Advanced Card Systems Ltd.
Card & Reader Technologies

APG8201
PINhandy 1

Technical Specifications

Subject to change without prior notice

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1.0. Introduction

As technology becomes more sophisticated, fraud-related incidents in banking sector becomes more prevalent. These occurrences generate billions of dollars worth of losses and bring distress among credit and debit cardholders. Certain security measures and systems are created specifically to protect cardholders from frauds, which makes the APG8201 PINhandy 1 a reliable tool to fight these occurrences.

What is APG8201 PINhandy 1?

APG8201 PINhandy 1 is a portable and low-cost and hand-held smart card device which supports PC-linked and standalone mode to perform various authentication applications. It is capable of managing One Time Passwords (OTP), Challenge-Response Authentication Codes, and Transaction Data Signing (PKI digital signatures) based on the security keys stored in the EMV cards.

How does APG8201 PINhandy 1 work?

The APG8201 PINhandy 1 uses a two-level authentication process which requires the cardholder to insert the EMV card into the device and enter a PIN using the built-in PIN-pad. APG8201 PINhandy 1 then generates a dynamic one-time password on the display screen which can be used to log-in before performing several transactions like online transactions, banking logons and telephone orders.

How is APG8201 PINhandy 1 secure?

APG8201 PINhandy is compliant with major banking, computing and safety standards such as MasterCard® Chip Authentication Program (CAP), MasterCard® Advanced Authentication for Chip (AA4C/PLA), VISA Dynamic Passcode Authentication (DPA) and EMV Level 1. It is specially designed to safeguard users from the emerging fraud attacks like Card-not-Present (CNP) fraud and emerging Man-in-the-Middle attacks. It also provides proof that a card is present during an OTP process.

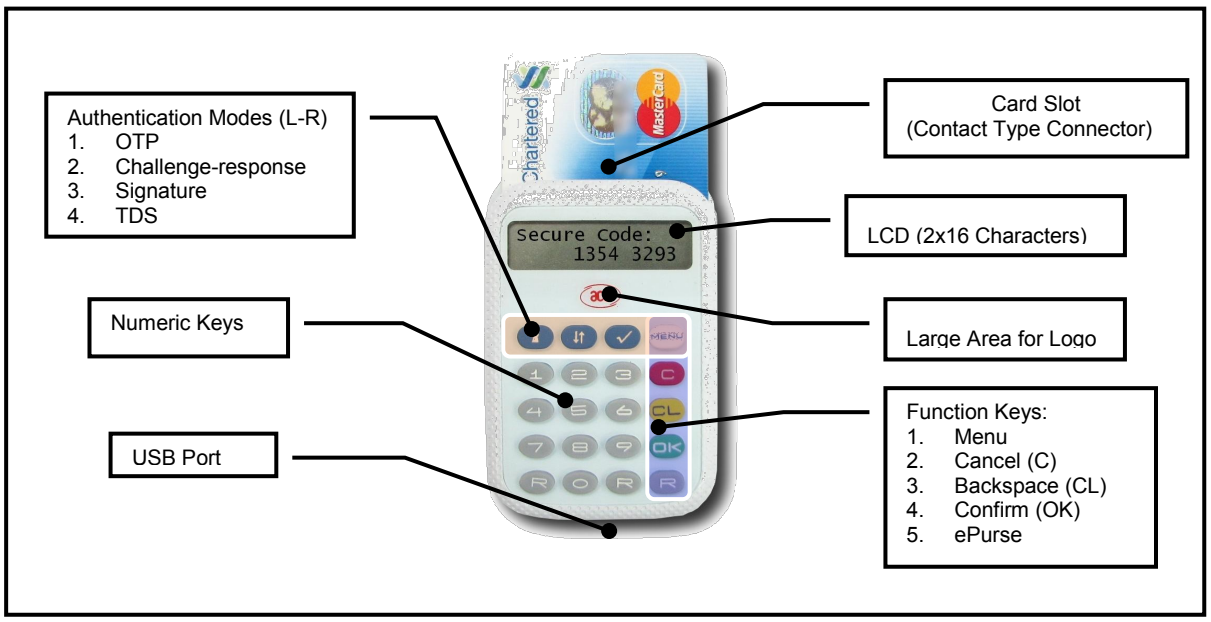
Likewise, APG8201 PINhandy 1 supports Secure PIN Entry (SPE), to assure safe PIN entry and PIN change while in PC-linked mode. The PIN is securely entered on the device rather than the vulnerable PC or workstation, hence eliminating the possibility of a Virus/Trojan getting hold of the PIN.

