



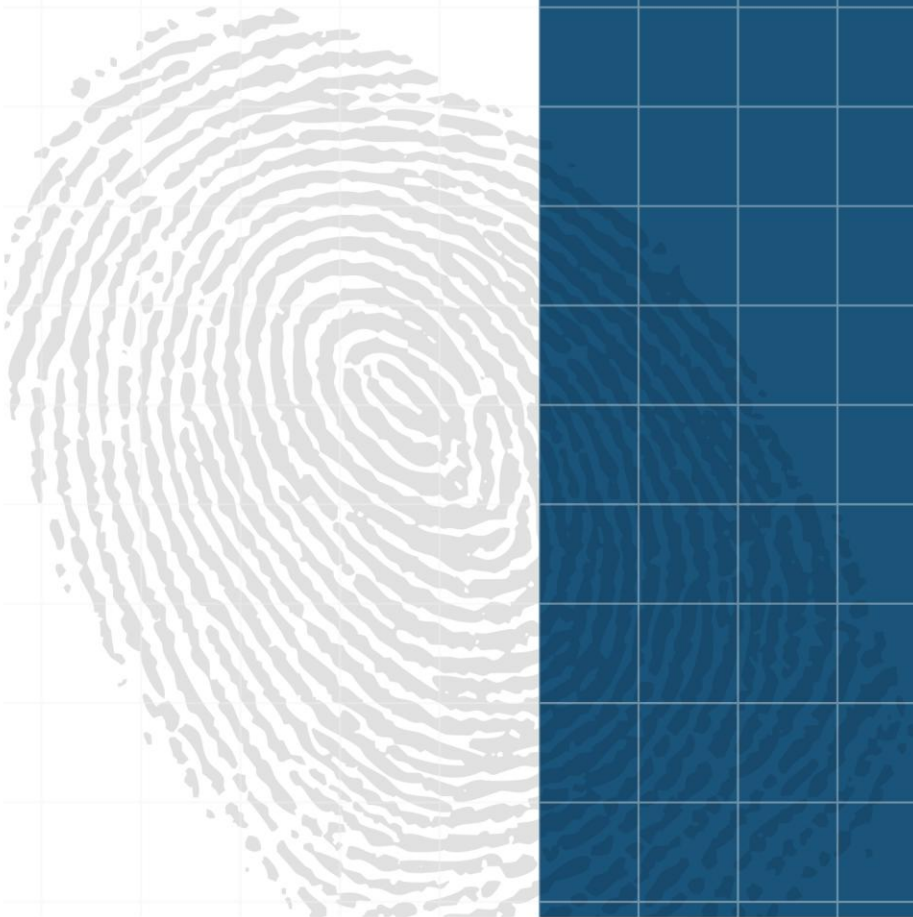
BIOSCRYPT
ENTERPRISE ACCESS SOLUTIONS

Biometric Smart Security Appliance

Engineering Specifications

V-Flex™ 4G

VERSION 1.0



COPYRIGHT © 2009, L-1 IDENTITY SOLUTIONS, INC.

The user should carefully select, copy and paste the portions of this document that fit the user's RFP, RFQ, or RFI answers, this document cannot be used to reverse engineer or evaluate the product.

The product and publication are provided “as is” without warranty of any kind, either express or implied, including, but not limited to, the implied warranties of merchantability, fitness for a particular purpose, or non-infringement.

This publication could include technical inaccuracies or typographical errors. Changes are periodically added to the information herein; these changes will be incorporated in new editions of the publication. L-1 identity solutions Inc. may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time.

TRADEMARKS

The trademarks identified herein are the trademarks or registered trademarks of L-1 Identity Solutions, Inc. All other brands and products referenced herein are acknowledged to be trademarks or registered trademarks of their respective holders or manufacturers.

1.0 DESCRIPTION

1. A SCOPE AND PURPOSE OF THIS DOCUMENT

This document shall include a general description of the V-Flex™4G product and information about its manufacturer. It shall also include the V-Flex™4G mechanical specifications, specific features, and servers, workstations, as well as software requirements.

This document or extracts from this document shall be intended to be copied and pasted in other documents (e.g. RFP, RFQ, or RFI answers); by doing so the user shall be aware that this document could include technical inaccuracies or typographical errors and that L-1 Identity Solutions Inc. shall not be liable for these technical inaccuracies or typographical errors.

