaged. The manufacturer recommends that it be imaged within three years of the manufacturing date. Store the paper at temperatures below 77 °F with a relative humidity of 45 – 65%. Do not expose to direct light.

The storage facility should have at least one workstation with AC power available for functionality testing, and so forth. A set of one Verity Scan and one Verity Touch Writer requires approximately 0.5 amps (AC) per device to operate, so the use of standard 15 amp circuits is adequate. If extension cords are necessary when testing the system or setting up for an election, be aware that pulling cords throughout your facility may be time consuming or inconvenient. Accordingly, the use of drop cords that contain multiple outlets is highly recommended, as this allows several polling place sets to be serviced at one time while minimizing the number of cords pulled throughout the facility. Conveyor belts or hand trucks can be used to transport equipment from storage to workstations.

Personnel Requirements

Personnel storing or deploying Verity equipment must receive training from Hart or Hart-trained personnel on the components in order to obtain the skill level required to successfully store and deploy equipment.

Materials for warehouse/field technicians required for working or cleaning devices		
Hart Item Number	Item Description	
2005357	Ballot Box, Scan, Verity	
2005358	Booth, Standard	

The number of personnel required is 1 person per piece of equipment.

Materials for warehouse/field technicians required for working or cleaning devices		
Hart Item Number	Item Description	
2005361	Keys for Verity device locks	
2005361	Key, Verity, Ibutton, in Holder	
1005324	vDrive	
	Micro-fiber (lint-free) wipes	
	isopropyl alcohol	
1005015	Totex battery	
2005365	Charger, 6 Bay, Verity Battery w/ AC Power Supply	
172436	Intrusion Detection Loops for Devices Touch Writer – Printer port vDrive Bay Handles	
2005430	OKI B431d, toner cartridge	
Mfg. MDV2TCA	Vacuum for scanner & printer clean-out; DATAVAC PRO	
Utilities	Power requirements for the devices:	
	6 Bay Charger: 120VAC, 18A	
	Scan: 120VAC, 2A, 3-prong outlet	
	Touch Writer: 120VAC, 2A, 3-prong outlet	
	OKI B431d Printer: 120VAC, 6A, 3-prong outlet	
	Eaton UPS: 120VAC, 9A, 3-prong outlet	
Furnishings	Work table	

Delivery Procedures

After all testing has been finalized, begin preparing the system for delivery to the polls. The procedures for moving voting systems vary by jurisdiction, so the need to organize this process is essential.

- It is very useful to work with other staff members to create a survey to be mailed to your polling locations far in advance of the election. Ascertain basic information such as the availability of AC power, tables and chairs, a phone, and access during voting hours.
- Create a checklist of polling places and ALL items that are to be shipped to minimize shortage calls on Election Day.
- If you use a moving company to deliver your voting system, arrangements must be made in advance.

- Keep in mind that AC power must be available at polling places.
- Provide the mover with the list of polling locations and the equipment assigned to each.
- If there are locations with special delivery requirements, let the mover know in advance.
- If you have assigned the equipment as suggested previously, you should have everything needed for a polling place on one pallet.
- It is very helpful to have a spreadsheet showing the equipment numbers and the polling places to which they are assigned (equipment serial number is located on the bottom of all units).
- Keep logs of voting devices sent to each polling place. Track by device serial number. Also log the wire seal serial number for each device.
- Keep your facility organized. Move polling place equipment to loading area in the reverse order it comes off the truck; first on, last off.

Transportation and Storage

Verity Scan and Touch Writer are electro-mechanical pieces of equipment and need to be protected when transporting or storing. Moving parts, optics within the scanner, and tablet computers are sensitive to excessive dust, moisture, and vibration.

Always use a Hart-approved shipping container, such as the original cardboard Verity Device box, when transporting the Device between facilities (for example, to or from a polling place).

Heavy-duty shipping containers are available for purchase from the Hart catalog.

Do not store Verity Devices in high humidity or dusty environments; this causes moisture or dust to collect on the glass surfaces of the scanner and may reduce the quality of scanned ballot images.

Polling Place Deployment

Verity Scan

Verity Scan setup.

Tasks
Ensure sufficient electricity is available in the area.
Do not connect Verity Scan to AC power at this time.



Place the tablet in the Verity Scan tablet cradle.
Lock the tablet in place.
Retrieve the power supply from the case's storage compartment.
Connect the power supply to Verity Scan.
Connect Verity Scan's power brick to an AC power source. Do not use 3– to-2–prong adapters.
Attach the privacy screens to the ballot box.
Turn on Verity Scan.

Verity Touch Writer

Verity Touch Writer Setup

Tasks
Ensure sufficient electricity is available in the area. Do not connect Verity Touch Writer to AC power at this time .
Open and remove the Verity Touch Writer case from the shipping carton.
Remove booth from carrying case.
 Ensure the booth is assembled properly: Booth legs are properly attached. Booth is opened and booth top is secure. Properly seat Verity Touch Writer on top of the booth. Secure Verity Touch Writer to booth.
Open Verity Touch Writer case and secure lid in upright position.
Remove the tablet from its storage location.

Remove the battery cover and press the battery check button on the battery. The battery charge indicator should indicate a battery charge >=80%.

If it does not contact the appropriate election personnel.

Place the battery cover back on the tablet case.

Place the tablet in the Verity Touch Writer tablet cradle.

Lock the tablet in place.

Retrieve the power supply from the case's storage compartment.

Touch Writer Printer Setup
A table or second booth must be set up for the printer.
The Hart-specific USB printer cable is 2 meters long and must be used.
The printer must be located close to the Touch Writer.
Remove printer from shipping carton.
Set the printer on the 2 nd booth or table.
Retrieve Hart USB printer cable for Touch Writer storage compartment.
Connect the Hart USB printer cable to printer's USB port.
Connect the USB printer cable to the Touch Writer printer port.
Connect the printer to AC power source.
Turn the printer on.
If a Verity Booth is used for the printer, attach the privacy screens to the booth.
Touch Writer Setup Completion
Connect the power supply to Verity Touch Writer.
Connect the Verity Scan power brick to an AC power source.
Do not use 3– to 2–prong adapters.
Attach the privacy screens to the booth.
Turn on Verity Touch Writer.

Decommissioning Equipment for Return to Warehouse

Verity Scan

Verity Scan Disassembly

Tasks
Turn off Verity Scan and allow it to shut down.
Remove and store the privacy screens from the Ballot Box.
Unplug Verity Scan from AC power source.
Unplug power connection on back of Verity Scan.
Properly store AC power brick and cords in storage compartment.
Unlock the vDrive secure storage compartment.
Remove the vDrive and store in secure vDrive container.
Enter vDrive information into the election log.
Unlock, remove, and store the Verity Scan tablet in shipping carton.
Close and lock Verity Scan case.
Properly disassemble Ballot Box.
1. Unlock ballot box door.
2. Unlock Verity Scan from ballot box.
3. Lift Verity Scan off the top of the ballot box.
4. Raise ballot box floor.
5. Close and lock front door.
6. Lift and rotate lid.
7. Secure straps.
8. Push to collapse the box.
9. Secure latches.

