PASSPORT

for Credential Components



CardLogix



A trusted credential is the fluid currency of identity today. With it, governments can interact with the world safely and securely, with complete trust in people, documents, and daily transactions. CardLogix smart cards and software have been at the core of trusted credentials since 1998. We understand the fundamental need for trust, and we know how to supply it to our customers, so that they can guarantee it in their trusted credentials.

Credentialing systems are more than just a secure credential. They require enrollment, vetting, data formatting, secure data storage and management, personalization, issuance, and verification. These processes may be tied to many other secure processes. CardLogix accomplishes this goal by producing some of the world's most secure credentials and working with the best-in-breed hardware and software components from our Smart Partners to provide fully integrated, interoperable systems.

CardLogix has supplied millions of credentials to customers in thirty six countries. Our capability to implement secure designs, test, and certify these components to ISO, ANSI and other international standards has evolved to the point where we have become globally trusted source for complete credential production, including secure chip operating systems, middleware, and development platforms. Our chain of trust extends from the world class chip manufacturers throughout the secure manufacturing process and internal networks, to the delivery of products to your facility.





Passport for Credential Components Welcome

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CardLogix e-Passport

The CardLogix e-Passport is a highly secure Credential for secure and controlled travel. The ePassport is built upon powerful CardLogix Credentsys[®] microprocessor technology, which is combined with state-of-the-art physical security to complete the chain of trust for border control.

As an integral part of the CardLogix portfolio of Credentialing Solutions, the e-Passport works with the worldwide infrastructure of standards, technology, and systems to insure compatibility.

The e-Passport card meets the latest ICAO 9303 and ISO/IEC standards for BAC and EAC and AA authentication with full support for LDS. The e-Passport combines certified chip security with the highest level of physical credential security to deliver a powerful identity solution that prevents cloned passports.

Features

- High security High Performance Cryptographic Microprocessor
- NIST certified Operating System to FIPS 140-2 Level 3 Certificate #917
- Full implementation of a logical credential data model that includes ICAO BAC-EAC, and AA
- EAL5+ chip certification
- On board hardware crypto accelerators for AES, 3DES, RSA, and DSA operations
- 72k of user EEPROM
- · Optional shielded covers
- · Optional DSS anti-copy reactive security paper
- Tamper evident binding
- Laser-perfed pages
- Watermarks
- Tamper-proof, fully secure polycarbonate data page with integrated antenna
- A complete range of secure printing options, including:
 - Color shifting inks OVI
 - Card Validator[®] hidden images
 - UV Ink and flourescent threads
 - Metameric inks
 - Sophisticated fine-line guilloche
 - Forensic ink taggants
 - Microtext and nanoprinting
 - Laser engraving
 - Holograms and OVDs
 - MLI/CLI
 - Hidden intentional errors
 - Holofuse[®] laminates





Credentsys® Dual Interface Card Family

Credentsys[®] is a secure Dual Interface smart card family that is designed for national ID systems, passports, and multi-use enterprise security environments. The family is certified to FIPS 140-2 and 201-1/SP800-73-1 specifications.

CardLogix Credentsys smart cards achieve high security assurance by resisting identity fraud and tampering, using rapid electronic authentication.

Credentsys cards offer a combination of high performance and cost-effectiveness by running on advanced 32bit RISC processor cores with DES & PKI Crypto acceleration. Credentsys supports both CardLogix proprietary and JavaCard[™] configurations and applets, and all cards include contactless communication protocol ISO 14443 Type A or B.

Credentsys cards offer a high level of built-in security with abnormal condition detection sensors to uncover changes in voltage, light, temperature, frequency, and other forms of tampering, such as glitch generation.

All cryptographic key objects, PIN objects and other sensitive data are always stored in nonvolatile memory in an encrypted format. Integrity checks are performed on all critical system and data components prior to each access in order to detect tampering, allowing the Credentsys secure kernel to take defensive action. The memory protection unit is used for secure isolation of applications and OS code. All supported chips have received Common Criteria EAL 5+ certification.

The Credentsys card's crypto library utilizes hardware crypto accelerators for 3DES, RSA, and DSA operations. The chips and OS's are designed to withstand differential timing (DTA) and power (DPA) attacks and are fully compliant with FIPS 140-2 level 3 requirements. On-card RSA asymmetric key pair generation is supported up to 2048 key lengths.

Features

- Operating ranges from 2.7 V to 5.5 V
- Power-saving Wait and Very-Low-Power
- Stop modes
- Power-up detection
- Full GlobalPlatform support

Memory

• 72k - 128k bytes of user EEPROM

FIPS 140-2 Level 3 and 201-1 SP800-73-1 Certified

- · Full support for high-level PIV client APIs and low level interface commands at card edge
- · Built-in PIV II Card Application with CHUID data object; post-issuance applications can be loaded as required
- Authentication of an individual isperformed via PIN or by utilizing Biometric methods

Security

- Dedicated hardware for protection against SPA/DPA/DEMA/SEMA attacks
- Velocity checking
- Advanced protection against physical attacks
- Environmental protection systems
- Voltage monitor
- Frequency monitor

Passport for Credential Components Credentials



Credentsys[®] Dual Interface Card Family «

Security (Continued)

- Temperature monitor
- Light protection
- Secure memory management/access protection (Supervisor Mode)

Application Resources (Depending on Device):

- Persistent Memory (EEPROM): 62 kB 128 kB
- Transient Memory (RAM): 2 kB 8 kB
- Transaction Buffer: 512 bytes
- APDU Buffer Size: 261 bytes

Communication Protocols

Contact Mode

• ISO 7816 T=1, baud rates from 9600 to 650k

Contactless Mode

- Contactless Interface Controller (CIC): with full support for ISO/IEC 14443 Type A & B protocols
- Supply voltage clamp and regulation

Reader-to-Card

- ISO/IEC Type A: 100% ASK modulation and modified Miller bit coding
- ISO/EIC Type B: 10% ASK modulation and NRZ Bit coding

Card-to-Reader

- ISO/IEC Type A: Generation of 847.5 kHz subcarrier with OOK modulation and Manchester bit coding
- SO/IEC Type B: Modulation of incoming RF carrier by resistive load switching / generation of 847.5 kHz subcarrier with BPSK modulation / NRZ data encoding
- Baud Rates: Up to 424 kbps
- RF Frame: Up to 256 Bytes

