Election Supporting Technology Test Report
KNOWiNK Poll Pad v3.6

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Test Report Rev 2.0

February 5, 2025

Prepared for:

Manufacturer Name	*KNOWiNK*
Product Tested	*Poll Pad v3.6*
EAC Application No.	*KNO-EPB-PP-3.6*
Manufacturer Address	*KNOWiNK, LLC* *460 N Lindbergh Blvd* *St. Louis, MO 63141*

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NVLAP TESTING
NVLAP Lab Code 200733-0

Accredited by the National Institute of Standards and Technology (NIST) National Voluntary Lab Accreditation Program (NVLAP) and accredited by the Election Assistance Commission (EAC) for VSTL status.

Disclaimer

The Test results reported herein must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the US Government. Results herein relate only to the items tested.

The tests referenced in this document were performed in a controlled environment using specific systems and data sets, and results are related to the specific items tested. Actual results in other environments may vary.

Opinions and Interpretations

There are no opinions or interpretations included in this report, except as noted under Recommendations.

TABLE OF CONTENTS

1 Introduction

SLI Compliance submits this report as a summary of the certification testing efforts for the **KNOWiNK Poll Pad v3.6**, as detailed in the System Identification and Overview section. The purpose of this document is to provide an overview of the testing effort and the resultant findings.

This effort included documentation review of the Technical Data Package, source code review, and testing of the **KNOWiNK Poll Pad v3.6**. Testing consisted of the development of a test plan, managing system configurations, executing test suites of functional and system level tests based on the product's functionality, and analysis of results. The review and testing were performed at SLI Compliance's Wheat Ridge, Colorado facility, from August 28th to September 20th.

1.1 Revision History

Date	Release	Author	Revision Summary
January 30, 2025	1.0	M. Santos	Initial Release
February 5, 2025	2.0	M. Santos	Updates for ESTEP comments

1.2 References

1. Election Assistance Commission Voluntary Electronic Poll Book Certification Requirements (VEPBCR) v1.0, April 8, 2024
2. NIST Handbook 150: 2020
3. NIST Handbook 150-22: 2021
4. Election Supporting Technology Evaluation Program Manual Version 1.0, April 8, 2024
5. SLI Compliance VSTL Quality System Manual, v 3.3, prepared by SLI Compliance, dated December 17, 2020

1.3 Terms and Abbreviations

The following terms and abbreviations will be used throughout this document:

Table 1 – Terms and Abbreviations

Term	Abbreviation	Description
Anomaly		A deviation from what is standard, normal, or expected, but does not necessarily fail a requirement.

Term	Abbreviation	Description
Commercial Off the Shelf	COTS	Any software, firmware, device, or component that is used in the United States by many different people or organizations for many different applications other than certified election-supporting technologies and that is incorporated into the election-supporting technology with no specific modification.
Deficiency		A non-conformity to the voluntary requirements to which the election- supporting technology is being certified.
Election Assistance Commission	EAC	An independent, bipartisan commission created by the Help America Vote Act (HAVA) of 2002 that operates the US government's voluntary voting system certification program.
Electronic Poll Book	ePB	The total combination of mechanical, electromechanical, and electronic equipment (including the software, firmware, cloud-based storage systems, and documentation required to program, control, and support the equipment) used to store and retrieve voter registration information, verify voter eligibility, and record voter activity at polls. EPBs may also allow voter registration records to be created and updated, assign voters to ballot styles, redirect voters to correct voting locations, provide voter turnout information to election officials, produce reports for election observers, and perform other tasks as permitted or required by local law.
Election Supporting Technology	EST	Any electronic machine, piece of equipment, or software package, other than a voting system, designed to streamline the voting experience. Includes electronic poll books, voter registration systems, election night reporting databases, and electronic ballot delivery systems. May also include emerging systems not previously evaluated or certified by an accredited Voting System Test Laboratory.
Hash Algorithm	Hash	An algorithm that maps a bit string of arbitrary length to a shorter, fixed-length bit string. The hash algorithm used for the EAC Program is the Secure Hash Algorithm (SHA-2) specified in Federal Information Processing Standard (FIPS) 180-4.

