Advanced Card Systems Ltd.
Card & Reader Technologies

APG8205
Dynamic Password Generator

Technical Specifications

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1.0. Introduction

As technology becomes more and more sophisticated, fraud related incidents in the banking sector become more prevalent. These occurrences generate billions of dollars worth of losses and bring distress among credit and debit cardholders. In this regard, dynamic password technology offers end users a reliable tool that can be utilized to fight these occurrences. In line with this, ACS introduces the APG8205, a thin and slim handheld device with a modern design, designed for banking and e-payment solutions. The APG8205 design also takes into consideration the customer's preference on the look and feel of the device, with a responsive keypad and a clear LCD.

What is APG8205?
APG8205 is a portable handheld and low cost smart card device which operates on standalone mode to perform various authentication applications. It is capable of managing One Time Passwords, Challenge-response Authentication Codes, and Transaction Data Signing (PKI digital signatures) based on the security keys stored in the EMV cards.

How APG8205 works?
The APG8205 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. APG8205 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.

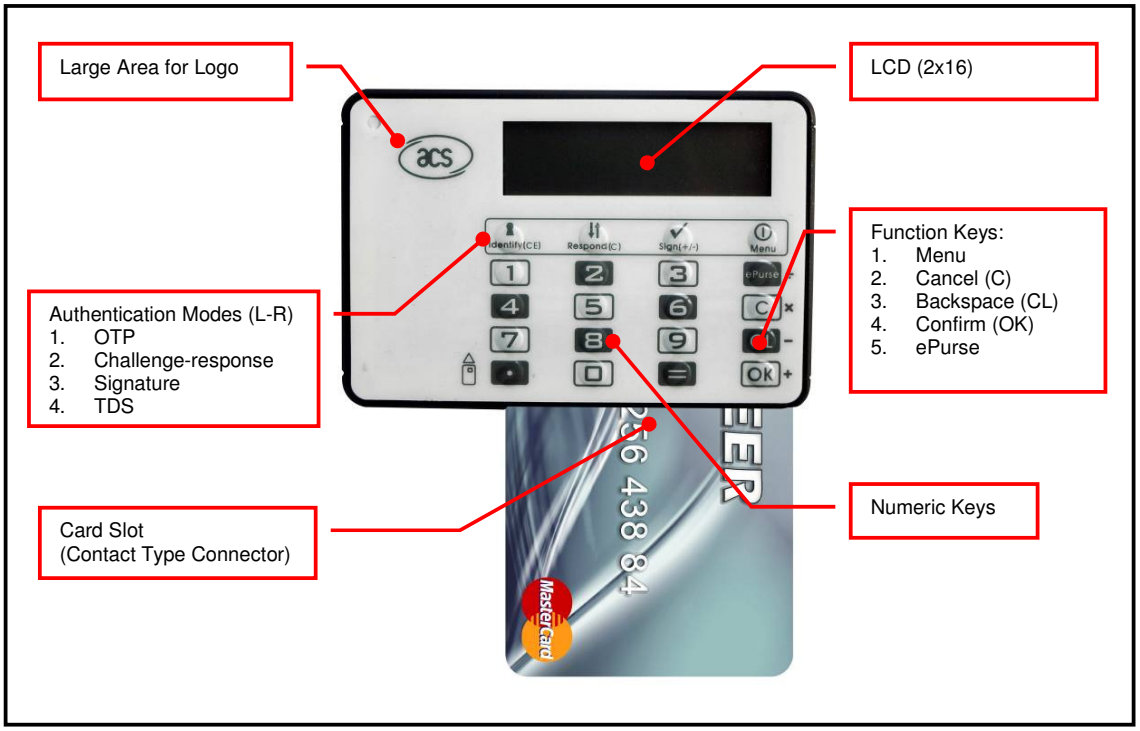
Why APG8205 is secure?
APG8205 is compliant with major banking, computing and safety standards such as Mastercard® Chip Authentication Program (CAP), Mastercard® Advanced Authentication for Chip (AA4C), VISA Dynamic Passcode Authentication (DPA) and EMV Level 1 Certification. It is specially designed 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.

Further, the APG8205 has no physical connection to a separate device like a PC. Thus, the unconnected mode of APG8205 makes it impossible for hackers to steal the sensitive information stored in the card.

How APG8205 can help you save money?
Banks can now distribute APG8205 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.