On-Card Registry

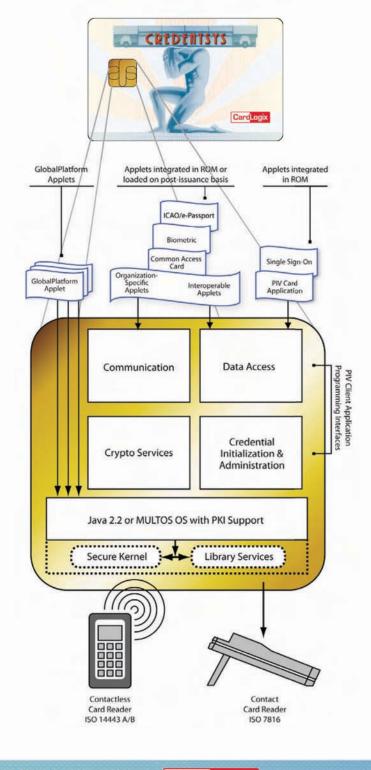
- Number of applets limited only by available persistent memory
- Fast search times for any entry selection

Data Objects Supported

- ICAO LDS-EAC and BAC
- X.509 certificate / card validation key
- CHUID
- Cardholder biometrics



Credentsys[®] Dual Interface Card Family



Passport for Credential Components Credentials

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Credentsys® Gen 2 Border Crossing Card

The Credentsys[®] Border Crossing Card is a Gen 2 RFID contactless solution for quick identification at frequently travelled borders. The card features CardLogix Credentsys[®] security, enhanced with the latest UHF antenna technology. The Gen 2 card's antenna enables long-range reading, and durably long life. The card is fully compliant with the EPC Gen 2 standards and stores up to 96-bit serial numbers. Compliance with ISO/IEC 18000-6C is designed into the silicon core and antenna configuration to ensure worldwide functionality. The card body has demonstrated flexure survivability in excess of 100,000 bends, further assuring a long card life.

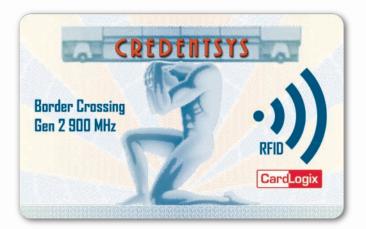
Many security options are available, including microprinting, guilloche, ultraviolet (UV) ink, optically variable devices (OVDs), hidden validation, laser engraving/indenting, watermarking, holograms, holomags, and colored interlayers.

Features

- Card meets ISO10373, ICAO 9303
- · Card size is fully compliant to ISO 7810, ID-1 specifications
- 100,000 write cycles, minimum
- Operating frequency from 860 to 960 MHz
- 3 modulation formats supported: DSB-ASK, SSB-ASK, and PR-ASK
- Robust interference rejection

Benefits

- Long Read Range up to 8 meters
- Long card life
- Rapid reading
- Multiple UHF reader choices
- ISO18000-6C compliant
- Very long-term data retention (over 50 years)
- Secure 32-bit password protected data storage





M.O.S.T. Cards®

Low Cost High Security Card Family

M.O.S.T. Cards[®] are a microprocessor-based smart card family designed for multi-function and/or high-security applications. M.O.S.T. Cards let you design a smart card system that grows with your needs, supporting multiple functions, applications, and readers–all while maintaining high security.

The family features up to 144 kB of user memory that can be configured for high-security and purse functions. The cards contain the M.O.S.T Card Operating System that supports a variety of security measures, including SHA-1 and SHA-256 bi-directional / mutual authentication, DES, 3DES, and AES encryption, PIN/passwords, and internal random number generation for unique digital signatures and session journaling. The OS also features built in anti-tearing mechanisms to support heavy transactional environments.

Benefits

- High-security architecture
- Large user memory
- T=0 or T=1 protocols
- PC/SC compatible
- Negotiable communication speed (PTS)
- Rapid card development
- Multiple reader and terminal choices
- · ISO 7816-1 through 7816-4 compliant

Features

- 3 V 5 V operating voltage range
- Ultra low power CMOS (100 μA standby, 10 mA active)
- User memory can be configured an unlimited number of times
- ATR configuration and T=0 serial interface in accordance with ISO standard 7816 (asynchronous transmission)
- Data retention > 100 years
- Minimum of 5x105 write/erase cycles
- Electrostatic discharge protection > 4,000 V

Dedicated Semiconductor and Operating System Countermeasures Guard Against:

- Side channel attacks
- Advanced fault attacks
- Velocity checking
- · Voltage attacks
- Frequency attacks
- Temperature glitch attacks
- Optical attacks



Passport for Credential Components Credentials

CardLogix

M.O.S.T. Cards[®] «

Secure printing options include:

- Laser engraving/indenting
- Guilloche and rosettes
- Microprinting
- Optically Variable Devices (OVDs) and holograms
- Hidden Card Validator ${}^{\rm \scriptscriptstyle M}$ graphics with lens viewer
- Ultraviolet (UV) Ink
- Watermark

CardLogix Part Number	Product Functionality/ Applications	Security Features	User-Data Memory (EEPROM)	Communications Protocols	Max. Supply Current
CLXSU064KJ4/ T=0ED	Multifunction, Purse/ Wallet, Identity, E-Commerce and Gaming	SHA-1 Authentication, Purse, DES, and 3DES Encryption	8 kB	T=0	3 milliamps
CLXSU128KJ4/ T=0ED	Multifunction, Purse/ Wallet, Identity, E-Commerce and Gaming	SHA-1 Authentication, Purse, DES, and 3DES Encryption	16 kB	T=0	3 milliamps
CLXSU256KJ4/ T=0ED	Multifunction, Purse/ Wallet, Identity, E-Commerce and Gaming	SHA-1 Authentication, Purse, DES, and 3DES Encryption	32 kB	T=0	3 milliamps
CLXSU512KJ4/ T=0ED	Multifunction, Purse/ Wallet, Identity, E-Commerce and Gaming	SHA-1 Authentication, Purse, DES, and 3DES Encryption	64 kB	T=0	3 milliamps
CLXSU512KC8/ T=0ED	Multifunction, Purse/ Wallet, Identity, E-Commerce and Healthcare	SHA-256 Authentication, Purse, AES, and DES Encryption	72 kB	T=0	3 milliamps
CLXSU001MC7/ T=0ED	Multifunction, Purse/ Wallet, Identity, E-Commerce and Healthcare	SHA-256 Authentication, Purse, AES, and DES Encryption	144 kB	T=0	3 milliamps
CLXSU512KJ4/ T=0ED	Multifunction, Purse/ Wallet, Identity, E-Commerce and Healthcare	SHA-1 Authentication, Purse, DES, and 3DES Encryption	72 kB	T=0 with PTS	3 milliamps



M.O.S.T. Toolz™

Smart Card File Creation Utility



Designed for multifunction and high security smart card systems, M.O.S.T. Toolz[™] is a lowcost add-on to the Smart Toolz[™] Smart Card Application Development Kit. M.O.S.T. Toolz[™] features robust software for rapid system development, plus five microprocessor smart cards for system and file set-up. Visual Basic, C++, and Delphi programming examples with full documentation complete the kit.

