



WMU6203

11ac 2T2R WIFI & BT Module

Technical Specifications

Standards

Data Rate

Operating Frequency

Interface

Modulation

Recommended Operating Conditions

Output Power & Sensitivity

STANDARDS

Wireless: IEEE 802.11a/b/g/n/ac (2T2R)

Bluetooth: v2.1/v3.0/v4.1/v4.2

Chipset: Realtek RTL8822BU

DATA RATE

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

OPERATING FREQUENCY

IEEE 802.11 a/b/g/n Band, 2.412GHz ~ 2.484GHz, 5.150GHz ~ 5.850GHz

INTERFACE

M.2 (2230) for USB2.0 (WiFi+BT)

Antenna Ports : MHF4 x 2 for 2T2R

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 3.3V $\pm$ 10%

Operating Temperature Range: -20°C ~ 70°C

Storage Temperature Range: -40°~ 85°C

Operating Humidity (non-condensing): 5% ~ 95, non-conensing

Storage Humidity (non-condensing): 5% ~ 90%, non-conensing

Power consumption: 2W(MAX)

Dimension (in mm): 22.0 x 30.0 mm

Driver Support

Platform Supported:

Windows 7/8/10 (32bit/64bin)

Linux (kernel 2.6.24~ 4.15)

Android 1.6 ~ 2.3, 4.0 ~ 8.x

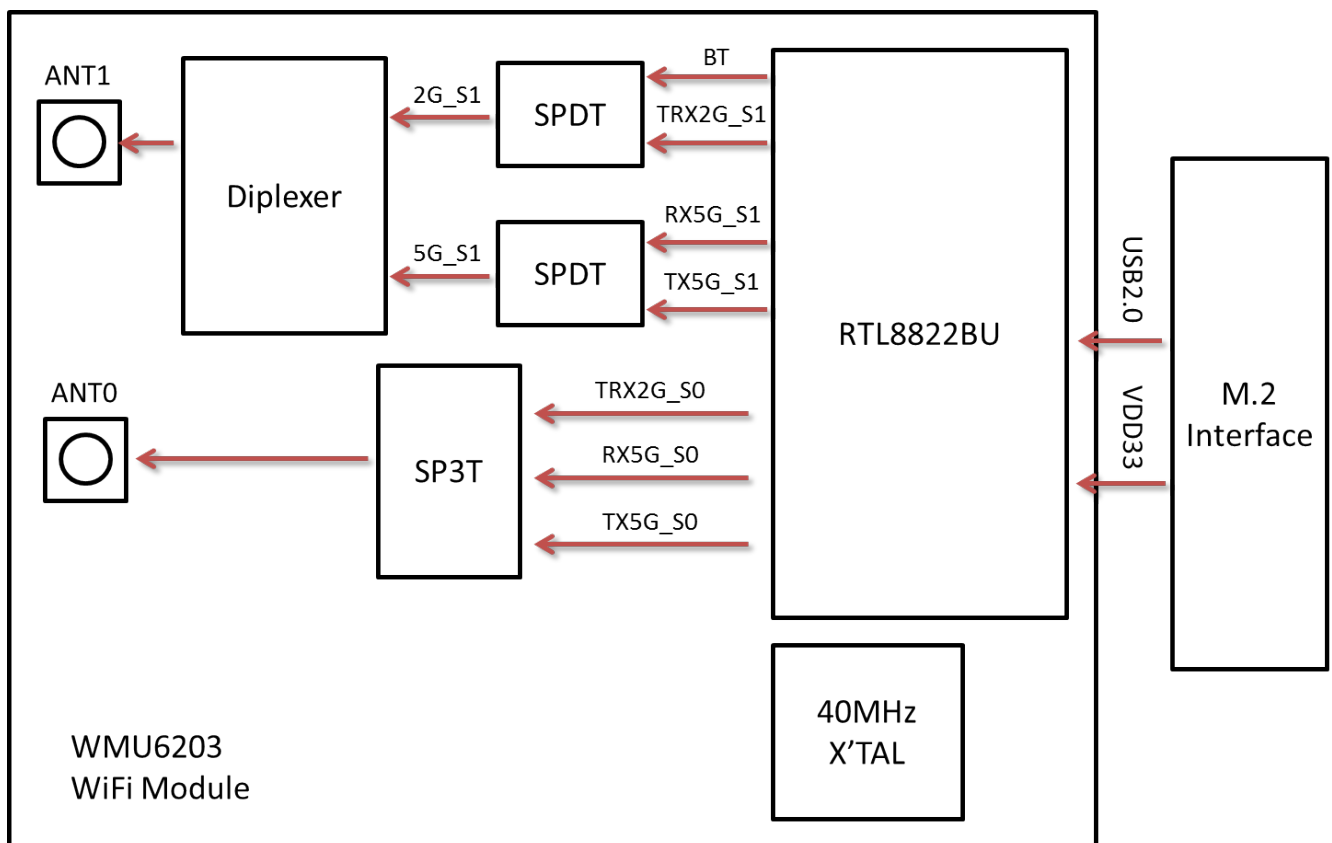
CPU Supported:

