

WPET-236ACN(BT)

802.11ac/a/b/g/n

2T2R Wi-Fi+Bluetooth 4.2

Half Mini PCIe Module



Support Multiple Drivers (Android/ Windows/ Linux)

SparkLAN WPET-236ACN(BT) is a highly integrated 802.11a/b/g/n/ac 2T2R and BT 2.1/3.0/4.1/4.2 module that support 2-stream 802.11ac Multi-user MIMO. The download speed are 300Mbps on N networks and 867Mbps on AC network. WPET-236ACN(BT) is integrates the Bluetooth transmission technology for voice and data transfers between devices in a short distance. **It supports Multiple drivers (Android/ Windows/ Linux)** for various application.

It combines a WLAN MAC, a 2T2R capable WLAN baseband, BT Protocol Stack (LM, LL, and LE), BT Baseband, modem. It provides a complete solution for a high throughput performance integrated wireless LAN and Bluetooth device. It is designed to provide excellent performance with low power consumption and enhance the advantages of robust system and cost-effective. It is targeted at competitive superior performance, better power management applications.

Embedded Application

A Applications include Tablet/ Notebook/ TV board/ Advertising machine/ OTT/ IPTV/ DVB/ STB / DV/ IPC/ Mini Driving Recorder/ Doorbell / Smart TV/ Intelligent Projector Pico/ VR/ AR terminal/ Wireless storage/ Printer/ POS machine/ Vehicle mounted front/ Rear Terminal UAV/ Robot thin client devices, and many more.

Key Feature

- Support 802.11ac 2x2, compliant with MU-MIMO. Operates in 2.4GHz and 5GHz frequency bands
- Data rates: 173.3Mbps using 20MHz bandwidth, 400Mbps using 40MHz bandwidth, and 866.7Mbps using 80MHz bandwidth.
- BPSK, QPSK, 16 QAM, 64 QAM, 256QAM modulation schemes
- Security support for WPE/WPA/WPA2

Specification

Standards	IEEE 802.11ac/a/b/g/n (2T2R) Bluetooth V4.2, V4.1, V4.0 LE, V3.0+HS, V2.1+EDR
Chipset	Realtek RTL8822BU-CG
Data Rate	802.11b: 11Mbps 802.11a/g: 54Mbps 802.11n: MCS0~7 802.11ac: MCS0~9 Bluetooth: 1Mbps, 2Mbps and up to 3Mbps EDR
Operating Frequency	IEEE 802.11ac/a/b/g/n ISM Band: 2.412GHz~2.484GHz, 5.150GHz~5.850GHz *Subject to local regulations
Interface	WLAN: USB ; Bluetooth: USB
Form Factor	Half Mini PCIe
Antenna	2 x IPEX MHF1 connectors (Ant0 for WLAN only, Ant1 for WLAN/BT)
Modulation	Wi-Fi: 802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11a: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM) Bluetooth: Header: GFSK Payload 2M: $\pi/4$ -DQPSK Payload 3M: 8-DPSK
Power Consumption	TX mode: 600mA (Max.) RX mode: 350mA (Max.)
Operating Voltage	DC 3.3V
Operating Temperature Range	-20°C ~ 70°C
Storage Temperature Range	-40°C ~ 80°C
Humidity (Non-Condensing)	5%~95% (Operating) 5%~90% (Storing)

Dimension L x W x H (in mm)	29.9mm(± 0.2 mm) x 26.6mm(± 0.2 mm) x 2.8mm(± 0.2 mm)
Weight (g)	3.1g
Driver Support	Windows 7/8.1/10, Linux, Android
Security	64/128-bits WEP, WPA, WPA2, 802.1x

OUTPUT POWER & SENSITIVITY		
802.11b		
Data Rate	Tx \pm 2dBm	Rx Sensitivity
11Mbps	15dBm	\leq -80dBm

802.11g		
Data Rate	Tx \pm 2dBm	Rx Sensitivity
54Mbps	14dBm	\leq -70dBm

802.11n / 2.4GHz				
	Data Rate	Tx \pm 2dBm(1TX)	Tx \pm 2dBm(2TX)	Rx Sensitivity
HT20	MCS7	13dBm	16dBm	\leq -61dBm
HT40	MCS7	13dBm	16dBm	\leq -61dBm

