



# WMU6209

## 802.11abgn/ac 2T2R WIFI & BT Module Technical Specifications

- System Information
- Data Rate
- Operating Frequency
- Interface
- Modulation
- Recommended Operating Conditions
- Driver Support
- Certification
- Block Diagram
- Dimension
- Pin Assignment
- Output Power & Sensitivity

### System Information

Wireless: IEEE 802.11 a/b/g/n/ac (2T2R)  
 Bluetooth: v2.1/v3.0/v4.1/v4.2  
 Chipset: Realtek RTL8822BU  
 Antenna: U.FL x2 for 2T2R (2.4GHz & 5GHz dual band antenna)  
 LED: WiFi Status

### Data Rate

802.11b : 11Mbps  
 802.11a/g : 54Mbps  
 802.11n : 300Mbps  
 802.11ac : 867Mbps

### Operating Frequency

IEEE 802.11 b/g/n: 2.412GHz ~ 2.484GHz  
 IEEE 802.11 a/ac: 5.150GHz ~ 5.850GHz

### Interface

Half Holes with USB Protocol (WiFi+BT)

### Modulation

802.11a : BPSK, QPSK, 16-QAM, 64-QAM  
802.11b : DBPSK, DQPSK, CCK  
802.11g : BPSK, QPSK, 16-QAM, 64-QAM  
802.11n : BPSK, QPSK, 16-QAM, 64-QAM  
802.11ac : BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM

### Recommended Operating Conditions

Operating Voltage: DC 5V  $\pm$  10%  
Operating Temperature Range: -20°C ~ 70°C  
Storage Temperature Range: -40° ~ 85°C  
Operating Humidity (non-condensing): 5% ~ 95%  
Storage Humidity (non-condensing): 5% ~ 90%  
Power consumption: 2W(MAX)  
Dimension (in mm): 40(L) x 20(W) mm

### Driver Support

**Platform Supported:**

Windows 7/8/10 (32bit/64bit)  
Linux (kernel 2.6.24~ 4.15)  
Android 1.6 ~ 2.3, 4.0 ~ 8.x