Changes shall be periodically added to the information herein; these changes shall be incorporated in new editions of this document. L-1 identity solutions Inc. may make improvements and/or changes in the product(s) and/or the program(s) described in this document at any time.

The information in this document is provided “as is” without warranty of any kind.

1. B GENERAL DESCRIPTION

The V-Flex™4G shall be equipped with biometric and/or multi-factor authentication, powerful on-board processing for rapid and accurate authentication, and sophisticated storage.

The V-Flex™4G shall incorporate innovative and powerful capabilities and shall be ready for future expansion as the security industry shall continue to evolve.

The V-Flex™4G shall take biometric access control to the level of truly connected and intelligent security appliances The V-Flex™4G shall have an intuitive interface and controls for personnel and administrators.

The V-Flex™4G shall address different deployment scenarios, changing business requirements, and future growth.

The V-Flex™4G shall have a modular design and shall be easy to maintain.

2.0 PRODUCTS

The V-Flex™4G shall provide a verification of a live fingerprint with a stored biometric record. The V-Flex™4G shall prevent 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.

The V-Flex™4G shall provide, as an option at time of purchase, the ability to use iCLASS, MIFARE or Prox credentials.

1. The V-Flex™4G shall allow:

a. Enrolling, consisting in capturing, processing, compressing, and storing a user's biometric data in a biometric record. If the unit contains an embedded card reader, it will provide a means to encode the card credential(s) with biometric record data if the card credential(s) supports such actions.

b. Authentication:

i. The 1:N mode shall support single factor authentication via the presentation of a user's live finger evaluated against the on-board database of biometric records.

ii. The 1:1 verification shall support two factor authentication via the use of an external Wiegand or GPI activation of the biometric record, then real-time evaluation of the presented finger against the stored biometric record.

c. Verification, which shall be the result of authentication, will result in either the activation of a single door relay, or a GP output, or the output of Wiegand data to an access control panel as previously configured by the administrator.

2. The V-Flex™4G shall ship with a single copy of the SecureAdmin™ management software. The SecureAdmin™ software will provide the 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 in either a SQL Server 2005 Express Edition or Oracle 10g Database.

3. The V-Flex™4G shall have available an SDK (software development kit, SecureSDK™, for the use of developer(s) to integrate the V-Flex™4G solution into a Physical Access Control (PAC) solution.

2.1 MANUFACTURER

The V-Flex™4G shall be the Biometric Smart Security Appliance and shall be provided by L-1 Enterprise Access Solutions with a principal office at 505 Cochrane Drive, Markham, Ontario, Canada. The hardware manufacturer shall be a ISO 9001:2000 registered company.

2.2 MECHANICAL SPECIFICATIONS

2.2. A DIMENSIONS

1. The V-Flex™4G will ship partially assembled and shall be comprised of:

- a. A wall plate that mounts directly to a wall.
- b. A V-Flex™4G Biometric Security Appliance.

2. Two mounting plates will ship with the V-Flex™4G, their dimensions will approximately be:

Recess Mount:

Length: 6.25"

Width: 4.81"

Depth: 0.125"

Flush Mount:

Length: 5.31"

Width: 3.63"

Depth: 1.31"

2.2. B COLOR & LOGO

1. The V-Flex™4G colors shall use two shades of gray:

- a. The casing and mount shall be dark gray (Pantone xyz).
- b. The front of the casing shall have at the top and at the bottom a light gray decorative border.
- c. The V-Flex™4G L-1 Identity Solutions logo shall be located at the front of the V-Flex™4G casing and shall be light gray.

2. The L-1 Identity Solutions logo shall be a proof of authenticity of the V-Flex™4G.

2.2. C SENSORS

1. Each V-Flex™4G shall be equipped with a finger-scan sensor located at the top of the unit. The V-Flex™4G will have one of the following sensors:

- a. SECUGEN OPTICAL with Optical Fingerprint sensing, 258 x 336 Sensor Array 500 DPI, and +/- 15kV Air ESD Resistance.
- b. UPEK TCS1 Active Capacitive Fingerprint sensor with 256 x 360 Sensor Array 508 DPI, and +/- 15kV Air ESD Resistance.