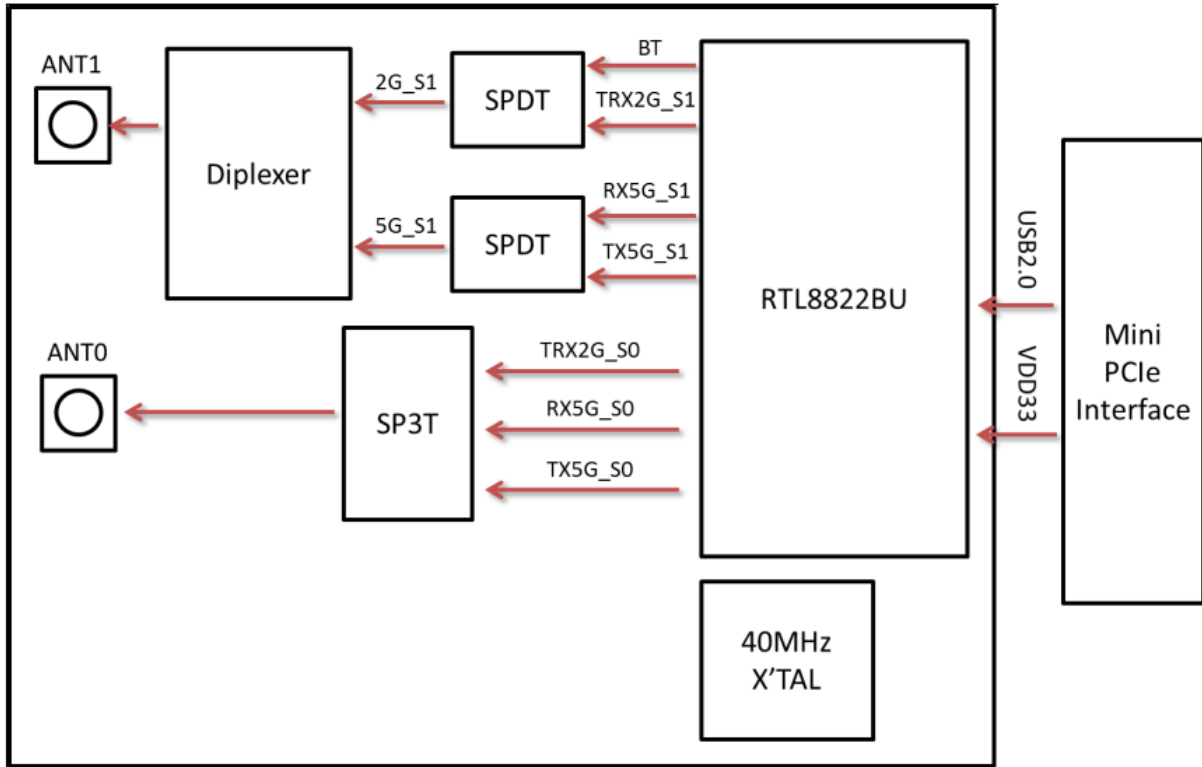
802.11a		
Data Rate	Tx \pm 2dBm	Rx Sensitivity
54Mbps	13dBm	\leq -70dBm

802.11n / 5GHz				
	Data Rate	Tx \pm 2dBm(1TX)	Tx \pm 2dBm(2TX)	Rx Sensitivity
HT20	MCS7	12dBm	15dBm	\leq -60dBm
HT40	MCS7	12dBm	15dBm	\leq -60dBm

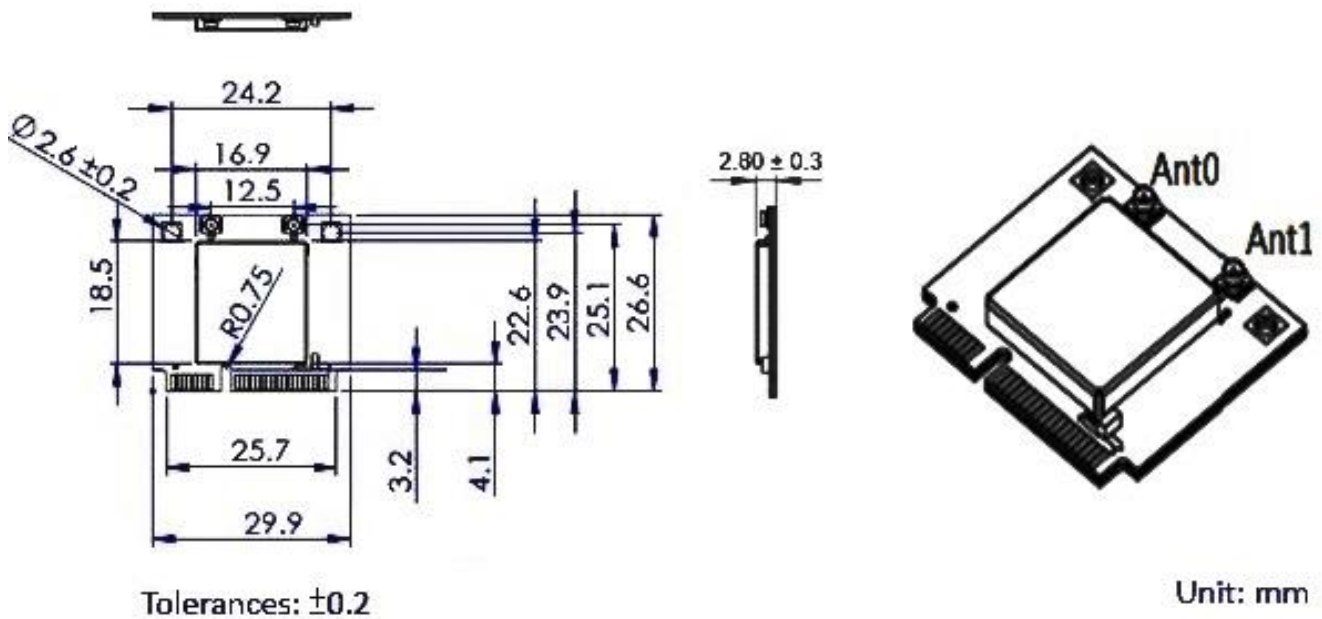
802.11ac				
	Data Rate	Tx \pm 2dBm(1TX)	Tx \pm 2dBm(2TX)	Rx Sensitivity
VHT80	MCS9	9dBm	12dBm	\leq -51dBm