Term	Abbreviation	Description
National Institute of Standards and Technology	NIST	A non-regulatory federal agency within the U.S. Dept. of Commerce. Its mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve quality of life.
National Voluntary Laboratory Accreditation Program	NVLAP	A division of NIST that provides third-party accreditation to testing and calibration laboratories.
Request For Information	RFI	A means used by testing laboratories and manufacturers to request that the EAC provide an interpretation of a technical issue related to testing of voting systems and election support products.
Requirements Matrix	N/A	A matrix that traces the applicable requirements to the various test modules and test methods.
Technical Data Package	TDP	The data package supplied by the vendor, which includes List of accessibility capabilities, Device capacities and limits, Coding convention, Functional diagrams, List of client jurisdictions, and Training materials.
Voting System Test Lab	VSTL	An independent testing organization accredited by NVLAP and the EAC to conduct voting system testing for EAC certification.
Voting Test Engineer	VTE	An SLI Compliance employee who has been qualified to perform EAC system testing.

1.4 Attachments

Attachment A - Warrant of Accepting Change Control Responsibility

Attachment B - As Run KNOWiNK Poll Pad 3.6 EAC ESTEP Test Plan v3

Attachment C – Anomalies, Deficiencies and Resolutions report, **CONFIDENTIAL**

Attachment D - Test Suites for PollPad 3.6, **CONFIDENTIAL**

Attachment E – KNOWiNK PP v3.6 VEPBCR 1.0 Test Readiness Review and Testing Matrix

2 System Identification and Overview

The **KNOWiNK Poll Pad v3.6** was submitted for testing with the hardware and software listed below. No other **KNOWiNK** product was included in this test effort.

2.1 Description of Baseline System

The **KNOWiNK Poll Pad v3.6** ePB system consists of ePulse, an election management suite designed to give administrators real-time access to monitor their election as a whole, and Poll Pad, a solution that provides electronic voter check-in and verification processes for election authorities

ePulse is an election management suite designed to give administrators real-time access to monitor their election as a whole. All Poll Pads connect to this central hub where voter check-in data is securely transferred via WiFi or cellular networks in near real time. This tool allows for administrators to oversee the operation of individual precincts and Poll Pads.

The Poll Pad solution provides a seamless electronic voter check-in and verification process. All Poll Pads connect to the ePulse central hub where voter check-in data is securely transferred via Wi-Fi or cellular networks in near real time.

2.1.1 Poll Pad Software/Firmware

The tables below detail each application employed by the product under test.

Table 2 – Poll Pad Software/Firmware

Component	Version
Poll Pad 3	3.6.0
ePulse	3.6
iOS 17	17.6.1

2.1.2 Equipment (Hardware)

The hardware employed by **KNOWiNK Poll Pad v3.6** consists of two types: custom and commercial off the shelf (COTS). COTS hardware was verified to be pristine or was subjected to review for analysis of any modifications and verification of meeting the pertinent standards.