The M.O.S.T. Toolz[™] file creation utility helps you build an on-card file system with direct calls to the M.O.S.T. Card. High level commands are sent through the Winplex[®] API to the reader that comes with the Smart Toolz Kit. Together, M.O.S.T Toolz[™] and the M.O.S.T. Card Family enable programmers to create a smart card-based transaction system

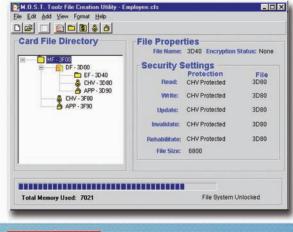
that updates and secures files while setting a variety of defensive measures to protect user ID, card access and file information.

The Winplex[®] API is the only smart card middleware on the market that can enable system design with support for multiple card types (both memory and microprocessor). Multiple reader types (e.g. Serial, USB, PCMIA, Keyboard Wedge and Magnetic Stripe) are supported as well as multiple readers on the same PC. This is all accomplished with the same command set. The API supports AES, DES and TDEA encryption and the SHA-1 authentication algorithms.

CardLogix gives you the power to deliver dozens of your products and services on a single card, allowing for fast system design and easy updating without the need for card reissuance.

Features

- Enables full ISO 7816-2, -3, and -4 card features
- Supports Windows Vista, XP, 2000, and NT
- Fully scalable, supporting a large variety of CardLogix Microprocessor Smart Cards
- Includes the Winplex[®] API





The World's Most Complete Smart Card Application Development Kit

Smart Toolz[®] is a comprehensive suite of software and hardware components that includes everything you need to develop contact and contactless memory smart card applications. The toolkit features the CardAppz[®] software, enabling marketing professionals to fully demonstrate card capabilities within a completely configurable card database and system. Also included is the Card Configuration Utility, which allows designers to configure card parameters, load card data, and communicate with cards through the supplied Winplex[®] middleware.



Smart Toolz™ Includes

Five different Contact Memory Smart Cards Five different Contactless Memory Smart Cards Dual-Interface USB (contact & contactless) reader/writer Winplex® middleware, with programming examples for C++, .NET, and Visual Basic Card Configuration Utility software Demo reader configuration utility software CardAppz® software System Features Fastest application development tools available Complete toolset—no additional software necessary Wide range of reader choices, pre- and post-design Enhanced data security through the Card Configuration Utility software and Winplex middleware Robust, customizable card application demonstration software using supplied templates Full support for MIFARE class cards



ICAOPack

Standards-Compliant Biometrics Software for e-Passport Solutions

ICAOPack is a software development kit that provides conformance with the new ICAO LDS and authentication standards as well as ISO/IEC biometrics standards.

ICAOPack is a flexible API and utility set designed to read, write, validate and view standards-compliant biometric image and template data. ICAOPack ensures that data generated for storage can be read by other systems, or similarly, that a system can read the data from any standards-compliant passport.

ICAOPack's Smart Card Library performs reading the contactless e-Passport chip in compliance with PC/SC.

ICAOPack's Security Library provides comprehensive support for Extended Access Control (EAC), Basic Access Control (BAC), Passive Authentication, and Active Authentication.

ICAOPack includes JPEG2000, JPEG, and WSQ1000 software for compression and decompression of biometric images, as well as quality scoring for fingerprint images. This advanced algorithm generates a score for a fingerprint image to help operators use only fingerprint images that are useful.

Card

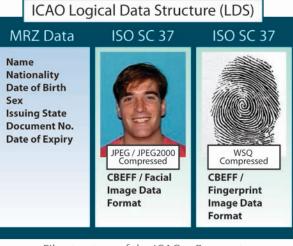
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ICAOPack Highlights

- SDK to read, write, edit, validate ISO-SC37/ICAO-LDS files
- Support for Extended Access Control (EAC) and Basic Access Control (BAC)
- Support for Active Authentication and Passive Authentication
- Aware JPEG2000 compression (FBI-compliant) for facial, iris, signature images
- WSWSQ1000 compression (FBI-compliant) for fingerprint images
- JPEG compression software
- Aware QualityCheck fingerprint image quality scoring API

Features and Functionality

- Software development kit includes example programs and documentation
- Easy to use and understand
- Programmable in C, C++, and Java
- Supports multiple facial, finger images, finger minutiae, and iris data sets
- Provides CBEFF, ISO/IEC SC 37, ICAO LDS file packing, unpacking, and reformatting
- CBEFF, ISO/IEC SC 37, ICAO LDS file content verification
- Supports extended access control, basic access control, active authentication, and passive authentication
- Ensures file structure and integrity
- Performs PC/SC compliant contactless
 e-passport chip reading
- Includes WSQ, JPEG2000, and JPEG compression
- Includes Aware QualityCheck API

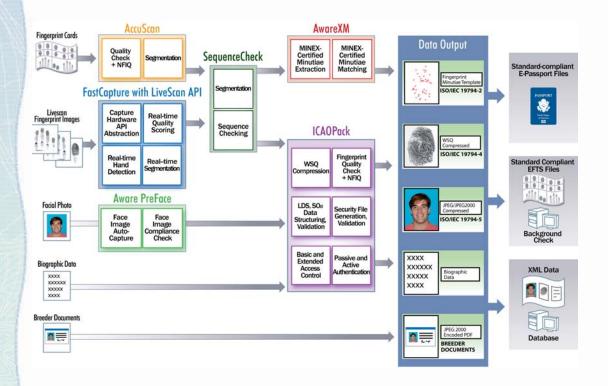


File structure of the ICAO e-Passport



Passport for Credential Components Tools

ICAOPack







Passport for Credential Components Tools



GIERS is a citizen identity enrollment and processing solution that provides a robust set of software tools that enable organizations to implement a comprehensive citizen identification enrollment program that meets their current needs securely and efficiently with the flexibility of expansion in the future. In addition to the basic components of information collection and data entry either through reading of barcodes or smartcards or manual entry and photo capture, GIERS provides a user-selectable set of biometrics and image capture tools that meet rigid international standards for interoperability. Face, fingerprint, and iris images may be collected and compared to those stored in the enrollment database to ensure each citizen is enrolled only once. Additionally, images of the signature and all required biographic information are enrolled as part of the individuals' comprehensive identification record. The user friendly interface enables importing and enrollment of precollected images of the individual and for images from multiple watch lists as part of the enrollment to expedite the process and ensure persons of interest are detected. Information and images can be exporeted easily to exnternal systems following interoperability standards.

