



# acs ACM1281 Contactless Reader Module with SAM Slot User Manual

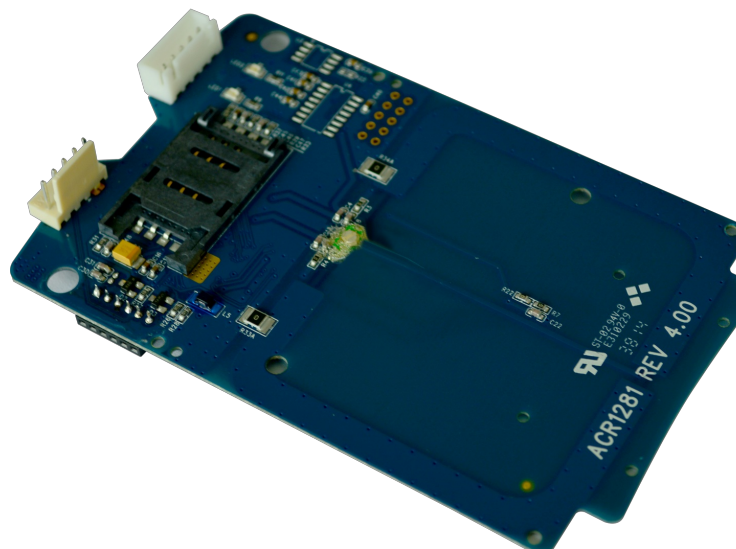
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## acs ACM1281 Contactless Reader Module with SAM Slot



## Introduction

- The ACM1281 is a Contactless Reader Module with SAM Slot designed based on the 13.56 MHz technology. It supports ISO 14443 Parts 1-4 Type A and B cards, and MIFARE® Classic series with a card reading distance of up to 50 mm (depending on tag type).
- The ACM1281 comes in a module form factor with different interface versions: ACM1281U-C is a USB version and ACM1281S-C is a serial version. It is specifically designed for fast and easy integration to embedded systems. It also has an ISO 7816 Compliant built-in SAM (Secure Access Module) slot which can be used together with a SAM card for high-level security in contactless transactions.
- The ACM1281 has an integrated (on-board) antenna and comes with an optional USB and serial cables, and has additional features like USB firmware upgradability and extended APDU support. Lastly, the ACM1281 makes use of high-speed communication for contactless cards at a maximum of 848 Kbps, which makes it suitable for highly demanding applications such as vending machine payment systems, kiosks, gaming machines and other integrated systems which have different serial ports.

