

# RF Receiver for Active RFID

Sunrom Part#  
**1449**

Receives & Decodes Unique Tag data from Active RFID transmitter operating at 433 Mhz and outputs serial data containing TAG ID at 9600 baud rate

User's  
Manual

Doc Version: 1  
1-Feb-17

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<http://www.sunrom.com/m/1449>

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## Introduction

This RF Receiver listens on 433 Mhz frequency for our Active RFIDs transmitter tags. When valid tag is detected in its range of around 25 meters, it outputs a unique 16 bit ID of the tag in serial ASCII data format at 9600 bps baud rate. It supports as many as 64 tags in same premises.

## Features

- LED indication on valid data receive
- Supports Active RFID Transmitter Tags
- Outputs 9600 bps Serial data
- UART is 5V level for direct connection to MCU
- No configuration required to use
- Up to 64 tags supported automatically in range

## Typical Applications

- Security Systems
- Identity discrimination
- Proximity Detection

## Specifications

| Parameter              | Value   |
|------------------------|---|
| Working Voltage        | 5V DC regulated power supply                            |
| Current Consumption    | 15 mA   |
| Memory Capacity        | Maximum 64 transmitters can be tracked by the module    |
| Frequency of Operation | 433MHz  |
| Serial Baud rate       | 9600 bps at 5V level                                    |
| Baud rate format       | 8-N-1; 1 Start bit, 8 Data bits, 1 Stop Bits, No Parity |
| RF Bit rate            | 1 kbps  |
| On Board controller    | PIC12F675   |
| RF Format              | Proprietary protocol with CRC check                     |

## Module Pin Details

| Pin | Details   |
|-----|---|
| GND | Common Ground   |
| VCC | Regulated positive power input 3.3V to 5V DC  |
| TX  | Transmit Output - UART TTL level - Connects to RXD pin of microcontroller or USB-UART |

