

USR-WIFI232-D2 Hardware Manual

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Content

USR-WIFI232-D2 Hardware Manual	1
1. Product Overview	3
1.1. Dimension	3
1.2. Pin Definition	3
2. Hardware Design	5
2.1. Typical Connection	5
2.2. Power Interface	5
2.3. UART Interface	6
2.4. 10/100M Ethernet Interface	6
2.5. Antenna	7
3. Contact	8
4. Disclaimer	8
5. Update History	8

1. Product Overview

1.1. Dimension

Module dimension diagram as follow:

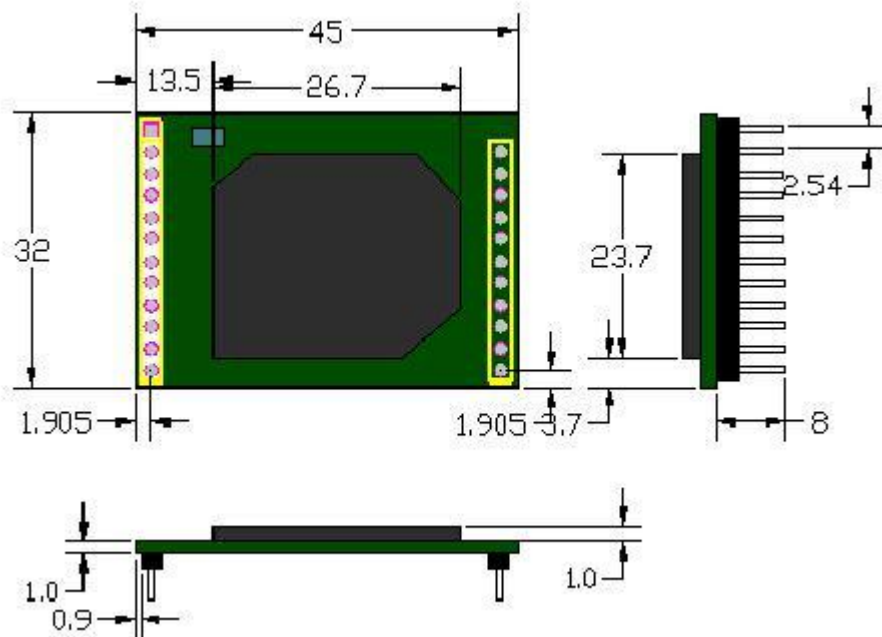
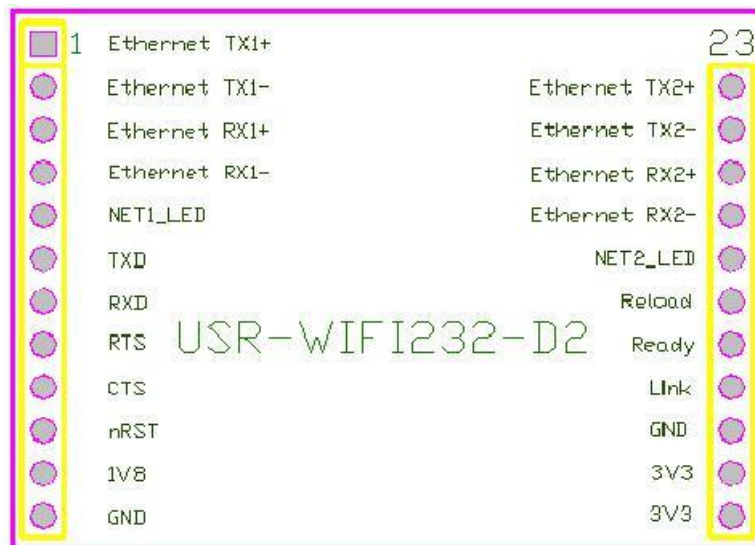