DISASSEMBLING
Image: sector process of the sector point door Image: sector point door
5 close & lock 6 lift & rotate lid to position shown 7 secure straps 8 collapse unit 9 secure latche
Ensure ballot box is ready for transportation.
Place Verity Scan in shipping carton. Ensure that both the Verity Scan case and the tablet are in the carton.
Close carton and ensure it is ready for transportation.

Verity Touch Writer

Verity Touch Writer Disassembly

Tasks
Turn off Touch Writer and allow it to shut down.
Remove and store the privacy screens from the Booth(s).
Unplug Touch Writer from AC power source. Unplug power cord on back of Touch Writer.
Turn off printer.

Unplug printer from AC power source.
Unplug power cord from printer.
Unlock the vDrive secure storage compartment.
Remove the vDrive and store in secure vDrive container. Enter vDrive information into the election log.
Unplug USB printer cable from Touch Writer and printer.
Place printer in shipping carton.
Place printer power cord in printer shipping carton.
Close printer shipping carton so that it is ready for transportation.
Properly store USB printer cable in Touch Writer case's storage compartment.
Properly store AC power brick and cords in Touch Writer case's storage compartment.
Unlock and remove Verity Touch Writer tablet from the cradle.
Store Verity Touch Writer tablet in shipping carton.
Close and lock Verity Touch Writer case.
Unlock the Touch Writer from the booth.
Place the Touch Writer in the shipping carton.
Ensure the both the Touch Writer case and the tablet are in the shipping container.
Close carton and ensure it is ready for transportation.
Properly collapse booth and place in carrying case.
Close case and ensure it is ready for transportation.

10. PREVENTIVE MAINTENANCE PROCEDURES

Maintenance procedures for the Verity Scan and Touch Writer devices are minimal. Retest and record any problems detected in functionality testing and return damaged equipment to Hart for replacement. There are only a few regularly scheduled maintenance procedures necessary:

- Cleaning the equipment screens
- Cleaning the Verity Scan scanner path
- Checking battery levels and charging batteries
- Other repair, replacement, and miscellaneous maintenance procedures
- Verity Touch Writer printer, PC printer, Verity Central PC scanner, and PC peripheral maintenance

Hart approved and trained warehouse workers and field technicians can perform equipment maintenance.

Personnel Requirements

Personnel maintaining Verity components must receive training from Hart or Harttrained personnel on the device in order to obtain the skill level required to successfully maintain the device.

The number of personnel required to maintain a Verity device is 1 person per device, the maintenance person can maintain 2-4 devices per hour.

Materials for warehouse/field technicians required for working or cleaning devices		
Hart Item Number	Item Description	
2005357	Ballot Box, Scan, Verity	
2005358	Booth, Standard	
2005361	Keys for Verity device locks	
2005361	Key, Verity, Ibutton, in Holder	
1005324	vDrive	
	Micro-fiber (lint-free) wipes	
	isopropyl alcohol	
1005015	Totex battery	
2005365	Charger, 6 Bay, Verity Battery w/ AC Power Supply	
172436	Intrusion Detection Loops for Devices Touch Writer – Printer port vDrive Bay Handles	

Materials for warehouse/field technicians required for working or cleaning devices		
Hart Item Number	Item Description	
2005430	OKI B431d, toner cartridge	
Mfg. MDV2TCA	Vacuum for scanner & printer clean-out; DATAVAC PRO	
Utilities	Power requirements for the devices:	
	6 Bay Charger: 120VAC, 18A	
	Scan: 120VAC, 2A, 3-prong outlet	
	Touch Writer: 120VAC, 2A, 3-prong outlet	
	OKI B431d Printer: 120VAC, 6A, 3-prong outlet	
	Eaton UPS: 120VAC, 9A, 3-prong outlet	
Furnishings	Work table	

Voting Device Maintenance

Because Verity Scan may have been stored for long periods of time between uses, and the scanner has moving parts and optics that are sensitive to excessive dust, moisture, and vibration, perform these steps at least once per year, or prior to every election:

- Always clean the upper and lower glass plates on each scanner with lint-free isopropyl alcohol wipes.
- Do not pour or spray liquids on the glass plates as this can cause streaking on the bottom surface of the glass plates.
- Have Hart replace the internal CMOS battery every 3 to 4 years through the preventative maintenance program.

Maintenance for Commercial Printers

Dust and debris are the main causes of poor-quality printing. Although these can never fully be eliminated, much can be done to reduce their effects.

Ensure that printing and storage rooms are kept clean and dust-free.

Perform all of the manufacturer's recommended printer cleaning and maintenance on schedule, even during the election off-season.

Prior to each election event, conduct full preventative maintenance on ballot printing equipment, including checking for proper paper and toner supplies.

Hart offers preventative maintenance programs for paper ballot printers that provide on-site visits from the printer vendor with preferred response times. Contact the Contact Hart Customer Support Center, 866.275.4278, for additional details.

Use only original equipment manufacturer (OEM) toner cartridges.

Remanufactured toner cartridges may have premature failures, leading to printer downtime. They may also produce low quality images.

During Ballot Printing

If printing on demand, make certain that the printer has been serviced and maintained.

If printing with a contract print vendor, make certain that the vendor is Hart-certified or qualified.

Always use high-quality paper stock that satisfies the Hart Secure Ballot Stock specification.

Paper dust problems can increase with large variations in moisture, poor formation (especially in 100% recycled-content grade), excessive variability of roll hardness (probably caused by poor winding at the mill) and other large variations in process parameters (such as caliper, weight, and so forth).

Use the same weight paper for all ballots in the election.

Consult your printer model's manual for paper weight calibration information.

Never double-print ballots for custom-stub printing or any other printing (paper that runs through the printer twice may contain fuser oil or lubricant, making it more susceptible to slippage).

Use only Hart-approved printers when printing ballots on demand.

Reducing Paper Dust

Paper dust accumulates in the printer fuser area and creates image-quality issues by contaminating components and causing a variety of difficult-to-diagnose problems.

Perforated paper should be as free as possible of paper dust and chaff, which can cause machine contamination.

Fan paper thoroughly on all four sides to remove any dust or shavings from edges.

Using paper specifically designed for laser printing will ensure high-quality images.

For best results, always use paper stock that satisfies the Hart Secure Ballot Stock specification.

Cleaning Rollers Contaminated With Paper Dust

Always follow the printer manufacturers suggested cleaning practices, consult the printer's maintenance section in the user manual. Rollers can usually be cleaned with a

damp lint-free cloth and in some cases isopropyl alcohol solution may be used. Always follow the instructions in the printer's operator guide when replacing the feed rollers.