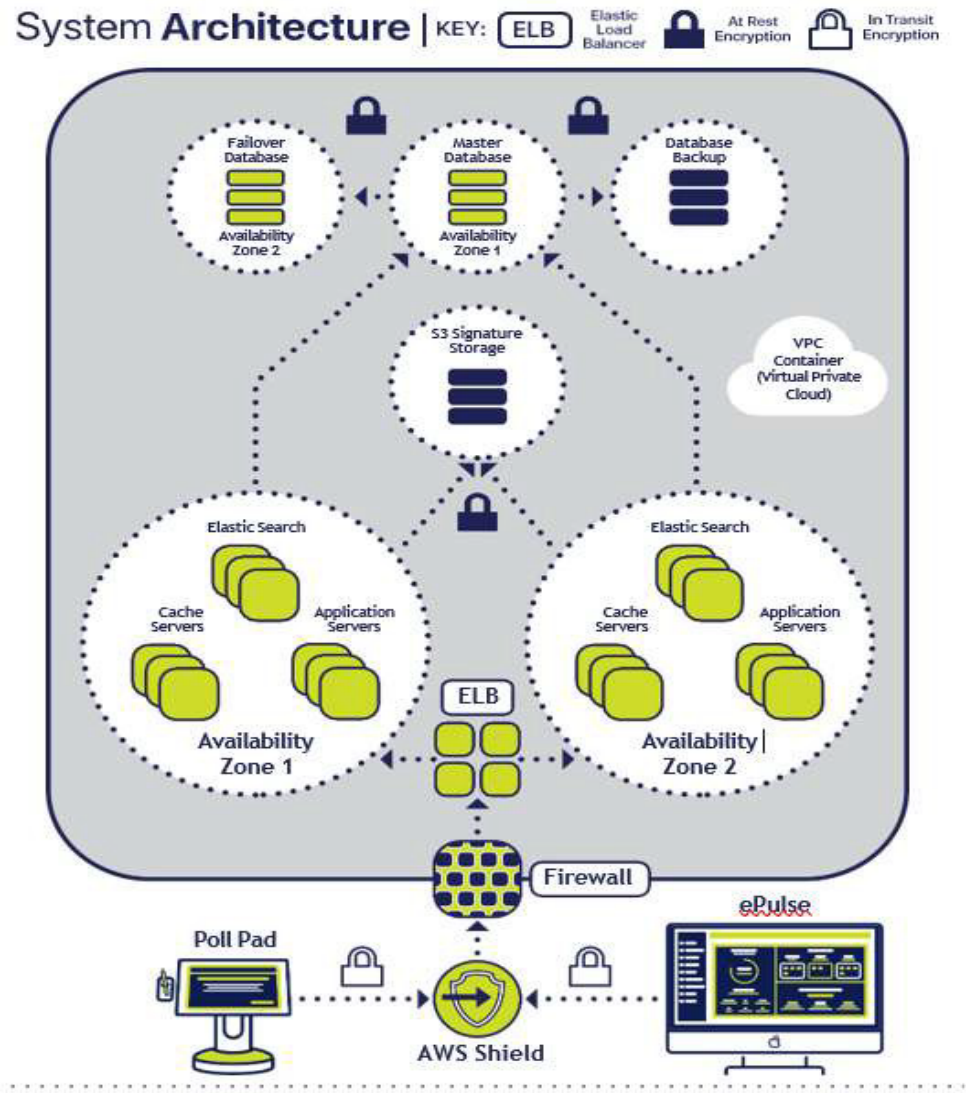
The table below details each device employed by the product under test.

Table 3 –Poll Pad Hardware

ITEM	MAKE	MODEL	DESCRIPTION
iPad / iPad	Apple	iPad 6th Gen iPad Gen 7 iPad Gen 8 iPad Gen 9 iPad Gen 10	The iPad has a touchscreen/keyboard and a shockproof clear case. The iPad has a battery life of approx. 10 hours.
Stand for iPad	AI Data	i360	The iPad stand is durable and user friendly.
Flip Stand for iPad	KNOWiNK	65102	Flip Stand for Poll Pad and Star mC-Print3 printer
Scanning tray	KNOWiNK	ISP103B- KN2-1	KNOWINK'S patented scanning trade scans barcodes on voter ID cards or state identification cards.
Styluses	AI Data	ISP-1010- KNO	Poll workers and voters may use the styluses or their finger for the iPad's capacitive touch screen.
Carrying case	Nanuk	910	Shockproof weatherproof foam-fitted case.
Carrying case	Nanuk	920	Shockproof weatherproof foam-fitted case.
Thermal printer	Star Micronics	TSP650ii	The Star Micronics printer is the original printer used with KNOWiNK's system. This printer requires AC power.
Thermal Label printer	Star Micronics	TSP700II	The Star Micronics thermal label printer is used to generate labels. This printer requires AC power.

Thermal Printer	Star Micronics	mC-Print3	New Star Micronics Thermal Receipt printer for printing voter receipt tickets
Printer	Brother PocketJet	PJ-763MFi	Brother Thermal printer for printing voter receipt tickets
Router	Cradlepoint	IBR600-LPE	WAN router with an embedded modem designed for critical business and enterprise applications.