In addition to the GIERS software, Corvus offers a complete line of hardware components to support all aspects of the enrollment and verification process.

Applications

Modular design enables GIERS to meet any government's citizen identity enrollment and registry requirements.

Passports and Visas

- Full compliance with all ICAO specifications
- Enhances border security by verifying traveler identification and supports watch list searches

National ID Programs

- Provides a unique, verifiable, and secure identification enrollment for each citizen
- Reduces identity fraud

Voter Registration Programs

- · Expedites voter identity verification
- Eliminates voter fraud

Law Enforcement

- Provides a secure, verifiable Driver License verification using biometrics
- Provides AFIS platform with photos for police reference
- Enables efficient inmate tracking using biometrics
- · Verifies the identity and authorization of a citizen to purchase and possess firearms







GIERS Government Identity Enrollment and Registry Solution

Features

- Cost-effective and powerful identity solution providing state-of-the-art enrollment of citizens for their biometric and biographic information
- · Easy to use graphical interface
- Modular software components that are easily configured to meet client requirements
- · Biometric enrollment of face, fingerprint, iris, and signature images from live or imported images
- · Biometric matching of face, fingerprint, and iris
- Biographic enrollment of all required citizen information
- · Scanning of supporting identification documents and barcodes
- · Automated enrollment of barcode and smart card information as well as GPS location of enrollment
- · Supports sending and receiving of standards compliant EFTS and EBTS files
- Supports Windows XP and Vista platforms
- · Supports stand alone or network configurations with fixed or mobile computing platforms
- Interoperable with other standards-compliant solutions

Standards Compliance

- ICAO 9303 MRID Parts 1, 2, and 3
- ISO/IEC 19794-4 Fingerprint
- ISO/IEC 19794-5 Face
- ISO/IEC 19794-6 Iris, ISO 8601:2004
- NCIC
- EFTS 7.1/EBTS 1.2
- ANSI/NIST
- ITL 1-2000
- ITL 1-2007
- ITL 2-2008
- WSQ

Hardware Component Options

Carrying Case

- Light weight, high impact
- Water, dust, and crush proof

Laptop

- Intel Atom 1.6 GHz processor
- 2 GB RAM
- 40 GB Hard Drive
- 2 USB 2.0 with powered USB Hub 8-port
- Ethernet, wired and wireless

Signature Pad

- Forensic Quality Signature data capture
- 350+ points per second
- 410 true points per inch







GIERS Government Identity Enrollment and Registry Solution

Integrated Face and Iris Camera

- High resolution (3 MP) CMOS sensor for face Integrated flash
- CMOS Sensor with VGA resolution for iris capture
- Multi-wavelength Near-IR illumination for iris imaging
- Intelligent distance sensing
- Tricolor RGB LED indicators

Fingerprint Scanner

- Compact and light-weight
- Auto-capture with image capture and quality feedback
- FBI Certified for Type 14 civilian flats and Type 4 criminal ten-print rolls
- Meets NIST EFTS 7.1 and EBTS 1.2 standards
- 500 DPI Optical Livescan
- 4800x4800 DPI Flatbed Scanner
- 48-bit color / 16-bit grayscale

Printer/Scanner Combo

- Copier specs same as above
- Printer 2400 DPI color

Barcode Reader

- CCD Scanner 2000+ pixels
- 660 nm LED
- 50 scans/sec
- TTL output

Smart Card Reader/Writer

Supports ISO 7816 / ISO 14443 A and B





SmartACT Credential Management

SmartACT is efficient, quick, highly flexible and an easy-to use innovative Credential Management system for companies and organizations of any size with a special demand for different levels of security requirements and complex integrations. It allows companies, enterprises, government agencies, educational and other organizations to easily enroll, issue and effortlessly manage end-to-end lifecycle of identities and credentials.

The powerful web-based system provides support for e-Passports, civil IDs and smart cards, digital certificates and biometrics. Different security levels for credentials



and system access with issuance and management roles, policies, and technologies ensure that only the right person has been issued the right ID.

IDExpert[®] SmartACT allows even complex integrations and enables you to consolidate diverse credentials with one central source for all identities, control and logging of all activities as well as automatic expiration procedures. It is truly customizable and very user-friendly due to its freely selectable skin for the graphical user interface. Via central ID management, it enables personalization and management of all credentials for different group of persons, secure credential issuance and identity lifecycle control with customizable layouts.

Standardized, Easy-to-Use ID Management

- · Management of all credentials throughout their lifecycle
- Powerful, multilingual, web-based system
- Pre-defined workflows
- Integrated certificate management
- Configurable role placing
- Central and local personalization of different credentials
- Supports e-Passports, civil IDs, smart cards, USB tokens, digital certificates and Biometrics
- Meets high security requirements
- Full capabilities for layout design, photo/signature/fingerprint acquisition and card printing
- Supports most common contact and contactless encoding methods
- Extensive PKI functions
- Simple operation
- Scalable, ideal for companies and organizations of any size

Features

- Intuitive multilingual user interface
- Multiuser capability, with a role-based authorization concept
- Management of master data for a variety of groups and organizations
- Convenient definition, personalization and management of different credentials
- PKI integrated certificate management
- Integrated Card Designer with all functions and tools to create custom designed card layouts quickly and easily





SmartACT Credential Management

Features (Continued)

- · Detailed encoding possibilities for RFID, contact and contactless chips, magnetic stripes, barcodes
- Mass personalization
- Professional image capture using different capture sources
- · Live image functionality with automatic image enhancement
- Online LDAP and ODBC interfaces
- Automatic or manual synchronization to external databases and X.500 directories
- Interfaces to external applications
- · Handling of temporary and permanent replacement credentials
- Receipt printing
- E-mail/alert-management
- Report generator

SmartACT Speci	fications
System Architecture	 Rich Internet J2EE/Java-based server application Microsoft SQL 2005-based database User-control via a browser or Java Web Start (JWS) application
Server Platforms	All Microsoft server platforms
Client Platforms	Microsoft Windows 2000, XP, Vista
Standards	 X.509 Certificates LDAP v3 HTTP/HTTPS Smart card support via PKCS#11
Supported Credentials	
Supported Encodings	
Certificate Management and PKI	Manager