If the fuser rollers cannot be cleaned or replaced by the operator, call for service.

Keep printers in a dust-free environment, closed off from outside and manufacturing areas. Ensure doors and windows remain closed.

Maintenance for Commercial Scanners

Dust and debris are the main causes of poor-quality scanning, which may result in a higher percentage of instances requiring ballot adjudication. Although debris can never fully be eliminated, much can be done to reduce their effects.

Ensure that scanner and storage rooms are kept clean and dust-free.

Perform all of the manufacturer's recommended scanner cleaning and maintenance on schedule, even during the election off-season.

Prior to each election event, conduct full preventative maintenance on ballot scanner equipment as described in the manufacturer's maintenance guide, including cleaning glass lenses and paper path; depending on the amount of use, roller replacement may be recommended.

During each election event, conduct full maintenance on ballot scanner equipment as described in the manufacturer's maintenance guide in order to provide the highest quality scanning function.

Hart offers preventative maintenance programs for paper ballot scanners that provide on-site visits from the scanner vendor with preferred response times. Contact the Hart Customer Support Center, 866.275.4278, for additional details.

Use only original equipment manufacturer (OEM) replacement parts.

During Ballot Scanning

Make certain that the scanner has been serviced and maintained.

Always use high-quality paper stock that satisfies the Hart Secure Ballot Stock specification.

Paper dust problems can increase with large variations in moisture, inferior quality (especially in 100% recycled-content grade), excessive variability of roll hardness and other large variations in process parameters (such as caliper, weight, and so forth).

Consult your scanner model's manual for paper weight calibration information.

Reducing Paper Dust

Paper dust accumulates throughout the scanner paper path and creates image-quality issues by contaminating components and causing a variety of difficult-to-diagnose problems.

Perforated paper should be as free as possible of paper dust and chaff, which can cause machine contamination.

Fan paper thoroughly on all four sides to remove any dust or shavings from edges.

Using high-quality paper stock will promote high-quality images and proper printer maintenance.

For best results, always use paper stock that satisfies the Hart Secure Ballot Stock specification.

Cleaning Rollers Contaminated With Paper Dust

Rollers can usually be cleaned with a damp, lint-free cloth and the suggested roller cleaner solution. Always follow the instructions in the scanner's operator guide for cleaning and replacing the rollers.

If the rollers cannot be cleaned or replaced by the operator, call for service.

Keep scanners in a dust-free environment, closed off from outside and manufacturing areas. Ensure doors and windows remain closed.

Scanner Cleaning Frequency

Clean the scanner in accordance with the suggestions in the scanner manual (usually every 5,000 to 7,000 ballots). More frequent cleaning may be needed throughout an election event as different environmental variables affect a scanner's performance. These variables include:

- Larger quantities of ballots.
- Excessive handling of ballots, particularly by oily or dirty hands.
- Larger ballot sizes such as tabloid, excess toner used in printing, and ballots spanning multiple sheets.
- Paper particles resulting from stub removal.
- Excess dirt that can stick to ballots in a high-humidity environment.
- Low humidity, highly static environments, where static electricity can cause the scanner to attract dust and other particulates.
 - Use an anti-static mat at the ballot sorting stations and the scanning stations.
- Dusty or dirty scanning rooms and areas that can contribute to accumulated scanner dirt through contact with ballots, hands, and dust.

Have Hart regularly perform your Scanner Preventative Maintenance to keep scanners in top working condition.

Scanner components that require particular attention:

- Main pick-up roller
 - Excessive dust on the main pick-up roller will make it appear worn and smooth to the touch, causing the roller to skim across the page instead of grabbing properly.
- Feed rollers
 - Excessive dust on feed rollers along the inside of the scanner path will result in a squeaking sound as the scanner feeds.
- Automatic document feeder
 - A worn automatic document feeder (ADF) pad will not push the paper fully against the main pick-up roller, causing multiple pages to be fed at one time.
- Image guides
 - Excessive dirt or marks on the image guides may create lines across the scanned ballot image.

How to detect that the scanner requires cleaning:

- Ballots jam during scanning.
- The pick-up roller grabs multiple sheets at one time or does not grab sheets at all.
- A squeaking noise is audible as the scanner feeds the paper through.
- Lines or other evidence of particulate matter appear on the scanned image in the ballot preview window.
- Watch the scanned ballot preview in Ballot Now while scanning.
- Stop and clean the scanner if ballot images look "dirty" or appear to have lines or streaks.

How to practice proper scanner usage, maintenance, and cleaning:

- When a ballot has been partially fed into the scanner or is trapped, never attempt to remove the ballot by pulling it back through the hopper. This places unneeded strain on and can cause damage to the rollers.
 - Always open the scanner door before removing jammed ballots.
- Refer to the manufacturers' documentation for instructions on maintaining scanner rollers, glass, and ADF pads.
- Purchase a scanner care kit for your particular scanner model. These care kits typically include cleaning pads and replacement rollers.
- Purchase a dust cover fitted for your scanner to keep out dust and debris during storage.
- Schedule training and maintenance visits with the manufacturer or through Hart's Scanner Preventative Maintenance service plan.

Maintenance of Verity Workstation

Verity Build, Central, and Count Workstations may be stored for long periods of time between uses. To keep Verity workstations in good condition, perform these steps at least once per year, or prior to every election, whichever is more frequent:

- Always clean the exterior of the workstation, keyboard, mouse, and display with moist, lint-free cloth.
- Never pour or spray liquids on the glass plates as this can cause streaking on the bottom surface of the glass plates.
- Have Hart replace the internal CMOS battery every 3 to 4 years through the preventative maintenance program.

NOTE: Only Hart personnel can upgrade software on Verity workstations. Call the Hart Customer Support Center at 866.275.4278.

Generating File Listings on Verity Applications on Workstations

Hart strongly suggests that the only required method of validating Verity files by the end user on the workstation is to use the Software Validation process described in the Verity applications' technical reference manuals.

The Verity workstations are configured to provide the secure authorization and access to the Verity application and direct access to the operating system; the direct operating system access was provided to allow for Hart personnel to perform forensic analysis of the system. Direct access to the operating system is not implemented with the intent of allowing the end user to have access to the operating system.

How-to generate the file manifest on the trusted external interface:

- 1. Contact the Hart Customer Support Center at 512.275.4278.
- 2. Insert a USB portable drive into one of the workstations USB ports.
- 3. Login to the Verity application launcher.
- 4. Launch the Desktop application.
- 5. In the "Export file hashes to removable drive" dialog box, select the "Export" button.
- 6. Allow the system to write the manifest file to the USB drive.
- 7. Remove the USB drive from the workstation.
- 8. Retrieve Verity file manifests from the NSRL reference files from the NSRL Voting website. http://www.nsrl.nist.gov/vote.html
- 9. Using Notepad or Excel or WinMerge, manually compare the Verity Manifest file provided by the NSRL to the manifest file stored on the USB drive.
- 10. The comparison should indicate that the file names, file versions, and file checksums are identical.