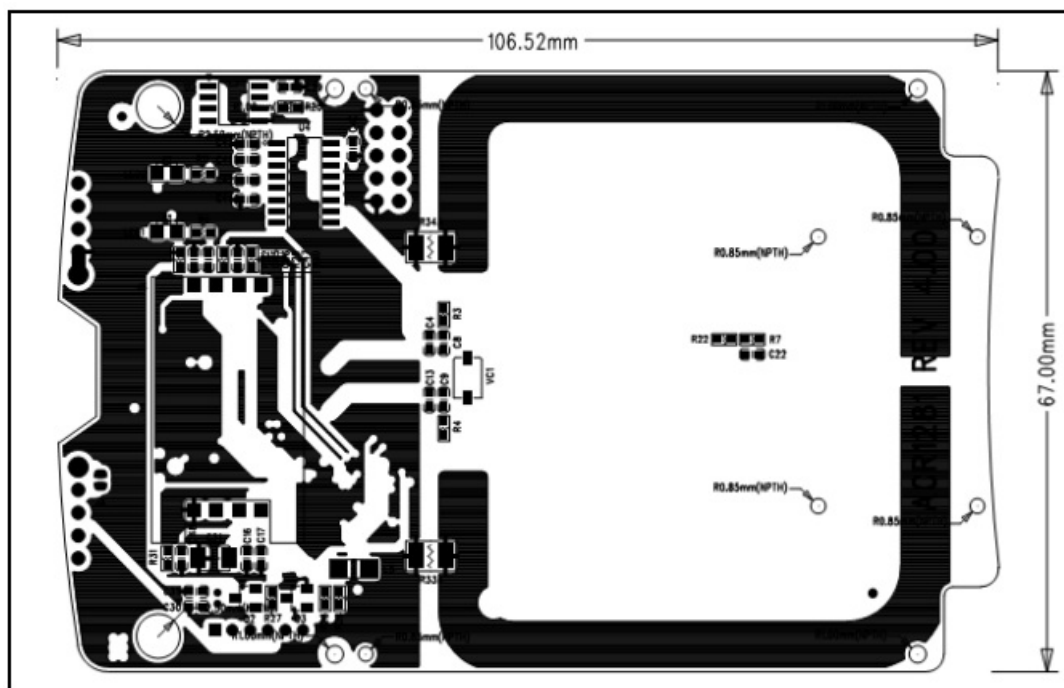


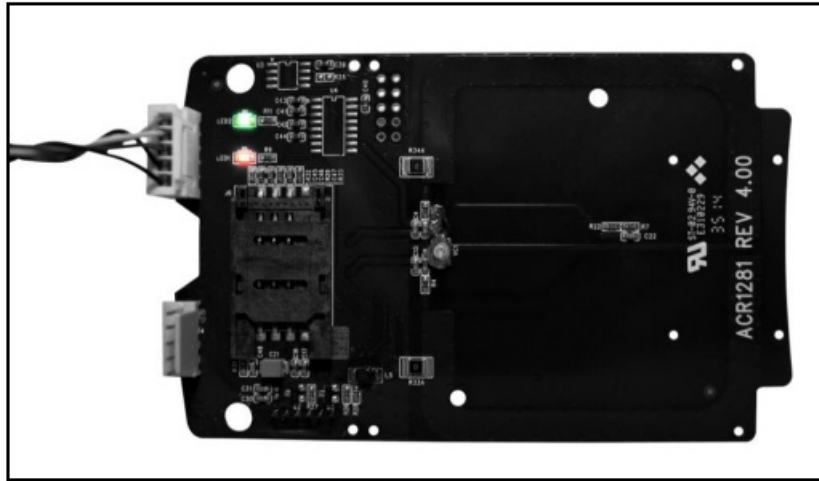
Figure 1: ACM1281 Main Board

## Pin Assignment

### Configuring the LED operations status

There are two LEDs on ACM1281 to display its operation status:

- Red is for power
- Green is for smart card operation



**Figure 2: ACM1281 LED Configuration**

### **LED Behaviors**

To control the LED's output and checking the LED's behavior for smart card operation status, you may refer to the following document:

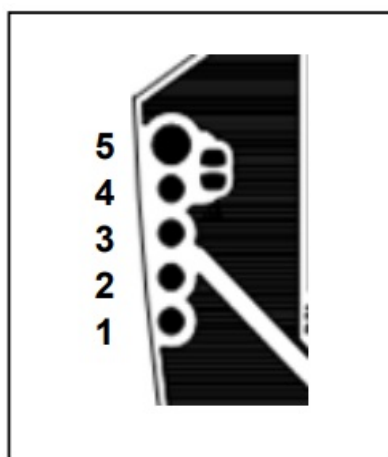
- ACM1281U-C: ACR1281U Reference Manual
- ACM1281S-C: ACR1281S Reference Manual

The reference manuals will discuss the detail how PC/SC APDU commands were implemented for the contactless interface and device peripherals of ACM1281U and ACM1281S.

