



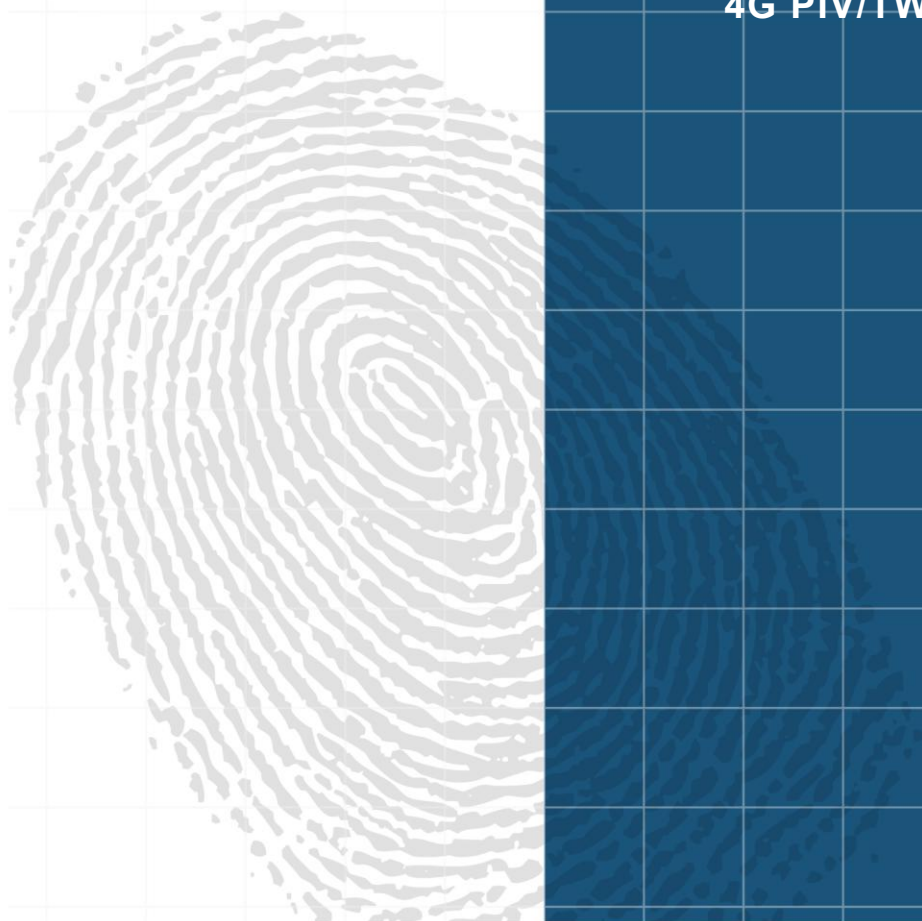
BIOSCRYPT  
ENTERPRISE ACCESS SOLUTIONS

# Biometric Smart Security Appliance

## Engineering Specifications

### 4G PIV/TWIC Station™ & 4G PIV/TWIC Station EXTREME™

VERSION:  
DRAFT RELEASE



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## 1. A SCOPE AND PURPOSE OF THIS DOCUMENT

This document shall include a general description of the 4G PIV/TWIC Station™ & 4G PIV/TWIC Station EXTREME™ product and information about its manufacturer. It shall also include the 4G PIV/TWIC Station™ & 4G PIV/TWIC Station EXTREME™ mechanical specifications, general features, and software requirements regarding servers and workstations.

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NOTE: In order to utilize this information in a more general manner for open bids, L-1 Identity Solutions, Inc. recommends replacing the product names, “4G PIV/TWIC Station™ & 4G PIV/TWIC Station EXTREME™” with “Biometric Smart Security Appliance.” Users of this document should take special care when replacing the names as not all characteristics are available to all models and product flavours. For example 4G PIV/TWIC Station EXTREME™ is a product designed for outdoor use and contains descriptions for environment including ice, rain and cold whereas 4G PIV/TWIC Station™ and its sub-flavours are not permitted for deployment outdoors. In a similar fashion L-1 Identity Solutions recommends if replacement of the term SecureAdmin™ is needed that the term “Server/Client Biometric Administration Software” be used instead.