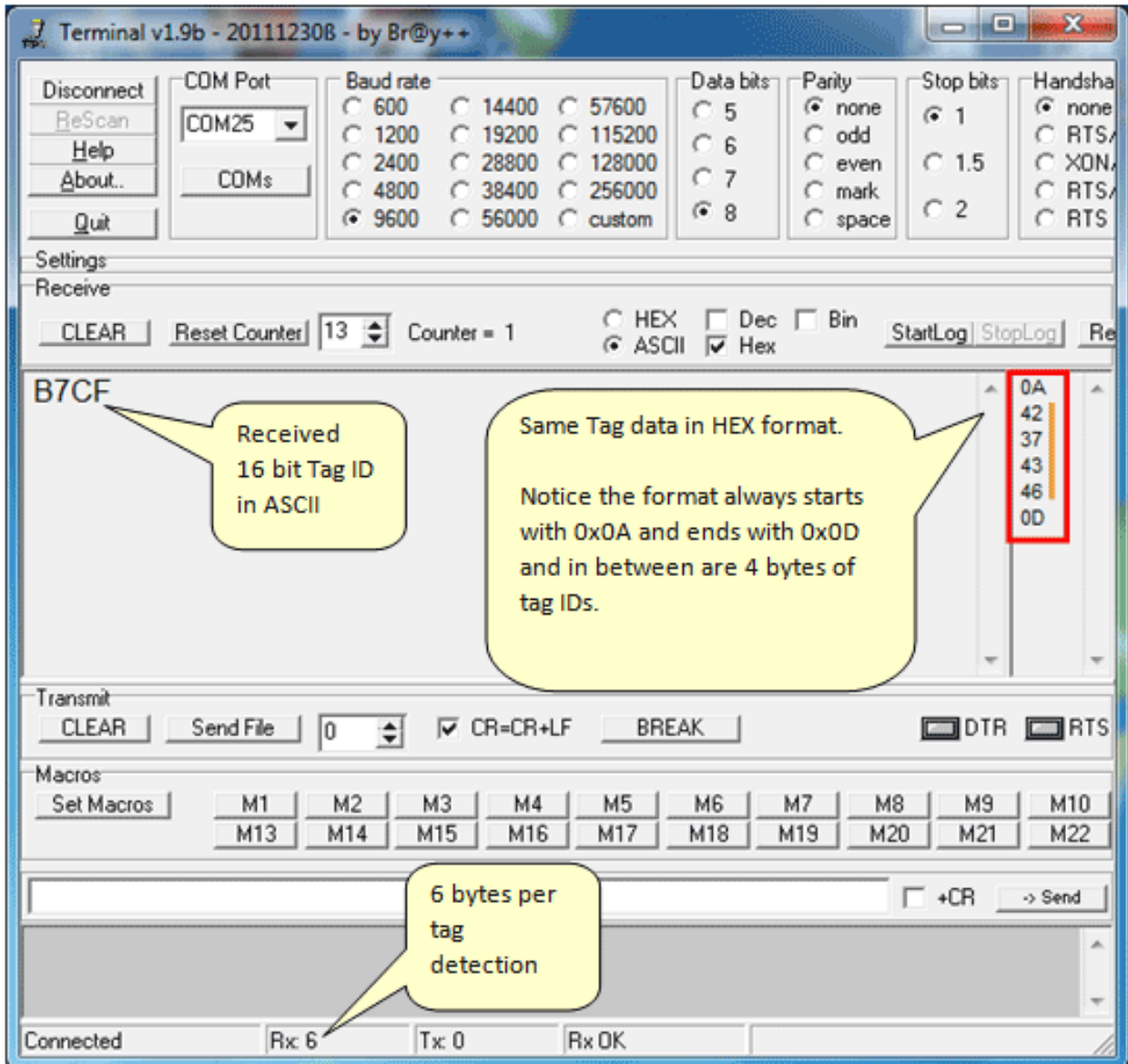
## Serial output data format

The output of data from is 6 bytes fixed length ASCII characters. The baud rate of output is 9600 bps. It output the transmitter in HEX ASCII format.

The string starts with 0x0A and ends with 0x0D which you can use in programming to detect START and END of packet. The output format of receiver is 6 bytes in ASCII for every tag detected.

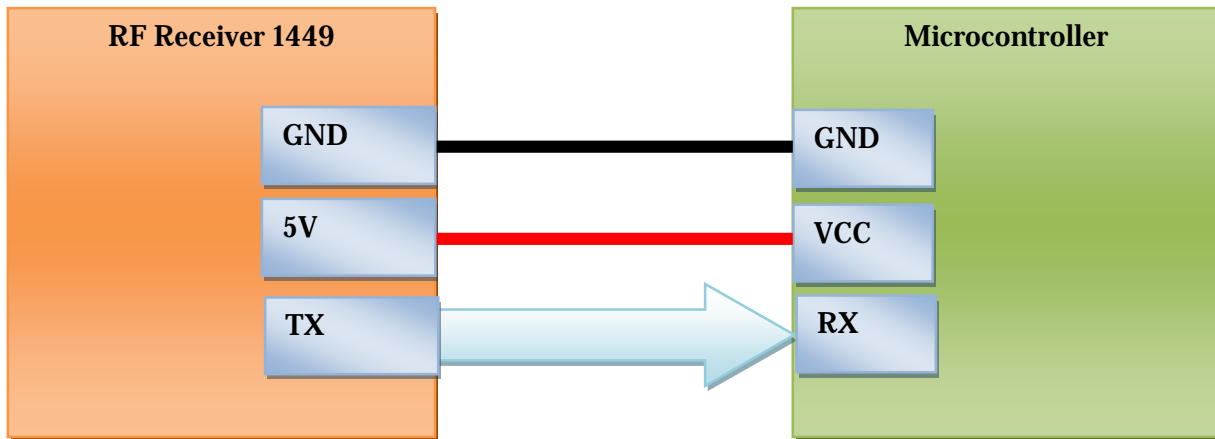
| Count | HEX Data     | Notes                                   |
|-------|--------------|---|
| 1     | 0x0A         | Fixed Character to mark Start of packet |
| 2     | 0x00 to 0xFF | ASCII Character #1 for Tag              |
| 3     | 0x00 to 0xFF | ASCII Character #2 for Tag              |
| 4     | 0x00 to 0xFF | ASCII Character #3 for Tag              |
| 5     | 0x00 to 0xFF | ASCII Character #4 for Tag              |
| 6     | 0x0D         | Fixed Character to mark End of packet   |

At PC side you can use any Terminal software to view incoming data. You can also use microcontroller directly but before that step we recommend to view data on PC. This will make programming easy as incoming data format is known.



