# ZDWFM2402 User Manual

**Product Name**：IEEE 802.11 b/g/n 2.4GHz 2T2R USB Module

**Model** ：ZDWFM2402

## 1. Introduction

Thank you for using the Wi-Fi module product provided by Qingdao Intelligent&Precise Electronics Co.,Ltd. Before use, please read this user manual carefully. Please follow the technical specifications when using the module in your design and develop activities. Qingdao Intelligent&Precise Electronics Co.,Ltd has the right to change the contents of this manual in accordance with the needs of the technical development.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC RF Radiation Exposure Statement Caution: To maintain compliance with the FCC's RF exposure guidelines, place the product at least 20cm from nearby persons.

Warning: Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Host labeling requirement:" Contains transmitter module FCC ID: 2AJVQ-ZDWFM2402"

## 2. Product Information

### 2.1 Product Information

ZDWFM2402 wifi USB module is a wireless signal module device work at 2.4Ghz .ZDWFM2402 comply with IEEE 802.11b、802.11 g and 802.11 n standard。It support up to 300Mbps physical layer transmitting rate. ZDWFM2402 support USB 2.0, which has up to 480Mbps data rate.

ZDWFM2402 has 2T2R structure， has 2 onboard Antenna. It could provide stable wireless link with high throughput。

ZDWFM2402 is a wireless WiFi signal module. It could transmit and receive WiFi wireless signal.

It is widely used to multi-media device, such as smart TV. Equiped with ZDWFM2402, a smart TV could access to Wireless Local Network, which is also called WLAN or WIFI network. ZDWFM2402 helps multi-media device achieve to send&receive data package in a wireless way.

### 2.2 Feature

- ●IEEE standard：IEEE 802.11b/g/n client
- ●operating Frequency 2.4Ghz
- ●support up to 300Mbps
- ●2T2R mode
- ●support 20MHz/40MHz different bandwidth
- ●support USB 2.0 high data rate mode，6-pin USB signal and power connector
- ●low power consumption
- ●support Wi-Fi direct link
- ●support WFA/ WPA/WPA2 /WPS2.0/WAPI security
- ●RoHs

### 2.3 MCU

MAC /baseband/RF：MT7603UN

## 3.Product Specification

### 3.1 Parameter

| | |
|---|---|
| WLAN Standard | IEEE802.11b;IEEE802.11g;IEEE802.11n |
| Data Interface | universal Serial Bus(USB2.0) |

| | | | |
|---|---|---|---|
| Data rate | 802.11b:11,5.5,2,1Mbps;<br>802.11g:54,48,36,24,18,12,9,6,Mbps;<br>802.11n:MCS 0 to 15 for HT20MHZ;<br>MCS 0 to 15 for HT40MHZ。 | | |
| Modulation Mode | 802.11g/n---OFDM(BPSK,QPSK,16QAM,64QAM);<br>802.11b---CCK 11Mbps,5.5Mbp，QPSK 2Mbps ，BPSK 1Mbps。 | | |
| Channel | 2.4GHz<br>11:(Ch.1-11)-United States<br>13:(Ch.1-13)-Europe<br>14: (Ch.1-14)-Japan | | |
| Working Frequency | 2.412~2.462 GHz- United States<br>2.412~2.484 GHz-Japan<br>2.412~2.472 GHz-Europe ETSI | | |
| Typical Tx Power | 802.11b(802.11 CCK,11Mbps)<br>16dBm | 802.11g(802.11 OFDM,54Mbps)<br>14dBm@54Mbps | 802.11n<br>13dBm@HT20 MCS0<br>13dBm@HT20 MCS15<br>12dBm@HT40 MCS0<br>12dBm@HT40 MCS15 |
| Receiver Sensitivity | -85dBm @ 11M(802.11b CCK,8% PER)<br>-65dBm @ 11M(802.11g OFDM,10% PER)<br>-64dBm @ MCS7(802.11n OFDM with 20MHz ,10% PER)<br>-61dBm @ MCS7(802.11n OFDM with 40MHz ,10% PER) | | |
| Working Voltage | 5V±10% I/O supply voltage | | |
| Antenna Gain | 2dBi | | |
| Antenna type | 2 onboard Omni-directional antenna; | | |

3.2

| | min | max | |
|---|---|---|---|
| Working Temperature | -10 | 70 | ℃ |
| Storage Temperature | -40 | 125 | ℃ |

## 4. Hardware information

### 4.1 structure dimension: (mm)

PCB Material：FR-4，Surface treatment：OSP。

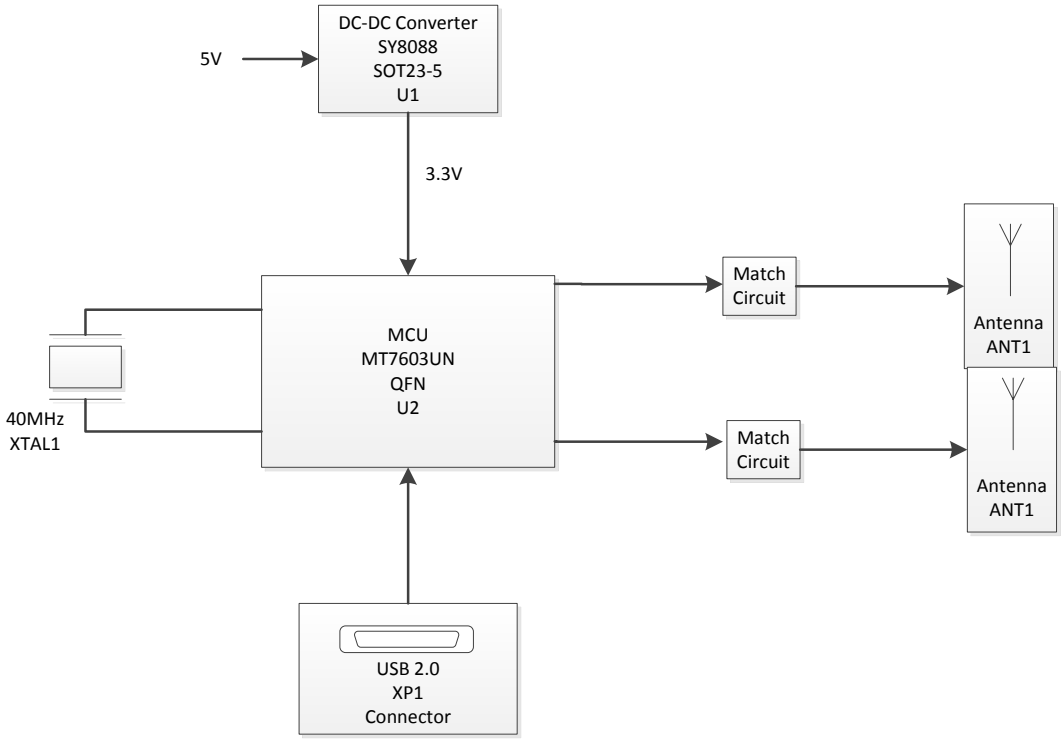
Appearance Dimension（mm）：40（+/- 0.2）×46.5（+/- 0.2）。

PCB thickness：1.0mm（+/-0.15mm）。

## 4.2 PIN definition

| Pin | Name | Type | Description |
|---|---|---|---|
| 1 | VCC | - | 5V |
| 2 | DM | I/O | USB Data - |
| 3 | DP | I/O | USB Data + |
| 4 | GND | - | Ground |
| 5 | WOW | I/O | Wake on Wireless control pin |
| 6 | RESET | I/O | LDO_RST_N |

## 4.3 Block Diagram




BLOCK DIAGRAM