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## 1.0 GENERAL DESCRIPTION

The 4G PIV/TWIC Station™ & 4G PIV/TWIC Station EXTREME™ shall be equipped with biometric and multi-factor authentication, powerful on-board processing for rapid and accurate authentication, sophisticated storage for up to 1 million TWIC TPK's and 1 million transaction logs, extensible memory, optional 802.11 wireless connectivity, and large 16 million color LCD displays to keep employees and visitors informed with custom messaging.

The 4G PIV/TWIC Station™ & 4G PIV/TWIC Station EXTREME™ shall address different deployment scenarios, changing business requirements, and future growth by providing adherence to the FIP201 requirements, TWIC reader hardware specification and allowance for transitional MIFARE/DESFire cards, along with active, defined manufacturer engineering development cycles that provide expanded features and bug fixes during the product's warranty period.

The 4G PIV/TWIC Station™ shall have a modular design and shall be easy to maintain with a field replaceable sensor.

The 4G PIV/TWIC Station EXTREME™ shall be at minimum IP65 compliant certified by a third party lab authority (not self-declared) to prevent ingress of water, ice and snow and capable of outdoor deployment to harsh environments.

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall ship with a single copy of the SecureAdmin™ management software. The SecureAdmin™ software will provide the product administrator with a means to remotely manage the unit via networking protocols. The SecureAdmin™ software will provide a means to centrally store biometric records via the use of a central server. The software will allow multiple client applications pointing to a single central server. The SecureAdmin™ software will operate by default in either a SQL Server 2008 Express Edition or Oracle 10g Database.

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall have available an SDK (SecureSDK™), for the use of developer(s) to integrate the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ solution into a Physical Access Control (PAC) solution.

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall provide immediate capability out of box to read TWIC, PIV, CAC-EP, MIFARE & DesFIRE cards.

## 2.0 PRODUCTS

### 2.1 PURCHASE OPTIONS

The 4G PIV/TWIC Station™ & 4G PIV/TWIC Station EXTREME™ shall provide a verification of a live fingerprint with a stored biometric record. The 4G PIV/TWIC Station™ & 4G PIV/TWIC Station EXTREME™ shall be capable of preventing unauthorized access via loaned, lost, stolen or copied passwords, credentials, and access cards by requiring the live authentication of a user's fingerprint against a stored biometric record when indicated by the active threat level.

The 4G PIV/TWIC Station™ & 4G PIV/TWIC Station EXTREME™ shall provide, as an option at time of purchase:

1. Wireless 802.1g networking capability with an extended operating range of 30 ft clear space from a wireless router. This option shall be available to all product models.
2. Integrated Contactless card reader that conforms to ISO/IEC 14443A/B parts 1, 2, 3, and 4 (T=CL protocol) as specified for FIPS201, as well this contactless reader shall provide for the use of MIFARE/DESFire card credentials up to a maximum read range of 10cm. This contactless reader shall be able to communicate with a contactless card at 106Kbit/s, 212Kbit/s or 423Kbit/s, dependent on the contactless card communications speed capabilities. This option shall be standard equipment for all product models.
3. Integrated Contact card reader that is compliant to ISO/IEC 7816 for contact chip communications. This option shall be available for all product models. This option shall be standard for 4G PIV/TWIC Station™.

The 4G PIV/TWIC Station EXTREME™ shall provide, as an option at time of purchase:

1. A Thermo Electric Cooler (TEC) Module that can be installed in the field without voiding the product warranty to provide the full operational temperature range (-25 degrees Celsius up to +70 degrees Celsius). Without this accessory the product shall be operational in the range of (-25 degrees Celsius up to +50 degrees Celsius). This accessory shall be available to all flavors of the product but must match the product mount correctly. This option shall be available both at time of sale and after sale in the event an enhanced temperature range is required once product is initially deployed. The TEC accessory shall use a different power supply than the 4G PIV/TWIC Station EXTREME™.

