



Advanced Card Systems Ltd.
Card & Reader Technologies

ACM120S-SM Contactless Small Module

Technical Specifications

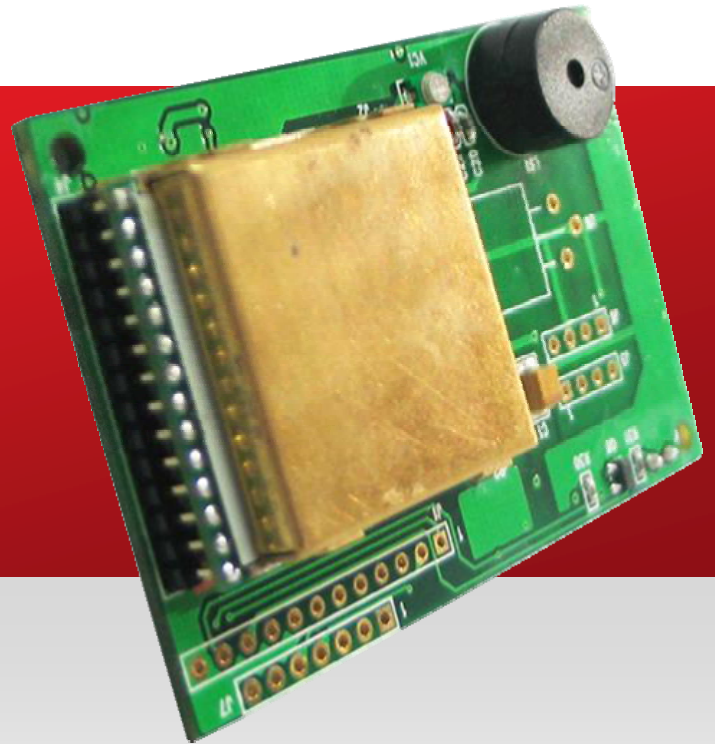




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1.0. Introduction



The ACR120 Small Module (ACM120S-SM) is a compact, easy-to-install and versatile contactless module.

ACM120S-SM not only retains the full functionalities of ACR120 contactless reader/writer, it also includes value-added features such as LED, buzzer and relay. This device is developed based on the 13.56 MHz contactless smart card (RFID) technology, supporting Mifare and ISO 14443 Type A cards. Its proximity operating distance is up to 5 cm, depending on the type of contactless tag in use.

ACM120S-SM's small size allows it to be readily installed into any standard, single-gang electrical switchbox; thus eliminating the hassle of drilling holes on walls to house the contactless module. Your integration choice is not limited to customized casing, but also handy electrical switchbox, which is readily

available everywhere.

Small yet powerful, ACM120S-SM is ideal for a broad range of applications, especially physical access control and time and attendance. With merely a wave of contactless card, the module immediately returns successful read/write signals via its self-contained LED/buzzer, and triggers the relay to open the door for you in a blink of an eye.



2.0. Features

- Compact size (70 mm x 45.3 mm)
- Serial RS232 interface
- Read and write functionality
- Built-in antenna for contactless tag access, with card reading distance of up to 50 mm
- Supports major contactless smart cards conforming to ISO 14443 Type A in the market
- Supports Mifare cards, including new Mifare Ultralight C, Mifare Plus and DESFire EV1
- Built-in anti-collision feature (only 1 tag is accessed at any time)
- Selective card polling capability (especially useful when multiple cards are presented)
- Easy-to-install for standard single-gang electrical switchbox
- Operation LED
- Buzzer
- Relay



3.0. Typical Applications



- e-Government
- e-Banking and e-Payment
- e-Healthcare
- Transportation
- Network Security
- Access Control
- Loyalty Program



4.0. Technical Specifications

4.1. Configuration of ACM120S-SM reader

Serial Interface

Type RS232 (Standard)
 Operation Baud Rate 9,600-115,200 bps
 Supply Voltage Regulated 5 V DC (4.75 – 5.25V)
 Supply Current approx. 40 mA for standby mode; approx. 200 mA for mode with contactless function on

Contactless Smart Card Interface

Standard ISO 14443 Type A
 Protocol Mifare® Classics protocols
 Smart card read / write speed 106 kbps

LED

LED Green

Buzzer

Buzzer Monotone

Relay

Relay Contact Rating 1 A
 Relay Control No pre-programmed duration; contact latching/releasing by software command