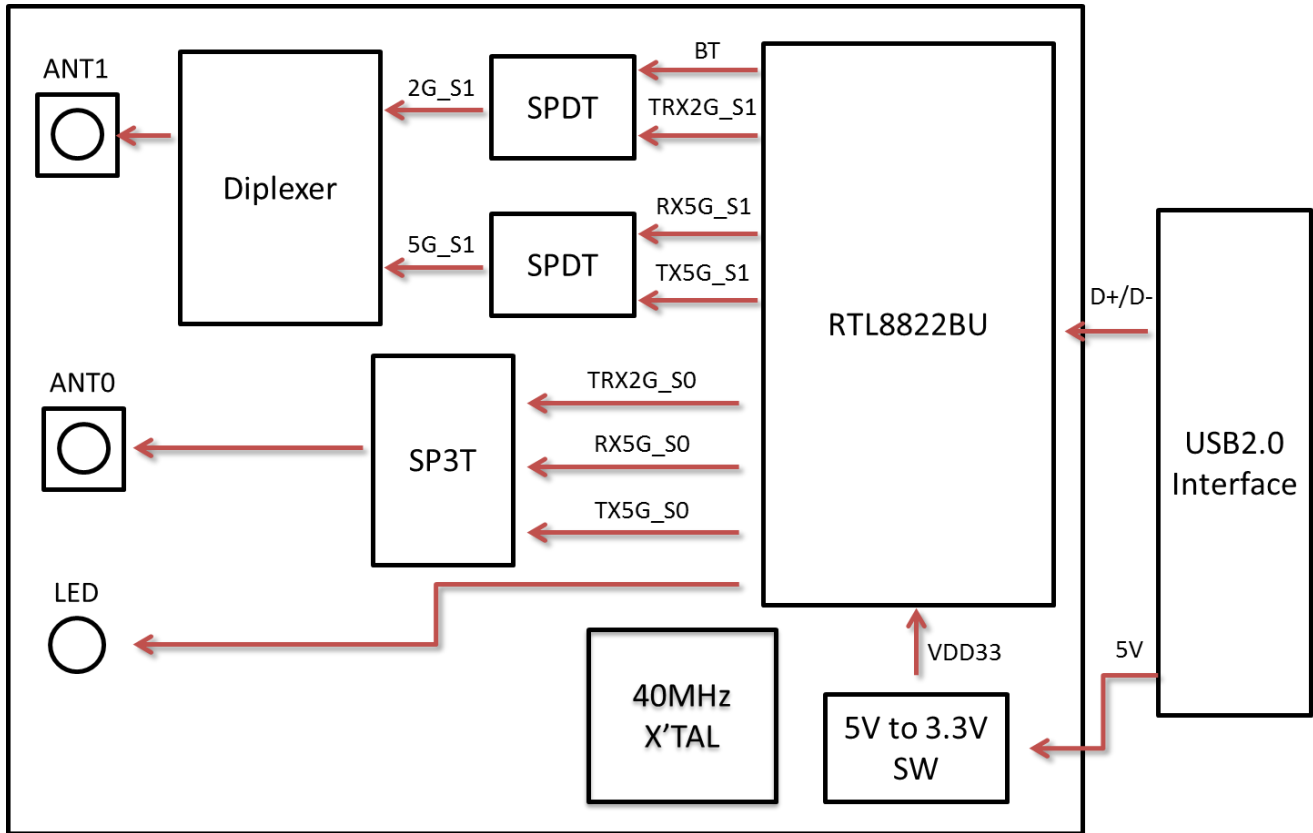
**CPU Supported:**

X86  
ARM  
MIPS

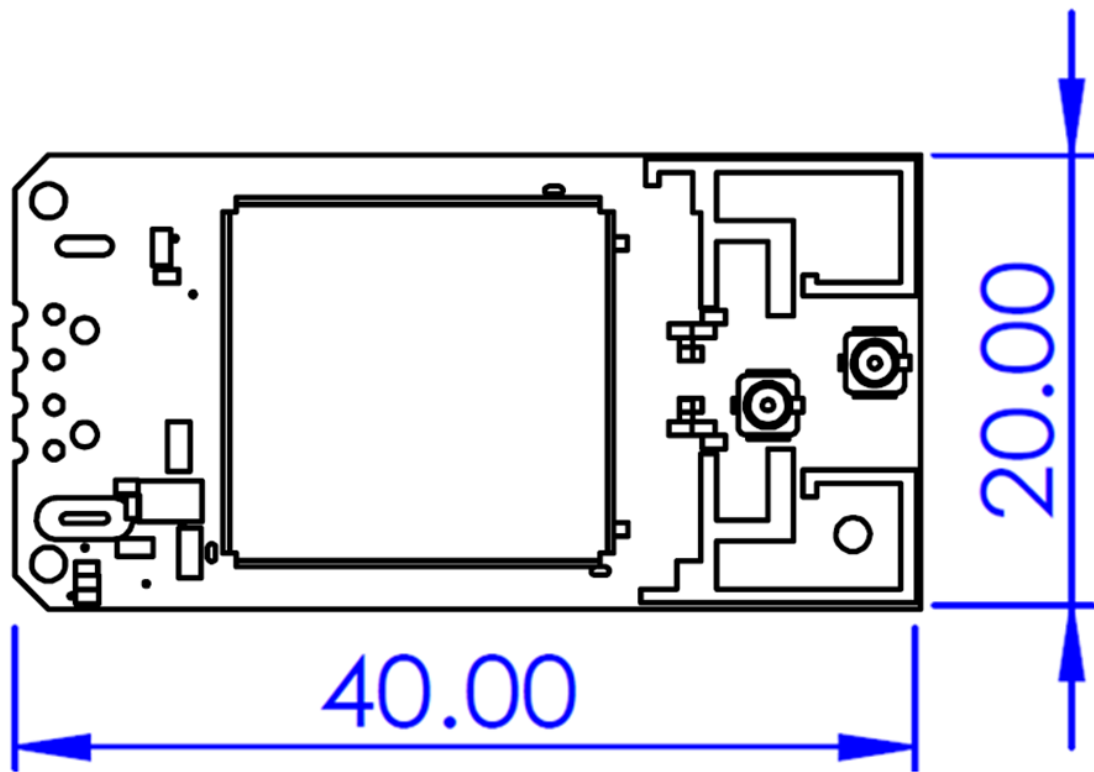
### Certification

FCC / CE / IC

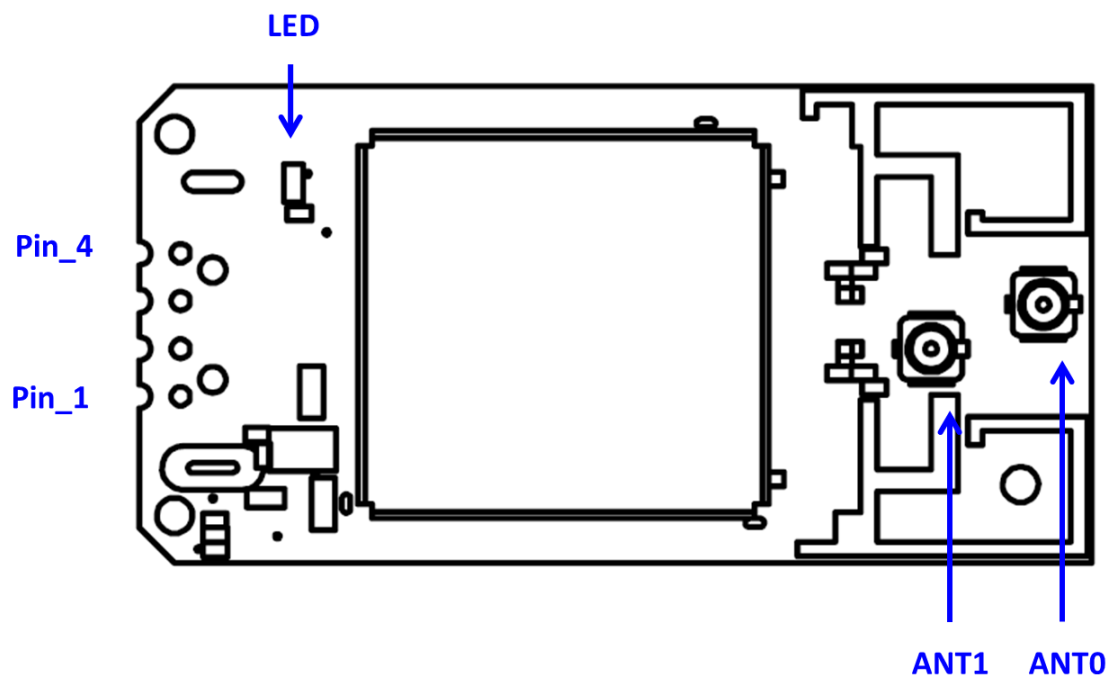
**Block Diagram**



Dimension



## Pin Assignment



Pin Name	Description
Pin_1	USB 5V
Pin_2	USB D-
Pin_3	USB D+
Pin_4	USB GND
LED	WiFi LED
Ant_0	RF Antenna for WiFi 2.4GHz/5GHz
Ant_1	RF Antenna for WiFi 2.4GHz/5GHz & Bluetooth

## Output Power & Sensitivity

### Bluetooth

Data Rate	Tx +/- 2dB	Rx Sensitivity +/- 2dB
3Mbps	$0 \leq \text{Output Power} \leq +4\text{dBm}$	<0.1% BER at -70dBm

### 802.11bg

Data Rate	Tx +/- 2dB	Rx Sensitivity +/- 2dB
1~11Mbps	15dBm	-80dBm
24Mbps	15dBm	-70dBm
54Mbps	14dBm	-70dBm

