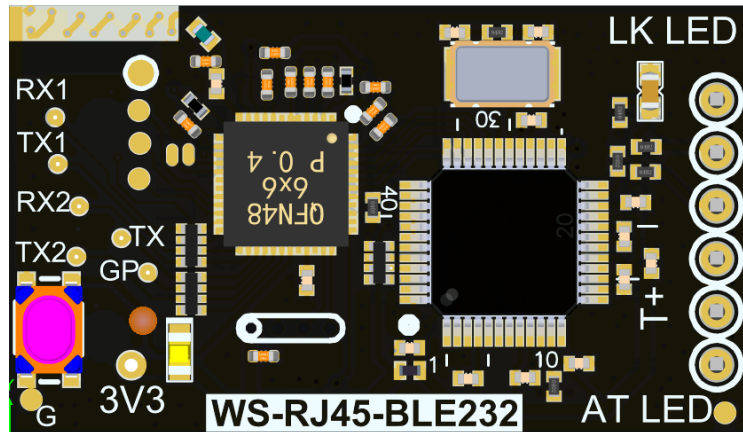


# WS-RJ45-BLE232-AG



- 100M high-speed network, 10/100M self-adjusting Ethernet interface
- Support HTTP communication protocol
- UART serial transmission rate can be set from 2400 bps to 115200 bps
- Work mode: TCP Client, TCP Server, UDP, MODBUS TCP, MODBUS-RTU, and other modes
- Support virtual serial port working mode when transparent transmission protocol
- Can cross the gateway, cross the switch, and the router
- It can work on the local area network or the Internet (external network)

## Product Features

- 10/100M TCP/IP
- Wired to Wireless Network
- Web Configuration
- Small Size 20.75\*35.74 mm
- Bi-directional Data Transmission
- ARM32 Core
- Low Voltage Operation 3.3V
- Connectable to NB-IoT
- Connectable to 4G
- Connectable to WiFi Module for Control

## Specification

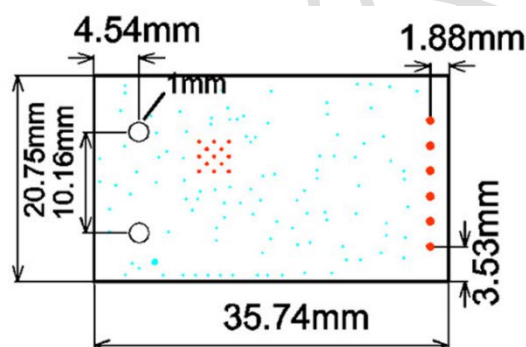
- Supply voltage : 3.3V
- TCP/IP protocols : TCP 、UDP
- Network protocols : Client 、Server
- Interface : TTL UART \* 3
- Operating temperature : -10°C~+85°C

## DC Characteristics

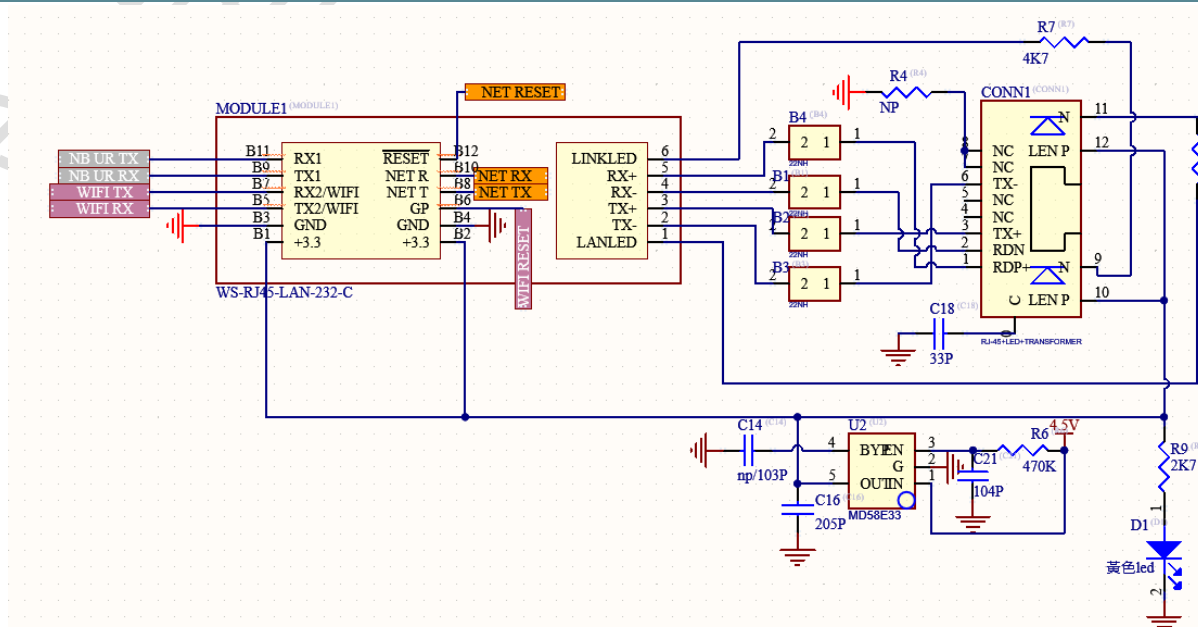
| Symbol | Parameter                 | Test Condition | Min | Typ | Max | Unit |
|--------|---------------------------|----------------|-----|-----|-----|------|
| VIH    | High level input voltage  |                | 2.0 |     | 5.5 | V    |
| VIL    | Low level input voltage   |                | 0.3 |     | 0.8 | V    |
| VOL    | Low level output voltage  | IOL = 8mA,     |     |     | 0.4 | V    |
| VOH    | High level output voltage | IOL = 8mA,     | 2.4 |     |     | V    |