Antenna

Antenna Size 42 mm x 48 mm
 Operating distance up to 50 mm

Operating Frequency

Operating Frequency 13.56 MHz

Operating Conditions

Temperature 0 - 50° C
 Humidity 10% - 80%

Certifications/Compliance

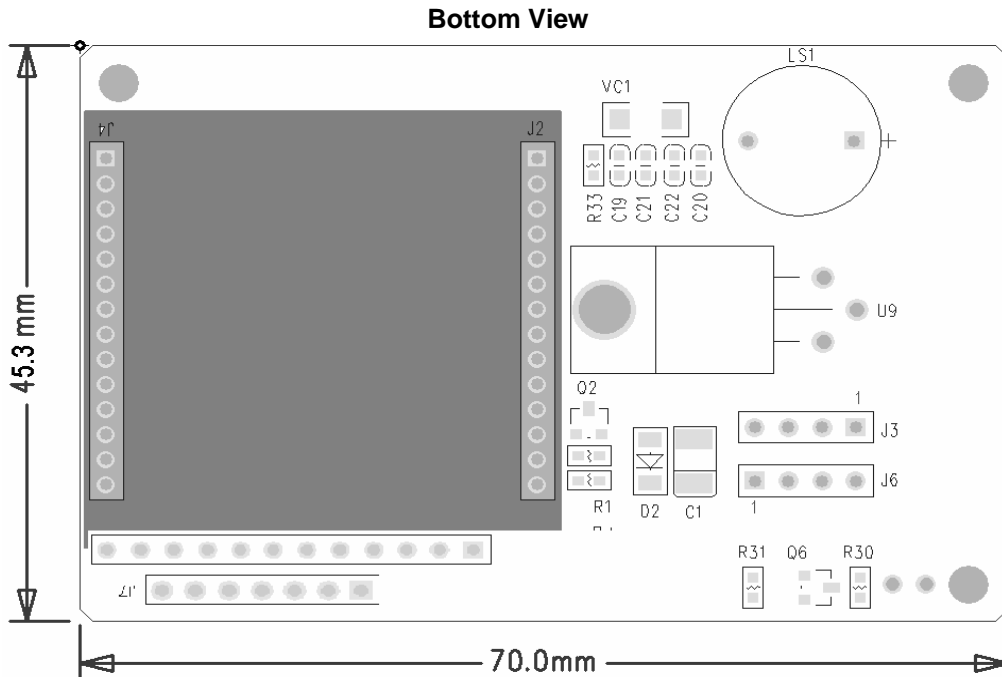
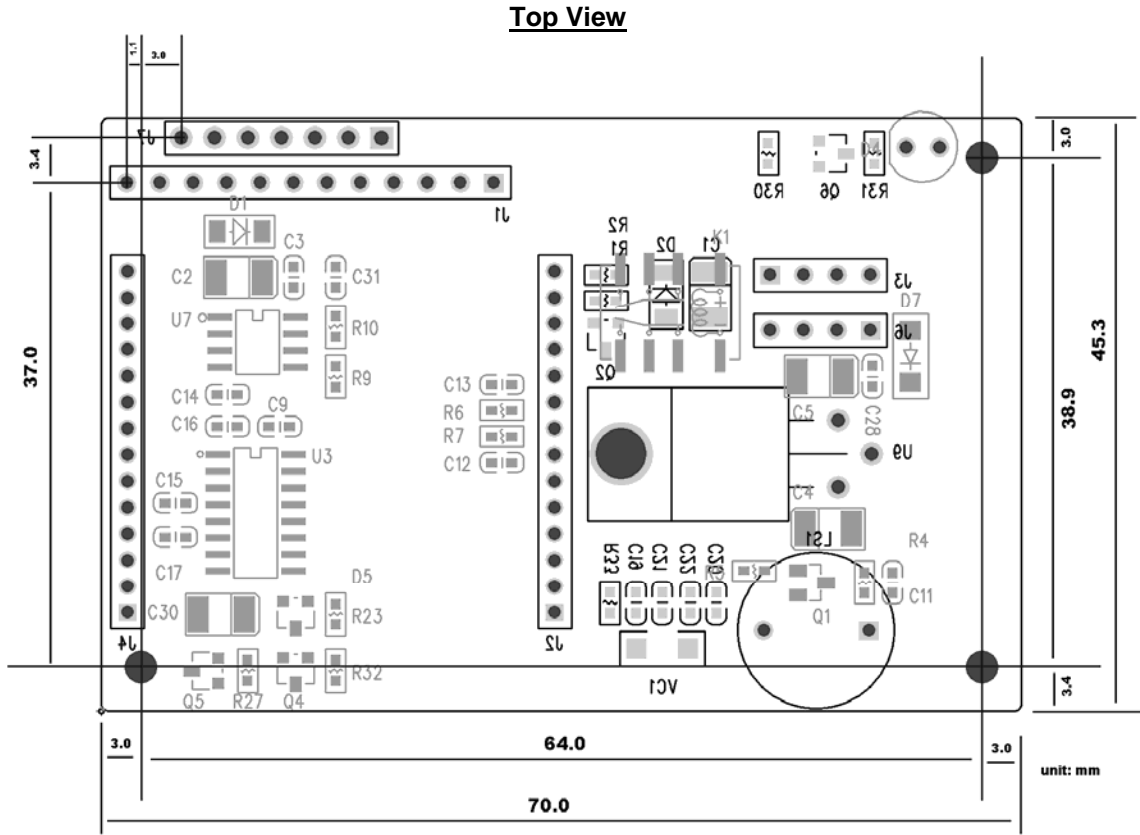
RoHS Compliant

Device Driver Operating System Support

Windows ® 98, ME, NT, 2000, Server 2003, XP, Vista, Server 2008, Server 2008 R2, 7
 Linux

4.2. Configuration of ACR120S-SM reader module

Board Diagram





(A) PIN Assignment (for Serial Communication Interface – RS232)

Pin (J1)	Signal	Description
1	-RESET	Pulling the signal to ground resets the module.
2	RS232Tx	RS232 Transmit
3	RS232Rx	RS232 Receive
4	RFU	Do not connect
5	RFU	Do not connect
6	SDA	I ² C Data
7	SCL	I ² C Clock
8	VCC	+5V supply to the module
9	RFU	Not connected
10	LED-/User Port	LED/User Port Output (Open Collector).
11	Reserved	Should connect to GND signal.
12	GND	Power and signal Ground.

Pin (J3)	Signal for Relay	Description
1	N.C.	Normal Close
2	N.O.	Normal Open
3	X	Not available
4	Com	Common

Pin (J7)	Signal	Description
1	X	Not available
2	VCC	+5V supply to the module
3	GND	Power and signal Ground.
4	RS232In	RS232 In
5	RS232Out	RS232 Out
6	X	Not available
7	X	Not available