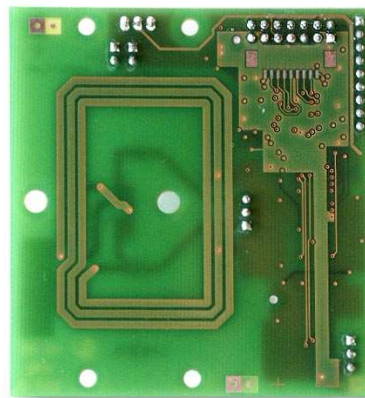




IC SIDE



ANTENNA SIDE

Embedded low-power proximity reader ISO 15693/14443

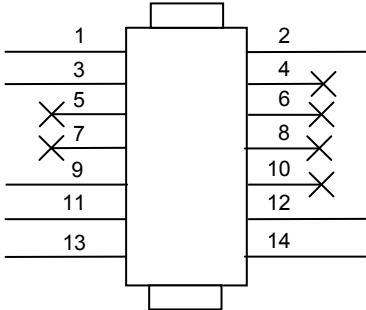
Board	Dimensions	76 x 70 mm
Power Supply	Supply voltage	+5 V DC stabilized. Digital section can be supplied with +3 V stabilized for less power consumption
	Current consumption *	~70 mA with active RF ~100 µA in Low-Power mode
	Connectors	Strip lines (step 2.54 mm)
RF	Frequency	13,56 MHz
	Antenna	Loop antenna integrated on board. No tuning required.
	Supported Protocols (RW)	- ISO 15693 - ISO 14443 A - Mifare® Standard & Ultralight family - ISO 14443 B - ST SRI family
	Security	Internal storage of 32 write-only mifare keys
	Reading range *	Approx. up to 12 cm ISO15693, up to 7 cm ISO14443
Microcontroller	Type	RISC 8 bit
	Flash	32 KB
	RAM	2 KB SRAM
	EEPROM	1 KB
Interfaces	RS232 serial port	9600 to 115200 baud, 8,n,1; 3-pin connector (step 2.54 mm)
	UART TTL serial port	Port shared with RS232; dedicated strip-line connector
I/O	Digital I/O ports	8 general purpose I/O lines (on request) 1 I/O line (A/D conversion on request)
	Wake-up	Serial frames can wake up the reader from Low-Power mode
	Comm. protocol	Full documentation
SDK	Libraries & docs	C, C#.net, Java binaries and sources
	Demo applications	Reader Control Panel, Card ID, Scan Manager
	Upgradeable	In-field by serial port
Firmware	Operating modes	Host controlled, automatic scan.

* depends on antenna type, tag size and environment

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For more information, contact the sales office. Contacts can be found on our web site at <http://www.lab-id.com>

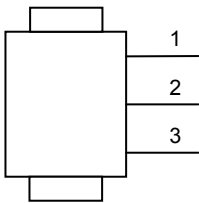
Connectors

CN1: Power supply, UART, RESET, IRQ



1. Power supply: +5 V DC or +3 V DC stabilized
2. nRES (reset) or disconnected
3. I/O pin IRQ RFID – the same signal in pin 1 of CN2
4. disconnected
5. disconnected
6. disconnected
7. disconnected
8. disconnected
9. Power supply +5 V DC stabilized
10. disconnected
11. GND
12. GND
13. Rx UART TTL or disconnected
14. Tx UART TTL or disconnected

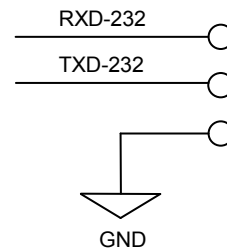
CN2: IRQ



Allows the use of an external input/output with optional A/D conversion. The use of this pin requires a firmware customization.

1. External input/output. This signal is routed also on pin 3 of CN1.
2. This pin is +5 V DC. It must not be connected to a power supply if voltage is supplied by CN1. It can be used as power source for external devices. Otherwise, it can be used as power source for the reader if R1 resistor is mounted (all board is powered with 5V).
3. GND

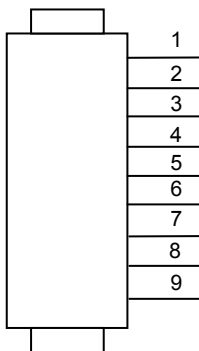
CN3: RS-232 (optional)



Pin 3 is the most external.

1. RX
2. TX
3. GND

CN4: I/O port (optional, on the antenna side)



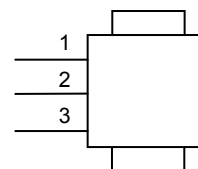
It is possible to mount a connector to use 8 digital I/O pins. A customized firmware is required to use them.

- 1-8. General Purpose Input/Output.
9. GND

CN5: Programming connector

CN5 is the programming connector. It must be left disconnected.

CN6: Antenna



This connector brings antenna signals.

1. TX1
2. GND
3. TX2

J1

This jumper connects pin 1 of CN2 (External I/O) to pin 3 of CN1 (IRQ Rfid). It must not be used if R5 is mounted, because it does the same connection.

J2

This jumper connects pin 1 of CN2 (External I/O) to an I/O pin of the microcontroller, passing through a voltage divider which allow 5V inputs when the microcontroller is powered by 3V. It must not be used if R2 is mounted, because it does the same connection.

Evaluation Socket

To ease the evaluation of the reader, LAB ID may supply a socket to be connected with power and RS232. You have only to plug the reader on the socket, connect a +12V DC power supply (GND on the outer side) to the DC jack and connect a PC to the RS232 (DB-9 connector) port using a standard male-female cable.

The evaluation socket is only a prototype and it is not intended as a finished or commercial product nor for real-world use. LAB ID does not offer any warranty about problems or damages caused by malfunctioning of the socket.