2.2. D WEIGHT

The V-Flex™4G shall weigh approximately .95 lbs (400 grams) assembled (packaged weight for shipping shall be 1.9 lbs (866 grams)).

2.2. E CERTIFICATIONS

The V-Flex™4G shall be FCC, CE, R&TTE compliant (when optional radios are included), and RoHS certified.

2.2. F TEMPERATURE & ENVIRONMENT

1. The V-Flex™4G will operate within a temperature range of 32° to 140°F (0° to 60°C).
2. The V-Flex™4G will operate indoors only and shall not be deployed to outdoor locations without the use of a L-1 Enterprise Access Solutions certified enclosure to guard against damage from the elements.
3. The V-Flex™4G will operate in 0-95% non-condensing humidity.

2.3 COMMON FEATURES

2.3. A POWER

1. The V-Flex™4G will allow for a plug-in bullet connector or a two-wire flying lead terminated power supply. The two wire connector will be included with the product when shipped.
 - a. The V-Flex™4G voltage shall be 12 - 24V.
 - b. The V-Flex™4G current draw shall be 1A, @ 12 VDC.
2. Power Over Ethernet 100 Base T (PoE - 802.3af compliant) shall be standard on all V-Flex™4G.
 - a. PoE 802.3af shall require:
 - i. an input voltage of 90-264 VAC, 60 Hz.
 - ii. an Input current of 0.4A @ 100 VAC.
 - iii. an output voltage of -48 VDC.
 - iv. an output current of 0.32A.
 - v. a output power of 15.36 W.

2.3. B NETWORK CONNECTIONS

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

2. Ethernet connections to the V-Flex™4G fingerprint readers shall be made through standard RJ-45 connectors.
 - a. V-Flex™4G shall be able to accommodate DHCP or static IP addresses.

2.3. C ADMINISTRATOR PORT

1. The V-Flex™4G shall have an administrator port accessible from the bottom of the unit. The administrator port shall accept a USB-Micro-A connector. The administrator 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 Administrator port shall provide standard USB 2.0 communication to the unit.
2. The USB 2.0 Aux port shall allow the transfer of V-Flex™4G firmware, logs, and configuration files from the USB.

2.3. D WIEGAND INPUT AND OUTPUT

1. A 28 pin connector pigtail shall provide connection to the V-Flex™4G for the purpose of connecting Wiegand communication cables. The V-Flex™4G shall provide Wiegand input functionality and Wiegand output functionality.
2. The reader shall support Wiegand output functionality for connection to an Access Control System.
3. For Wiegand output, the V-Flex™4G shall require a homerun connection to the Access Control System. An 18-22 AWG cable should be used for this connection. At 18 AWG, a distance of 500 feet is possible.
4. By default the V-Flex™4G shall ship with no Wiegand output active. It will require activation via the SecureAdmin™ software.
5. The V-Flex™4G 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.
6. The SecureAdmin™ interface shall allow setting the V-Flex™4G Wiegand Input format, Wiegand output for events, and upload custom Wiegand formats.
 - a. The predefined Wiegand Formats are:
 - i. Standard 26-bit.
 - ii. Apollo 44-bit.
 - iii. Northern 34-bit.
 - iv. Northern 34-bit.
 - v. HID Corporate.
 - vi. Ademco 34-bit.

vii. HID 37-bit.

7. The SecureAdmin™ interface shall provide the V-Flex™4G expanded Wiegand compatibility. It shall allow Administrators to define a Pass-Thru format with the following information:

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

8. The SecureAdmin™ interface shall allow the V-Flex™4G to create customized formats by selecting:

- a. The ID number of bits.
- b. The site code.
- c. The parity bits.

2.3. E GENERAL PURPOSE INPUT/OUTPUT

The V-Flex 4G shall provide General Purpose Input and Output as follows:

1. Three General Purpose Inputs.

a. The General Purpose Inputs shall be configurable through the SecureAdmin™ interface with the following options:

- i. No Action.
- ii. Verify.
- iii. Enroll.
- iv. Delete Template(s).
- v. Reboot Device.
- vi. Alarm.