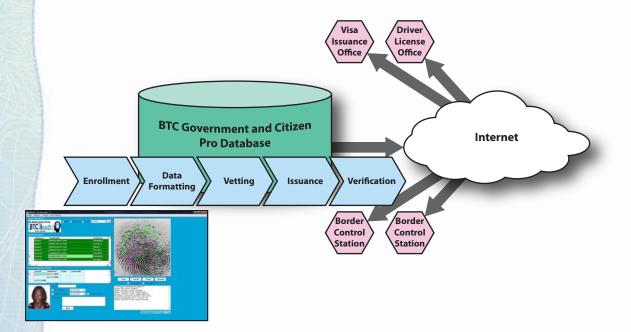


Citizen Pro Series

BTCSoft provides cloud-based, software-as-a-service solutions for governments to centrally manage their credentials. These solutions enable a government to biometrically capture and profile a person's information and centrally manage and cross-check it against Third Party AFIS and Watch Lists, managing the data into specific Credential Issuance. The Government-Pro, Citizen-Pro, and Visa-Pro programs enable a government to integrate many different types of credentials into a single, well-managed database. This improves the efficiency and security of managing citizen and visitor identity, especially in the accountability of revenue generation. The Pro Series unifies data for e-Passport, Visa, National ID, Driver License, Voting, and many other credentials.

Highlights

- · Manages multiple credentials across a single enterprise
- Provides lifecycle management of credentials
- Features tiered user access for system stability and security
- Offers Vetting Modules for AFIS and data comparison
- Works as a complete data management program, including formatting and scrubbing, fully compliant to ISO and ICAO standards
- · Provides a scalable credentialing solution that adapts to growth and change



Card

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Applications

Passport for Credential Components

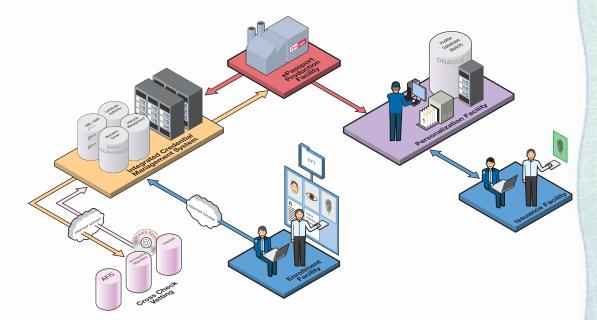
e-Passport System™

The SypherMedia[™] e-Passport System[™] is a complete end-to-end high security architecture for IC based e-Passports. The SypherMedia e-Passport System architecture provides a modular solution that scales to the Systems Integrator's requirements. This flexible and modular design allows for high availability, reliability and expandability while maintaining low operational costs.

The following provides a brief description of the roles and responsibilities involved with each subsystem of SMI's e-Passport System:

The Integrated Credential Management System is responsible for the following:

- Management of the Database Subsystems
 - Interface to Live Data Capture
 - Key Generation
 - Communications Subsystem
 - Data Import & Data Conversion Subsystem
 - Key Management Subsystem





Passport for Credential Components Data Management



e-Passport System™

The Production Management Subsystem is responsible for the following:

- Personalization Security Subsystem (PSS)
 - Quality Control
 - Audit, logging, Production Reporting, Reconciliation
 - Communications
 - Interface to Headend, Interface to Application Controller PC
 - Security protection
 - · Authentication to Headend, Security Access Module (SAM), Machine startup protocol, Printer registration
 - Job allocation, Job reallocation
 - Database Management
 - Key Management Subsystem
 - Life Cycle Management Subsystem
- Application Controller Subsystem
 - Interface to Printer
 - Security Access Module (SAM)
 - RFID communication
 - Authentication protocol
 - Communication protocols
 - Transport protocol, Command structure, Chip Protocol, Server
 - Key Management Subsystem
 - Life Cycle Management Subsystem

The Life Cycle Management Subsystem is responsible for the following:

- Manufacturing status
- Chip, inlay, book
- Production status
- e-Passport Generation
- Secure loading of data into the chip
- Headend reporting
- Links to key management system
- Storage of master database
- Border control
 - Document usage

The Key Management Subsystem is responsible for the following:

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- Secure key generation
- Secure key distribution
- Secure key storage
- Secure key programming



Passport for Credential Components

Data Management

Securion Card Printer

Badges That Secure Your Ideas!



Printing and Laminating Solution for Highly Secure Badges

The Securion is a one-stop solution for personalizing and laminating secure badges in a decentralized way. The printer seamlessly scales to meet growing concerns about security and data forgery, while greatly extending the lifespan of any card. The printer offers dual-sided operations on both the color-printing module and the lamination station. The

badge is first processed through graphical and electrical personalization. Then, a protection film, in the format of a varnish or a patch, is applied by a hot roller over the full card surface. Printing, encoding and laminating a secure badge are carried out in a single pass.

Top Quality Technology at An Affordable Price

Securion's technology is unique: PVC cards are laminated with no damage or distortion as a result.

This solution provides an attractive cost per card, greatly extends the lifespan of cards and offers foolproof security. Securion also supports the composite cards required for advanced and complex applications such as driver's licenses.

New and Highly Secured Lamination Films

To cater to higher requirements in card security, Evolis offers an extended range of films, from basic varnish protection to patches with embedded holograms for maximum security.

Applications

Securion personalizes and issues durable, tamperproof ID cards:

- ID cards
- Driver's licenses
- Health insurance cards
- Access control badges

Benefits

• Secure badges that last

- Securion's next-generation lamination station applies a varnish or patch-based protection film, and also manages holograms whenever required. Securion provides premium protection for badges, when it comes to security and durability.
- Stunning graphics
 - Securion comes with the leading dual-sided and color printing module in the market for an optimum print quality.





Benefits (Continued)

- Versatile encoding options
 - Securion supports advanced encoding options that can all be combined to cater to all encoding requirements, including the most sophisticated ones.
- Highly secure operation
 - Securion deploys additional layers of security to guarantee safe operation: a central locking system that
 prevents access to consumables (cards and ribbons), a password-based access to the machine and a slot
 for a Kensington[®] anti-theft system.