How-to generate a file listing of the Verity application files:

- 1. Contact the Hart Customer Support Center at 512.275.4278.
- 2. Insert a USB portable drive into one of the workstations USB ports.
- 3. Login to the Verity application launcher.
- 4. Launch the Desktop application.
- 5. Enter the Access Code provided by Hart CSC.
- 6. At the command prompt type the command listed below:
- a. >DIR C:\Program Files (x86)\Verity\Client D:\Verity_File_Manifest.txt
- 7. Shutdown the workstation.
- 8. Remove the USB drive from the workstation.

Voting Device Storage

Storing the Scan power supply (or "brick") inside the storage compartment:

- Simplifies transporting the Scan to and from the polling place.
- Lessens the chance for damage to the brick caused by handling errors. Because the fuse inside the power brick is fragile, sudden jarring can cause the fuse to break (such as when dropped on the floor).

Paper Storage

Paper is very sensitive to moisture changes, and this fluctuation can cause print quality issues. The temperature of the room where paper is stored can have a significant effect on how that paper performs in the machine. Humidity control is essential to ensuring proper paper handling and performance.

- Optimum paper storage and printer operating temperature is 68 to 76 degrees Fahrenheit.
- Optimum storage conditions include areas with a relative humidity of 35% to 55%. Overloading of the storage or work area with external air from open doors and excessive in-and-out traffic may defeat environmental control systems.
- Do not store paper directly on the floor, since that increases the possibility of moisture absorption. Store paper on pallets, shelves, or in cabinets in an area protected from extremes in temperature and humidity.
- Open sealed reams of paper only when they are ready to be loaded into the printer.

Conditioning Paper

When paper is moved from a storage area to a location with a different temperature and humidity, allow the paper to acclimate to the new location before use.

Cleaning the Equipment Screens

Table 1-9. Cleaning the equipment screens.

Tasks
Use a minimum 50% isopropyl alcohol and lint-free wipes.
Wipe the Verity Scan and Touch Writer screens clean.
Include a minimum 50% isopropyl alcohol and lint-free wipes with the polling place supplies, and ask poll workers to clean the screens at least once daily during election events.

Verity Tablet Battery Maintenance

The following battery maintenance procedures apply for Verity system hardware components.

Only use Hart approved battery charger when charging tablet batteries.

Table 2. Battery charging.

Battery Charger Visual Queue	Definition	Notes
<80%	Recommended time to recharge battery.	To test the charge level, press and hold the test button on the battery.
Red pulsing light on battery	Battery cannot be charged	When the battery is fully drained, it may indicate a pulsing red light. Try leaving it in the charger for 30 minutes to see if it begins pulsing green (take a charge).
Green pulsing light on battery	Battery is charging	
Green solid light on battery	Battery is fully charged	

Table 3. **Battery charge and drain statistics.**

Battery Statistics	Timeline	Notes
Battery charge time	4-5 hours	for a fully discharged battery
approx. 0.5%/month	On-shelf drain rate	
approx. 5.0%/week	Device on power	
Storage percentage	On-shelf	Suggest charge for storage is 60%

Cleaning the Verity Scan Scanner Path

Table 1-10.	Cleaning	the	scanner	path.
				F

Tasks
Raise the top cover to the scanner section of the Verity Scan.
Raise the inside cover to the scanner.
Use isopropyl alcohol and lint-free wipes.
Wipe the scanner path clean of small paper debris. NOTE : Do not use a pressurized air canister. Doing so may result in debris becoming trapped under the scanner glass.
Clean the transport mechanism (rollers under the inside cover) using a minimum 50% isopropyl alcohol and lint-free wipes.

Verity Scan Bitonal Test

Before each election, run a Verity Scan Bitonal test to determine if contrast and speed calibration are required. The scanner within the Scan unit should have the calibration checked at least once per year. The following flow chart depicts the calibration process.



For more information, refer to the Service and Maintenance Technical Reference Manual.

Calibrating the Verity Scan Scanner

To ensure proper ballot scanning, you may periodically need to calibrate the Verity Scan ballot feed slot.

NOTE: Calibrate the Verity Scan once per year at most. If you are unsure of when or why to calibrate the Verity Scan, contact a Hart representative.

11.SECURITY

Proper security is critical to safeguarding the election process. Hart combines technology and best practices to ensure that Verity is secure. Hart ensures that security policies and procedures for both jurisdictions and physical security (both in-person voting devices and electronic and paper ballots) are fully documented. Verity was designed for cost-effective and meaningful security solutions. To ensure security at every level, Verity Voting engages the AAA (authentication, authorization, and audit) security framework.

Quality Certified

In addition to measures taken by Hart to protect Verity security, all Verity software and hardware has been tested by an outside auditing agency to ensure proper security and functionality.

Layered Defense

A multi-layer defense strategy and application verification process is used to provide security throughout Verity Voting. Software independence measures are employed, which means that voters can verify ballot choices before they are cast and counted, and elections and software can be audited independently.

In addition to Verity devices' physical security attributes that reduce the possibility of undetected and unauthorized access, Verity devices employ a secure boot BIOS to significantly minimize the incidence of unauthorized modification of the system's software. If unauthorized software modification is detected, the Verity device will shut down.

After the secure boot process has successfully completed, the Verity device performs a self-test to ensure proper system functionality. If an error occurs, Verity alerts the user.

Tamper Evident

Verity Key software independence ensures that, in the event that the software is altered in any way, the alteration is evident in the audit log (i.e., tamper evident).

CVR Protection

Users are unable to view, access, or alter CVR (cast vote record) data. To protect voter privacy, CVRs are stored in randomized order so that voting order cannot be determined. CVRs do not contain any information that can connect a vote to a specific voter.

Audit Logs

Comprehensive audit logs are generated for all user authentication attempts, data transfers, configuration changes, and errors. Audit logs are designed to be complete and easy to understand. Audit logs are created uniformly across system components, software applications, and voting devices.

General Security Best Practices

- Have members of the election staff work in pairs. This will greatly reduce the potential for accidental errors and opportunity for deliberate mischief or fraud by a rogue employee.
- Use surveillance cameras, motion sensors, and other advanced means to monitor both access and usage of computers for additional security.
- Review voting equipment storage and work areas to ensure that only authorized personnel have access to them.
- Maintain a list of personnel with door keys or electronic access badges to election office work areas and voting equipment storage locations. Ensure all door keys are accounted for and only authorized personnel have them.
- Document the controlled physical access to voting systems and the facility where the systems are stored. Document all security-related repairs and modifications to the physical components of the facility where voting systems are stored.
- Develop and apply procedures and policies requiring that keys or combination locks be changed periodically.
- Review election office work areas to ensure that office space is appropriately visible and that undetected access by unauthorized individuals is not possible.
- Preview polling places and identify secure areas for equipment drop-off, storage, and pickup.
- Ensure that blank ballot paper stock is controlled at all times.

