

# JWAP604-0

802.11 a/n+g/n 2T2R High Power DBDC PCBA

## Technical Specifications

System Information

Radio Information

Output Power & Sensitivity

### System Information

<b>Chipset</b>	Qualcomm Atheros AR9342 Qualcomm Atheros AR9382 Qualcomm Atheros AR8327
<b>Memory</b>	64MB
<b>Flash</b>	16MB
<b>Ethernet</b>	WAN: 10/100/1000BaseTx* 1 LAN: 10/100/1000BaseTx * 4
<b>USB</b>	USB type-A *1
<b>RF Connector</b>	MMCX * 4 (a/n: *2 & g/n *2)
<b>Push Button</b>	Reset Button*1, SW Reset Button*1
<b>LEDs</b>	*4, Power(DS1), WAN(DS2), WLAN_2G(DS3), WLAN_5G(DS5)
<b>Console</b>	UART*1, Pin-Header
<b>Input Power</b>	DC: 12V, 12V@2A(21Ø) PoE: 802.3at
<b>Power Consumption</b>	@HT40 ≤ 12.5W, @HT20 ≤ 14.9W, @54Mbps ≤ 12.5W
<b>ESD</b>	WAN port
<b>Humidity</b>	Operating: 10% to 90% non-condensing Storage: 5% to 90% non-condensing
<b>Temperature Range</b>	Operating Temperature: -10°C to +60°C Storage Temperature: -20°C to +70°C
<b>Dimension (in mm)</b>	120 x 170 (mm)

### Radio Information

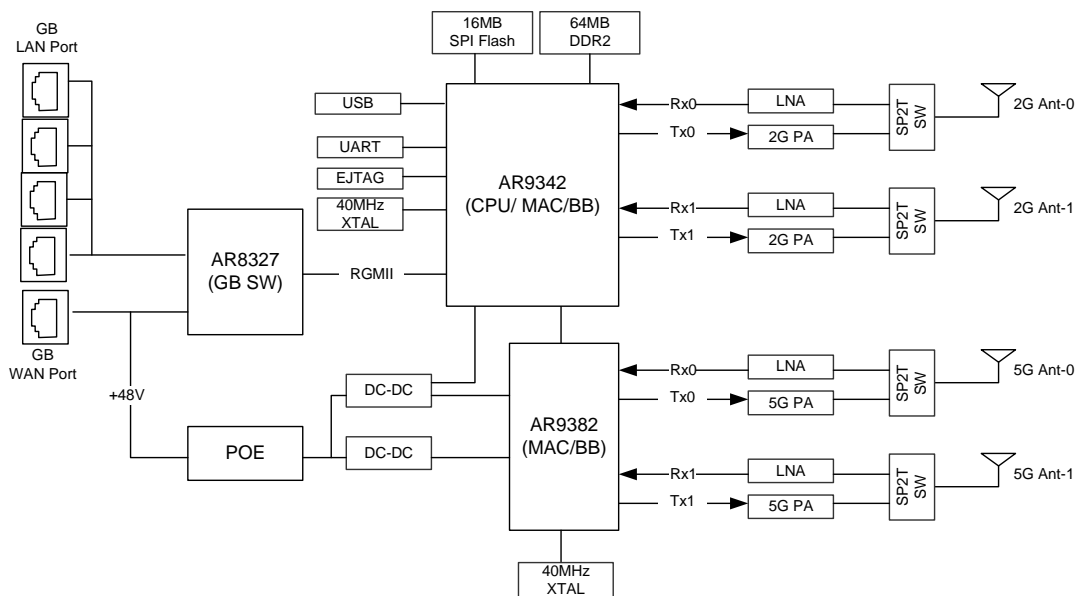
<b>Standards</b>	IEEE 802.11b/g, 802.11a, 802.11n
<b>Data Rate</b>	11b: 1/2/5.5/11Mbps 11a/g: 6/9/12/24/36/48/54Mbps 11n (20MHz): MCS0-15, up to 150Mbps 11n (40MHz): MCS0-15, up to 300Mbps
<b>Modulation</b>	OFDM, 16QAM, 64QAM
<b>Frequency Range</b>	2.412 ~ 2.472GHz 5.15 ~ 5.825GHz