Evolis Securion Specifications

General	
Specifications	
	USB & Ethernet TCP/IP connection
	16 MB RAM allowing two card storage devices (front & back)
	Flip-over station for dual-sided printing or laminating
	Detachable feeder with a capacity of 100 cards (0.76 mm or 30 mil)
	Output hopper with a capacity of 100 cards (0.76 mm or 30 mil)
	Reject box for 15 cards (0.76 mm or 30 mil)
	Laminate film loading cassette
	Two-line LCD display and a status LED
	Locking system to secure access to blank cards, ribbons, films and rejected cards Support for a Kanzington® locking system
	 Support for a Kensington[®] locking system RoHS compliant
Print Mode	· · · · · · · · · · · · · · · · · · ·
	Enhanced color management system for top quality pictures
	Edge-to-edge printing
	Dual-sided printing
Lamination Mode	
	Dual-sided lamination
	Speed range: 2 mm/s to 18 mm/s (0.08 inch/s to 0.71 inch/s)
	Temperature range: 100° C to 180° C (212° F to 356° F)
Encoding Options	Encoding options (can be combined):
& Accessories	Magnetic stripe encoder ISO 7811 HiCo/LoCo or JIS2
	Smart contact station – ISO 7816-2
	 Smart contact station and encoding unit – PC/SC, EMV 2000-1
	Contactless encoding unit – ISO 14443A, B, ISO 15693, MIFARE, DesFire, HID
	iCLASS
	Other types upon request
	100-card additional feeder: red, blue, green
Ribbon Types for	 2-panel KO black monochrome ribbon – 500 cards/roll
the Printer Module	
	 6-panel YMCKO-K color ribbon – 200 cards/roll
	 Half-panel YMCKO color ribbon – 400 cards/roll
	Monochrome ribbons – 1,000 cards/roll (black, red, green, blue, white, gold and
	silver)

CardLogix



Issuance

Passport for Credential Components

Securion Card Printer

Evolis Securion	Specifications
Film Types for the Lamination Module	 Generic thin holographic overlay film, full card – 350 and 400 cards/roll Clear patch 1 mil film – 200 cards/roll Clear patch 0.5 mil film – 200 cards/roll Alternate patch Front/ Back 0.5 and 1.0 mil – 100 cards/roll Special patches and thin overlay films upon request: holograms, security inks, custom cutting
Printing and Laminating Speed	 YMCK-K, 1.0 mil patch single-side – 85 to 105 cards/hour YMCK, 1.0 mil patch single-side – 95 to 120 cards/hour
Card Format	 ISO CR-80 – ISO 7810 (53.98 mm x 85.60 mm – 3.375" x 2.125")
Card Type	 All PVC, Composite PVC cards Lamination on regular PVC card, recommended with 0.5 mil patch or thin varnish
Card Thickness	 From 0.25 mm (10 mil) to 1 mm (40 mil) No lamination under 0.50 mm (20 mil), recommended from 0.76 mm (30 mil min.)
Resident Fonts	 Arial 100, Arial bold 100 Barcode – Code 39, 2/5 interleaved, Code 128, EAN13
Supported Platforms	 Windows[™] XP and Vista 32 & 64 bits Other Windows[™] versions, Macintosh[™] OS X, Linux upon request
Supplied Software	 eMedia Card Designer Software for designing and editing badges (30-day trial version): Compatible with Windows[™] XP, Server 2003 and Vista 32 & 64 bits Connection to Microsoft[™] Excel databases
Interface	USB and Ethernet TCP/IP (USB cable supplied)
Printer Form Factor	 Without card hopper: 274.64 mm (10.81") (H) x 562.70 mm (22.15") (L) x 262.16 mm (10.32") (W) With card hopper: 274.64 mm (10.81") (H) x 658.20 mm (25.91") (L) x 262.16 mm (10.32") (W)
Printer Weight	• 15.4 Kg (33.15 lbs)
Power Supply	 Power supply: 100-240 V AC, 50-60 Hz, 2 A Printer: 24 V DC, 6.25 A
Environmental Conditions	 Min/Max operating temperature: 15° / 30° C (59° / 86° F) Humidity: 20% to 65% non-condensing Min/Max storage temperature: -5° / +70° C (23° / 158° F) Storage humidity: 20% to 70% non-condensing Operating ventilation: free air
Warranty	 2 years (printer, lamination module, print head and lamination hot roller), or 100,000 inserted cards, whichever comes first¹ ¹ Subject to observance of specific conditions and use of Evolis genuine consumables.

CardLogix

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Passport Laser Personalization System

The Mühlbauer IDENTIFIER 54 is a rugged, portable solution for passport personalization in both centralized and field locations. This Desktop Laser Personalization System is designed for e-Passport production on issuance and Express e-Passport. It performs laser engraving, contactless chip encoding, and optical and electric data inspection and verification. Up to 60 laser engraved passports and other documents based on the ID3 format can be produced per hour.

The ID 54 system is suitable as a decentralized personalization machine as well as a backup solution or as a low volume solution for test applications. The ID 54 does an effective and reliable job within various production surroundings, including the high security demands of ID applications.

Ideal Solution for Distributed Passport Issuance and Laboratory Tests

- Perfect engraving results by using vision system alignment
- Engraving of state-of-the-art security features
- IDENTIFIER 54 engraving results comparable to IDENTIFIER 540, IDENTIFIER 5000 and IDENTIFIER 5600
- Easy integration in existing environment due to efficient data management system
- Clear interface to data supply system and certification authority
- System access control (operator mode/service mode/password access, etc.)
- Reporting functionality to support system monitoring



XID 9330 Retransfer Printer

The double-sided XID 9330 Retransfer Printer is the most powerful and versatile printer in its class. The printer combines maximum hourly output of printed cards with a wide range of encoding and highly secure lamination options. The printer provides utmost security due to security locks and security password. It is the ideal and flexible printer for secure and reliable mass production in multinational corporations, card service centers, and government agencies.

The XID 9330 prints on a variety of card materials including long-lasting, durable non-PVC cards such as ABS, PET, and Polycarbonate. The lockable, spacious card drawer stores up to 300 blank cards to ensure an interruption-free workflow.

With Advanced Intelligent Printer Management (IPM) up to seven printers can be connected to one server for high capacity production of up to 840 cards per hour. Due to the parallel workflow, an unrivalled level of system availability is achieved. Print jobs and the accompanying encoding data are routed securely to the correct printer, even in a distributed network environment.

Diverse security features such as dye-sublimation UV ink ribbon for invisible security printing, IPSEC for encrypted data transfer through networks, and Security Erase of black data on used supplies help to secure the environment and cards from counterfeiting and to avoid misuse of personal information.

The XID 9330 is prepared for any type and combination of encoding as well as lamination for demanding applications.