- Have an impartial third party conduct a security review and establish and implement applicable election management system security measures. Resources might be found in county and municipal information technology staff or local community college or technical school staff.
- Maintain staffing levels adequate to monitor voting booths.
- Allow only qualified voters, persons assisting voters, and poll workers entrance to the voting booth area.
- Queue the line of voters at the ballot issuing station, not at the voting area. Do not issue voters Access Codes or paper ballots, or allow them to enter the voting booth area, until a booth is open and available for use.
- Report any suspicious activity in or around voting machines to the local election officer.

Computer Security Best Practices

- Keep computer equipment in locked facilities, and use a log to monitor access.
- Log and limit access to Verity Keys.
- Remove Verity Keys from equipment when not in use.
- Maintain an accurate inventory of all voting system computers and peripherals by make, model, location, and serial number.
- Maintain an accurate inventory of vDrives.
- Keep vDrives secured at all times.
- Keep computers running at optimal performance by following these guidelines:
 - Use a properly grounded anti-static mat beneath each computer.
 - Make sure the system is plugged into a surge protector.
 - Make sure the system is in a secure, stable position to avoid vibration.
 - Make sure the system has proper ventilation to prevent overheating.
- In general, it is best not to abort a process that is midstream. Instead let the process complete, and then take corrective action. Performing a hard shut down of equipment, disconnecting cables to avoid a data transfer, or other process-interruptive steps can lead to equipment failures. This is a common best practice when working with any technology, not just the Verity equipment.
- For mission-critical computer systems, such as the Count computer, use an uninterruptable power supply (UPS) to prevent the loss of data in the event of a power outage during election night reporting.

• Always exit Windows by choosing "Shut down" from the Start menu.

Voting Device Security Best Practices

- Cover and seal all unused connections on voting systems, devices, and hardware, including USB, parallel, and other ports.
- Ensure that blank ballot paper stock is controlled at all times.
- Use security cameras in the voting system storage facility.
- Use a secure access system and limit the number of keys or access badges to the voting system storage facility.
- Use a burglar and fire alarm system in the storage facility. Periodically test their functionality at least as often as recommended by the manufacturer.
- Use chain-of-custody forms when transporting equipment for any reason.
- Verify that all voting devices are returned to storage after each election. Confirm that the device seals have not been tampered with during transport, and sign the chain-of-custody document upon receipt of voting devices.
- Maintain an inventory of election materials, including voting devices, vDrives, security seals, voter registration (poll) lists, election result tapes and printouts, field supervisors' reports, poll workers' daily logs, reconciliation reports, audit data, and other items.
- Store voting equipment on racks and off of the floor. Cover racks to protect voting devices from water damage from above (e.g., roof leaking) and below (e.g., building flooding).
- When returning equipment to Hart for repair, seal the inner box with serialized, tamper-evident tape, log the seal number on the chain-of-custody form, and use an outer shipping box.
- When equipment is returned from repair, perform acceptance testing within 10 business days to confirm functionality and firmware version. Perform hash code testing to confirm that the certified firmware has not been compromised, where applicable.
- Maintain an accurate inventory of all voting system equipment by type, location, and serial number.
- Prior to the Early Voting period or Election Day, maintain polling place devices under the chief election officer's close supervision at all times.

- Require the lead poll worker to verify the numbers of all seals and tamperresistant tape on all voting devices and to inspect the voting devices for any evidence of tampering.
- Require the lead poll worker and all poll workers to use and sign a checklist to verify that all opening procedures were followed.
- Control access to voting device power control, power supply, and election results storage media.
- Maintain a physical barrier between the voter and undistributed ballots to limit unauthorized access.
- Arrange the polling place so that the exterior of each voting device is in plain view of poll workers at all times.
- Allow only poll workers and registered voters in the voting device area. Allow voters to enter this area only when a voting device is available for use.
- Train lead poll workers to operate ballot activation devices (e.g., Touch Writer or Controller).
- Treat Voting devices with the same sensitivity as you would a secure ballot box containing paper ballots.
- Never leave voting devices unattended at any time (e.g., in an automobile, an unlocked room, and so forth).
- Break or remove the security seal from the voting devices in strict accordance with close polls or central count tabulation procedures.
- Throughout the voting day, monitor voting devices closely to protect against malicious tampering. Pay especially close attention to ports, cable connections, and external power supplies on voting devices. Do not allow unauthorized persons access to these areas.
- Establish times for poll workers to verify the number of voters processed with the number of votes recorded (the ballot count) on the voting devices. Train poll workers to log and reconcile inconsistencies.
- Early Voting or Absentee-In-Person Equipment:
 - Record the ballot and lifetime counts of all devices at the beginning and the end of each voting day using a reconciliation log.
 - At the end of each voting day, close and secure all voting devices with tamper-evident seals. Store all devices in a locked location.

- Verify the numbers on all protective seals and public counters before using the voting devices the next day.
- Follow all Election Day voting security Best Practices.
- Pay especially close attention to ports on the back of voting devices and keep all storage compartments closed to restrict access to cables. Do not allow unauthorized persons access to these areas.
- Monitor the security and integrity of all voting system cable connections to ensure that voting will not be disrupted because the connection is inadvertently broken. Ensure that cable connections are firmly tightened and that cables are placed where they will not be tripped over or pulled on.

vDrive Security Best Practices

- Secure vDrives within the voting device vDrive compartment with a tamperevident security seal.
- Record voting device serial numbers, as well as security seal numbers, during official election events in order that deployed equipment can be physically authenticated at the polling place.
- At the end of Election Day, follow local procedures to transport voting devices and/or vDrives from the voting location to the jurisdiction election office by a sworn election official or a law enforcement officer.
- Establish procedures to secure voting devices and ballot boxes each day after suspending polls. Voting devices may be sealed, locked, and/or chained, and paper ballot marking booths may remain assembled.
- Conduct the delivery of voting equipment to polling place locations with the same degree of control as applied to the warehouse storage of sensitive election equipment.
- Require that the delivery person or company (or in some cases the supervising poll worker) use a chain-of-custody document that contains the voting device serial numbers and security seal numbers for each voting location where equipment has been delivered.
- Use the chain-of-custody form in triplicate. Delivery personnel may require training on its proper use.
- Use only lockable buildings or locations that are capable of monitoring the secure storage of voting equipment at polling places.