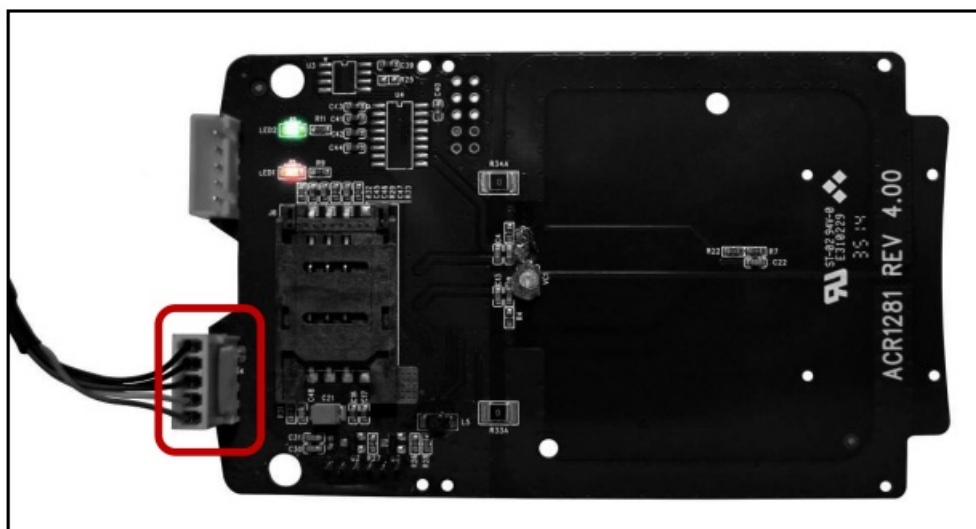
### **Connect ACM1281 to another device via USB (applicable for ACM1281U-C only)**

A USB port is available to connect the ACM1281 to other peripheral or devices. To do this:

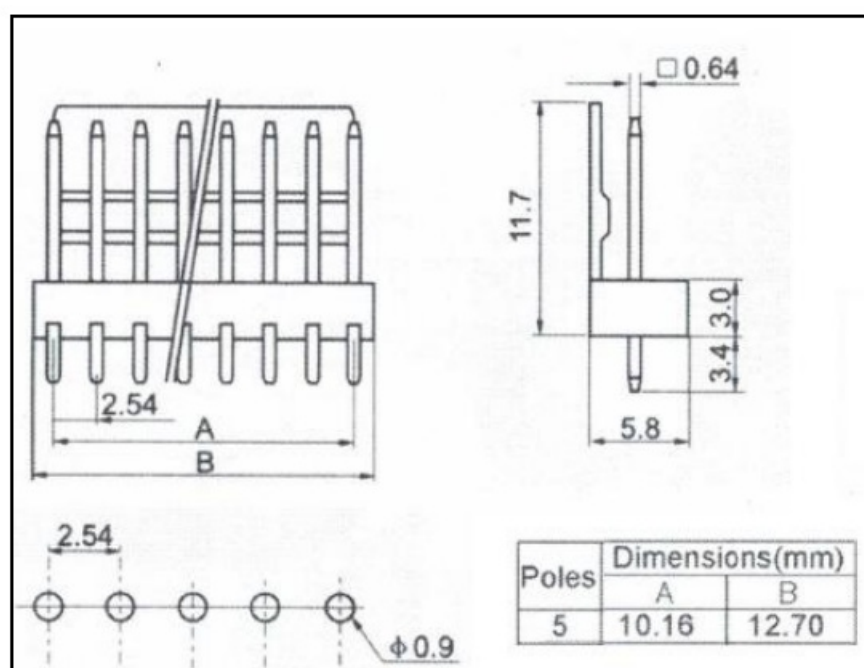
Connect socket J2 via USB cable to another peripheral device (see Figure 3).