2.2 System Block Diagram



3 Certification Test Background

3.1 Implementation Statement

The following functionality is included in the product under test:

ePulse

- Election Setup
  - Creating an election
  - Managing groups, parties, statuses, and ballot styles
  - Editing or closing an election
- Polling Place Management
- Ballot Inventory
- Poll Worker Management
- Poll Pad Management
- Issue Tracking
- Reporting
- Election Monitoring
- Audit Logging

Poll Pad

- Process Voters
  Search for registered voters by scanning an ID or entering their name manually, and check them in.
- Voter Status
  The Poll Pad displays a voter's status, including jurisdiction-specific instructions on processing a voter with that status.
- Polling Location Information
  If a voter is in the wrong location, the poll worker can find their correct location and give them directions.
- Accessibility Options
  - Spoken content
  - Hover text
  - Magnification of the screen or a region of the screen
  - Changing the colors or contrast of the display
- Language
  English is the officially supported language of Poll Pad. Jurisdictions may upload additional language translations.

Note: only English was utilized in testing.

- System Limits

  Poll Pad has been internally tested by KNOWiNK, up to the following limitations:

  - 11,000,000 Voters
  - 11,000,000 Voter Signature Files
  - 1,000 Check-ins per device per 8-hour day

3.2 Scope of Testing

3.2.1 Document and Source Code Reviews

The review of the **KNOWiNK Poll Pad v3.6** documentation submitted in the Technical Data Package (TDP) was performed in order to verify conformance with the EAC's VEPBCR v1.0, April 8, 2024 standard.

Source code was reviewed for each software and firmware application declared within the **Poll Pad v3.6** system.

All document reviews were conducted in accordance with the documentation requirements of the EAC's "EAC VEPBCR v1.0, April 8, 2024" standard, to demonstrate that the system meets the requirements. Inconsistencies or errors in documentation were identified to KNOWiNK in a discrepancy report for resolution or comment.

3.2.2 Functional and System Testing

All source code reviews were conducted in accordance with the source code requirements of the EAC's "EAC VEPBCR v1.0, April 8, 2024" standard, to demonstrate that the system meets the requirements. Inconsistencies or errors in the source code were identified to KNOWiNK for resolution or comment.

SLI Compliance's standard test suites were customized for the **KNOWiNK Poll Pad v3.6** e-poll book system and conducted in accordance with EAC's "EAC VEPBCR v1.0, April 8, 2024" standard , in conjunction with the functional testing. Simulations of elections were conducted to demonstrate a beginning-to-end business use case process for the **KNOWiNK Pollpad 3.6** e-poll book system.

3.2.3 Test Methods

All test methods employed are within the scope of SLI Compliance's VSTL accreditation.

The following validated test methods were employed during this test campaign:

- ESTEP ePB VEPBCR Accessibility Test Method v1.0
- ESTEP ePB VEPBCR Functionality and Interoperability Test Method v1.0
- ESTEP ePB VEPBCR Security Test Method v1.0

3.2.4 Deviations from, additions to, or exclusions from the test methods

There were no deviations from, additions to, or exclusions from any of the test methods used in this test campaign.

4 Test Findings

4.1 Summary of Findings

SLI Compliance has successfully completed the testing of the **KNOWiNK Poll Pad v3.6** and determined that the system meets the required acceptance criteria of the applicable EAC requirements.

4.1.1 TDP Review

The Technical Data Package for the **KNOWiNK Poll Pad v3.6** was found to sufficiently comply with the applicable EAC requirements.

EAC ESTEP's "VEPBCR v1.0, April 8, 2024" Technical Data Package requirements reviewed for compliance, included:

- 1.1.1 – User-centered design process
- 1.1.2 – Instructions for election workers
- 1.1.3 – Plain language
- 1.1.4 – Usability testing with voters
- 1.1.5 – Usability testing with election workers
- 1.1.6 – Physical manipulation
- 1.2.1 – Check-in procedures
- 1.2.2 – Maintain voter registration records
- 1.2.3 – Maintain digital signatures
- 1.2.4 – Record and display election information
- 1.2.5 – Printing capabilities
- 1.3.1 – Compatibility with hardware
- 1.3.2 – Compatibility with software
- 1.3.3 – Compatibility with voter registration systems