### Software Information

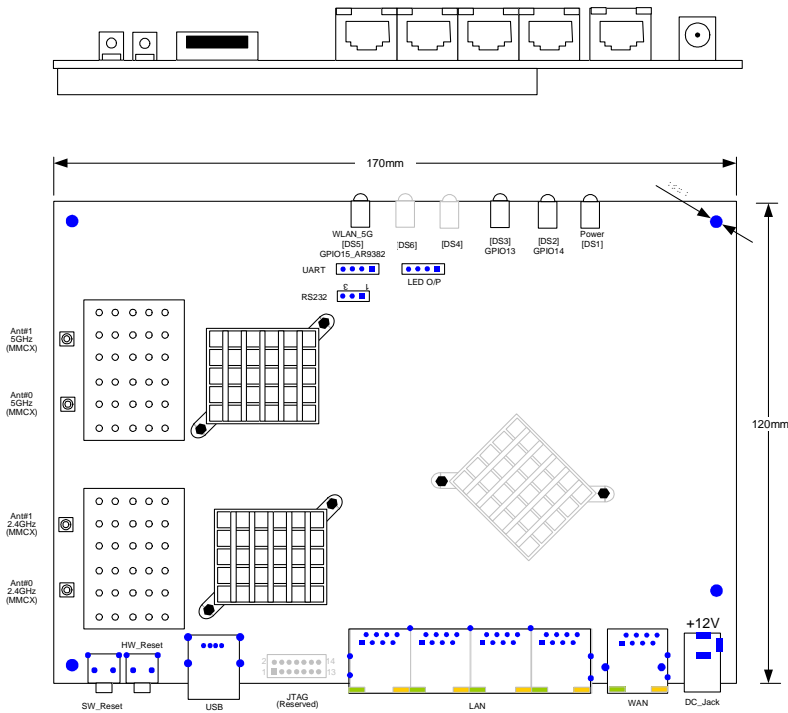
<b>Firmware</b>	JJ+ LSDK Image by default, OpenWRT LSDK (optional)
-----------------	--

Output Power & Sensitivity							
	Data Rate	Tx (RMS) @1Tx,±2dB	Rx @2Rx,±2dB	Data Rate	TX (RMS) @1Tx,±2dB	RX @2Rx,± 2dB	
802.11a				1-11Mbps	24dBm	-91 ~ -85 dBm	
	6Mbps~24Mbps	24dBm	-89~-80dBm	6~24Mbps	24dBm	-89 ~ -80dBm	
	36Mbps	23dBm	-76dBm	36Mbps	23dBm	-76dBm	
	48Mbps	22dBm	-71dBm	48Mbps	22dBm	-71dBm	
	54Mbps	21dBm	-70dBm	54Mbps	21dBm	-70dBm	
802.11n 5GHz	HT20			HT20			
	MCS0/8	23dBm	-83dBm	MCS0/8	24dBm	-83dBm	
	MCS1/9	23dBm	-80dBm	MCS1/9	24dBm	-80dBm	
	MCS2/10	22dBm	-78dBm	MCS2/10	23dBm	-78dBm	
	MCS3/11	22dBm	-75dBm	MCS3/11	23dBm	-75dBm	
	MCS4/12	21dBm	-71dBm	MCS4/12	22dBm	-71dBm	
	MCS5/13	21dBm	-67dBm	MCS5/13	22dBm	-67dBm	
	MCS6/14	20dBm	-66dBm	MCS6/14	21dBm	-66dBm	
	MCS7/15	20dBm	-65dBm	MCS7/15	21dBm	-65dBm	
	HT40			HT40			
	MCS0/8	23dBm	-80dBm	MCS0/8	24dBm	-80dBm	
	MCS1/9	23dBm	-77dBm	MCS1/9	24dBm	-77dBm	
	MCS2/10	22dBm	-75dBm	MCS2/10	23dBm	-75dBm	
	MCS3/11	22dBm	-72dBm	MCS3/11	23dBm	-72dBm	
MCS4/12	21dBm	-68dBm	MCS4/12	22dBm	-68dBm		
MCS5/13	21dBm	-64dBm	MCS5/13	22dBm	-64dBm		
MCS6/14	20dBm	-63dBm	MCS6/14	21dBm	-63dBm		
MCS7/15	20dBm	-62dBm	MCS7/15	21dBm	-62dBm		