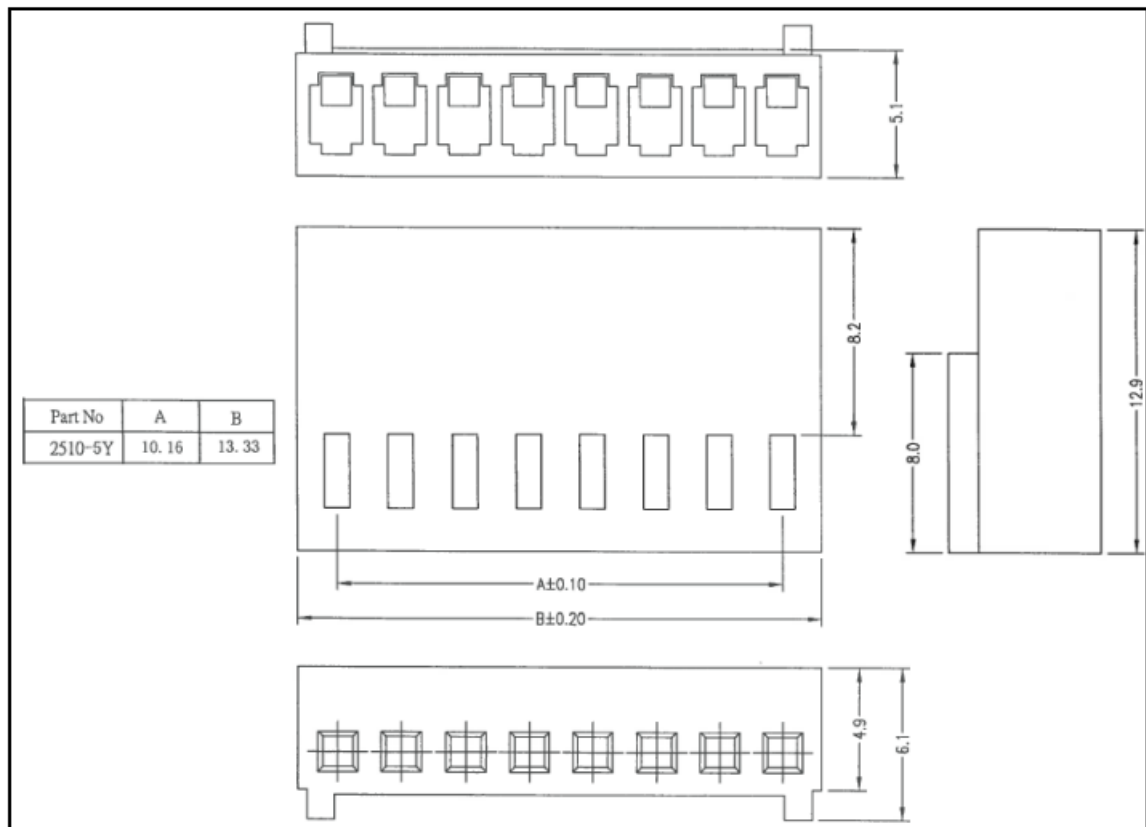
1. +5V Power Supply
2. USB D-
3. USB D+
4. GND
5. GND



