

USR-K2 Hardware Manual

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1. Product Overview

1.1. Dimension

Module size: 33.03*19.01*19.15 mm, error ± 0.2 mm, pin size as follow:

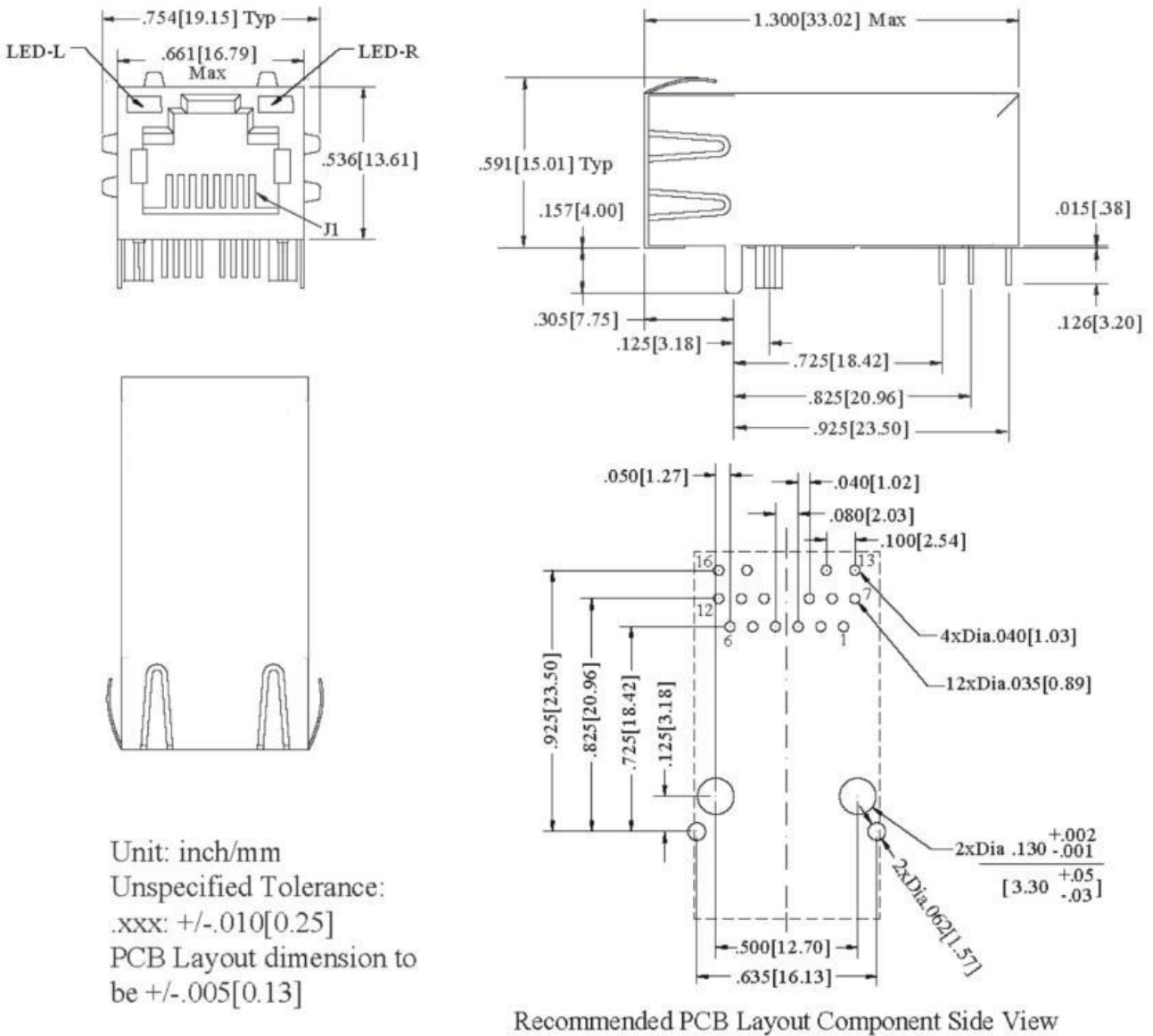
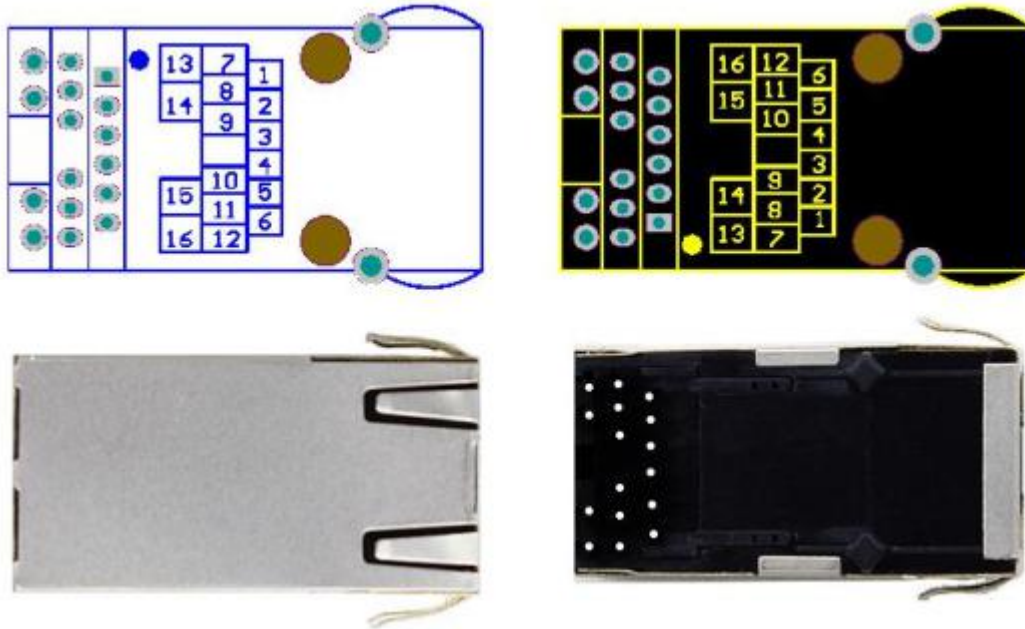