2. Integrated left side-mount mag-stripe (mag) reader compatible with two-frequency coherent phase (F2F) card read and compatible with ISO 7811 and AAMVA, able to read TWIC TPK's adhering to ISO 7811 standard. The mag reader shall be available on all product models.

## **2.2 MANUFACTURER**

The 4G PIV/TWIC Station™ & 4G PIV/TWIC Station EXTREME™ shall be the Biometric Smart Security Appliance and shall be provided by L-1 Identity Solutions, Inc., Enterprise Access Division with a principal office at 505 Cochrane Drive, Markham, Ontario, Canada. These products shall ship FCA Markham, Ontario, Canada. The 4G PIV/TWIC Station™ & 4G PIV/TWIC Station EXTREME™ shall be designated 'Made in Canada.'

## 2.3 MECHANICAL SPECIFICATIONS

### 2.3.1 DIMENSIONS & MATERIAL

The 4G PIV/TWIC Station™ dimensions shall be 6.27" (159 mm) long x 6.47" (165 mm) wide x 2.25" (57 mm) deep. The reader will ship partially assembled and shall be comprised of:

1. A wall plate that mounts directly to a wall.
2. A 4G PIV/TWIC Station™ Biometric Security Appliance.

The 4G PIV/TWIC Station EXTREME™ dimensions shall be:

- Reader – Height 7.2" (181 mm), Width 10.0" (254mm) Depth 4.3" (109mm)
  - With Mag Reader - Height 7.2" (181 mm), Width 11.9" (302mm) Depth 4.3" (109mm)
  - With TEC Module - Height 8.4" (213 mm), Width 10.0" (254mm) Depth 5.4" (137mm)
  - With TEC and Mag - Height 8.4" (213 mm), Width 11.9" (302mm) Depth 5.4" (137mm)

The reader will ship partially assembled and shall be comprised of:

1. A wall plate that mounts directly to a wall.
2. A 4G PIV/TWIC Station EXTREME™ Biometric Security Appliance.

The main plastic casing of the 4G PIV/TWIC Station EXTREME™ shall be made of G.E.® Lexan EXL9335 Plastic treated with UV inhibitors to prevent discoloration by active exposure to the sun and related UV emitters. The finished assembly shall comply with flammability rating UL94V-0.

### 2.3.2 COLOR & LOGO

The 4G PIV/TWIC Station™ colors shall use three shades of gray:

1. The casing and mount shall be dark gray (~~Pantone xyz~~).
2. The front of the casing shall have at the top and at the bottom a light gray (~~Pantone xyz~~) accentdecorative border.
3. The sensor module used on the device shall be a light gray (~~Pantone XYZ~~).
4. The 4G PIV/TWIC Station™ text "L-1 Identity Solutions" shall be located at the front left of the 4G PIV/TWIC Station™ casing and shall be light gray (Pantone xyz).

The L-1 Identity Solutions logo on the front casing shall be a proof of authenticity of the 4G PIV/TWIC Station™.

The 4G PIV/TWIC Station EXTREME™ colors shall use ~~two~~three shades of gray:

1. The casing and mount shall be dark gray ~~(Pantone xyz)~~
2. The front of the casing shall have at the top and at the bottom a light gray ~~(Pantone xyz)~~ decorative border
- ~~3. The sensor module used on the device shall be a light gray (Pantone XYZ)~~
- 4.3. The 4G PIV/TWIC Station EXTREME™ text “L-1 Identity Solutions” shall be located at the front left of the 4G PIV/TWIC Station EXTREME™ casing and shall be light gray ~~(Pantone xyz)~~.