- Tightly strap all equipment being delivered in place both horizontally and vertically inside delivery vehicles to avoid damage to the voting units (in-transit damage may appear to be a security violation, when in fact it is simply the mishandling of equipment).
- Always keep doors on delivery vehicles locked when unattended.

12.SPECIFICATIONS

Verity polling place components can be stored in quickly and easily deployable cartons and carriers. The procedures presented in this guide help to make accessing and deploying system components easy.

Verity Scan Specifications, I/N 3005350

Verity Scan is lightweight and designed for convenient storage. Verity Scan sits atop a Verity Ballot Box for election events. The Ballot Box is collapsible so it can easily be stored.



 Table 2 - Verity Scan specifications.

Setting	Description
Scan Accuracy	Scan accuracy has been validated to be 100%
	<u>Note</u> Scanner must be maintained per the Preventative Maintenance Schedule listed in this document.

Scan Rate	1 Ballot Sheet (8.5" x 17", double-sided) every 30 seconds
Height	7.7 inches
Width	18.8 inches
Depth	15.6 inches
Weight	28.3 pounds
Weight with batteries	29.1 pounds
Display	12.1 inches
Screen Size	12.1 inches

Verity Scan Paper Specifications

Setting	Description
Width in inches	2.25
Basis Weight	53 g/m ²
Length in feet	80.0

Verity Scan Ballot Box Specification, I/N 3005357



Table 4 - Verity Scan Ballot Box specifications.

Dimensions & Weight	Collapsed in Bag	Collapsed	Deployed
Height in inches	28.5	28.3	28.3
Width in inches	26.5	26.0	26.0
Depth in inches	5.5	5.2	23.3
Weight in pounds	26.9	25.6	25.6

Verity Touch Writer Specifications, I/N 3005352

Verity Touch Writer is lightweight and designed for convenient storage. Touch Writer can sit on top of a standard Verity Booth or, as shown below, atop a lightweight, ADA-compliant Accessible Verity Booth that can be collapsed for easy storage.



Setting	Description
Audio-Tactile Interface	Verity Access provides accessibility interfaces for voters with physical or hearing disabilities.
Height	7.7 inches
Width	18.8 inches
Depth	15.6 inches
Weight	28.3 pounds
Weight with batteries	29.1 pounds
Display	12.1 inches
Screen Size	12.1 inches

Verity Touch Writer Thermal Paper Specifications

Setting	Description
Width in inches	2.25
Basis weight	53 g/m ²
Length in feet	80.0

Table 6 - Verity Touch Writer thermal, BPA-free paper specifications.

Verity Touch Writer Printer Specifications, I/N 3005370

The Verity Touch Writer Printer is lightweight and designed for convenient storage.



Table 7 - Verity Touch Writer Printer specifications.

Setting	Description
Dimensions	15.2" x 14.3" x 9.6" (38.7 cm x 36.4 cm x 24.5 cm)
Weight	26 lbs (11.4 kg)
MTBF	The monthly duty cycle (service period for reliable printing) is 80,000 sheets Exceeding the duty cycle number on a regular basis can lead to equipment malfunctions and breakdowns over time.

Verity Touch Writer Printer UPS Specifications, I/N 3005362

The Verity Touch Writer Printer UPS is designed for convenient storage.

Table 8 - Verity Touch Writer Printer UPS specifications.

Setting	Description
Dimensions	9.1" x 5.9" x 17.5"
Weight	35.6 lbs

Verity Touch Writer Ballot Paper Specifications

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Setting	Description
Brightness	>92
Basis Weight	28 lbs
Ballot sizes	8.5" x 11"
	8.5" x 14"
	8.5" x 17" (multi-purpose tray)

Table 9 - Verity Touch Writer thermal, BPA-free paper specifications.



Standard Verity Touch Writer Booth Specification, I/N 3005-358



Table 10 - Standard Verity Touch Writer Booth specifications.

Dimensions & Weight	Collapsed in Bag	Collapsed	Deployed
Height in inches	22.0	39.7	33.6
Width in inches	31.5	29.0	28.8
Depth in inches	4.0	5.5	23.3
Weight in pounds	11.7	10.1	10.1



Accessible Verity Touch Writer Booth Specifications, I/N 3005-359

Table 11 - Accessible Verity Touch Writer Booth specifications.

Dimensions & Weight	Collapsed in Bag	Collapsed	Deployed
Height in inches	19.5	37.9	30.2
Width in inches	41.5	39.1	38.8
Depth in inches	4.0	5.8	25.5
Weight in pounds	11.0	10.1	10.1

13. TROUBLESHOOTING PROCEDURES FOR SUPPORT PERSONNEL

Trained local support personnel at the Elections Office Help Desk should use the Help Desk Call Log. The log includes fields for documenting the Help Desk operator name, time, date, polling place site calling, caller, problem, resolution, and call back confirmation. This log, or one like it, should be used to document and track problems encountered.

Field personnel providing technical support should use a log such as the Polling Place Troubleshooting & Observation Log. Information recorded in this log should be crossreferenced to the Help Desk Call Logs used. Log serial numbers should be used for this purpose.

Post-election debriefing meetings should include an analysis of logs to determine issues that need resolution and how those resolutions will take place, and to identify issues that can be prevented in future election events.

Personnel Requirements

Verity equipment troubleshooting personnel must receive training from Hart or Harttrained personnel on the components in order to obtain the skill level required to successfully store and deploy equipment.

Personnel who are troubleshooting issues should contact the Hart Customer Support Center, 866.275.4278, to ensure proper diagnosis and resolution of the issue.

The number of personnel required is 1 person per piece of equipment.

Help Desk Personnel Requirements

Personnel troubleshooting Verity equipment must receive training from Hart or Harttrained personnel on the components in order to obtain the skill level required to successfully store and deploy equipment.

The number of personnel required is 1 person per 50 pieces of equipment.

Spare Equipment Requirements

While determining spare equipment requirements can be subjective, as a general rule it is suggested that for each type of unit at least 1 spare unit be kept on hand for every 20 units, with a minimum of 1 spare of each type of unit used.

Taking a Systematic Approach to Troubleshooting

When faced with a troubleshooting situation, apply this systematic troubleshooting approach.

Troubleshooting guidelines.

Tasks
Remain calm.
Identify the issue, or the symptoms, as reported.
Gather further information. Think broadly. Do not jump to conclusions. Ask questions.
Establish a theory to explain the source of the problem.
Research resolution steps, based on your theory.
Use documentation available to you to identify the resolution steps necessary.
Attempt resolution.
Check for success.
Repeat.

Remember, as with all electronic systems, many equipment issues can be solved by simply checking connections.

Verity Scan Troubleshooting Guide

Restarting Scan

If you need to restart (cycle power to) Scan because of an error, follow these steps.

Troubleshooting: Restarting Scan.