Figure 1 Dimension diagram

1.2. Pin Definition



PIN	Name	Signal Type	Definition
1	NC	NC	Not available
2	NC	NC	Not available
3	LINK	O	Can be used to indicate TCP connection status. After establishing TCP connection and enabling LINK function, led LINK will light.
4	RST	I	Inputting low level over 300ms to reset the module
5	485_EN	O	RS485 receiving/transmitting control pin, high level to enable transmitting.
6	Reload(CFG)	I	After module powering off, pulling down Reload pin to 0V, then powering up, keeping Reload pin 0V over five seconds and pull up Reload pin(3.3V), module will restore default settings. Reload pin connects to internal 10K Ohm pull-up resistor.
7	LED_DATA+	O	Ethernet interface LED_DATA+ pin
8	RXD	I	Serial port receiving pin(3.3V, TTL level) which needs to connect to external 10K Ohm pull-up resistor.
9	TXD	O	Serial port transmitting pin(3.3V, TTL level) which needs to connect to external 10K Ohm pull-up resistor.
10	GND	P	Power ground
11	VCC	P	3.3V VCC
12	LED_LINK+	O	Ethernet interface LED_LINK+ pin

13	LED_DATA-	I	Ethernet interface LED_DATA- pin
14	LED_3V3	P	Power supply pin for Ethernet interface LED
15	LED_3V3	P	Power supply pin for Ethernet interface LED
16	LED_LINK-	I	Ethernet interface LED_LINK- pin

Figure 2 Pin definition

1.3. Ethernet interface LED

LED	Function	Description
Green	Indicating connection status	Green LED will light after module connecting to network
Yellow	Indicating data transmission	Yellow LED will blink when module has data transmission