2. Three General Purpose Outputs.

a. The V-Flex™4G General Purpose Inputs shall be configurable through the SecureAdmin™ interface with the following trigger options:

- i. No Action.
- ii. Enroll Completed.
- iii. Enroll Initiated.
- iv. Verify/Identify Passed.
- v. Verify/Identify Failed.

- vi. Finger Not Detected.
- vii. V-Flex Admin mode.
- viii. Delete Attempted.
- ix. Device Boot-up.
- x. File Transfer Complete.

2.3. F SINGLE-DOOR CONTROL

1. The V-Flex™4G shall have a built-in relay with a max amperage of 170 mA.
2. The V-Flex™4G fingerprint shall support Integrated Door Access Control (Relay, REX, Contact Monitor).
 - a. The V-Flex™4G shall need:
 - i. A dead bolt or door strike.
 - ii. A snubber diode to protect regulated DC power supply from inductive kickback (1 N4007 diode or equivalent recommended).
 - iii. A separate power supply for the dead bolt or door strike based on supplier's recommendations.
 - iv. An optional external relay for locks that are higher than 170 mA.
 - b. The Single-Door Control option shall not require Wiegand Output signals.

2.3. G TAMPER SWITCH

The V-Flex™4G shall have a tamper switch.

1. The V-Flex™4G tamper switch shall be a push-button that will signal that the V-Flex™4G has been tampered with when the switch shall not be in its normal depressed state.
2. The V-Flex™4G 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.

2.3. H LEDs

1. The top of the V-Flex™4G shall have two tricolor 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:
 - a. Successful (Pass - access granted) confirmation.
 - b. Unsuccessful (Fail - access denied) confirmation.
 - c. Place finger, and place card events.
2. The V-Flex™4G shall have, at the front, a power LED that shall be blue when power is on.

2.3. I RIDGE LOCK

A Ridge-Lock shall be located at the top of the V-Flex™4G. The Ridge-Lock shall position the user's finger on the V-Flex™4G, before touching the sensor, to ensure accuracy in the authentication and verification processes.

2.3. J FIELD REPLACEABLE SENSOR

The V-Flex™4G shall include a field replaceable sensor that upon failure can be swapped out for a similar sensor module without violation of the warranty term. L-1 EAS 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.
2. Unscrew the two screws securing the sensor to the unit, decouple the cable.
3. Reverse the operation for the new sensor.

2.4 SPECIFIC FEATURES

The V-Flex™4G shall have options where the standard product will be enhanced or altered via the use of additional components to provide features in addition to the common features listed above. The optional components shall be as listed below and will provide specific operations as listed under the appropriate product flavor section.

1. Each V-Flex™4G shall have option to have an embedded HID® Proximity reader; when embedded it will be commonly referred as V-Flex™4G Prox.
2. Each V-Flex™4G shall have option to have an embedded HID® ICLASS; when embedded it will be commonly referred as V-Flex™4G ICLASS.
3. Each V-Flex™4G shall have option to have an embedded MIFARE reader; when embedded it will be commonly referred as V-Flex™4G MIFARE.

2.4. A V-FLEX™4G (BASE)

The Base model shall support both 1:N and 1:1 modes

1. The 1:N mode shall support single factor authentication via the presentation of a user's live finger evaluated against the on-board database of biometric records.
2. The 1:1 verification shall support two factor authentication via the use of an external Wiegand input or credential activation of the biometric record, then real-time evaluation of the presented finger against the stored biometric record.
3. Biometric Record Options:
 - a. Default Template Configuration - 1:1 BUR.
 - i. Max Default Template storage - 100,000 Biometric Records.
 - b. 1:1 Biometric Record Options configurable via SecureAdmin™ or from the panel:
 - i. TEM (1:1) - 100,000 templates.
 - ii. VUR (1:1) - 100,000 templates.
 - iii. BUR (1:1) - 100,000 templates.
 - iv. MTM (1:N) 200 templates.
 - v. TMS (1:N) 500 templates.
 - vi. 1:N BUR (1:N) 10,000 templates.

2.4. B V-FLEX™4G (PROX)

The V-Flex™4G (Prox), with an integrated Prox Card Reader, shall provide a single (finger only), and two-factor (finger and Prox card).