Features

- Advanced Intelligent Printer Management (IPM)
- Lockable housing for utmost security
- Optional lockable card stacker for 100 cards
- Printer Password Protection
- · Printer Look-Up Tables and pre-selection of 5 different card type profiles
- Automatic ribbon detection and low ribbon warning
- Auto cleaning notification
- Admin Center and Media Status Monitor to manage and handle printer settings from PC
- Built-in operating panel with LCD for convenient set-up and operation



XID 9330 Retransfer Printer shown with optional LCP 9000 Laser Engraver and ILM Laminator





XID 9330 Retransfer Printer 🖗

Features (Continued)

- Print head has no contact with card, minimizing risk of damage
- Removable cleaning roller unit for long-term usage and reliable, steady card cleaning
- Field upgradable encoder options
- Inline operation of printing, encoding and lamination reduces total personalization time
- Intuitive, in-house developed printer driver for utmost user convenience and productivity
- USB 2.0 and Ethernet LAN interface for easy connection with PC or network
- IPSEC for encrypted data transfer through network

Options

- Magnetic stripe encoding (HiCo and LoCo)
- Contact and contactless chip encoding (ISO 14443 A and B, MIFARE, DESFire, Legic, etc.)
- A variety of chip encoder plug-ins for Advanced CEF
- Prepared for optional modules such as CSM 2 Credential
- Input scanning
- Inline lamination (single- and double-sided, with ILM or ILM-DS)

XID 9330 Specifications Print Method · Dye-sublimation retransfer Single- and double-sided over-the-edge retransfer printing (full bleed) Print Mode Print Speed From up to 120 to 840 cards per hour (single-sided) using Advanced IPM; more under Ethernet (in preparation) **Print Resolution** 300 DPI Printhead Lifetime warranty (using EDIsecure® materials) PVC, Composite PVC, ABS, PET, and Polycarbonate Cards of ISO ID-1/CR-80 size Card Types **Card Thickness** 0.25 – 2.0* mm without encoder 0.25 – 1.4 mm with encoder 300 cards (0.76 mm) Input Hopper 100 cards (0.76 mm) Output Hopper USB 2.0 and Ethernet Interface Windows 2000, Windows XP, Windows Vista, Windows 7 **OS Support** Printer 343 x 347 x 381 mm (WxDxH) **Dimensions** Weight 22 kg 100/120 V and 220/240 V, 50/60 Hz - FCC, CE, UL, GOST-R, and CCC approved **Power Supply** • 15°C to 30°C, 35% to 70% noncondensing humidity Operating **Environment**

digital identification solutions



Passport for Credential Components Credentials

Fingerprint Scanner Card Reader 250 MC



- Combination fingerprint and smart card reader for two-factor authentication
- Design approved by US government specifications for HSPD-12 and PIV applications
- Secure architecture no sensitive or personal information leaves the device or card
- Optimized for Precise Match-on-Card[™]

The Precise 250 MC is a secure and robust combined fingerprint and smart card reader, perfectly suited for government users as well as public usage areas. Supporting the ANSI 378 template standard, the Precise 250 MC is designed to fully comply with US governmental requirements for HSPD-12 and PIV.

Combining fingerprint recognition and smart card technologies, you get the best of two authentication methods: Match-on-Card. With the well-proven and widely deployed Precise Match-on-Card[™] technology, Precise Biometrics is a recognized world-leader in this field. Precise Match-on-Card[™] stores and matches the fingerprint information in the secure environment of the card itself, and thereby eliminates the need for processing sensitive information in PCs and databases, which could be considered weak links in the security chain and may risk user integrity.

The Precise 250 MC used in conjunction with Precise Match-on-Card[™] technology allows Precise Biometrics and CardLogix to offer increased security and preserved user privacy in any authentication solution.

With a robust and user-friendly design, the Precise 250 MC is durable and ideal for high transaction volumes and public usage areas.





Fingerprint Scanner Card Reader 250 MC «

Product Features

- Uses the strengths of Precise BioMatch[™] fingerprint matching technology
- Interoperability through supporting ANSI 378 template standard
- Optimized for Precise Match-on-Card[™]
- Two-factor authentication, combining smart cards and fingerprints
- User-friendly and durable design for high-transaction volumes
- Firmware upgradeable for future smart card types and capability enhancements
- High-speed smart card operation

Specifications

General

- Power consumption: Standby: 0.5 mA
- Normal: 50 mA
- Max: 220 mA
- Operating temperature range: 0-50° C (32-120° F)
- USB 1.1/2.0 compliant
- FCC (Part 15 Class B) and CE certified
- Microsoft WHQL approved
- UL 1950 certified
- ISO 9000/1 and ISO 14001 production certified
- RoHS/WEEE compliant
- USB Chip/Smart Card Interface Devices (USB CCID) compliant
- Drivers for Windows 2000, XP, and Vista

Biometric Reader

- Complies with HSPD-12 and PIV specifications (Single Fingerprint Capture Devices)
- Image processing is performed within the device or smart card
- Large area (12.8 x 18.0 mm / approx. 1/2 x 3/4 in) silicon sensor for maximum ease of use

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500 DPI sensor resolution - UPEK TCS1

Smart Card Reader

- Smart card reader
- ISO/IEC 7816 T=0 and T=1, 3V and 5V cards supported
- Support for up to 8 MHz smart cards
- Up to 250 kbit/s communication speed





Secure Contact and Contactless Reader

The SDI010's dual interface reader combines contact and contactless interface capabilities to support the growing demand for badging and other personal identification applications utilizing contactless smart cards and e-Passports. The combination of technologies in one reader makes it possible to integrate a number of conventional single-purpose card applications into one card. For example, the same card and type of reader might be used for building access (attaching the card to the reader) and network access (inserting the card into the reader and entering a password). The SDI010 is widely used for applications like public transport, Badging Stations, e-Banking, or checking the balance of your e-Purse, as well as for e-Passport personalization and verification.

SDI010 Benefits

The SDI010 is based on the 13.56 MHz radio frequency (RF technology) and works with all ISO 14443 type A and B compliant contactless smart cards from CardLogix, NXP, Infineon, Atmel, Sharp, ST Microelectronics, Samsung, and others.

- Full USB support with all relevant security standards
- On-board flash provides seamless secure firmware upgrades in the field
- PC/SC drivers supported for contact and contactless interfaces
- Combines contact and contactless smart card in a single product
- Fully tested and compliant with e-Passports and all major smart cards on the market
- Seamless abstraction of contactless card as T=1 so that existing applications designed for contact cards can
 work without any changes
- Optionally, an additional clip can be delivered for securing badge holders or passports onto the reader









SDI010 Specifica	tions
Host Interface	 Full speed USB 2.0 (12 Mbps) USB bus powered device CCID compliant
Smart Card Interface	 T=0, T=1 protocol support Communication speed up to 344,105 bps (PPS, FI parameter) Frequency up to 12 MHz (PPS, DI parameter) Supports ISO 7816 Class A and AB smart cards Contactless Interface Supports ISO 14443 A and B (13.56 MHz) smart cards Compliant with ISO 14443-1 through 14443-4 1 cm operating distance Communication speed up to 848 kbit/s
Smart Card Connector	 8 sliding contacts (ISO locations) 100,000 insertions
Human Interface	Tri-color LED
Cable	1.5 m long with USB type A connector
Power	USB bus
Dimensions	• 118 x 78 x 22 mm
Weight	• 128 g
Operating Temperature	• 0 to 50 °C
Operating Systems	 Windows Vista, XP, Server 2003, 2000, Me, 98, CE Windows Vista, XP, Server 2003 (64-bit) MacOS Linux Solaris (on request)
API	PC/SCCT-API (through wrapper on top of PC/SC)
Functional Approvals	 VCCI FCC Class B part 15 and FCC Class C, cULus, CE USB Microsoft WHQL 2000, XP, Server 2003
Environmental Approvals	• RoHS • WEEE

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Passport for Credential Components Verification **Handheld Biometric Terminals**

Rugged, Compact, GSA-approved model ideal for federal, state, and local applications requiring instant ID authentication and biometric processing.

