



Advanced Card Systems Ltd.
Card & Reader Technologies

APG8201-B2

Smart Card Reader with Pinpad

Technical Specifications v1.01





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1.0. Introduction

As technology becomes more sophisticated, fraud-related incidents in banking and identification sector becomes more prevalent. These occurrences generate billions of dollars worth of losses and bring distress among cardholders. Certain security measures and systems are created specifically to protect cardholders from frauds, which makes the APG8201-B2 a reliable tool to fight these occurrences.

The APG8201-B2 is a portable, low-cost, and hand-held smart card device which supports Secure PIN Entry (SPE) to assure safe PIN entry and PIN change while connected to a personal computer to perform various authentication applications. The PIN is securely entered on the device rather than the vulnerable personal computer or workstation, hence eliminating the possibility of a middleman attack in getting hold of the card PIN.





2.0. Features

- USB 2.0 Full Speed Interface
- Plug and Play – CCID support brings utmost mobility
- USB Type A Connector
- Smart Card Reader:
 - Supports full-sized microprocessor cards (T=0, T=1 Protocols)
 - Supports ISO 7816 Class A cards
 - Allows semi-insertion of cards
 - Short Circuit Protection
- Application Programming Interface:
 - Supports PC/SC
 - Supports SPE
 - Supports PPS (Protocols and Parameters Selection)
- Built-in Peripherals:
 - Dot Matrix LCD
 - LCD Resolution: 96 × 16 pixels
 - LCD Number of characters: 16 characters × 2 lines
 - Monotone buzzer
 - Durable tactile keypad with 20 silicone rubber keys
 - Key symbol on LCD to recognize SPE mode
- Supports Android™ 3.1 and later¹
- Compliant with the following standards:
 - ISO 7816
 - PC/SC
 - PC/SC 2.01 Part 10 – Secure PIN Entry
 - CCID
 - CE
 - FCC
 - RoHS
 - REACH
 - Microsoft® WHQL

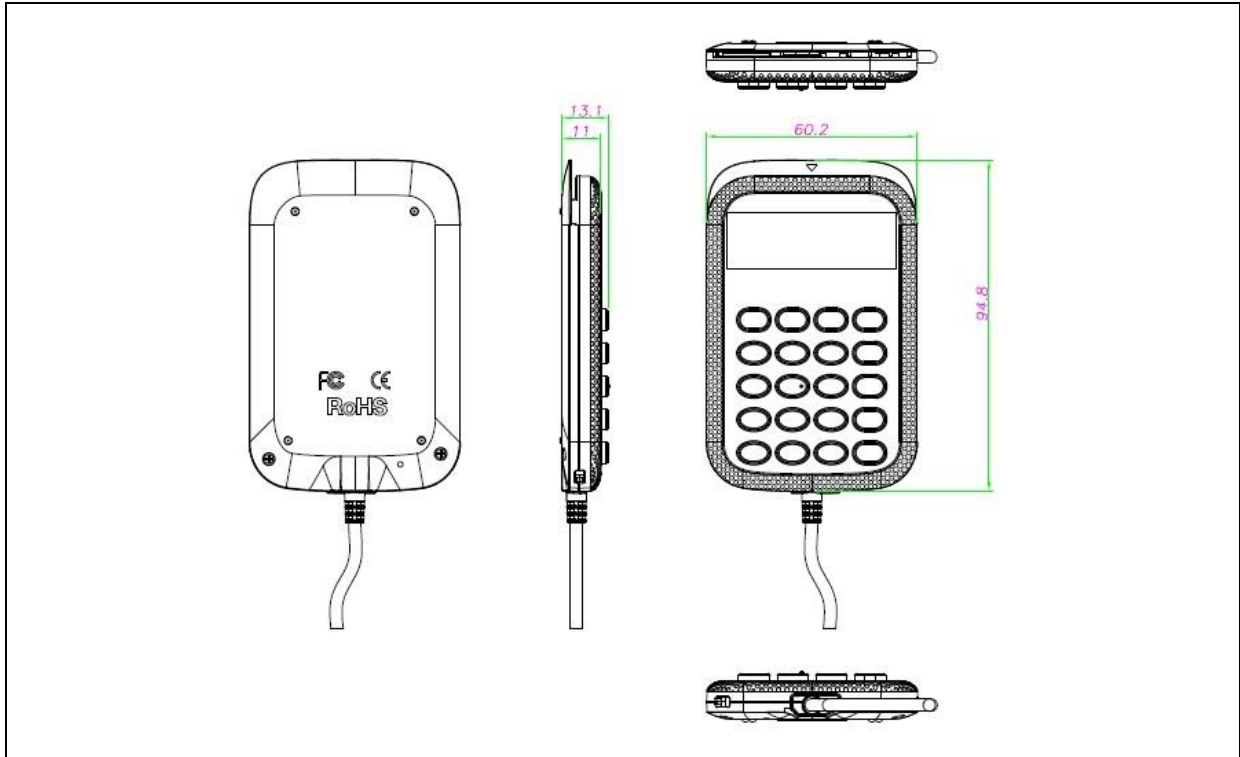
¹ Uses an ACS-defined Android Library



3.0. Typical Applications

- e-Government
- e-Healthcare
- e-Purse and Loyalty
- Mobile Banking and Payment
- Network Security
- Access Control
- Public Key Infrastructure

4.0. Technical Specifications



Physical Characteristics

Dimensions 95 mm (L) x 60 mm (W) x 13 mm (H)
Weight 98 g (± 5 g allowance for cable)
Color Black

USB Host Interface

Protocol USB CCID
Connector Type Standard Type A
Power Source From USB Port
Speed USB Full Speed (12 Mbps)
Supply Voltage 5 V
Supply Current Max. 50 mA
Cable Length 1.5 m, Fixed

Contact Smart Card Interface

Number of Slot 1 Full-sized Card Slot
Standard ISO 7816 Class A (5 V)
Protocol T=0; T=1
Supply Current Max. 50 mA
Smart Card Read/Write Speed 1.743 Kbps – 250 Kbps
Short Circuit Protection (+5) V/GND on all pins
Clock Frequency 2 MHz
Card Connector Type ICC Slot 1: Contact
Card Insertion Cycles Min. 100,000

Built-in Peripherals

LCD Dot Matrix LCD
..... Resolution: 96 pixels x 16 pixels
..... Number of characters: 16 characters x 2 lines
Buzzer Monotone
Keypad 20 keys

Application Programming Interface

PC-linked Mode PC/SC

Operating Conditions

Temperature 0 °C – 50 °C
Humidity Max. 90% (non-condensing)
MTBF 60,000 hrs



Certifications/Compliance

ISO 7816, USB Full Speed, PC/SC, PC/SC 2.0 Part 10 (SPE), CCID, CE, FCC, RoHS, REACH, Microsoft® WHQL

Device Driver Operating System Support

Windows® 7, Windows® 8, Windows® 8.1, Windows® 10
Windows® Server 2003, Windows® Server 2008, Windows® Server 2008 R2, Windows® Server 2012, Windows® Server 2012 R2
Linux®, Mac OS®, Android™ 3.1 and later



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