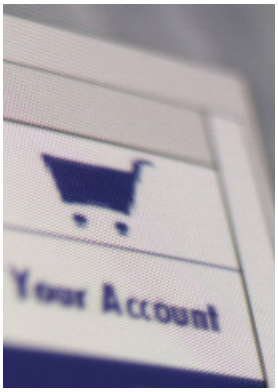
2.0. Features

- Handheld Device with Compact and Sleek Design
- Standalone Operation:
  - Supports OTP (One-time Password), Challenge-Response and Transaction Data Signing Modes
  - 2 CR2016 Batteries for Power
  - Intelligent Battery Management or a Life Expectancy of 5 years (depending on usage)
- Smart card reader:
  - Supports Full-sized Microprocessor Cards (T=0, T=1 Protocols)
  - Supports ISO-7816 Class A cards
  - Supports PPS (Protocol and Parameters Selection)
  - Allow semi-insertion of cards
  - Short Circuit Protection
- Built-in Peripherals:
  - Graphical LCD for Logos and Multiple-language Characters
  - Monotone Buzzer
  - Durable Tactile Keypad Membrane with 20 Keys
- Value-Added Calculator and ePurse Function
- Optical Sensor (on request)
- Compliant with the following standards:
  - MasterCard® Chip Authentication Program (CAP)
  - VISA Dynamic Passcode Authentication (DPA)
  - EMV Level 1
  - CE
  - FCC
  - RoHS



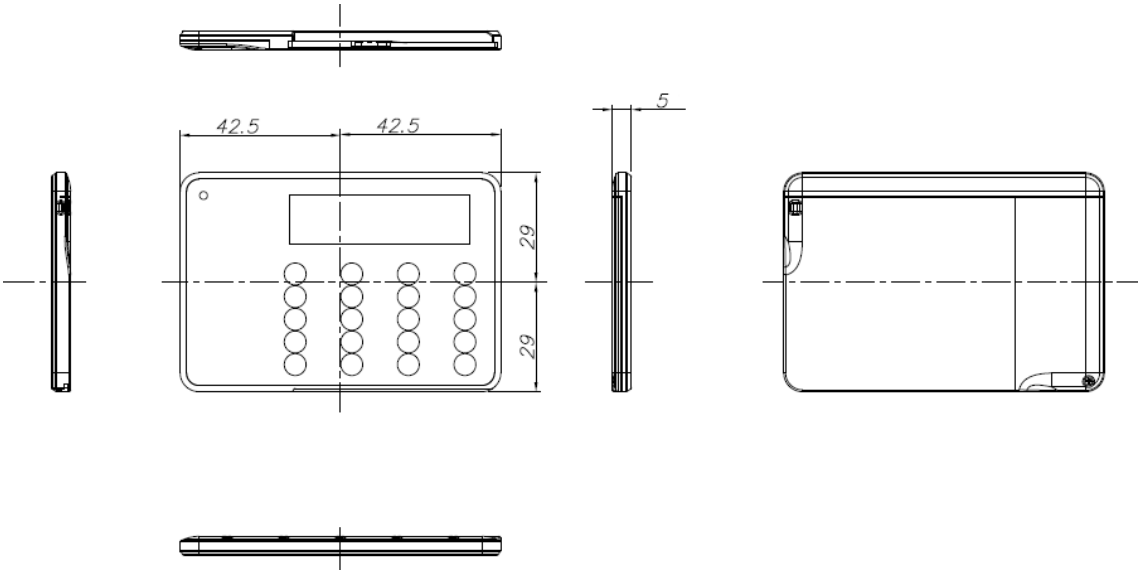
3.0. Typical Applications

- 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 CR2016 Batteries (Replaceable)
Supply Current ..... < 10mA

Smart Card Interface

Standard..... ISO 7816 Class A (5V), T=0 and T=1
Supply Current..... Max. 10mA
Smart Card Read / Write Speed ..... 9600 – 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
..... (2 x 16 alphanumeric characters)
Buzzer ..... Monotone
Optical Sensor ..... Light Optical Sensor (On Request)

Physical Specifications

Case Color ..... Gray and White
Dimensions..... 85.00mm (L) x 58.00mm (W) x 5.00mm (H)
Weight..... 27g (with Batteries)

Operating Conditions

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

Other Features

Built-in Calculator Functions, e-Purse

Compliance/Certifications

MasterCard® CAP, Visa DPA, EMV Level 1, CE, FCC, RoHS, ISO 7816

Other Features

Other Features ..... Built-in calculator function, ePurse