Applications

For on-the-spot identity verification where product dependability is essential: Government/Military.

- Authenticates ICAO, PIV, TWIC, CAC and other issued credentials, delivering instant ID verification in mission critical environment such as ports and military bases. Law Enforcement/Corrections
- Reads and validates driver's licenses, providing an AFIS platform for police.
- Replaces paper-based inmate tracking and census programs with biometric authentication. First Responder/Emergency Evacuation
- Verifies first responder cards of officials responding to emergency disasters.
- Account for individuals leaving disaster areas that are assembling at remote mustering sites. Border Patrol
 Protects borders by reading border crossing credentials and government issued documents, supporting US-VISIT and NEXUS Border Crossing programs.

A handheld biometric terminal designed specifically for mission critical ID verification programs. The unit is ergonomically designed to be held comfortably in the user's hand and can be configured to operate for up to 16 hours of battery life. The unit reads contact/contactless smart cards, magnetic stripes, and 2-D bar codes.

Offering a variety of expansion capabilities, it can be connected to third-party databases via USB, CF, serial, Wi-Fi, Bluetooth[®], or cellular technologies. These support applications such as memory expansion and global communications.









ExpressPoll®-5000

Automated Voter Verification Solution

By leveraging proven, advanced technology, an automated solution connects the precinct to the voter registration database and is scalable to meet a wide variety of jurisdiction needs. With more than 15,000 units installed, ExpressPoll[®]-5000 is THE complete, dependable solution.

The lightweight ExpressPoll-5000 can store registered voter information for a precinct, a district or the entire jurisdiction. A poll worker can enter various information onto the large, easy-to-read touch screen to verify a voter is registered.



The ExpressPoll-5000 is intuitive and simple to use, and can add value and convenience to your voting process.

Key Features and Benefits



• ExpressPoll voter validation is 50-65% faster than using a paper poll book

- Voter lines move faster
- Increased voter satisfaction

• Voters in incorrect polling locations are easily directed to the correct voting site as the entire county voter registration database is on each ExpressPoll-5000 unit

• Dramatically reduced call rate to election central from precinct locations (up to an 80% reduction in Help Desk calls experienced)

• Significant reduction in the number of Provisional Ballot affidavits that must be reviewed

• A road map of the voter's correct voting site is displayed and the address of the site can be printed and handed to the voter

Automated, accurate retrieval of post-election voter history

 Voter history data upload completed in hours instead of days or weeks

Significant reduction of headcount required for this task

• Voter history upload into the voter registration system is accurate, eliminating the need to re-scan paper poll books when numbers do not balance

- Existing staff can be re-directed to accomplish other tasks
- Voting Centers- Multiple Precincts on Each ExpressPoll unit
- Excellent solution for early voting sites

 ExpressPoll units in multiple locations can be seamlessly networked; so all Express Poll units are updated once a voter is validated

- Facilitates reduction of polling locations
- Voters can go to any line as all voters are contained on each ExpressPoll-5000 unit. Eliminates the need for A-K and L-Z voter lines
- Eliminates Paper Poll Book printing and coordination costs







ExpressPoll®-5000

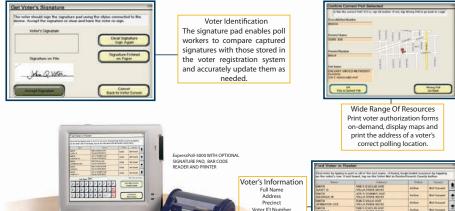
- Ongoing cost savings associated with each election
- Data Security Provides Peace of Mind •
 - · Data and Smart Cards are encrypted to ensure data is securely protected from tampering

ExpressPoll-5000: The Automated Voter Verification Solution

- Quickly accesses voter data making the overall check-in process fast, accurate and efficient
- Flexible design enables integration with:
 - ES&S' line of tabulation systems
 - ES&S' DIMSNeT power profile and mega profile voter registration systems
 - · Other election system technologies and voter registration systems

With ExpressPoll-5000 You Get

- Audit log file to automatically update voter history on Voter Registration System
- · Voter access card encoder
- Tablet-sized touch-screen device
- Large 10.5" touch-screen
- System running on Microsoft[®] Windows with SQLite database engine



Voter ID Nu





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Card Validator[™]

Instant Visual Card Validation

Designed as a frontline defense against fraudulent smart cards, the Card Validator[™] is an instant, easy and simple tool for verifying a smart card's authenticity. When placed on a smart card that is printed with hidden Card Validator graphics, the Validator lens reveals the images and confirms that the card is genuine.

The Card Validator and graphics cost just pennies per card and streamline an essential step in security for personnel



check-in, perimeter set-up, etc. This methodology is ideal for quickly checking large quantities of cards. The Card Validator does not require a card reader or terminal. After initial validation, the smart card can be electronically read for further authentication.

The palm-sized Card Validator is highly portable and durable. There has never been a quicker or easier means of preliminary card verification. The Card Validator and graphics are available on CardLogix Credentsys[™] and M.O.S.T. smart cards.

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Card Validator Benefits

- Can be custom printed
- Additional materials for program reinforcement
- Differentiates your project
- Ultra-low cost to benefit ratio



CardLogix Quality

CardLogix Corporation is absolutely committed to providing flawless products and services to our customers, in partnership with equally committed suppliers and authorized dealers.



- California C Corporation
- CA Resale SREAA 97-124323
- D&B No. 867418899
- SIC Codes 3577, 3089, 5162
- UNSPCSC Code 32101617
- Harmonized Code 8542.10.0000
- NAICS Codes 334119, 326199, 334418, 334519, 42261, 51421
- CAGE Code 1KV39
- Congressional District No. 47

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