

μRFID Reader



Overview

The μRFID reader is a low cost, low power consumption, small size & easy to use device ideal to develop an RFID system. Once powered, it can detect any RFID card within range and with the frequency same as that of its working frequency (125kHz). It can interact with a microcontroller in any one of the two supported protocols namely TTL Serial & Wiegand 26 as per the system design. μRFID reader also has a detection pin (BUZ) that could be used to simply detect a valid RFID card. Its form factor and output data formats are 100% compatible with EM-18 Reader Module.

Major applications of the module

- **Toll fee collection**

The reader can be connected to the beginning or end of a toll road, which can read the RFID cards from vehicles and debit money accordingly.

- **Access control**

Restrict entry based on the card ID

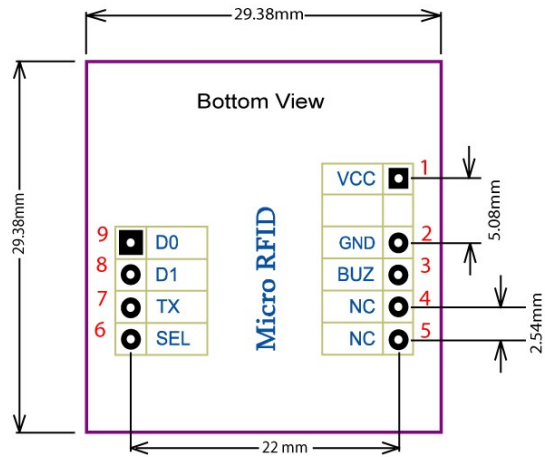
- **Asset management**

The user can record and retrieve the details of cards used on the module at any given point of time

Features

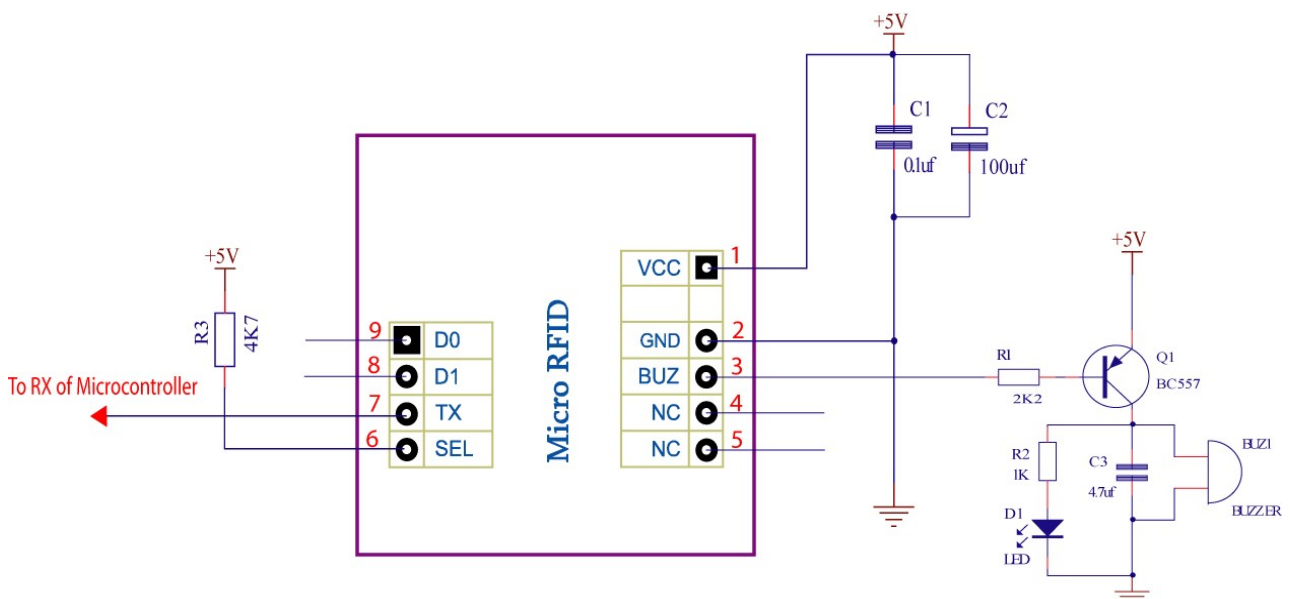
Size	(32x32x8)mm
Operating frequency	125kHz
Operating voltage range	3.3V to 5.5V
Current Rating	< 50mA
Reading distance	10-15cm
Communication parameters	9600bps, 8-N-1
Supported cards	Tags which work at 125kHz

Pin Diagram and Description



Pin No.	Name	Function
1	VCC	5V
2	GND	Ground
3	BUZ	Becomes LOW on valid card detection
4	NC	No Connection
5	NC	No Connection
6	SEL	HIGH selects TTL Serial o/p, LOW selects WIEGAND 26 o/p
7	TX	UART TX, When TTL Serial is Selected
8	D1	WIEGAND Data 1
9	D0	WIEGAND Data 0

Application Circuit



Output Formats

◆ **TTL Serial**

When a high value is sent to the SEL pin of the reader, TTL Serial communication is enabled.

The output in this mode is the 10 digit card no (ASCII) + 2 digit XOR result (ASCII)

Communication parameters are-

Baud rate	9600bps
Data bits	8 bits
Parity check	none
Stop bit	1 bit

For eg: If the RFID tag number is 500097892E, output of μRFID reader will be 500097892E60 where 60 is 50 xor 00 xor 97 xor 89 xor 2E

◆ **Wiegand 26**

When a low value is sent to the SEL pin of the reader, Weigand26 communication is enabled.

The output in this mode is based on the table below-

Bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	
Note	P	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	P
	P	E	E	E	E	E	E	E	E	E	E	E	E														
														O	O	O	O	O	O	O	O	O	O	O	O	O	P

Note:

- E: Summed for even parity
- O: Summed for odd parity
- P: Parity(even or odd)
- D: Data code for card