Figure 1 Dimension diagram

1.2. Pin Definition



PIN	Name	Signal Type	Definition
1	TX1+	O	1.8V interface. Supporting direct connection with external transformer or Ethernet AC Coupling without external transformer. From 1~4 respectively are Ethernet 1 output+, output-, input+, input-.
2	TX1-	O	
3	RX1+	I	
4	RX1-	I	
5	NET1_LED	O	LED for Ethernet 1. Low level means connection normal, blinking means data transmission.
6	UART_TXD	O	If user don't need UART function, these four pins can be set to GPIO function mode. Then user can send AT command to query/set GPIO status.
	GPIO6	I/O	
7	UART_RXD	I	
	GPIO7	I/O	
8	UART_RTS	O	
	GPIO8	I/O	
9	UART_CTS	I	
	GPIO9	I/O	
10	RESET	I	
11	1.8V	O	1.8V@300mA, used for Ethernet.
12	GND	P	Power ground.
13/14	3.3V	P	3.3V@350mA, VCC.
15	GND	P	Power ground.
16	nLink	O	WIFI connected, output "0"; otherwise output "1". Can be set as GPIO.
	GPIO16	I/O	
17	nReady	O	Module starting normally, output "0"; otherwise output "1". Can be set as GPIO.
	GPIO17	I/O	
18	nReload	I	Take effect in low level. Press over 3 seconds and release to restore default settings.
	GPIO10	I/O	
19	NET2_LED	O	LED for Ethernet 2. Low level means connection normal, blinking means data transmission.
20	RX2-	I	1.8V interface. Supporting direct connection with external transformer or Ethernet AC Coupling without external transformer. From 20~23 respectively are Ethernet 2 input-, input+, output-, output+.
21	RX2+	I	
22	TX2-	O	
23	TX2+	O	

Figure 2 Pin definition

2. Hardware Design

2.1. Typical Connection

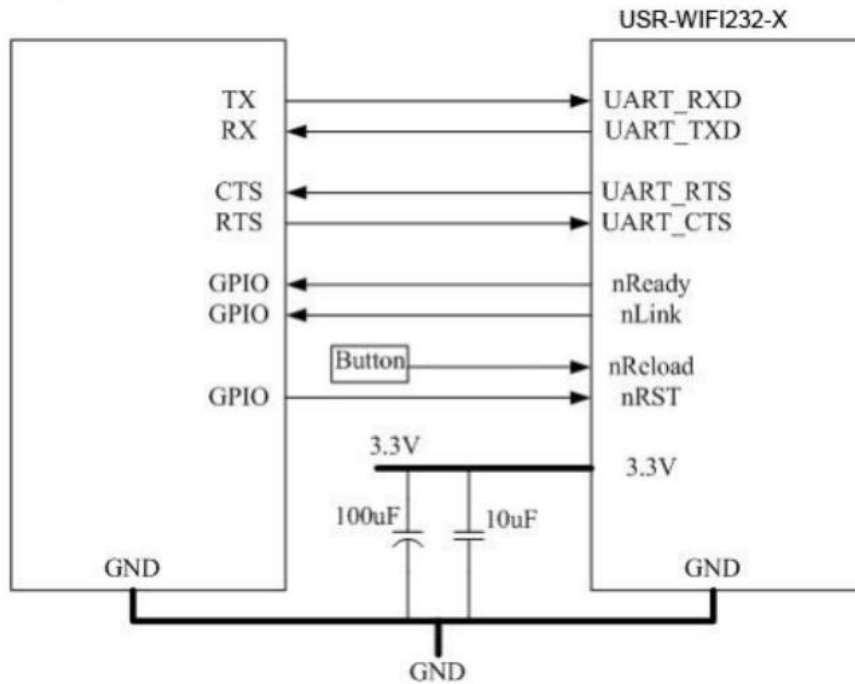


Figure 3 Typical connection

1. nRST: Input pin. Resetting the module and taking effect in low level. nRST pin connect to internal 100K Ohm pull-up resistor to 3.3V. Press over 300ms and release to reset the device.
2. nReady: Output pin. Output low level(or heartbeat signal) after module starting normally. nReady pin connect to internal 4.7K Ohm pull-up resistor to 3.3V.
3. nLink: Output pin. Output low level when module connect to AP or has STA device connect to module in AP mode. nLink pin connect to internal 4.7K Ohm pull-up resistor to 3.3V.
4. nReload: nReload pin can connect to external button or configuration pin. Press over 3s to restore default settings. nReload pin should connect to external 4.7k-10k Ohm pull-up resistor.

2.2. Power Interface

USR-WIFI232-D2 adopt single-voltage 3.3 V power supply. Peak current is about 350mA, work current is about 200mA and sleep mode current is 100mA.

The power filter is recommended to be used near the connector of the user board, and it is recommended to use three parallel decoupling capacitors with 100uF, 10uF and 100nF to improve the stability of the system and wireless performance.