Tasks
Make certain that all voters currently voting have access to the emergency ballot slot on the Scan Ballot Box.
Press the Scan power switch so that it is in the OFF position.
Wait 30 seconds.
Press the Scan power switch so that it is in the ON position.
Type the required password.
File all tapes that print in the appropriate envelope.
Continue normal operations.

Ballots deposited in the Scan Ballot Box emergency slot will need to be scanned at the central counting station and/or according to local procedures.

Power Fails

Verity Scan will operate for at least 2-hours when the tablet battery is fully charged. The tablet battery is charged with a Hart approved external battery charger. The battery is not charged by the tablet or when connected to AC power.

Troubleshooting: Scan power failure.

Tasks
Check the power connection on the back of the Scan device, at the power brick, and at the wall.
If Scan is plugged into a surge protector that has a switch, check the switch.
If power to the facility fails, call the Elections Office or Help Desk and report the power failure.
Have voters use the emergency slot in the Scan ballot box until power resumes.
Unplug Scan from the outlet in order to avoid a power surge to the device when power returns.
File the tapes printed upon restart in the appropriate envelope.

Ballots deposited in the emergency slot will need to be scanned at the central counting station and/or according to local protocol.

Troubleshooting: Scan does not work.

Tasks
Check all of the Scan power connections.
Check the AC power connection on the back of Scan, at the power brick, and at the wall.
If Scan is plugged into a switched surge protector, check the switch.
Make certain that the Scan tablet is securely seated in the cradle and locked in place.
Press the power switch to the OFF position, wait 30 seconds, and press the switch to the ON position.
If Scan shows an error or alert message, try restarting the device.
Press the power switch to the OFF position, wait 30 seconds, and press the switch to the ON position.
Enter the required password and follow the prompts.
If Scan still does not work, use the ballot box emergency slot for ballots and call the Elections Office or Help Desk.

Scan Replacement

Troubleshooting: Replacing Scan.

Tasks
Do not close polls to replace equipment.
If replacing a Scan device, first disconnect all power sources and remove, box, and tag the inoperable Scan.
Set up the replacement Scan.
Connect the Scan black power cord to the power brick and then to an electrical outlet, and then press the power switch to the ON position.
Select the polling place from the list provided and tap Accept . Tip: Type the polling place name to filter the list for the option.
Confirm the selected polling place by tapping Yes, assign it .
Tap Print Zero Report .
Write the Scan ballots total, found at the bottom of the screen to the right of Ballots , in the appropriate polling place log.
Tap Open the Polls .
Type the Open Polls Code and tap Accept . The Polls Open screen appears.
Complete the support log, as applicable.

vDrive Removal

Only remove the vDrive if your instructions specifically call for this. Otherwise bring the entire Scan to the substation or central counting facility.

Troubleshooting: Removing the vDrive.

Tasks
To remove the vDrive, break the wire security seal securing the locked compartment on the right side of the Scan.
Using the appropriate key, unlock the compartment and remove the lid.
Remove the vDrive.
Follow procedures for transporting the vDrive to a substation or central counting station.

Ballot Jam

Troubleshooting: A ballot is jammed in Scan.

Tasks
If a ballot causes a paper jam in the scanner path, carefully lift both the external AND internal scanner covers and remove all pieces of paper. Take care not to touch any glass surfaces in the scanner path.
Wipe the scanner path clean of small paper debris. NOTE : Do not use a pressurized air canister. Doing so may result in debris becoming trapped under the scanner glass.
Replace the scanner covers. If it is damaged, spoil the voter's ballot and have the voter mark a replacement ballot.
Rescan either the original ballot (if not spoiled) OR the replacement ballot.
If the problem persists, call the Elections Office or Help Desk.

Invalid Password

Troubleshooting: Password is not accepted.

Tasks
If you get an error message after entering a Scan password, verify the password.
From the error message screen, tap Continue and follow the screens to restart the sequence you were attempting to perform.
If you still get an error message, call the Elections Office or Help Desk.

Thermal Printer Error

Troubleshooting: Printer error.

Tasks
If the Printer error screen displays, check the Scan printer.
Open the printer cover and check the paper path.
Verify that the printer feed lever is in the DOWN position and close the printer cover.
Tap Retry on the screen.
If the printer error message continues to display, tap Cancel Print and call the Elections Office or Help Desk to report the problem.

Scan will continue to function properly for all tasks other than report printing. If deemed necessary, replace Scan.

The thermal printer is on the right side of the Scan device. It works with a special type of thermal rolled paper. Changing printer paper is similar to feeding paper into a cash register or a typewriter. Follow these steps to change printer paper.

Troubleshooting: Changing the paper roll in Scan.

Tasks
Open the lid to the printer compartment. Before removing the old roll, observe the routing of the paper in the well.
Gently peel the free end of the paper off the roll and insert the new roll into its place in the printer compartment so that the roll feeds from the bottom.
Pull some extra paper out so that you have some lead when you close the lid.
Close the lid, the LED should be green. You are ready to print.

Printing Reports

If you must print additional copies of reports immediately after closing polls, tap the appropriate report from either the Polls Closed or the Polls Suspended screen.

Verity Touch Writer Troubleshooting Guide

Personnel Requirements

Personnel troubleshooting Verity devices must receive training from Hart on the device in order to obtain the skill level required to successfully maintain the device.

The number of personnel required to troubleshoot a Verity device is 1 person per device.
Restarting Touch Writer

If you need to restart (cycle power to) Touch Writer because of an error, follow these steps.

Troubleshooting: Restarting Touch Writer.

Tasks
Press the Touch Writer power switch to the OFF position.
Wait 30 seconds.
Press the Touch Writer power switch to the ON position.
Type the required password.
File all tapes that print in the appropriate envelope.
Continue normal operations.

Power Fails

Verity Touch Writer will operate for at least 2-hours when the tablet battery is fully charged. The tablet battery is charged with a Hart approved external battery charger, the battery is not charged by the tablet or when connected to AC power.

Troubleshooting: Touch Writer power failure.

Tasks
Check the power connection on the back of the Touch Writer device, at the power brick, and at the wall.
If Touch Writer is plugged into a surge protector that has a switch, check the switch.
If power to the facility fails, call the Elections Office or Help Desk and report the power failure.
Unplug Touch Writer from the outlet in order to avoid a power surge to the device when power returns.
File the tapes printed upon restart in the appropriate envelope.

Touch Writer Does Not Work

Troubleshooting: Touch Writer does not work.

Tasks
Check all of the Touch Writer power connections.
Check the AC power connection on the back of Touch Writer, at the power brick, and at the wall.
If Touch Writer is plugged into a switched surge protector, check the switch.
Check the AC Power connection on the Touch Writer printer.
Make certain that the Touch Writer tablet is securely seated in the cradle and locked in place.
switch to the ON position.

If Touch Writer shows an error or alert message, try restarting the device.