The 4G PIV/TWIC Station EXTREME™ shall have white keys numeric and function keys with blue inset text lit by blue LED backlighting.

The L-1 Identity Solutions logo on the front casing shall be a proof of authenticity of the 4G PIV/TWIC Station EXTREME™.

### 2.3.3 Sensors:

Each 4G PIV/TWIC Station™ shall be equipped with a finger-scan sensor located at the top left-side of the unit. The sensor shall be:

1. UPEK TouchChip® TCS1 – Turbo Mode Active (500 dpi, FIPS 201 Approved), Active Capacitive Fingerprint sensor with 256 x 360 Sensor Array 508 DPI, and +/- 15kV Air ESD Resistance.

Each 4G PIV/TWIC Station EXTREME™ shall be equipped with a finger-scan sensor located at the middle left-side of the unit. The sensor shall be:

1. Lumidgm Venus™ – Multi Spectral Imaging with ‘liveness’ detection.

### 2.3.4 Weight:

The 4G PIV/TWIC Station™ shall weigh 1.45 lbs (657.20 grams) assembled (packaged weight for shipping shall be 2.30 lbs (1043.20 grams))

The 4G PIV/TWIC Station EXTREME™ shall weigh 3.95 lbs (1792 grams) assembled (packaged weight for shipping shall be 7.05 lbs (3198 grams))

- If the Mag reader is optionally included, then the weight shall be increased by 0.2 lbs (91 grams)
- If the Contact reader is optionally included then the weight shall be increased by 0.2 lbs (91grams)

- If the TEC module is optionally included then the weight shall be increased by 1.65 lbs (749 grams)

#### **2.4.5 Regulatory Approvals and Certifications:**

~~The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall be UL294 approved for safety~~

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall be TWIC ICE certified for readers using TWIC TPK and TWIC reference biometrics

The 4G PIV/TWIC Station EXTREME™ shall be FCC, CE (R&TTE) compliant and RoHS certified, the product shall meet all the TWIC outdoor reader approvals and certifications specifications ([http://www.tsa.gov/assets/pdf/twic\\_reader\\_card\\_app\\_spec.pdf](http://www.tsa.gov/assets/pdf/twic_reader_card_app_spec.pdf))

The 4G PIV/TWIC Station EXTREME™ shall be on the FIPS201 Evaluation Program Approved Products List (APL) as a CHUID Reader Contactless and CHUID Reader Contact

The 4G PIV/TWIC Station™ shall be FCC, CE (R&TTE) compliant and RoHS certified

The 4G PIV/TWIC Station™ shall be on the FIPS201 Evaluation Program Approved Products List (APL) as a CHUID Reader Contactless, CHUID Reader Contact, Transparent Reader Contactless and Transparent Reader Contact

#### **2.5.6 TEMPERATURE & ENVIRONMENT:**

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall be operational from 0C - 50C (32F - 122F).

The 4G PIV/TWIC Station EXTREME™ shall be operational from -25C - +70C (-13F - 158F) when used with an accessory TEC module.

The 4G PIV/TWIC Station™ shall be operational indoors only (not a damp, wet, icy environment).

The 4G PIV/TWIC Station EXTREME™ shall be operational in varied weather conditions including snow, rain, sleet and ice prone environments.

## **2.4 GENERAL FEATURES**

### **2.4.1 POWER:**

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall allow for a plug-in bullet connector (2.1 mm tip connector) or the 4G PIV/TWIC Station™ shall allow a two-wire flying lead terminated power supply; the two wire connector shall be included with the product when shipped.

1. The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall accept 12 – 24 VDC.
2. The 4G PIV/TWIC Station™ current draw shall be 1A, @ 12 VDC
3. The 4G PIV/TWIC Station EXTREME™ current draw shall be 3A @ 12V
4. The TEC module shall have a separate power supply from the 4G PIV/TWIC Station EXTREME™; the TEC shall draw 8A @ 12VDC

The 4G PIV/TWIC Station™ shall support Power Over Ethernet 100 Base T (PoE - 802.3af compliant) and shall be standard on all 4G PIV/TWIC Station™.

