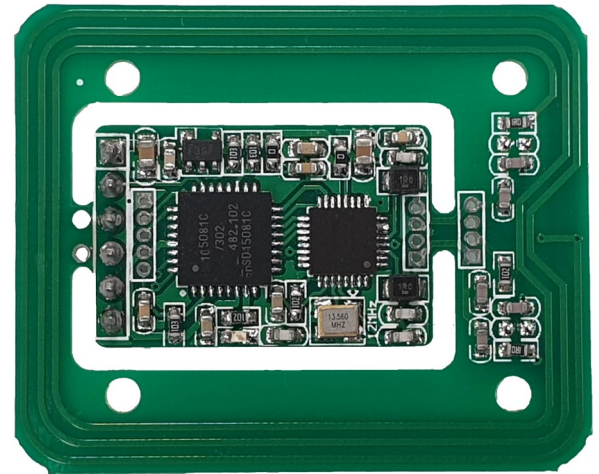


## 13.56MHz ISO4443A MIFARE

- 13.56MHz Reader Module
- ISO/IEC 14443 Type A
- Break Out Antenna Included
- Cards/Tags Supported: Mifare one (S50, S70, RC632 / ntag203 / ntag213 etc.)
- Read Range upto 100mm
- Supply +3.3Vdc @100mA
- TTL Data output
- Baud rate 9600bps or 115200bps
- Communications speed 106Kbit/s
- Module Dimensions:
  - Module 25.5×16 x 0.9mm
  - Antenna 43×35×0.9mm
- Operating Temp 0 to 80°C



### Applications

- Asset/Stock Tagging
- Access control
- Payment systems
- Managing resources
- Identification Control

### Description

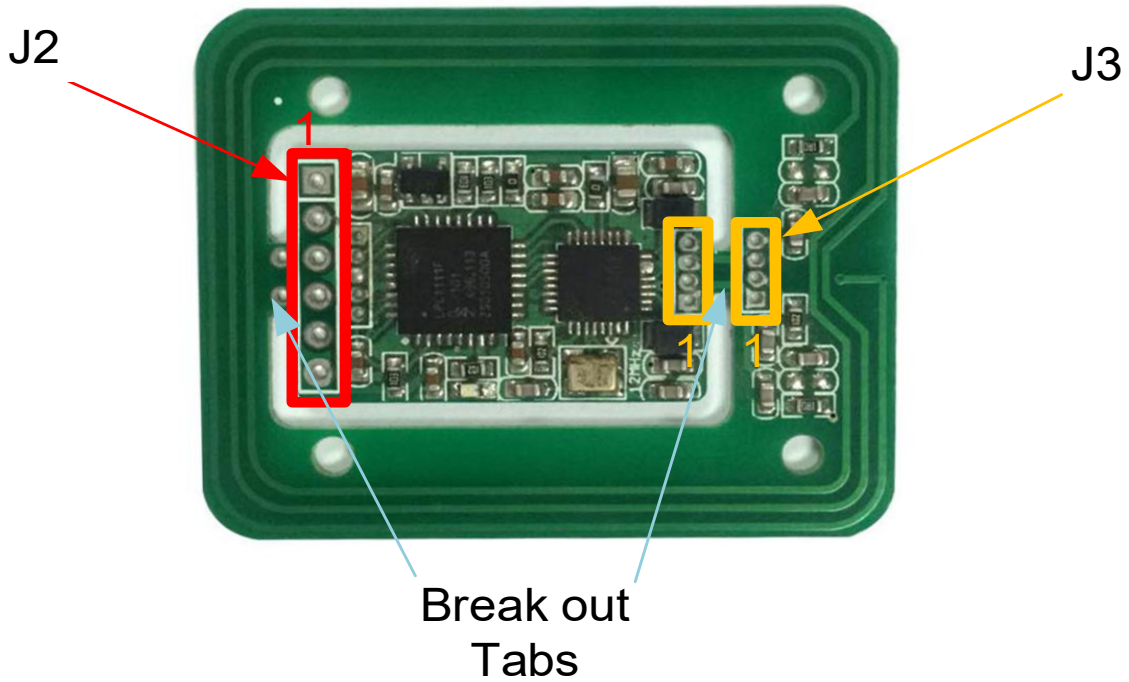
A Compact RFID reader module for use in general purpose RFID applications. Whenever the compatible RFID tag is brought within range the module will output a TTL serial data stream with the tag data

The module can be used standalone, or the antenna section can be removed and deployed remotely whilst connected to the module via cable.

The module is compatible with all known ISO4443A compatible cards and Tags and provides a simple plug in solution to passive tag interface.