Press the power switch to the **OFF** position, wait 30 seconds, and press the switch to the **ON** position.

Enter the required password and follow the prompts.

Check the USB cable connections at both the printer and Touch Writer USB ports.

If Touch Writer still does not work, use the ballot box emergency slot for ballots and call the Elections Office or Help Desk.

Touch Writer Replacement

Troubleshooting: Replacing Touch Writer.

Tasks
Do not close polls to replace equipment.
If replacing a Touch Writer device, first disconnect all power sources. Then remove, box, and tag the inoperable Touch Writer.
Set up the replacement Touch Writer.
Connect the Touch Writer black power cord to the power brick and then to an electrical outlet, and press the power switch to the ON position.
Select the polling place from the list provided and tap Accept . Tip : Type the polling place name to filter the option in the list.
Confirm the selected polling place by tapping Yes, assign it .
Tap Print Zero Report .
Write the Touch Writer ballots total, found at the bottom of the screen to the right of Ballots in the appropriate polling place log.
Tap Open the Polls .
Type the Open Polls Code and tap Accept . The Polls Open screen appears.
Complete the support log, as applicable.

vDrive Removal

Only remove the vDrive if your instructions specifically call for this. Otherwise bring the entire Scan to the substation or central counting facility.

Troubleshooting: Removing the vDrive.

Tasks
To remove the vDrive, break the wire security seal securing the locked compartment on the right side of the Scan.
Using the appropriate key, unlock the compartment and remove the lid.
Remove the vDrive.
Follow procedures for transporting the vDrive to a substation or central counting station.

Ballot Jam in Printer

Troubleshooting: A ballot is jammed in Touch Writer Printer.

Tasks
If a ballot causes a paper jam in the printer path, carefully examine the paper path in the printer.
Remove all paper that is stuck in the paper path
Allow the voter to reprint either the original ballot (if not spoiled) OR the replacement ballot.
If the problem persists, call the Elections Office or Help Desk.

Invalid Password

Troubleshooting: Password is not accepted.

Tasks
If you get an error message after entering a Touch Writer password, verify the password.
From the error message screen, tap Continue and follow the screens to restart the sequence you were attempting to perform.
If you still get an error message, call the Elections Office or Help Desk.

Thermal Printer Error

Troubleshooting: Printer error.

Tasks
If the printer error screen displays, check the Touch Writer thermal printer.
Open the printer cover and check the paper path. Close cover.
Verify that the printer cover is closed and the LED is green.
Tap Retry on the screen.
If the printer error message continues to display, tap Cancel Print and call the Elections Office or Help Desk and report the problem.

Scan will continue to function properly for all tasks other than report printing. If deemed necessary, replace Scan.

Changing the Thermal Printer Paper

The thermal printer is on the right side of the Scan device. It works with a special type of thermal rolled paper. Changing printer paper is similar to feeding paper into a typewriter or a dot-matrix printer. Follow these steps to change printer paper.

Troubleshooting: Changing the paper roll in Scan.

Tasks
Open the lid to the printer compartment. Before removing the old roll, observe the routing of the paper in the well.
Gently peel the free end of the paper off the roll and insert the new roll into its place in the printer compartment so that the roll feeds from the bottom.
Pull some extra paper out so that you have some lead when you close the lid.
Close the lid, the LED should be green. You are ready to print.

Printing Reports

If you must print additional copies of reports immediately after closing polls, tap the appropriate report from either the Polls Closed or the Polls Suspended screen.

COTS Scanner Troubleshooting

It is suggested that you always call the Hart Customer Support Center, 866.275.4278, if the COTS scanner is suspected of having any hardware issues.

NOTE: Only Hart personnel can upgrade software on the Verity COTS scanner. Call the Hart Customer Support Center at 866.275.4278.

COTS Printer Troubleshooting

It is suggested that you always call the Hart Customer Support Center, 866.275.4278, if the COTS printer is suspected of having any hardware issues.

 Table 8 - COTS Printer MTBF specifications.

Setting	Description
OKI B431d MTBF	The monthly duty cycle (service period for reliable printing) is 80,000 sheets Exceeding the duty cycle value on a regular basis can lead to equipment malfunctions and breakdowns over time.
OKI C831dn MTBF	The monthly duty cycle (service period for reliable printing) is 75,000 sheets Exceeding the duty cycle value on a regular basis can lead to equipment malfunctions and breakdowns over time.
OKI C911dn MTBF	The monthly duty cycle (service period for reliable printing) is 300,000 sheets Exceeding the duty cycle value on a regular basis can lead to equipment malfunctions and breakdowns over time.

Verity Touch Writer Printer UPS Specifications, I/N 3005362

The Verity Touch Writer Printer UPS is designed for convenient storage.

•	•
Setting	Description
Dimensions	9.1" x 5.9" x 17.5"
Weight	35.6 lbs

 Table 9 - Verity Touch Writer Printer UPS specifications.

NOTE: Only Hart personnel can upgrade software on the Verity COTS printer. Call the Hart Customer Support Center at 866.275.4278.

Verity Workstation Troubleshooting

It is suggested that you always call the Hart Customer Support Center, 866.275.4278, if the workstation is suspected of having any hardware issues.

NOTE: Only Hart personnel can upgrade software on the Verity workstations. Call the Hart Customer Support Center at 866.275.4278.

Verity Networked Workstations Troubleshooting

It is suggested that you always call the Hart Customer Support Center, 866.275.4278, if the workstation is suspected of having any hardware issues.

There are times when network communications between Verity Servers and Verity Client workstations may become degraded or non-functional; follow the checklist below to try and recover the network connections.

- Ensure all network cables are plugged into all workstations' Ethernet ports and the Ethernet switch.
- Check to see that the Ethernet switch shows that each port that has a workstation connected to it indicates that it has a physical connection to the workstation. If it does, the port's Link LED will be lit.
- ✓ If all connections are good:
 - On each workstation, close all active tasks.
 - On each workstation, return the Home screen.
 - o Shut down each Verity Client.
 - o After each client is shut down,
 - Shut down the Verity server.
 - o After the Verity server is shut down,
 - Press the Power button to power-up the Verity server.
 - o After the Verity server is up and presents the Log In window,
 - Verify that the Ethernet switch indicates that the server is connected to a port on the switch.
 - Power up each Verity client one at a time and verify the switch indicates that the Verity client is connected to a port on the Ethernet switch.
 - The Verity client must display the user log-in display, if it does not call Hart.
 - Log in to each workstation with unique user credentials.

NOTE: Only Hart personnel can upgrade software on the Verity workstations. Call the Hart Customer Support Center at 866.275.4278.

ⁱ Art Institute of Graphics Art (AIGA) – Design for Democracy are a set of design tools to increase civic participation by creating easily understandable, efficient, and trustworthy interactive communication technologies.