**Figure 3:** ACM1281U-C via USB Interface



**Figure 4:** Dimension of connector socket J2 soldered onto PCB

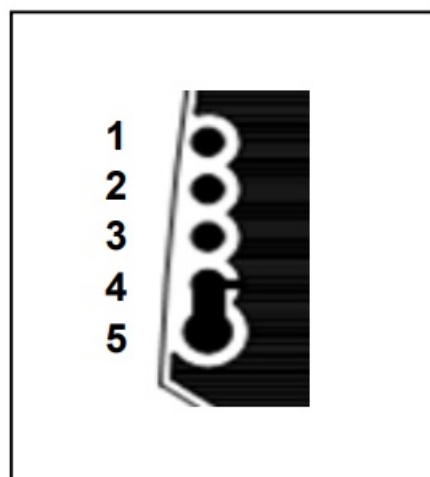


**Figure 5: Male plug (USB cable side) of J2 (Unit: mm)**

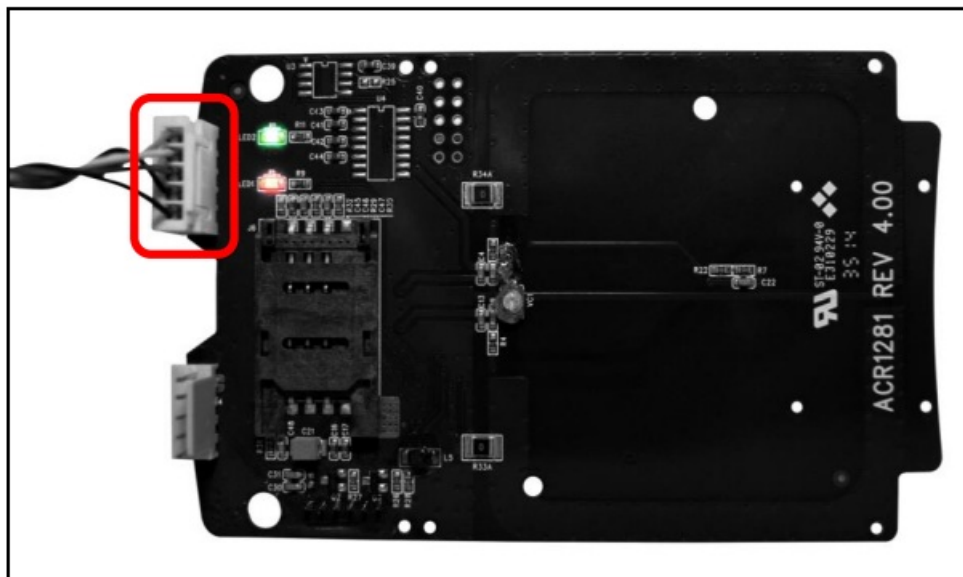