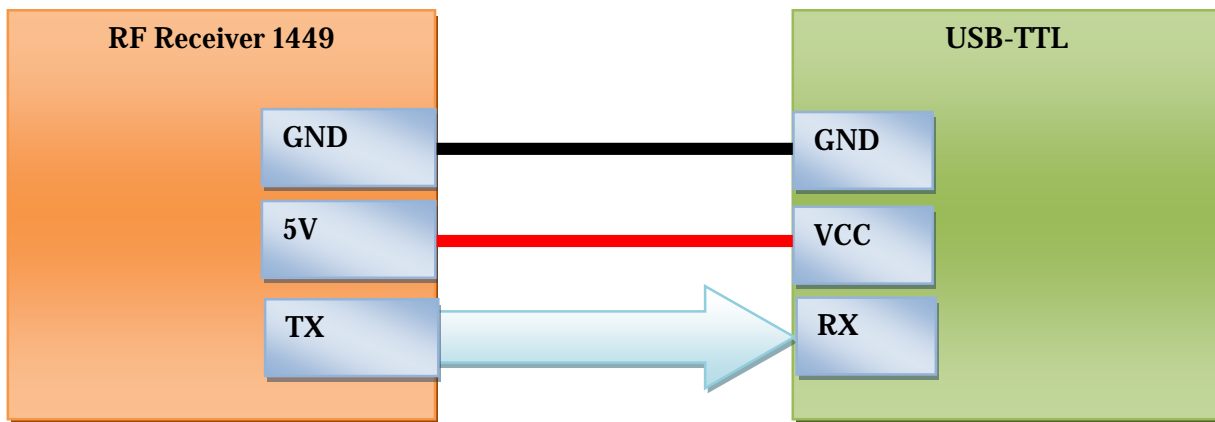
## Interfacing with Microcontroller

If you want to operate with microcontroller then it's very simple to connect by various pins.

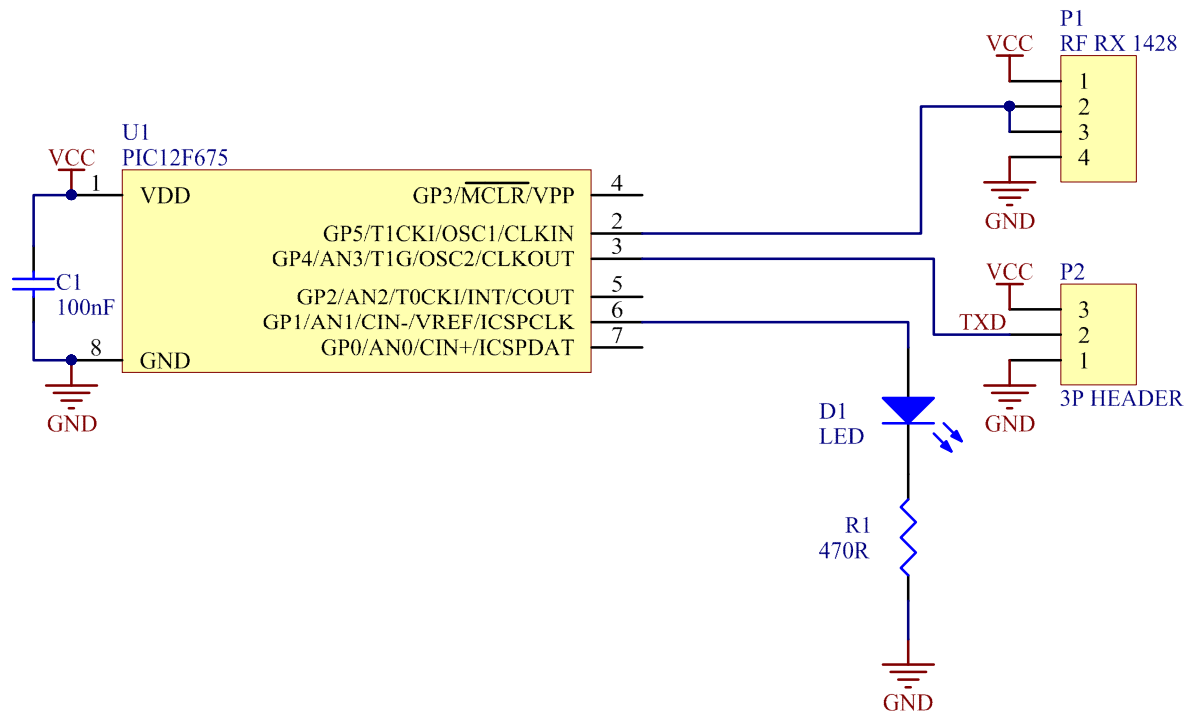


## Monitoring data on UART

If you want to operate with PC terminal then you can use USB-TTL (Not RS232).



## Board Schematic

Title **Active RFID**Sunrom Electronics [www.sunrom.com](http://www.sunrom.com)

Size: A4

Number: 1449

Revision: 1

**SUNROM**

Date: 01-02-17

Time: 10:57:51 AM Sheet 1 of 1

## Support

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Sunrom Electronics offers free **technical support** ([www.sunrom.com/contact](http://www.sunrom.com/contact)) for customers, until the end of the product's lifetime, so if something goes wrong, we're ready and willing to help!

Technical Support is available by email only and scope is limited to problem faced during use of the use of product and does not cover end user programming and hardware troubleshooting.

Each product passes through strict quality checks before it reaches you. So if something is not working out right, the first thing to doubt is the connections or programming of your hardware.

## Disclaimer

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Sunrom Electronics assumes no responsibility or liability for any errors or inaccuracies that may appear in the present document. Specification and information contained in this document are subject to change at any time without notice.

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