How can APG8201 PINhandy 1 help save money?

Banks can now distribute APG8201 PINhandy 1 most efficiently in bulk/volume to individual customers without the concern of handling sensitive data. More importantly, complicated device issuance or re-issuance strategy is no longer needed, hence the overall implementation cost is lowered. And since the APG8201 PINhandy 1 also works as a standalone device, no specialized programming is required.

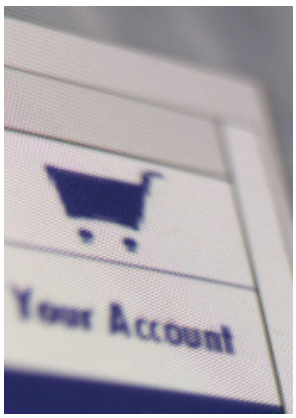
2.0. Features

- Handheld Device with Compact and Portable Design
- Supports OTP (One Time Password), Challenge-Response and Transaction Data Signing Modes
- PC-linked and Standalone Modes
- 2 CR2032 Batteries Powered for Standalone Mode
- Intelligent Battery Management or a Life Expectancy of 5 Years (depending on usage)
- USB Powered for PC-linked Mode
- USB 2.0 Full Speed (12 Mbps)
- Supports Full-size Microprocessor Cards (T=0, T=1 Protocols)
- Supports ISO-7816 Class A Cards
- Allows Semi-insertion of Cards
- Supports PPS (Protocols and Parameters Selection)
- Supports PC/SC 2.01 Secure PIN Entry (SPE)
- Key Symbol on LCD to Recognize SPE Mode
- Graphical LCD for Logos and Multiple-language Characters
- Monotone Buzzer
- Value-Added Calculator and ePurse Function
- Durable Tactile Keypad with 20 Silicon Rubber Keys
- Short Circuit Protection
- MasterCard® Chip Authentication Program (CAP)
- MasterCard® Advanced Authentication for Chip (AA4C/PLA)
- VISA Dynamic Passcode Authentication (DPA)
- EMV Level 1
- CE
- FCC
- RoHS
- Microsoft® WHQL
- CCID