### 802.11n / 2.4GHz

Data Rate		Tx +/- 2dB (1TX)	Rx Sensitivity +/- 2dB
VHT 20	MCS 0	15dBm	-70dBm
	MCS 4	14dBm	-60dBm
	MCS 7	13dBm	-60dBm
VHT 40	MCS 0	15dBm	-70dBm
	MCS 4	14dBm	-60dBm
	MCS 7	13dBm	-60dBm

### 802.11a

Data Rate	Tx +/- 2dB	Rx Sensitivity +/- 2dB
6Mbps	18dBm	-90dBm
24Mbps	18dBm	-80dBm
54Mbps	16dBm	-70dBm

802.11n / 5GHz			
Data Rate		Tx +/- 2dB (1TX)	Rx Sensitivity +/- 2dB
VHT 20	MCS 0	14dBm	-70dBm
	MCS 4	13dBm	-60dBm
	MCS 7	12dBm	-60dBm
VHT 40	MCS 0	14dBm	-70dBm
	MCS 4	13dBm	-60dBm
	MCS 7	12dBm	-60dBm

802.11ac			
Data Rate		Tx +/- 2dB (1TX)	Rx Sensitivity +/- 2dB
VHT 20	MCS 0	14dBm	-70dBm
	MCS 4	13dBm	-60dBm
	MCS 8	12dBm	-60dBm
VHT 40	MCS 0	12dBm	-60dBm
	MCS 4	10dBm	-50dBm
	MCS 9	9dBm	-50dBm
VHT 80	MCS 0	12dBm	-60dBm
	MCS 4	10dBm	-60dBm
	MCS 9	9dBm	-50dBm