PoE 802.3af shall require:

1. Input voltage of 90-264 VAC, 60 Hz
2. Input current of 0.4A @ 100 VAC
3. Output voltage of -48 VDC
4. Output current of 0.32A
5. Output power of 15.36 W

The 4G PIV/TWIC Station EXTREME™ shall support Power over Ethernet (PoEPLUS), using an RJ-45 Ethernet interface. When these devices are to be powered over Ethernet, an IEEE 802.3at compliant Active Mid-span Injector shall be used.

PoEPLUS 802.3at shall require:

1. Input voltage: 90-264 VAC, 60 Hz
2. Input current: 1A @ 100 VAC
3. Output voltage: 56 VDC
4. Output current: 0.6 A
5. Power: 30 W

For Power over Ethernet, RJ-45 pin numbers 4, 5 shall be considered VB1 (+) positive DC supply, and pin numbers 7, 8 shall be VB2 (-) DC return.

#### **2.4.2 PHYSICAL NETWORK CONNECTIONS:**

A 28 pin connector pigtail shall provide connection to the 4G PIV/TWIC Station™ for a RS-485 or RS-232 network. Installers shall select appropriate wire terminations for the chosen network.

Ethernet connections to the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™, readers shall be made through standard RJ-45 connectors.

4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall be able to accommodate DHCP or static IP addresses.

#### **2.4.3 ADMINISTRATOR PORT**

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall have an administrator (AUX) port accessible from the bottom of the unit. The AUX port shall accept a USB-Mini-B connector. The AUX port shall be protected via a hard plastic cover of the same material as the main unit body secured by a tamper resistant hex screw. The AUX port shall provide standard USB communication to the unit.

The USB 2.0 AUX port shall allow the transfer of 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ audio, images, firmware, logs, and configuration files to and from the external USB memory stick/key

The SecureAdmin™ Administration software client shall, when in communication with the device, provide option to lock and unlock the AUX port by means of a password to prevent unauthorized logical access to the unit via the port.

#### **2.4.4 WIEGAND INPUT AND OUTPUT**

A 28 pin connector pigtail shall provide connection to the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ for the purpose of connecting Wiegand communication cables. The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall provide Wiegand input and output functionality.

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall support Wiegand output functionality for connection to an Access Control System (ACPS, PACS).

For Wiegand output, the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall require a homerun connection to the Access Control System. An 18-22 AWG cable will be used for this connection. At 18 AWG, a distance of 500 feet shall be possible.

By default the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall ship with no Wiegand output active. It will require activation via the local keypad interface or via the SecureAdmin™ software.

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall support outputs up to 512 bits and shall provide means, via SecureAdmin™, for an Administrator to define multiple unique output fields and parity assignments.

The SecureAdmin™ interface shall allow setting the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ Wiegand Input format, Wiegand output for events, and upload custom Wiegand formats.

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall support the FIPS-201 Wiegand standards defined in the PIV Standards and further shall support the 75 bit and 48 bit formats defined by the TWIC hardware specification.

The predefined Wiegand Formats are:

1. Standard 26-bit.
2. Apollo 44-bit.
3. Northern 34-bit.
4. Northern 34-bit.
5. HID Corporate.
6. Ademco 34-bit.
7. HID 37-bit.
8. TWIC 48-bit
9. TWIC 75-bit
10. FIPS201 - 40 Bits
11. FIPS201 - 64 Bits
12. FIPS201 - 75 Bits
13. FIPS201 - 128 Bits
14. FIPS201 - 200 Bits

The SecureAdmin™ interface shall provide the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ expanded Wiegand compatibility. It shall allow Administrators to define a Pass-Thru format with the following information:

1. Total bits - the number of Wiegand bits in the Wiegand string (maximum = 256 bits).
2. ID start bit - the start of the ID Field (where the first bit is Bit 0).
3. Total ID bits - the number of bits in the ID Field (must be adjoining bits).

