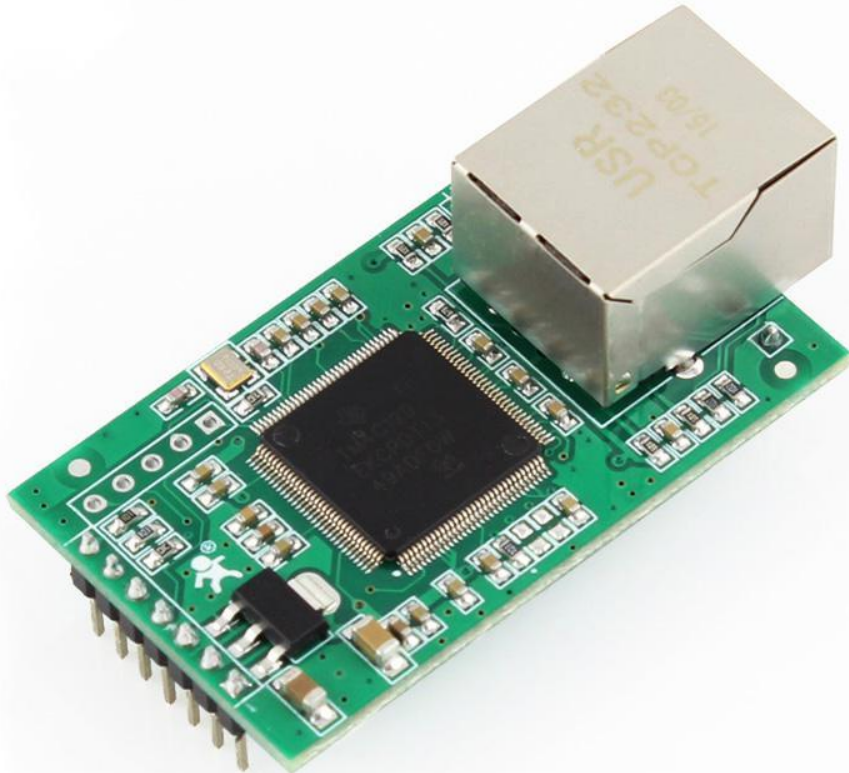


# USR-TCP232-E2 Hardware Manual

File version: 1.0.0.01



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# 1. Product Overview

## 1.1. Dimension

Module dimension diagram as follow:

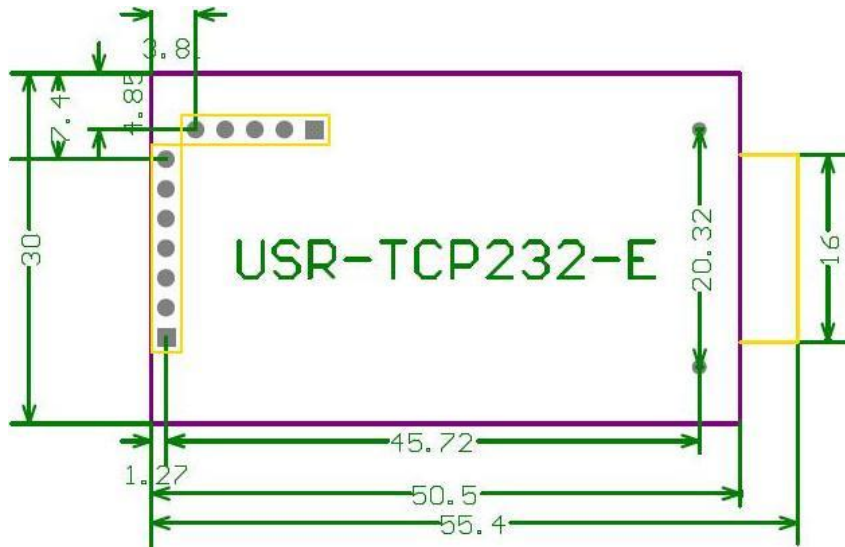
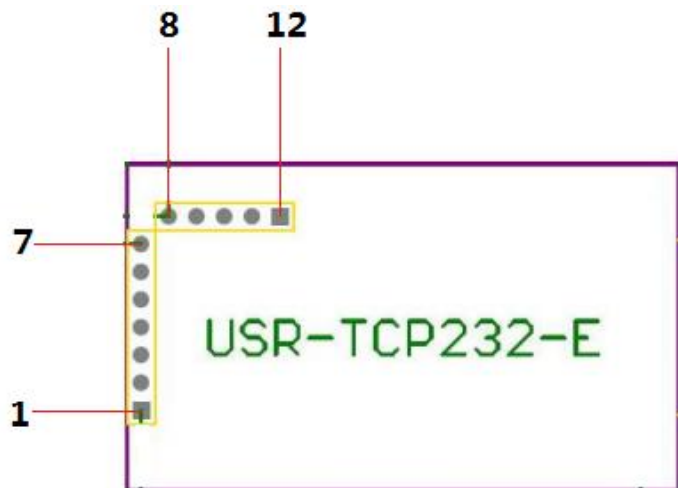


Figure 1 Dimension diagram

## 1.2. Encapsulation

User can download PCB Library from [http://www.usriot.com/usr-tcp232\\_pcb/](http://www.usriot.com/usr-tcp232_pcb/).