X86

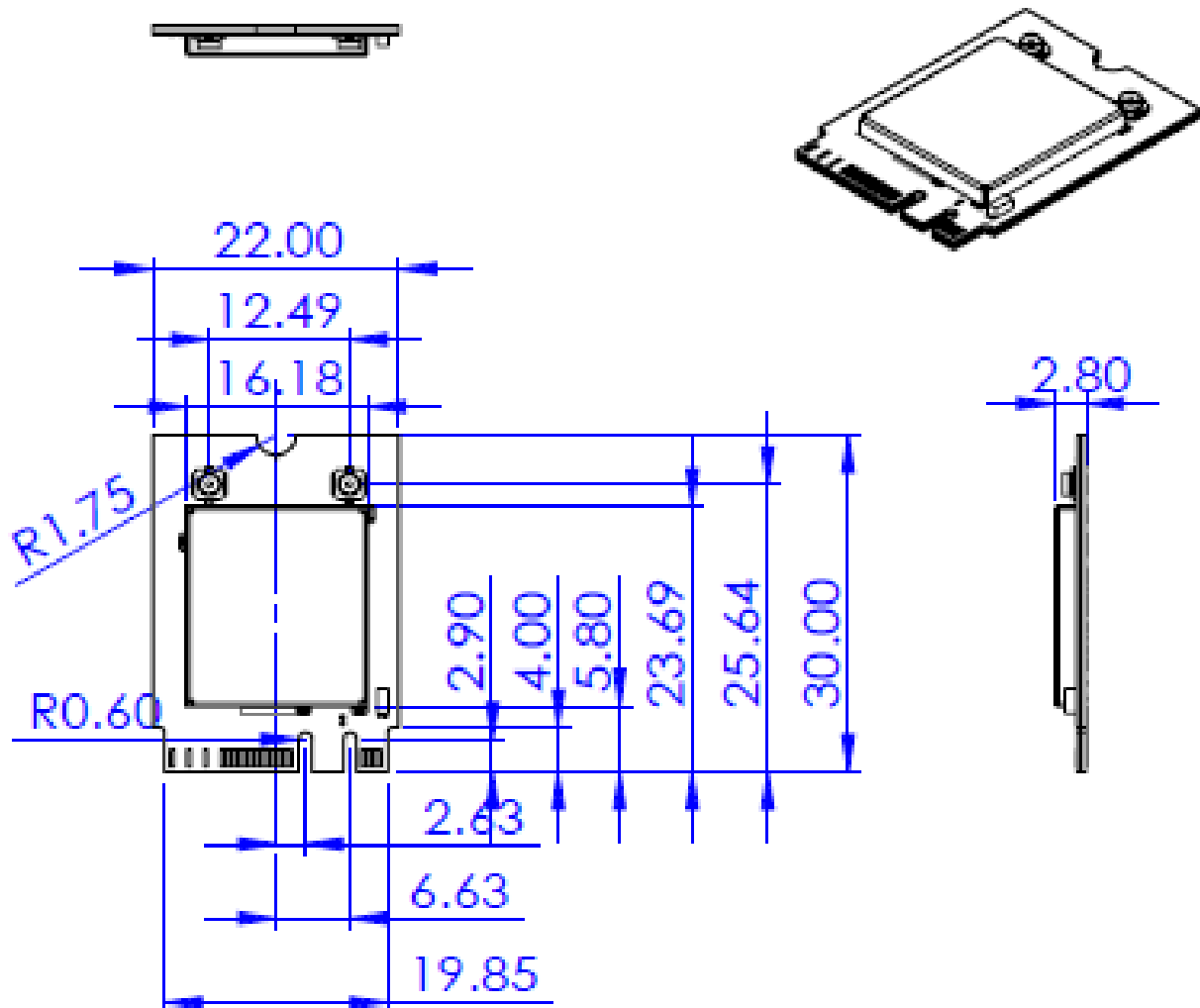
ARM

MIPS

Block Diagram



Dimension



Pin Assignment

PIN#	Pin Name	Design Status	PIN#	Pin Name	Design Status
1	GND	GND	2	3.3V	VDD33
3	USB_D+	HSDP_	4	3.3V	VDD33
5	USB_D-	HSDM_	6	LED_1#	WiFi LED
7	GND	GND	8	Module Key	N/C
9	Module Key	N/C	10	Module Key	N/C
11	Module Key	N/C	12	Module Key	N/C
13	Module Key	N/C	14	Module Key	N/C
15	Module Key	N/C	16	LED_2#	N/C
17	N/C	N/C	18	GND	GND
19	N/C	N/C	20	UART WAKE	N/C
21	N/C	N/C	22	UART TX	N/C
23	N/C	N/C	24	Module Key	N/C
25	Module Key	N/C	26	Module Key	N/C
27	Module Key	N/C	28	Module Key	N/C
29	Module Key	N/C	30	Module Key	N/C
31	Module Key	N/C	32	UART RX	N/C
33	GND	GND	34	UART RTS	N/C
35	PERp0	N/C	36	UART CTS	N/C
37	PERn0	N/C	38	VENDOR DEFINED	N/C
39	GND	GND	40	VENDOR DEFINED	N/C
41	PETp0	N/C	42	VENDOR DEFINED	N/C
43	PETn0	N/C	44	COEX3(I/O)	N/C
45	GND	GND	46	COEX_TXD(O)	N/C
47	REFCLKp0	N/C	48	COEX_RXD(O)	N/C
49	REFCLKn0	N/C	50	SUSCLK(32kHz)	N/C
51	GND	GND	52	PERST0#(I)	N/C
53	CLKREQ0#(I/O)	N/C	54	W_DISABLE2#(I)	N/C
55	PEWAKE0#(I/O)	N/C	56	W_DISABLE1#(I)	N/C
57	GND	GND	58	I2C DATA (I)	N/C
59	PERp1	N/C	60	I2C CLK (I)	N/C
61	PERn1	N/C	62	ALERT# (O)	N/C
63	GND	GND	64	RESERVED	N/C
65	PETp1	N/C	66	RESERVED	N/C