**Connect ACM1281 to another device via serial port (applicable for ACM1281S-C only)**

A serial port is available to connect the ACM1281 to other peripheral or devices. To do this:

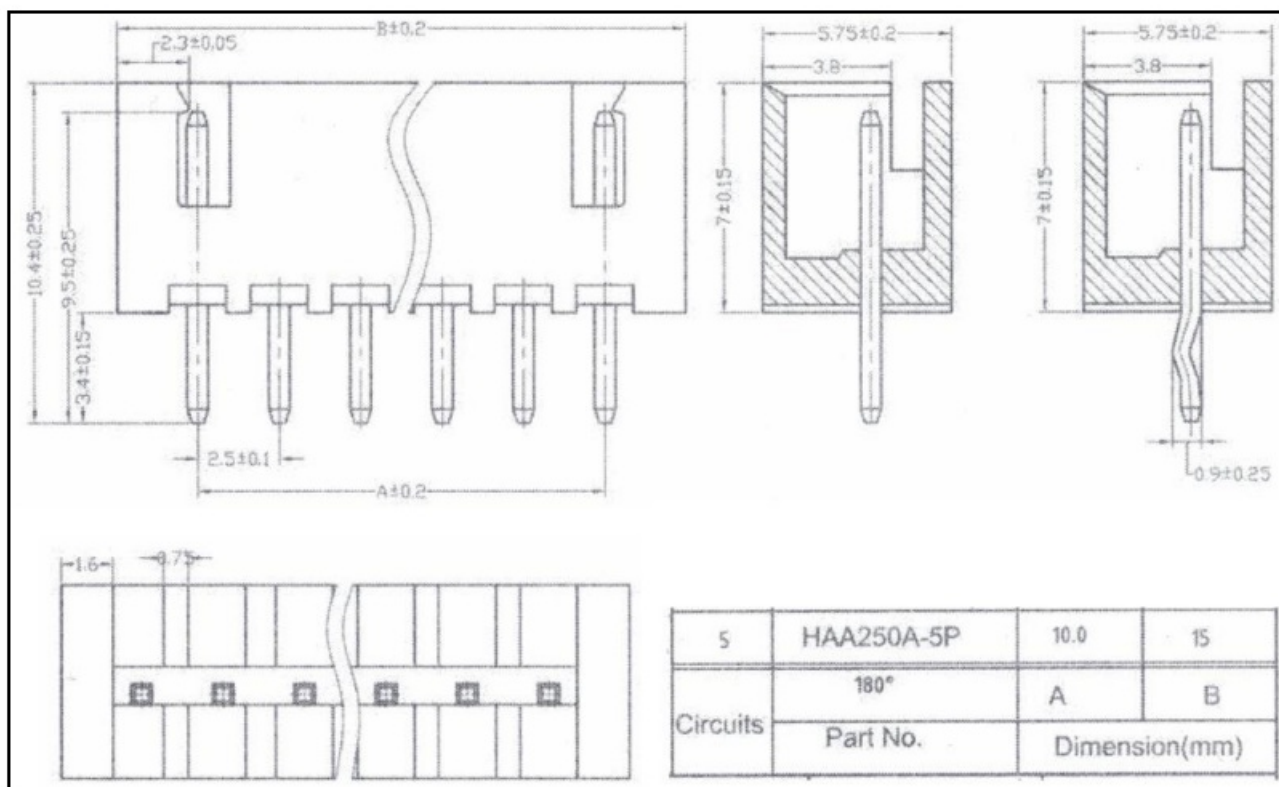
Connection socket J5 via RS-232 cable to another peripheral device (see Figure 6).