The SecureAdmin™ interface shall allow the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ Administrator to create customized formats by selecting:

1. The ID number of bits.
2. The site code.
3. The parity bits.

#### **2.4.5 GENERAL PURPOSE INPUT AND OUTPUT**

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall provide General Purpose Input and Output as follows:

Three General Purpose Input:

1. The General Purpose Inputs shall be configurable through the SecureAdmin™ interface with the following options:
  - a) No Action
  - b) Verify
  - c) Enroll
  - d) Delete Template(s)
  - e) Reboot Device
  - Alarm
  - f) [Add in 4.1.7 options](#)

Three General Purpose Output:

2. The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ General Purpose Outputs shall be configurable through the SecureAdmin™ interface with the following trigger options:
  - a) No Action
  - b) Enroll Completed
  - c) Enroll Initiated
  - d) Verify/Identify Passed
  - e) Verify/Identify Failed
  - f) Finger Not Detected
  - g) V-Station Admin mode
  - h) Delete Attempted
  - i) Device Boot-up
  - j) File Transfer Complete**
  - [k\) Tamper Detected](#)

h)) [Duress Finger DetectedAdd on 4.1.7 options](#)

### 2.4.6 SINGLE-DOOR CONTROL

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall have a built-in relay with a max amperage output of 170 mA.

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall support Integrated Door Access Control (Relay, REX, Contact Monitor).

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall need:

1. A dead bolt or door strike.
2. A snubber diode to protect regulated DC power supply from inductive kickback (1 N4007 diode or equivalent recommended).
3. A separate power supply for the dead bolt or door strike based on supplier's recommendations.
4. An optional external relay for locks that are higher than 170 mA draw.

The Single-Door Control option shall not require Wiegand Output signals.

### 2.4.7 TAMPER SWITCH

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall have a tamper switch.

1. The 4G PIV/TWIC Station™ tamper switch shall be a push-button that will signal that the 4G PIV/TWIC Station™ has been tampered with when the switch shall not be in its normal depressed state.
2. The 4G PIV/TWIC Station EXTREME™ tamper switch shall be a magnetic contact reed switch that will signal that the 4G PIV/TWIC Station EXTREME™ has been tampered with when the reed switch shall not be in its normal closed state.
3. The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ tamper switch shall trigger protection sounds, or an audio alert, or shall flash LEDs, or shall send a predefined Wiegand string to the control panel, or shall disable biometrics, according to the unit's preset configuration from the SecureAdmin™ interface.

### 2.4.8 WIRELESS LAN

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall have an optional Wireless LAN connection that shall allow setting up the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ on a wireless network through the SecureAdmin™ interface or the "On Device" GUI.

1. The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall support the 802.11b and 802.11g standards.
2. The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall support the WEP open, WPA, and WPA2 protocols.

### 2.4.9 LEDs

The front of the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall have two tri-color LEDs that shall be visual indicators.

The default LED successful confirmation event color shall be green; the default LED unsuccessful confirmation event color shall be red; the default LED place finger or place card events color shall be orange.

The SecureAdmin™ software interface LED Table tab shall allow the modification of default colors and the association of specific LED colors with the specific events listed below:

1. Successful (Pass - access granted) confirmation.
2. Unsuccessful (Fail - access denied) confirmation.
3. Place finger, and place card events.
- ~~3.4.~~ Remove finger

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall have, at the front, a power LED that shall be blue when power is on.

### 2.4.10 DISPLAY

At the front, the 4G PIV/TWIC Station™ shall have a 2.5" and the 4G PIV/TWIC Station EXTREME™ shall have a 3.5" QVGA Color LCD to display and select option or settings menus, customizable messages and graphics to users.

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ QVGA 16 Million Color LCD shall allow the Administrator, using the "On Device" GUI, to adjust the LCD's contrast and brightness and to program the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ settings on the device.