Figure 3 Ethernet interface LED

2. Hardware Design

2.1. Typical Connection

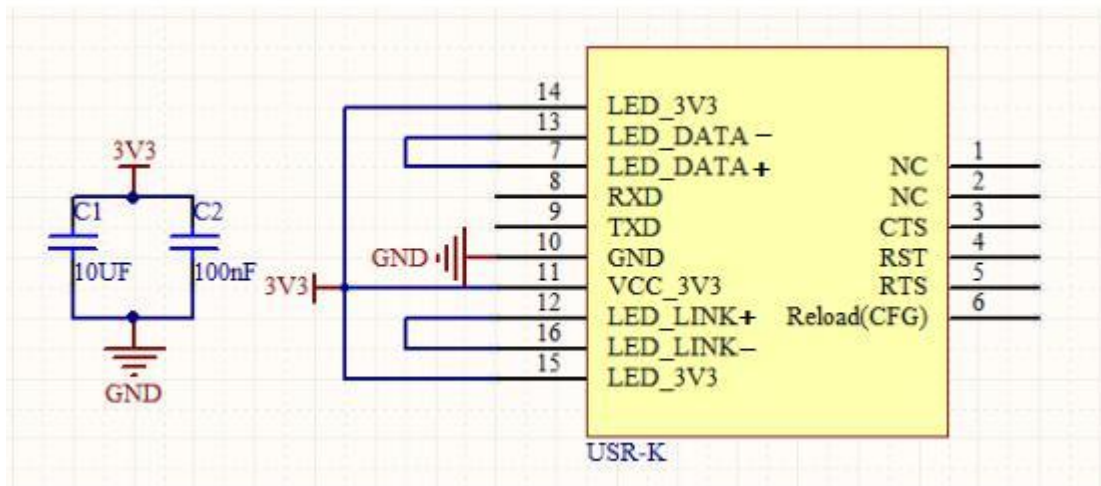


Figure 4 Typical connection

Note:

1. Connect two LED_3V3 pin to 3.3V power supply.
2. Connect 12 pin LED_LINK+ to 16 pin LED_LINK- which has connected to internal 1K Ohm series resistor.
3. Connect 7 pin LED_DATA+ to 13 pin LED_DATA- which has connected to internal 1K Ohm series resistor.
4. RST: Resetting module and taking effect in low level. RST pin has connected to internal 10K Ohm pull-up resistor to 3.3V. When USR-K2 works in TCP Client mode, module will connect to TCP Server. After enabling Reset function, module will reset if TCP connection can't be established after trying 30 times.
5. Reload: After module powering off, pulling down Reload pin to 0V, then powering up, keeping Reload pin 0V over five seconds and pull up Reload pin(3.3V), module will restore default settings. Reload pin connects to internal 10K Ohm pull-up resistor.
6. TXD/RXD: Serial port data transmitting/receiving pin and should connect to 10K Ohm pull-up resistor.

2.2. Power Interface

USR-K2 adopts 3.3V power supply and working current is 136mA@3.3V. Pin 11 is VCC 3.3V pin which can connect to 10µF/6V3/10% and 100nF/50V/10% bypass capacitor to make module work stably. Circuit diagram as follow:

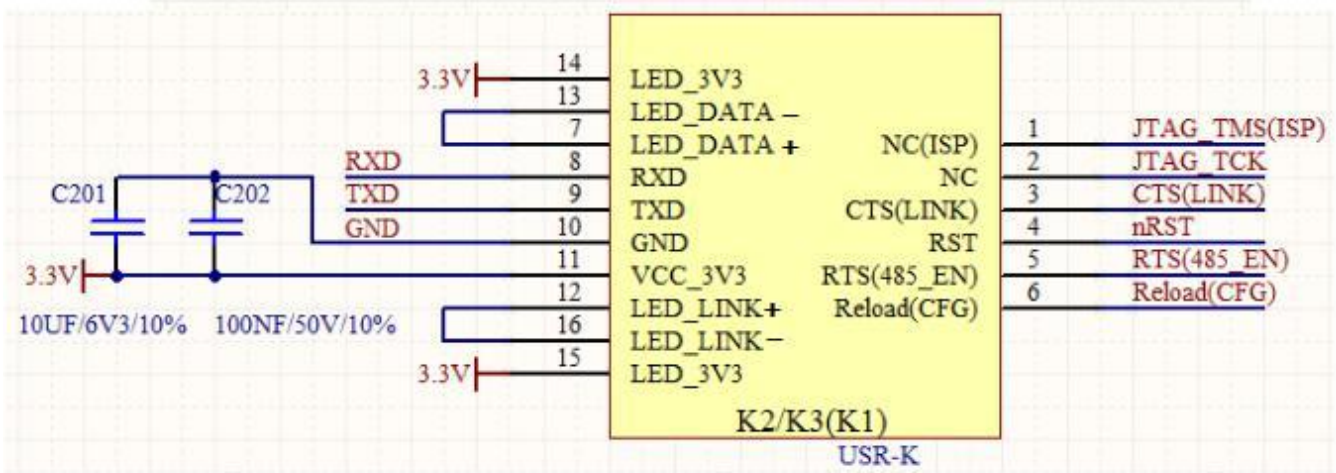


Figure 5 Power interface

2.3. 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. Taking the RS-232 level as a reference circuit diagram as follow:

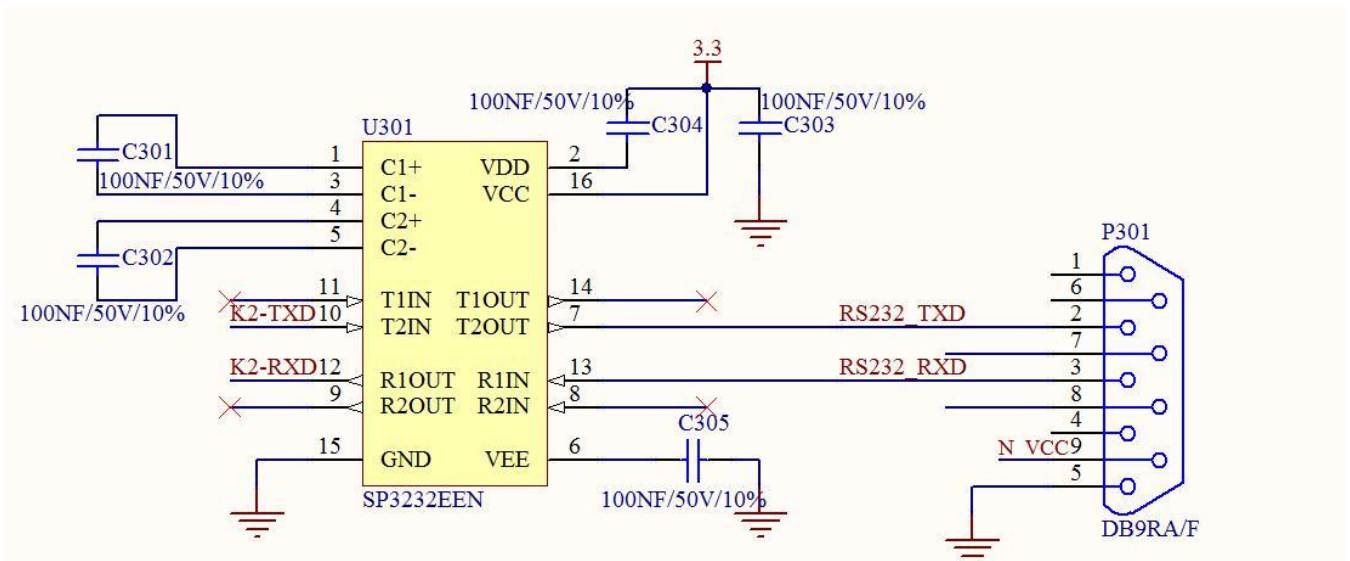


Figure 6 RS232 level UART interface

When communicating to MCU with 3.3V, just connecting TXD of module to RXD of MCU and RXD of module to TXD of MCU. When communicating to MCU with 5V, switching circuit is necessary.

Switching circuit diagram as follow:

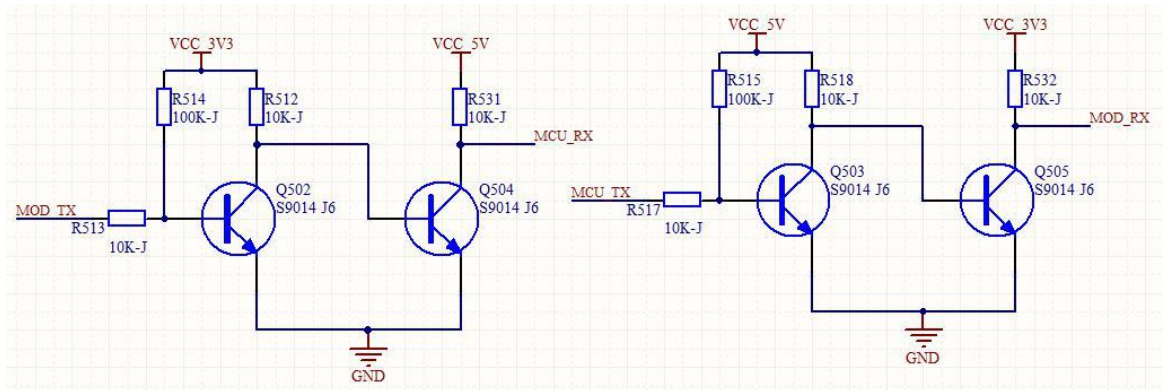


Figure 7 Switching circuit

3. Contact

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4. Disclaimer

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5. Update History

2017-11-02 V1.3.01 created based on Chinese version V1.3.