Bluetooth		
Data Rate	Tx \pm 2dBm (Class 2 Device)	Rx Sensitivity
3Mbps	0 \leq Output Power \leq 4 dBm	<0.1% BER at -70dBm

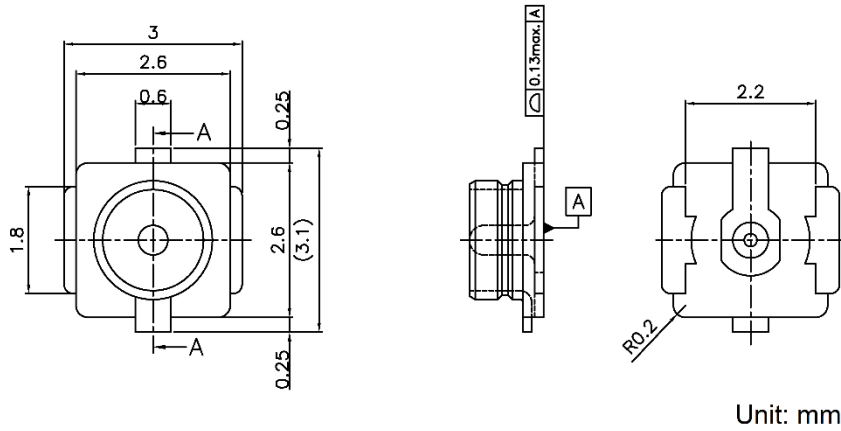
Block Diagram



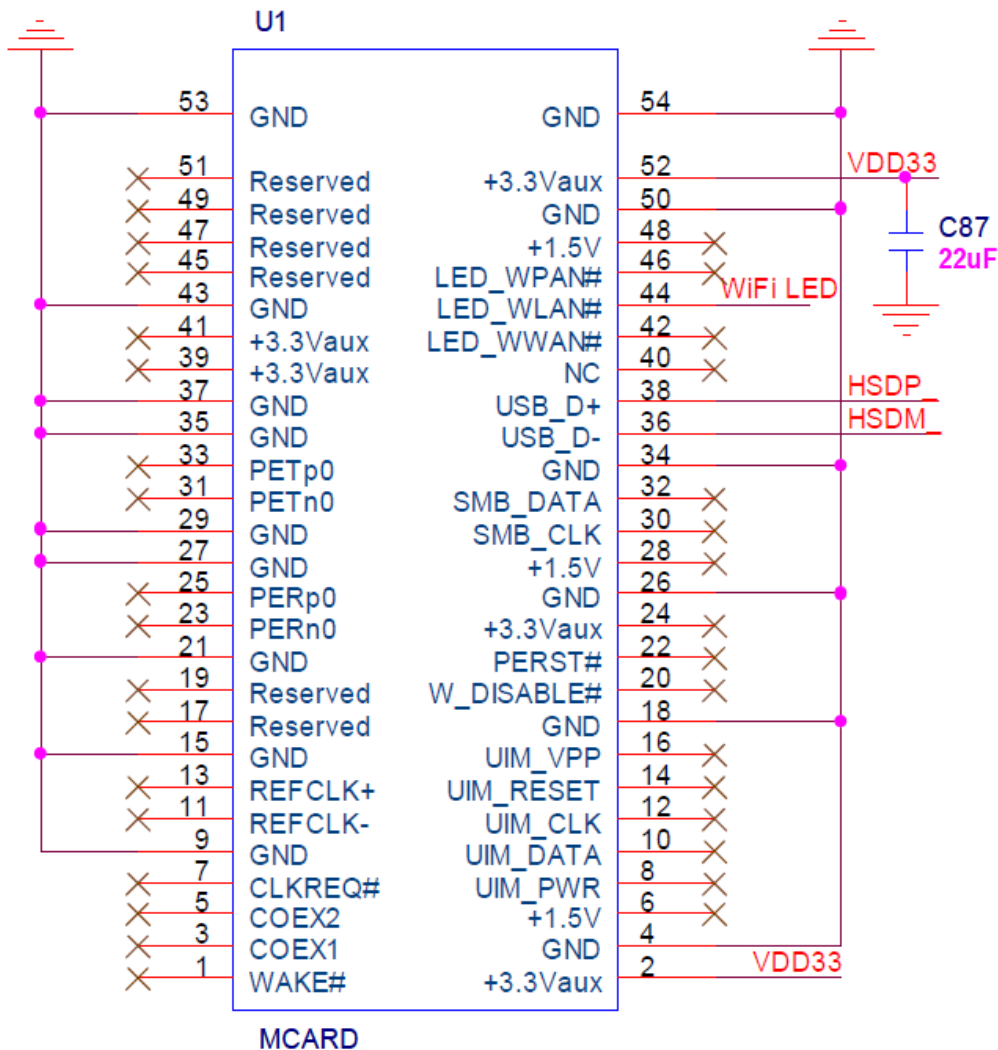
Mechanical Dimension (mm)



MHF1 connector spec.



Pin Assignment



Pin Assignment

PIN#	Pin Name	Design Status	PIN#	Pin Name	Design Status
1	WAKE_L	NC	2	+3.3Vaux	YES
3	Reserved	NC	4	GND	YES
5	Reserved	NC	6	+1.5V	NC
7	CLKREQ_L	NC	8	UIM_PWR	NC
9	GND	YES	10	UIM_DATA	NC
11	REFCLK-	NC	12	UIM_CLK	NC
13	REFCLK+	NC	14	UIM_RESET	NC
15	GND	YES	16	UIM_VPP	NC
17	Reserved	NC	18	GND	YES
19	Reserved	NC	20	W_DISABLE_L	NC
21	GND	YES	22	PERST_L	NC
23	PERu0	NC	24	+3.3V	NC
25	PERp0	NC	26	GND	YES
27	GND	YES	28	+1.5V	NC
29	GND	YES	30	SMB_CLK	NC
31	PETn0	NC	32	SMB_DATA	NC
33	PETp0	NC	34	GND	YES
35	GND	YES	36	USB_D-	YES
37	RESERVED	NC	38	USB_D+	YES
39	RESERVED	NC	40	GND	NC
41	RESERVED	NC	42	LED_WWAN_L	NC