- 1.4.1 – Communication with voter registration systems
- 1.4.2 – Communication with other e-poll books
- 1.5.1 – Batteries or power supply
- 1.5.2 – Memory storage
- 1.5.3 – Loss of connectivity
- 1.5.6 – System failure
- 2.1.2 – Access control policies and procedures
- 2.2.1 – Documentation of asset management features
- 2.2.2 – Device disk encryption
- 2.2.4 – Document the application of tamper-evident sealing
- 2.2.5 – Document anti-theft controls, and emergency system decommissioning
- 2.3.1 – Endpoint detection and response (EDR) tool
- 2.3.2 – Antivirus tool
- 2.3.4 – Verification of voter information
- 2.3.7 – Cryptographic key management documentation
- 2.4.2 - Disallow connections to unapproved external networks
- 2.4.3 – Disallow connections to unapproved external devices
- 2.4.6 – Documentation of the network and communications architecture
- 2.4.7 – Secure network configuration documentation
- 2.5.3 – Utilized recognized software standards
- 2.5.8 – Third-party code and libraries
- 2.5.9 – Application allowlisting
- 2.5.11 – Documentation of media sanitization procedures
- 2.6.3 – Application errors
- 2.7.1 – List of approved suppliers
- 2.7.2 – Authenticity of components
- 2.7.3 – Provenance of devices
- 3.1.2 – Accessibility documentation

The **KNOWiNK Poll Pad v3.6** Technical Data Package was determined to sufficiently conform to all ESTEP “VEPBCR v1.0” TDP requirements.

4.1.2 Source Code Review

SLI Compliance has reviewed the source code for each application in the **KNOWiNK Poll Pad v3.6** to determine the code’s compliance with EAC requirements and for compliance with ***KNOWiNK***’s internally developed coding standards. The source code was written adequately per these requirements. The

code is modular and there is sufficient error handling. Readability is sufficient and supports maintainability.

EAC ESTEP VEPBCR source code requirements reviewed for compliance, included:

- 2.5.3 Utilize recognized software standards
- 2.5.4 Input validation and error defense
- 2.5.5 Escaping and encoding output
- 2.5.6 Sanitize output
- 2.5.7 Stored injection
- 2.5.8 Third-party code and libraries

The **KNOWiNK Poll Pad v3.6** source code was determined to sufficiently conform to all ESTEP "VEPBCR v1.0" source code requirements.

4.1.3 Accessibility and Usability Testing

Accessibility of the **Poll Pad v3.6** system was examined to verify proper function, as well as verification for compliance to applicable EAC ESTEP VEPBCR requirements, including:

- 3.1.2 Accessibility documentation
- 3.2.1 Reset to default settings
- 3.2.2 Reset by election worker
- 3.2.3 Default contrast
- 3.2.4 Contrast options
- 3.2.5 Color conventions
- 3.2.6 Using color
- 3.2.7 Text size (electronic display)
- 3.2.8 Text size (paper)
- 3.2.9 Scaling and zooming
- 3.2.10 Toggle keys
- 3.2.11 Identifying controls
- 3.2.12 Display and interaction options
- 3.2.13 Electronic display screens
- 3.2.14 Flashing
- 3.3.1 Scrolling
- 3.3.2 Touch screen gestures
- 3.3.3 Accidental activation
- 3.3.4 Touch area size
- 3.3.5 Key operability
- 3.3.6 Bodily contact

- 3.3.7 No repetitive action
- 3.3.8 Secondary ID and biometrics
- 3.3.9 Eliminating hazards Testing
- 3.4.1 Sound cues
- 3.4.2 Information in all modes
- 3.4.3 Audio synchronized
- 3.4.4 Audio settings
- 3.4.5 Speech frequencies
- 3.4.6 Audio comprehension
- 3.4.7 Audio control
- 3.4.8 Standard audio connectors
- 3.5.1 Languages
- 3.5.2 Presenting content in all languages
- 3.5.3 Language selections

The **KNOWiNK Poll Pad v3.6** system was determined to sufficiently conform to all ESTEP "VEPBCR v1.0" Accessibility and Usability requirements.

Requirement "3.1.1 Federal standards for accessibility", which covers "Section 508 Information and Communication Technology (ICT) Final Standards and Guidelines" and "WCAG 2.0 Level AA checkpoints", was not included in this campaign, as per ESTEP.