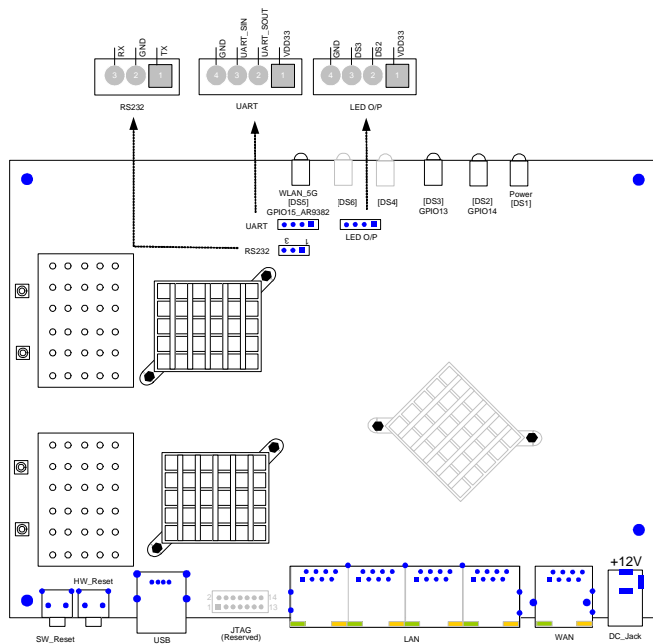
■ Block Diagram



## Physical Dimension



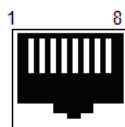
## Interfaces & Pins Definition



## ■ Interfaces-GPIOs Definition

### A. Ethernet-WAN

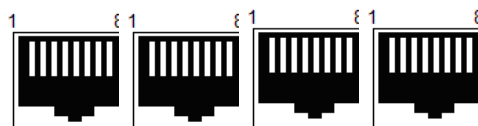
- 1x LAN: 10/100/1000Tx, RJ-45
- Automatic MDI/MDIX
- 802.3at PoE input DC
- Pin Definition:



Pin#	10/100Tx	1000Tx	PoE (Mode A) (DC & Bi-Data)	PoE (Mode B) (DC & Bi-Data)
1	RxD+	TxRx A+	TxRx A+ DC+	TxRx A+
2	RxD-	TxRx A-	TxRx A- DC+	TxRx A-
3	TxD+	TxRx B+	TxRx B+ DC-	TxRx B+
4	NC	TxRx C+	TxRx C+	TxRx C+ DC+
5	NC	TxRx C-	TxRx C-	TxRx C- DC+
6	TxD-	TxRx B-	TxRx B- DC-	TxRx B-
7	NC	TxRx D+	TxRx D+	TxRx D+ DC-
8	NC	TxRx D-	TxRx D-	TxRx D- DC-

### B. Ethernet-LAN

- 1x LAN: 10/100/1000Tx, RJ-45
- Automatic MDI/MDIX
- Pin Definition:



Pin#	10/100Tx	1000Tx
1	RxD+	TxRx A+
2	RxD-	TxRx A-
3	TxD+	TxRx B+
4	NC	TxRx C+
5	NC	TxRx C-
6	TxD-	TxRx B-
7	NC	TxRx D+
8	NC	TxRx D-

### C. RS-232 Console,J3 – Pin-Header, 3-pin

- Pin Definition:

PIN#	Pin Name	Design Status
1	Tx	Yes
2	GND	Yes
3	Rx	Yes

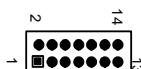
### D. UART Console,CN5 – Pin-Header, 4-pin

- Pin Definition:

PIN#	Pin Name	Design Status
1	3.3V	Yes
2	UART_SOUT	Yes
3	UART_SIN	Yes
4	GND	Yes

### E. JTAG, J1

- Pin Definition:



PIN#	Pin Name	Design Status	PIN#	Pin Name	Design Status
1	GND	Yes	2	GND	Yes
3	TDI	Yes	4	GND	Yes

5	TDO	Yes	6	GND	Yes
7	TMS	Yes	8	GND	Yes
9	TCK	Yes	10	GND	Yes
11	RST_B	Yes	12	NC	NC
13	NC	NC	14	2.5Vdc	Yes

Note: Reserved for future use.

## 1.4.2 GPIOs Definition

### ■ AR9342

Pin#	Pin Definition	Active	Remark
GPIO0	TCK		JTAG (Reserved)
GPIO1	TDI		
GPIO2	TDO		
GPIO3	TMS		
GPIO4	IC Reserved		
GPIO5	SPI_CS_L		SPI Flash
GPIO6	SPI_CLK		
GPIO7	SPI_MO_SI		
GPIO8	SPI_MI-SO		
GPIO9	UART_SIN		Console
GPIO10	UART_SOUT		
GPIO11	POWER LED	Low	DS1
GPIO12	LED	Low	DS4
GPIO13	LAN LED	Low	DS2
GPIO14	WLAN LED	Low	DS3
GPIO15	SW_Reset Button	Low	SW2
GPIO16	RF Control		
GPIO17	RF Control		

### ■ AR9382

Pin#	Pin Definition	Active	Remark
GPIO15	WLAN_5G	Low	DS5

## 1.4.3 LEDs Definition

	LED Definition	Color	Status	Remark
DS1	Power	Green	On: Power on. Off: Power off.	GPIO11
DS2	LAN	Green		GPIO13
DS3	WLAN_2G	Green		GPIO14
DS4	LED	Green	x	GPIO12
DS5	WLAN_5G	Green		AR9382 GPIO15
DS6	TBD	Green		GPIO11

## ■ Ordering Information

	Order Number	Description
1	JWAP604-0	PCBA, Bulk packing