43	GND	YES	44	LED_WLAN_L	NC
45	RESERVED	NC	46	LED_WPAN_L	NC
47	RESERVED	NC	48	+1.5V	NC
49	RESERVED	NC	50	GND	YES
51	RESERVED	NC	52	+3.3V	YES

Certification

Dipole Ant.

 FCC IC NCC CE (RED EN 300 328 V2.2.2 / EN 301 893 V2.1.1) MIC ASNZS

Ordering Information

Product Name	Part Number	Description
WPET-236ACN(BT)	R9701890019	802.11ac/a/b/g/n 2T2R Wi-Fi+BT 4.2 Half Mini PCIe Module

Optional Accessory

Product Name	Part Number	Description
AD-103AG	R3410110203	Dipole Antenna, 2dBi 2.4GHz/5GHz, RP-SMA(M) connector
AD-302N	R3410110221	Dipole Antenna, 3dBi/2dBi 2.4G/5GHz, RP-SMA(M) connector
AD-303N	R3410110222	Dipole Antenna, 3dBi/3dBi 2.4G/5GHz, RP-SMA(M) connector
AD-305N	R3410110223	Dipole Antenna, 5dBi/5dBi 2.4G/5GHz, RP-SMA(M) connector
CBIRF-ME150	R3470300023	I-PEX/MHF1 to RP-SMA Female; L:150mm; Coaxial 1.37 Black
CBIRF-ME250	R3470300024	I-PEX/MHF1 to RP-SMA Female; L:250mm; Coaxial 1.37 Black