## 1.3. Pin Definition



PIN	Name	I/O	Voltage Range	Definition
1	VDD	P	5~7V	5.0V power supply.
2	VCC	P	3.0~3.6V	3.3V power supply.
3	GND	P	-	Power ground
4	RST	I	3.0~3.6V	Resetting the module and taking effect in low level. Inputting low level for 200ms will reset the module. User can connect RST pin to MCU I/O to reset the module through MCU controlling when exceptions occur.
5	TXD0	O	3.0~3.6V	Serial port 1 TX pin.
6	RXD0	I	3.0~3.6V	Serial port 1 RX pin.
7	Reload	I	3.0~3.6V	When module are working normally, user should make Reload pin not available or connect to high level. Inputting low level will enable configuring the module by serial port. User should power the module firstly, then pull down Reload pin to enter serial port configuration mode. When user uses Reload pin to restore the default settings, serial port can't have data transmission.
8	Work	O	3.0~3.6V	Module work LED.
9	CTS0	I	3.0~3.6V	Serial port 1 CTS pin. Flow control pin.
10	RTS0	O	3.0~3.6V	Serial port 1 RTS pin. Flow control pin.
11	RXD1	I	3.0~3.6V	Serial port 2 RX pin.
12	TXD1	O	3.0~3.6V	Serial port 2 TX pin.

**Figure 2 Pin definition**

**P:** The pin of power supply

**I:** Input pin

**O:** Output pin

## 2. Hardware Design

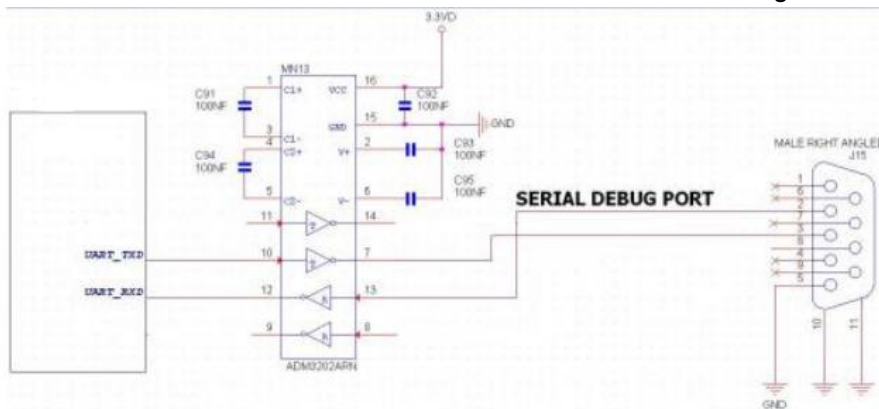
### 2.1. Power Interface

USR-TCP232-E2 adopt 3.3V/5V dual power supply and they can't be used simultaneously. Peak current about 200mA and working current about 150mA.

1. VCC: 3.3V DC power supply. Voltage range: 3.0~3.6V and be suitable for 3.3V MCU.
2. VDD: 5V DC power supply. Voltage range: 4.75V~5.5V. When user connect to 5V MCU, please refer to **2.3. UART Interface** switching circuit .

### 2.2. UART Interface

UART is serial data interface that can connect the RS-232 chip and transfer to the RS-232 level. UART interface includes TXD/RXD. Take the RS-232 level as a reference circuit diagram as follow:



**Figure 3 UART interface**

When communicate to MCU with 3.3V, just connecting TXD of module to RXD of MCU and RXD of module to TXD of MCU. When communicate to MCU with 5V, switching circuit is necessary. Switching circuit diagram as follows:

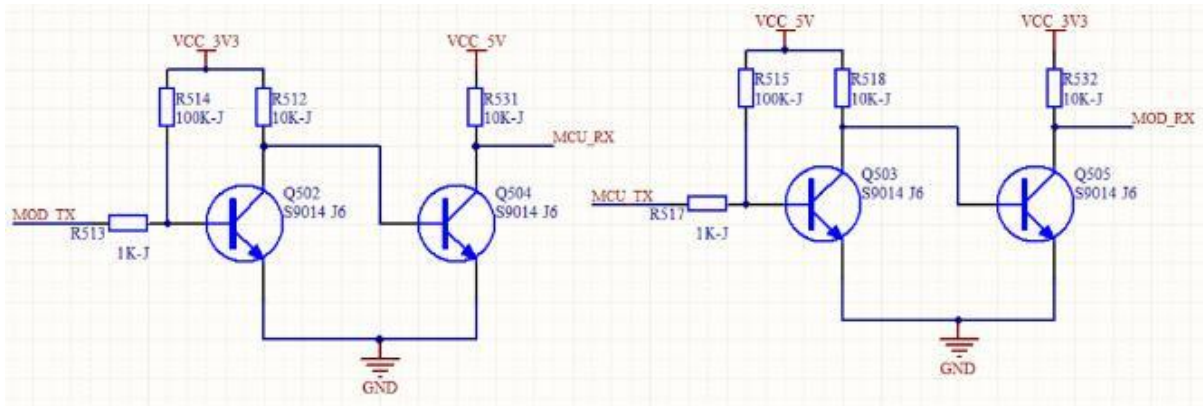


Figure 4 Switching circuit

### 3. Contact

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### 4. Disclaimer

This document provide the information of USR-TCP232-E2 products, it hasn't been granted any intellectual property license by forbidding speak or other ways either explicitly or implicitly. Except the duty declared in sales terms and conditions, we don't take any other responsibilities. We don't warrant the products sales and use explicitly or implicitly, including particular purpose merchant-ability and marketability, the tort liability of any other patent right, copyright, intellectual property right. We may modify specification and description at any time without prior notice.

### 5. Update History

2017-10-17 V1.0.0.01 created.