## Dimensions

(mm)



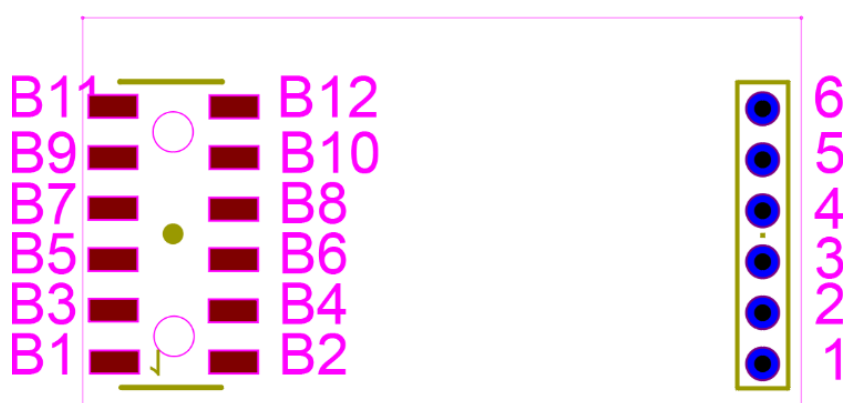
## Demo Circuit



## Pin Assignment

| Pin | Name     | I/O | Description                             |
|-----|----------|-----|-----------------------------------------|
| 1   | LAN LED  | O   | Network activity status indicator light |
| 2   | TX-      | AO  | Differential signal transmission        |
| 3   | TX +     | AO  | Differential signal transmission        |
| 4   | RX -     | AI  | Differential signal reception           |
| 5   | RX +     | AI  | Differential signal reception           |
| 6   | LINK LED | O   | Network connection indicator light      |
| B1  | VDD      | P   | Power Supply 3.3V                       |
| B2  | VDD      | P   | Power Supply 3.3V                       |
| B3  | GND      | G   | Ground                                  |
| B4  | GND      | G   | Ground                                  |
| B5  | TX2      | O   | UART TX2 (Customizable)                 |
| B6  | GP       | I/O | TBD (Customizable)                      |
| B7  | RX2      | I   | UART RX2 (Customizable)                 |
| B8  | NET TX   | O   | Module UART TX                          |
| B9  | TX1      | O   | UART TX1 (Customizable)                 |
| B10 | NET RX   | I   | Module UART RX                          |
| B11 | RX1      | I   | UART RX1 (Customizable)                 |
| B12 | REST     | I   | Pull low reset                          |

## Top View



## AT Command

| # | AT Command                    | Return                      | Function Explanation                                                                                                                     |
|---|-------------------------------|-----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| 1 | AT+RJ45_IP:0,192.168.2.3      |                             | 查詢或主動上報 IP，因定 IP 或 DHCP 獲取成功後主動發出本地 IP<br>//參數 1 0 固定 IP 1 DHCP 獲取成功 2 DHCP 未獲取到 IP 5 網線沒插入或不良<br>?查詢<br>//參數 2 本地 IP<br>方向：模組通過 UART 發送 |
|   |                               | AT+RJ45_IP:0,192.168.2.3    | 查詢時回復                                                                                                                                    |
| 2 | AT+NETSTA:?                   |                             | 查詢與 SERVER 連接或 SERVER 時被連接的狀態                                                                                                            |
|   |                               | AT+NETSTA:0                 | //參數 0 未連接 1 連接成功                                                                                                                        |
| 3 | AT+SETNET:0,192.168.2.10,8082 |                             | 向設備設置網路參數<br>參數 1 0 設備為 client 1 為 server<br>參數 2 目標 IP<br>參數 3 參數 1 為 0 時為目標 Port 參數 1 為 1 時為設備 server 偵聽埠                              |
|   |                               | +SETNET:0,192.168.2.10,8082 | 返回                                                                                                                                       |
| 4 | AT+LinkWLAN=0                 |                             | 模組主動發送連接 SERVER 狀態 ( 0.03 版本才有 )<br>參數 0 斷開連接 1 連接成功                                                                                     |
|   |                               |                             |                                                                                                                                          |
| 5 | AT+FlashFactoryReset          |                             | FLASH 保存的參數設置恢復出廠                                                                                                                        |
|   |                               |                             |                                                                                                                                          |
| 6 | AT+RJ45Reset                  |                             | 模組復位                                                                                                                                     |
|   |                               | AT+ACK:OK                   |                                                                                                                                          |
| 7 | AT+MAINUPDATE                 |                             | 模組向主機板發送更新請示 ( 0.03 版本才有 )                                                                                                               |
|   |                               |                             |                                                                                                                                          |

## Web page login information

User name : admin

Password : 12345678