The Display Settings menu of the SecureAdmin™ application shall allow an Administrator to adjust the LCD's contrast and brightness and to program the V-Station™ 4G settings.

Via SecureAdmin™ for PIV & TWIC card verification, administrators shall be able to enable/disable option of displaying the printed information stored on the cards. If enabled, the card holder's information available on the card shall be displayed on the LCD after successful verification and entering the correct PIN number. This set of options shall also allow the administrator of the unit to choose to display or not display a 2D image on the LCD extracted from the TWIC cards presented.

### 2.4.11 KEYS AND KEYPADS

At the front, the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall have an illuminated keypad with three rows of three alphanumeric keys in blue.

1. The keys of the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ illuminated keypad shall allow Administrators to configure, with the "On Device" GUI, some of the common set-up functions of the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™
2. The keys of the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ illuminated keypad shall allow users to enter their PIN numbers, and passwords.
3. The LED Settings screen Low Intensity and High Intensity Values of the "On Device" GUI and SecureAdmin™ software shall control the brightness of the keypad when the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ is idle or in use.

At the front, of the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ function keys, the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall have an illuminated navigation keypad with right, left, up, and down arrows as well as an OK button.

1. The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ navigation keypad shall allow users to move left, right, up, and down through the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ LCD GUI display to modify device menu options.
2. The central OK button shall let users enter or confirm a selection of entered data.

The "On Device" GUI and SecureAdmin™ software shall control the light intensity and brightness of the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ when idle or in use.

### 2.4.12 RIDGE LOCK

A finger Ridge-Lock shall be located directly in front of the finger-scan sensor on the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™. The Ridge-Lock shall position the user's finger on the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™, before touching the sensor, to ensure accuracy in the authentication processes.

### 2.4.13 FIELD REPLACEABLE SENSOR

The 4G PIV/TWIC Station™ shall include a field replaceable sensor that upon failure can be swapped out for a similar sensor module without violation of the warranty term. The product manufacturer shall provide sensors separately for the purpose of replacement at a moderate cost. This feature shall allow the unit to be retained in its field environment for service recovery. The sensor shall be easy to replace in a three step method as follows:

1. Unlock the unit from its mount then tip forward.

2. Unscrew the three screws on the backside securing the sensor to the unit then, decouple the cable.
3. Reverse the operation for the new sensor.

#### **2.4.14 4G PIV/TWIC STATION™ AND 4G PIV/TWIC STATION EXTREME™ (TRANSITION SMART CARD)**

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall support transition Smart Card(s), with an integrated MIFARE/DESFire Card Reader, this shall provide a two-factor (Contactless Smart Card and then user's fingerprint) authentication or shall support three factor authentication (via the use of a code or credential activation of the biometric record, then real-time evaluation of the presented finger against the stored biometric record and then authentication of the user via a password entered via the keypad) to give visitors to the facility temporary access methods.

The MIFARE/DESFire readers shall allow templates to be stored on the cards (and not in the V-Station™ 4G) which shall allow a limitless number of users.

The MIFARE/DESFire Smart Card shall accommodate the following templates:

1. Default Configuration:
  - a) Default Template – TEM
2. 1:1 Mode – MIFARE/DESFire Smart Card(s) shall accommodate the following templates:
  - a) TEM (1:1): 2 templates with 1, 2, 3, or 4 Kilobyte cards.
  - b) VUR (1:1): 2 templates with 1, 2, 3, or 4 Kilobyte cards.
  - c) BUR (1:1): 2 templates only with 4 Kilobyte cards.