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/RTS/CTS. Take the RS-232 level as a reference circuit diagram as follow:

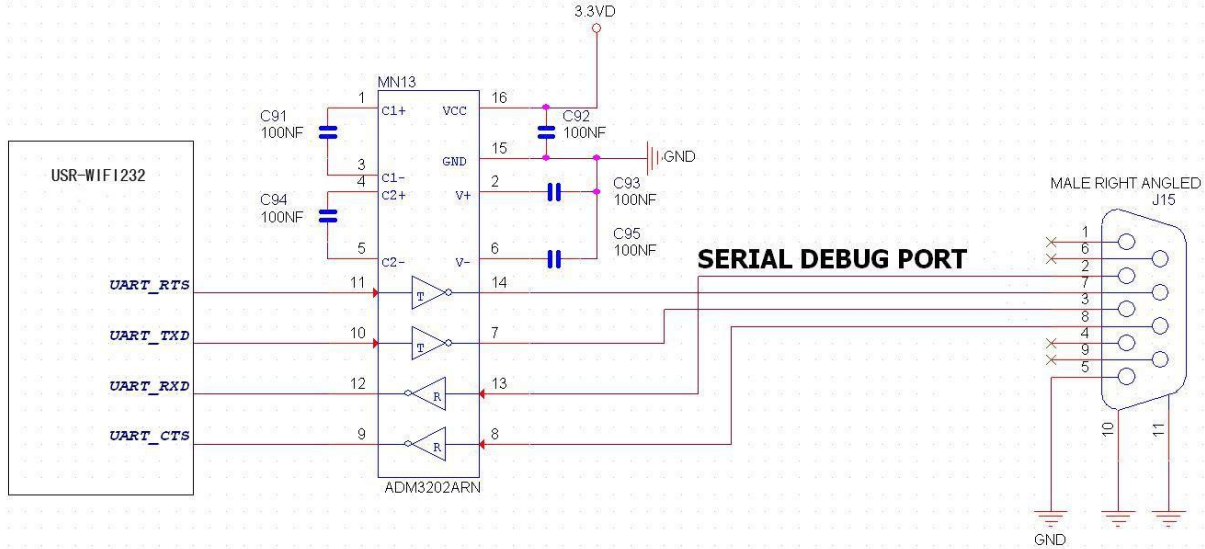


Figure 4 UART interface

2.4. 10/100M Ethernet Interface

USR-WIFI232-D2 provide two 10/100M Ethernet Interfaces and support Ethernet Interface with transformer design.

Put Ethernet transformer and RJ45 connector on user board is a standard 10/100M Ethernet Interface. Reference circuit diagram as follow:

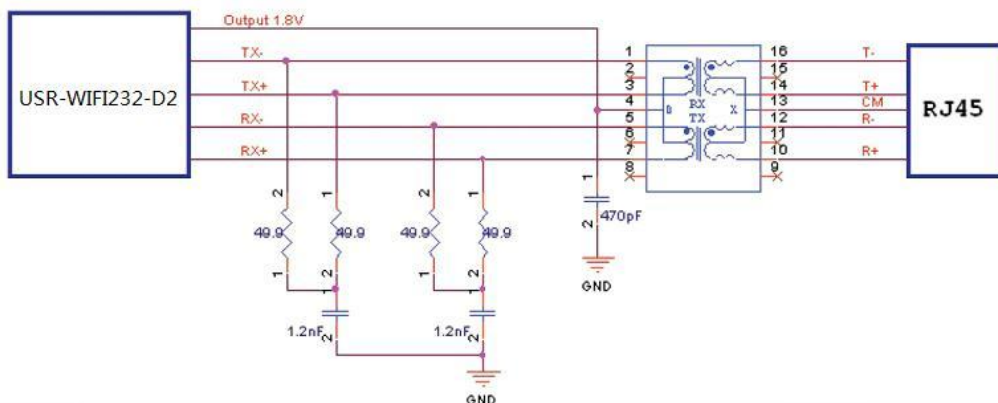


Figure 5 10/100M Ethernet Interface

2.5. Antenna

USR-WIFI232-D2 adopt externally installed antenna. USR-WIFI232-D2 need connect to the 2.4GHz antenna that conforms to 802.11b/g/n. The specific parameters of the antenna as the following table:

Frequency	2.4~2.5GHz
Impedance	50 Ohm
VSWR	2 (Max)
Return Loss	-10dB (Max)
Connector	I-PEX or populate directly

Figure 6 Antenna standards

3. Contact

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4. Disclaimer

This document provide the information of USR-WIFI232-D2 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

2017-10-10 V1.0.12.01 created.