4.1.4 Security Testing

Security of the **Poll Pad v3.6** system was examined to verify compliance to applicable EAC ESTEP VEPBCR requirements, including:

- 2.1.1 Account management
- 2.1.2 Access control policies and procedures
- 2.1.3 Role-based access
- 2.1.4 Multi-factor authentication
- 2.1.5 Separation of duties
- 2.1.6 Least privilege
- 2.1.7 Session termination, device lock, and reauthentication
- 2.1.8 Unsuccessful logon attempts
- 2.1.10 Information and data flow
- 2.2.1 Documentation of asset management features
- 2.2.2 Device disk encryption
- 2.2.3 Device BIOS or other firmware interface access
- 2.2.4 Document the application of tamper evident sealing
- 2.2.5 Document anti theft controls, and emergency system decommision

- 2.3.1 Endpoint detection and response (EDR) tool
- 2.3.2 Antivirus tool
- 2.3.3 Authentication to access configuration file
- 2.3.5 Cryptographic module validation
- 2.3.6 Cryptographic strength
- 2.3.7 Cryptographic key management documentation
- 2.4.1 Network encryption
- 2.4.2 Disallow connections to unapproved external networks
- 2.4.3 Disallow connections to unapproved external devices
- 2.4.4 Network firewall
- 2.4.5 Confidentiality and integrity of transmitted data
- 2.4.6 Documentation of the network and communications architecture
- 2.4.7 Secure network configuration documentation
- 2.5.1 Execute on a supported operating system
- 2.5.2 Support updates and patching
- 2.5.3 Utilize recognized software standards
- 2.5.4 Input validation and error defense
- 2.5.5 Escaping and encoding output
- 2.5.6 Sanitize output
- 2.5.7 Stored injection
- 2.5.8 Third-party code and libraries
- 2.5.9 Application allowlisting
- 2.5.10 Integrity protection for software allowlists
- 2.5.11 Documentation of media sanitization procedures
- 2.6.1 General system usage
- 2.6.2 Operational maintenance activity
- 2.6.3 Application errors
- 2.6.4 System Integrity
- 2.6.5 Report generation
- 2.7.1 List of Approved Suppliers
- 2.7.2 Authenticity of Components
- 2.7.3 Provenance of Devices

The **KNOWiNK Poll Pad v3.6** system was determined to sufficiently conform to all ESTEP “VEPBCR v1.0” Security requirements.

4.1.5 Functional Testing Summary

Functionality of the **Poll Pad v3.6** system was examined to verify all implemented functionality performed as expected, as well as verification for compliance to applicable EAC ESTEP VEPBCR requirements, including:

- 1.1.1 User-centered design process
- 1.1.2 Instructions for election workers
- 1.1.3 Plain language
- 1.1.4 Usability testing with voters
- 1.1.5 Usability testing with election workers
- 1.1.6 Physical manipulation
- 1.1.7 Vote records
- 1.2.1 Check-in procedures
- 1.2.2 Maintain voter registration records
- 1.2.3 Maintain digital signatures
- 1.2.4 Record and display election information
- 1.2.5 Printing capabilities
- 1.3.1 Compatibility with hardware
- 1.3.2 Compatibility with software
- 1.3.3 Compatibility with voter registration systems
- 1.4.1 Communication with voter registration systems
- 1.4.2 Communication with other e-poll books
- 1.5.1 Batteries or power supply
- 1.5.2 Memory storage
- 1.5.3 Loss of connectivity
- 1.5.4 System response time
- 1.5.5 System-related errors
- 1.5.6 System failure
- 1.5.7 Feedback
- 1.5.8 Warnings, alerts and instructions
- 1.5.9 Icon Labels

The **KNOWiNK Poll Pad v3.6** system was determined to sufficiently conform to all ESTEP “VEPBCR v1.0” Functional requirements.

4.1.6 Evaluation of Testing

The following test suites were executed:

- Functional
- Accessibility/Usability

- Security

The above tests were successfully conducted using the executables delivered, in association with the appropriate hardware versions as declared in this Test Report for the **KNOWiNK Poll Pad v3.6** ePB system.

4.2 Anomalies, Deficiencies, and Resolutions

All Anomalies/Deficiencies found in preliminary executions were reported, resolved and re-tested to verify compliance to their respective requirements.

5 Recommendation

5.1 Support for Recommendation to Certify

It is SLI Compliance's technical opinion that certification should be granted based on the above findings.

6 Signature

Michael Santos

Michael Santos

Director, VSTL, SLI Compliance

February 5, 2025

End of KNOWiNK Poll Pad 3.6 Test Report