Part Number	Description
<b>RFID1-13RTTL-3V</b>	13.56MHz 3V Reader with TTL output
<b>RFID1-13RTTL-5V</b>	13.56MHz 5V Reader with TTL output

## Dimensions and Connections



### Notes

If using the break out option keep connecting cable less than 20cm

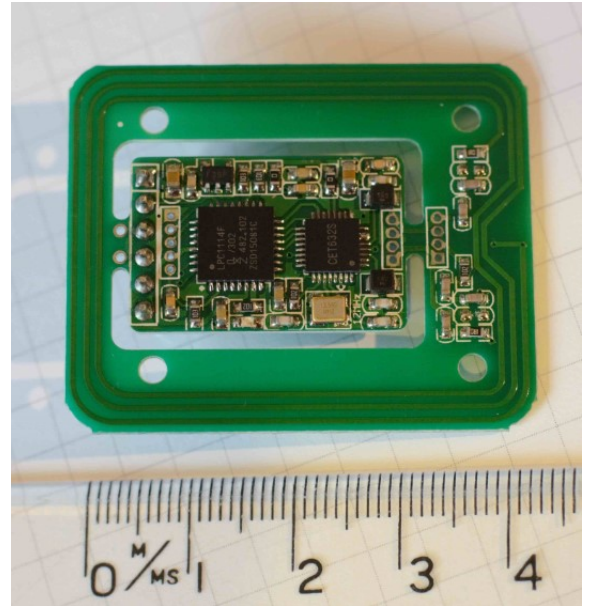
Connector	Name	Direction	Description
J2-1	EN	In	<b>Enable input—must be connected to Vcc for general operation</b>
J2-2	I/O	In / Out	Not currently used
J2-3	RXD	In	Serial Output to Host Rx line
J2-4	TXD	Out	Serial Output to Host Tx line
J2-5	GND	In	Supply GND connection
J2-6	Vcc	In	Supply Power in connection

## Using the RFID-13RTTL NFC Reader

The RFID1-13RTTL is an NFC reader for 13.56MHz RFID cards (ISO/IEC 14443 ). Measuring just 35.5mm x 43.5mm including the snap out pick up coil, this is an idea unit for simple access control, time keeping and general tracking applications

The board requires a +5V supply and consumes approximately 50mA when active. Connection are made via a 6 way 0.1" pin header for easy mounting on to a base board. The communication is an asynchronous serial 3.6V format. The output is at 9k6 Baud, 8 bits, No parity and 1 stop bit (9k6,8,N,1) and normally high when not sending. Throughout this document, we used an FTDI TTL to USB cable TTL-232R-3V3

[https://www.ftdichip.com/Support/Documents/DataSheets/Cables/DS\\_TTL-232R\\_CABLES.pdf](https://www.ftdichip.com/Support/Documents/DataSheets/Cables/DS_TTL-232R_CABLES.pdf)

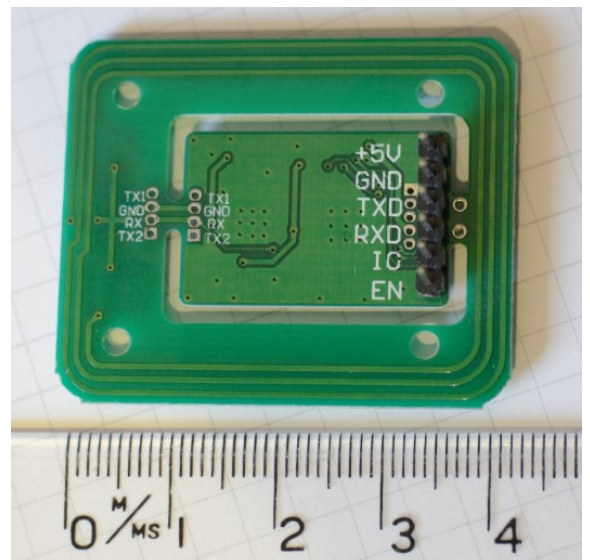


The +5V was supplied by an external power supply.

## Connecting up the board

The reverse side of the board has each of the 6 pins clearly marked but we only need to manage four of these pins. Connect a +5V supply to the top pin marked +5V and to the next pin down marked GND. The data is sent out on the 4<sup>th</sup> pin down marked as RXD. The IO pin must be left unconnected. This leaves the bottom pin marked EN and this is the ENABLE control. To activate the reader, this pin must be connected to GND and immediately, a blue LED will illuminate. If this pin is taken to +5V then the reader goes into a low power mode and consumes less than 100nA.

When a card is brought within range of the reader, the blue LED will pulse and the data is sent out on the serial port. This data was sent, via the FTDI cable to a terminal emulator on the PC.



## Data Format

The data from the card reader is bracketed by two string delimiters, 0x02 (ASCII Start of Text) at the start of the data and 0x03 (ASCII End of Text) at the end of the data. The card data its self is transmitted as ASCII and consists of 10 decimal digits followed by a <LF> and <CR> (0x0A, 0x0D). This straight forward format makes it easy to interface to most microcontrollers for local processing or to send this data over RS485 to a central location.

## Technical Specifications

Operating Temperature 0 - 80 °C

Weight 10g

Electrical Characteristics	Min	Typical	Max	Units
Supply Voltage	3.0	3.3 5.0		V
Supply Current:				
Low Power Mode (EN at Vcc)		100		nA
Quiescent		100		mA
Card Present				

## Important European compliance information

This RF Solutions product meets the essential requirements of the European Radio Equipment Directive 2014/53/EU and has been tested to European Harmonised Standards and CE marked accordingly. A copy of the EU Declaration of Conformity can be located on the RF Solutions Website, [www.rfsolutions.co.uk/certification-i59](http://www.rfsolutions.co.uk/certification-i59).

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RF Solutions Ltd. , fulfills its WEEE obligations by membership of an approved compliance scheme.

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