67	PEYn1	N/C	68	RESERVED	N/C
69	GND	GND	70	RESERVED	N/C
71	REFCLKp1	N/C	72	3.3Vaux	N/C
73	REFCLKn1	N/C	74	3.3Vaux	N/C
75	GND				

Output Power & Sensitivity

Bluetooth

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

802.11b g

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

802.11n / 2.4 GHz

	Data Rate	Tx +/- 2dB (1TX)	Tx +/- 2dB (2TX)	Rx Sensitivity +/- 2dB
HT20	MCS 0	15dBm	18dBm	-70dBm
	MCS 4	14dBm	17dBm	-61dBm
	MCS 7	13dBm	16dBm	-61dBm
HT40	MCS 0	15dBm	18dBm	-70dBm
	MCS 4	14dBm	17dBm	-61dBm
	MCS 7	13dBm	16dBm	-61dBm

802.11a

Data Rate	Tx +/- 2dB	Rx Sensitivity +/- 2dB
6Mbps	15dBm	-70dBm
24Mbps	15dBm	-70dBm
54Mbps	13dBm	-70dBm

802.11n / 5 GHz

	Data Rate	Tx +/- 2dB (1TX)	Tx +/- 2dB (2TX)	Rx Sensitivity +/- 2dB
HT20	MCS 0	14dBm	17dBm	-70dBm
	MCS 4	13dBm	16dBm	-60dBm
	MCS 7	12dBm	15dBm	-60dBm
HT40	MCS 0	14dBm	17dBm	-70dBm
	MCS 4	13dBm	16dBm	-60dBm
	MCS 7	12dBm	15dBm	-60dBm

802.11ac				
VHT20	Data Rate	Tx +/- 2dB (1TX)	Tx +/- 2dB (2TX)	Rx Sensitivity +/- 2dB
	MCS 0	14dBm	17dBm	-70dBm
	MCS 4	13dBm	16dBm	-60dBm
	MCS 8	12dBm	15dBm	-60dBm
VHT40	MCS 0	12dBm	15dBm	-60dBm
	MCS 4	10dBm	13dBm	-60dBm
	MCS 9	9dBm	12dBm	-50dBm
VHT80	MCS 0	12dBm	15dBm	-60dBm
	MCS 4	10dBm	13dBm	-60dBm
	MCS 9	9dBm	12dBm	-51dBm