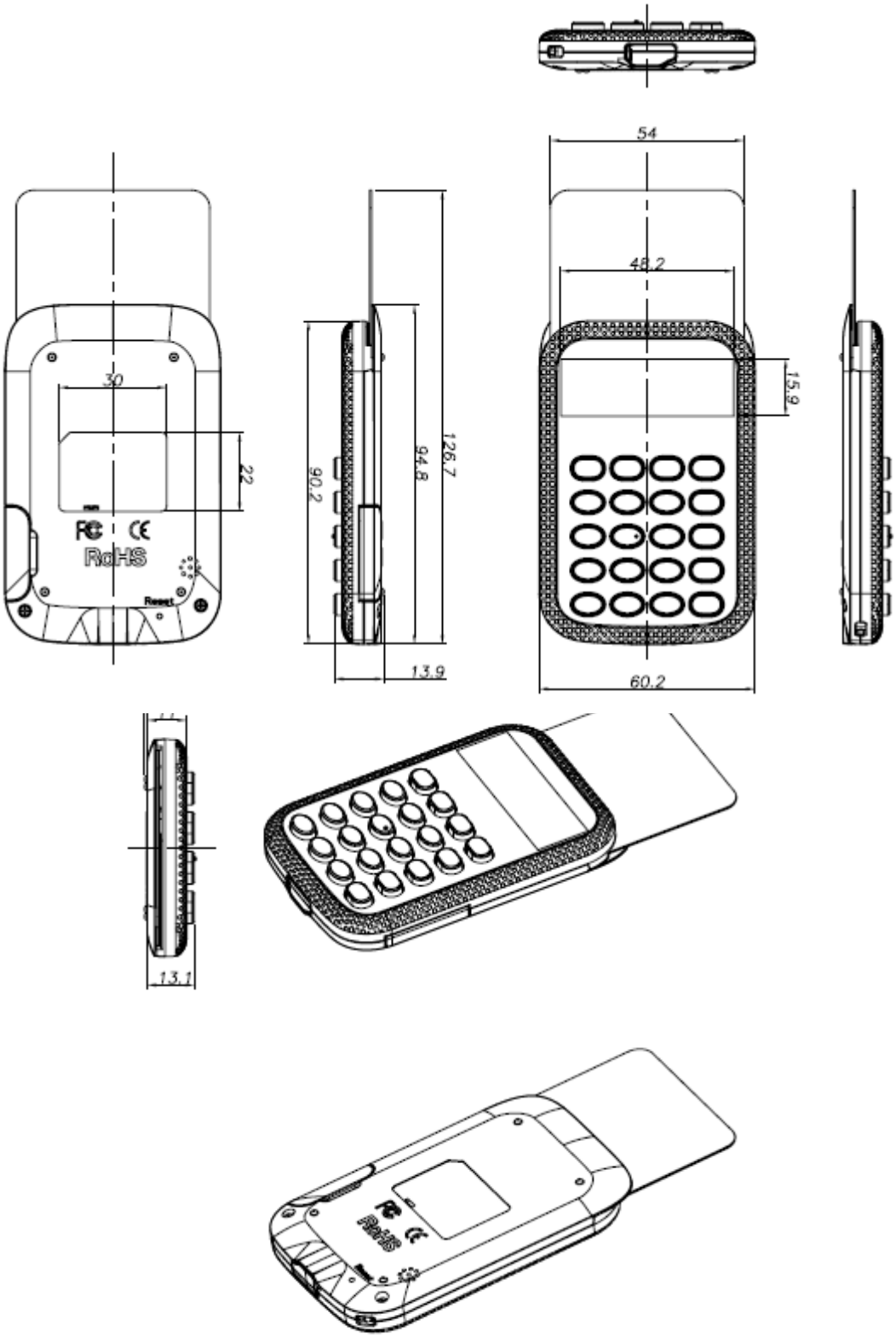
3.0. Typical Applications

- e-Banking and e-Payment
- Dynamic One-Time Password
- Remote Authentication
- Digital Signature





4.0. Technical Specifications



Power Supply

Supply Voltage.....Standalone Mode: 2 x CR2032 Batteries (Replaceable)
..... Connected Mode: USB

Universal Serial Bus Interface

Type ..... USB Full Speed, Four Lines: +5V, GND, D+ and D-
Power Source ..... USB Powered
Speed ..... 12 Mbps

Smart Card Interface

Standard ..... ISO 7816 Class A (5V), T=0 and T=1
Supply Current ..... Max. 50mA
Smart Card Read/Write Speed ..... 1743 – 250,000 bps
Short Circuit Protection ..... +5V / GND on All Pins
CLK Frequency ..... 2 MHz
Card Connector ..... Contact
Card Insertion Cycles ..... Min, 100,000

Human Interfaces

Keypad ..... 20 Keys
LCD Display ..... Graphical LCD for Logos and Multiple-language Characters
..... (1 line for 6 Chinese/16 alphanumeric characters, 128x24 pixels)
Buzzer ..... Monotone Buzzer

Physical Specifications

Case Color ..... White with Blue Cover
Dimensions ..... 95.00mm (L) x 60.00mm (W) x 11.00mm (H)
Weight ..... 49g (with Batteries)
Cable Length, Cord, Connector ..... 1.5 meters, Black, Detachable, and USB B

Operating Conditions

Temperature ..... 0°C to 50°C
Humidity ..... 10% to 90%, Non-condensing

Device Driver Operating System Support

For Connected Mode: Windows ® 98, ME, 2000, Server 2003, XP, Vista, Server 2008, Server 2008 R2, 7, Linux, Mac

Certifications/Compliance

MasterCard® CAP, MasterCard® AA4C/PLA, Visa DPA, EMV Level 1, CE, FCC, VCCI, CCID, RoHS, ISO 7816, PC/SC 2.01, Microsoft® 2000, Server 2003, XP, Vista, Server 2008, Server 2008 R2, 7

Other Features

Other Features ..... Built-in Calculator Function, ePurse