1. +5V Power Supply
2. RS-232 RXD
3. RS-232 TXD
4. GND
5. GND

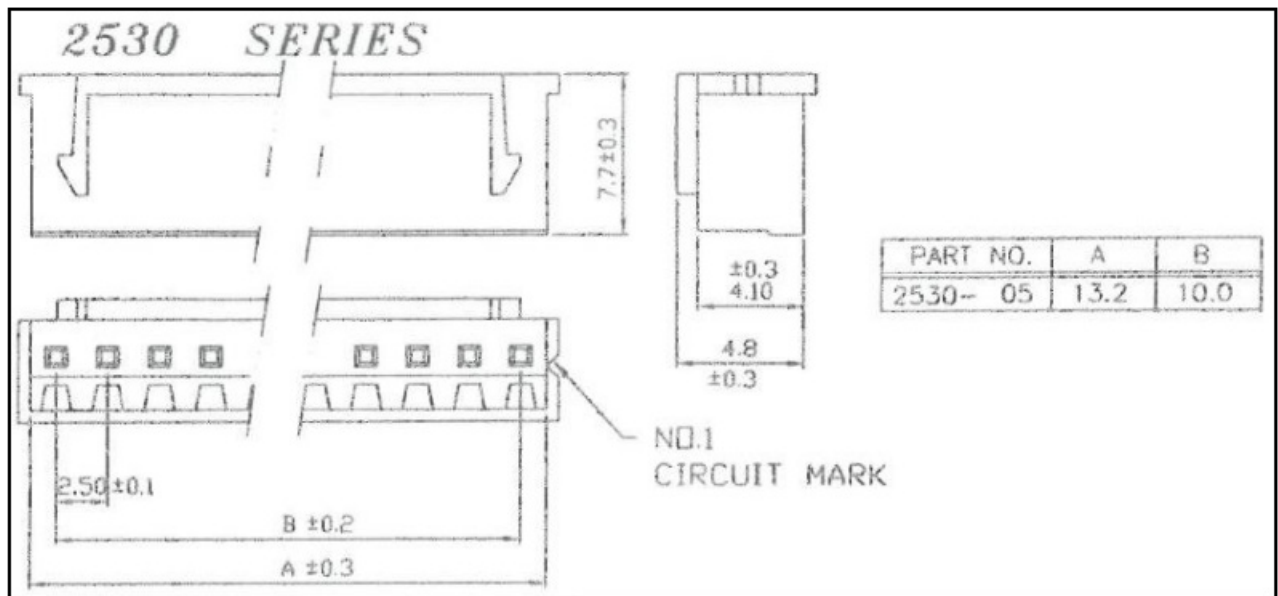


**Figure 6:** ACM1281S-C via Serial Interface



**Figure 7:** Dimension of connector socket J5 soldered onto PCB

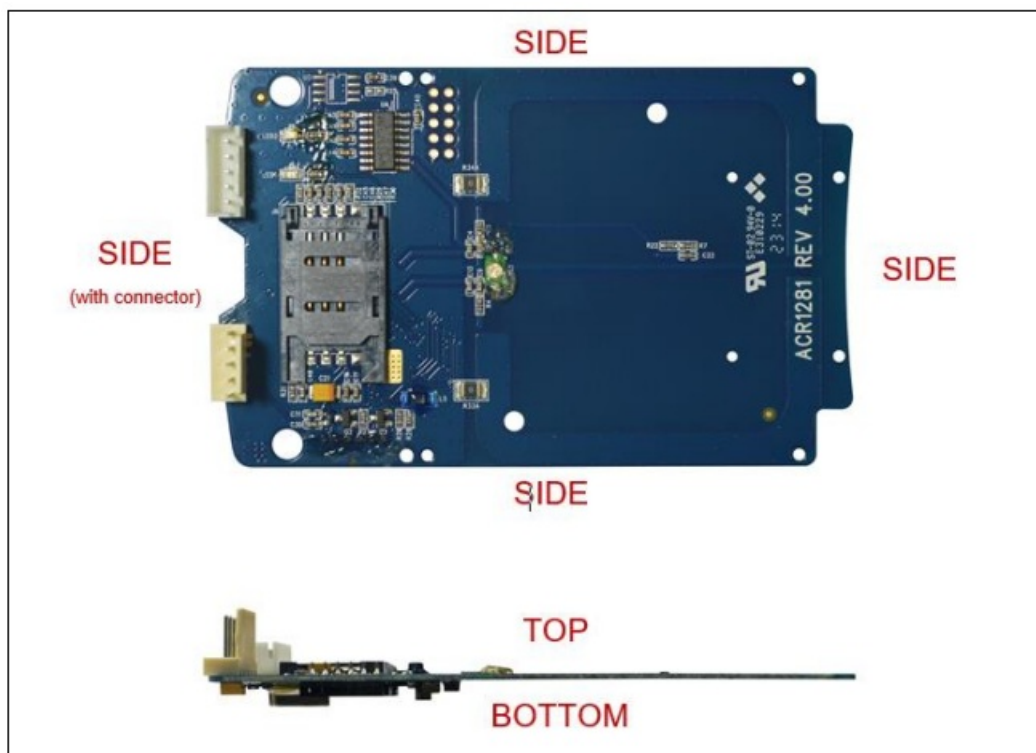




**Figure 8:** Male plug (RS-232 cable side) of **J5** (Unit: mm)

### Minimum Distances from Conductive Materials


The figure below illustrates the recommended minimum distances of the ACM1281 board from conductive materials.





Location	Minimum Distance
Sides	20 mm
Side (with connector)	5 mm
Top and Bottom	40 mm

**Table 1:** Recommended Minimum Distances from Conductive Materials

Documents / Resources

	<p><a href="#">acs ACM1281 Contactless Reader Module with SAM Slot</a> [pdf] User Manual</p> <p>ACM1281 Contactless Reader Module with SAM Slot, ACM1281, Contactless Reader Module with SAM Slot, Contactless Reader Module, Reader Module with SAM Slot, Module with SAM S lot, Module, SAM Slot Module</p>
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References

-  [ACS Services Inc. | Managed Services Provider | Boston, MA](#)
-  [ACS - Top PC-linked Smart Card Reader Supplier | Homepage](#)