#### **2.4.15 RECORDS AND TEMPLATES**

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall use one or more of the following template formats:

1. The Biometric User Record (\*.bur) which shall be a tag-based, variable length record used on the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ for the following authentication purposes:
  - a) 1:1 Verification.
2. User Records (.vur) shall include:
  - a) Global data - This shall be information relevant to the entire record (ID, name, password, for example). Some fields shall be needed while others shall be optional.
  - b) Enrollment data - This will be data belonging only to a particular finger. It will be a section of data that contains compressed fingerprint information with specific information about that enrollment (for example: sensor, finger, security level for the finger, and the index). A User Record will be able to contain more than one enrolled finger when stored on the unit.

- c) User data - This will be a user-defined variable length block of data that will either be global or enrollment specific. Data in this block will be accessed all at once, rather than being divided into separately named fields.
3. A 348-byte template (\*.tem) contains a unique ID, usually associated with a single individual. The same ID, but a unique index value (0-255), shall define each enrollment under that ID in case of multiple enrollments for added fingers of the same person.
- a) The template's size shall be 348 bytes. Out of these, User Data (Template ID, Name, for example) shall use 64 bytes. Fingerprint data, also called in-phase data, shall use the remaining 284 bytes.

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall be interoperable as defined as the ability of a biometric TWIC reader to perform a match from a presented biometric with the ANSI/INCITS 378 formatted templates provided on a TWIC card by TSA. Such templates shall be in compliance with NIST special publication 800-76-1 INCITS 378 profile for PIV card templates.

#### **2.4.16 CRL LIST UPDATES FOR TWIC COMPLIANCE:**

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall provide an option to automatically update the CRL list via a scheduling tool, this shall permit the product to either go directly to the federal government website hosting the CRL list or take updates from the SecureAdmin server.

## **3.0 SERVERS, WORKSTATIONS, AND SOFTWARE**

### **3.1 SECUREADMIN™ & SERVER REQUIREMENTS**

The SecureAdmin™ administrative interface shall require:

1. PC Workstation with:
  - a) 1 GHz Intel® processor or equivalent.
  - b) 1 GB RAM (2 GB recommended).
  - c) CD-ROM drive.
  - d) One available USB port.
  - e) Ethernet or COM port.
  - f) 1024 X 768 high color video display.
2. SecureAdmin™ Client with:
  - a) 10 MB hard disk space minimum.
  - b) SecureAdmin™ Server.
  - c) 25 MB hard disk space minimum.
3. Operating Systems shall be either:
  - a) Windows Server® 2003 R2.
  - b) Windows Server® 2008.
  - c) Windows Vista™
  - d) Windows XP Service Pack 2 or higher.
4. The Database shall be either:
  - a) SQL Server™ 2008 Express Edition with:
    - i. 350 MB hard disk space for the recommended installation.
    - ii. 425 MB additional hard disk optional.
  - b) Oracle® 10G Express with:
    - i. 1.6 GB hard disk space for server.
    - ii. 75 MB hard disk space for client.
5. Additional Components
  - a) Microsoft® .NET Framework 3.5

## **3.2 SOFTWARE**

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ "On Device" GUI shall provide administrators the possibility to set up, program, and retrieve information from the V-Station™4G without using a computer and the SecureAdmin™ administrative interface.

The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ shall provide extensive Information management capability via SecureAdmin™ using Microsoft .NET Framework V3.5. SecureAdmin™ shall be able to operate In a Client/Server configuration and communicate to the server via a Fast Ethernet 10/100, TCP/IP network. The SecureAdmin™ Interface shall be intuitive, customizable, and the operator interface shall be able to control the following:

1. The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ readers.
2. Configuration of the 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ personnel records (transitional cards), operators, operator privileges, and specific needs.
3. The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ system variables.
4. Import/Export of 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ objects, including images.
5. The 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ system functions (event command and control, actions, schedules, and logs).
6. Display of a list of 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ objects in a grid which shall have their values modified and shall respond to real-time status changes and specific needs.
7. Monitoring of 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ system settings and performance.
8. Broadcast to all, groups, users, or individual 4G PIV/TWIC Station™ and 4G PIV/TWIC Station EXTREME™ of all or selected unit settings or subsets of settings.