1. The 1:N mode shall support single factor authentication via the presentation of a user's live finger evaluated against the on-board database of biometric records.
2. The 1:1 verification shall support two factor authentication via the use of a external Wiegand input or credential activation of the biometric record, then real-time evaluation of the presented finger against the stored biometric record.
3. The V-Flex™ 4G (Prox) shall accommodate the following templates:
 - a. Default Configuration:
 - i. Default Template - 1:1 BUR.
 - ii. Max Template storage - 100,000 templates.
 - b. Biometric Record Options:
 - i. Default Template Configuration - 1:1 BUR.
 - ii. Max Default Template storage - 100,000 Biometric Records.
 - c. 1:1 Biometric Record Options configurable via SecureAdmin™ or the front panel:
 - i. TEM (1:1) - 100,000 templates.
 - ii. VUR (1:1) - 100,000 templates.
 - iii. BUR (1:1) - 100,000 templates.
 - iv. MTM (1:N) 200 templates.
 - v. TMS (1:N) 500 templates.
 - vi. 1:N BUR (1:N) 10,000 templates.

2.4. C V-FLEX™4G (SMART CARD)

The V-Flex™4G (Smart Card), with either an integrated iClass or MIFARE/DESfire Card Reader, shall provide a two-factor (Contactless Smart Card and then user's fingerprint).

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

1. The 1:N mode shall support single factor authentication via the presentation of a user's live finger evaluated against the on-board database of biometric records.
2. The iClass Smart Card shall accommodate the following templates:
 - a. Default Configuration:
 - i. Default Template – TEM.

- b. 1:1 Mode – The iClass Smart Card shall accommodate the following templates:
 - i. TEM (1:1): 2 templates with 16 Kilobyte cards.
 - ii. VUR (1:1): 2 templates with 16 Kilobyte cards .
 - iii. BUR (1:1): 2 templates with 32 Kilobyte cards.
- 3. The MIFARE/DESfire Smart Card shall accommodate the following templates:
 - a. Default Configuration:
 - i. Default Template – TEM.
 - b. 1:1 Mode – MIFARE/DESfire Smart Card shall accommodate the following templates:
 - i. TEM (1:1): 2 templates with 1, 2, 3, or 4 Kilobyte cards.
 - ii. VUR (1:1): 2 templates with 1, 2, 3, or 4 Kilobyte cards.
 - iii. BUR (1:1): 2 templates only with 4 Kilobyte cards.

2.4. D RECORDS AND TEMPLATES

The V-Flex™4G shall have available:

1. The Biometric User Record (*.bur) shall be a tag-based, variable length record used on the V-Flex™4G for the following authentication purposes:
 - a. 1:1 Verification.
 - b. 1:10K Identification.
 - c. 1:50K Identification
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.
4. A 1:200 searching template (*.mtm) shall contain the entire 1:1 template, which shall be 348 bytes, adding 2004 bytes of data needed for searching functionality, making the total length of 1:200 searching template 2352 bytes.
 - a. In 1:200 searching mode, the flash memory of the V-Flex™4G shall store a maximum of 200 templates.
5. A 1:500 searching template (*.tms) shall contain the entire 1:1 template, which will be 348 bytes, with the addition of 2140 bytes of data needed for the searching functionality. The total length of this searching template shall be 2488 bytes.
 - a. In 1:500 searching mode, the flash memory of the V-Flex™4G shall store a maximum of 500 templates.

3.0 SERVERS, WORKSTATIONS, AND SOFTWARE

3.1 SECUREADMIN™ 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™ 2005 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

1. The V-Flex™4G shall provide extensive Information management capability (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.
2. The SecureAdmin™ Interface shall be intuitive, customizable, and the Administration Operator interface shall be able to control the following:
 - a. The V-Flex™4G readers.
 - b. Configuration of the V-Flex™ personnel records, operators, operator privileges, and specific needs.
 - c. The V-Flex™ system variables.
 - e. The V-Flex™ system functions (event command and control, actions, and logs).
 - f. Display of a list of V-Flex™ objects in a grid which shall have their values modified and shall respond to real-time status changes and specific needs.
 - g. Monitoring of V-Flex™ system settings and performance.
 - h. Broadcast to all, groups, users, or individual V-Flex™ of all or selected unit settings or subsets of settings.