

#### Qualcomm's IPQ5322 Embedded Board Supporting WiFi 7

WiFi 7 support / 2 x 2.5Gbps /

2 x 2.4GHz Copper Antenna / 2 x 5GHz Copper Antenna



#### Model: WPQ530

#### KEY FEATURES

- Qualcomm IPQ5322 Quad-Core Cortex-A53 @ 1.5GHz processor.
- 2x2 on-board 2.4GHz radio, up to 573Mbps physical data rate.
- 2x2 on-board 5-6GHz radio, up to 5764Mbps physical data rate.
- 2 x 2.4GHz Copper Antenna, 2 x 5GHz Copper Antenna
- 1x 2.5Gbps Ethernet port
- 6x LED (Green) Indicators, 2x LED (RGB) Indicators

#### APPLICATIONS

- 802.11be MU-MIMO OFDMA Access Point
- Internet of Things (IoT)
- HD streaming and gaming

#### **Specifications**

Chipset	Qualcomm IPQ5322 Quad-Core Cortex-A53 @ 1.5GHz processor 'Miami' Series
Reference Design	Qualcomm AP.MI01.2
System Memory	1GB, DDR4 16-bit (1x16-bit) interface
Flash	NAND Flash: 512MB NOR Flash: 8MB
Wireless	On-board 2x2 2.4GHz MU-MIMO 802.11b/g/n/ax/be, max 24dBm per chain On-board 2x2 5-6GHz MU-MIMO 802.11a/n/ac/ax/be, max 19dBm per chain 4x U.FL connectors (IPQ5322)
Frequency Range	2.412~2.472GHz 5.180~7.125GHz
Peak Gain	3 dBi for 2.4GHz, 5GHz and 6GHz
Modulation Techniques	OFDMA: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM,1024-QAM
NGFF Slot	N/A
Interface	1x 2.5Gigabit Ethernet (1GbE) LAN/WAN RJ45 Port 2x 2.4GHz Copper Antenna 2x 5GHz Copper Antenna 1x LED 12 Pin Connector 1x JTAG 10 Pin Connector 2x 4 Pin Connector 8x UFL Connector 1x SWITCH Button
LED	6x LED (Green) Indicators 2x LED (RGB) Indicators
DC Power	1x DC Jack Connector: 12V
Power Consumption (Board only)	TBD
Certification	REACH & RoHS Compliance

1. The Serial Port is a 4-pin header (TTL). A Serial Converter is available to change the TTL signals on the board to RS-232 signals for debugging.

2. The JTAG Port is a 20-pin header. A JTAG kit is for writing your self-developed loader and firmware directly.

\*Configurations are subject to change without notifications.

Continued on Page 2...



## Specifications

Continued from Page 1.	
Environmental Temperature	Operating: -20°C to 70°C, Storage: -40°C to 90°C
Environmental Humidity, Non-Condensing	Operating: 5% to 95%, Storage: Max. 90%
Dimensions (W x H x D) in mm	135 x 110 x 20 (non-cooling)

\*Configurations are subject to change without notifications.

### RF Performance Table for 2.4GHz

	Data Rate	TX Power (per chain)	TX Power (4 chains)	Tolerance		Data Rate	RX Specifications Sensitivity	Tolerance
	MCS 0	24dBm	27dBm	±2dB		MCS 0	TBD	±2dB
	MCS 1	23dBm	26dBm	±2dB		MCS 1	TBD	±2dB
	MCS 2	22dBm	25dBm	±2dB		MCS 2	TBD	±2dB
	MCS 3	21dBm	24dBm	±2dB		MCS 3	TBD	±2dB
	MCS 4	20dBm	23dBm	±2dB		MCS 4	TBD	±2dB
2.4GHz	MCS 5	20dBm	23dBm	±2dB	2.4GHz	MCS 5	твр	±2dB
802.11be EHT20	MCS 6	19dBm	22dBm	±2dB	802.11be EHT20	MCS\6	TBD	±2dB
EHIZU	MCS 7	19dBm	22dBm	±2dB	EHIZU	MCS 7	TBD	±2dB
	MCS 8	18dBm	21dBm	±2dB		MCS 8	TBD	±2dB
	MCS 9	18dBm	21dBm	±2dB		MCS-9	TBD	±2dB
	MCS 10	17dBm	20dBm	±2dB		MCS 10	TBD	±2dB
	MCS 11	17dBm	20dBm	±2dB		MCS 11	TBD	±2dB
	MCS 0	24dBm	27dBm	±2dB		MCS 0	TBD	±2dB
	MCS 1	ICS 1 23dBm 26dBm ±2dB		MCS 1	TBD	±2dB		
	MCS 2	22dBm	25dBm	±2dB		MCS 2	TBD	±2dB
	MCS 3	21dBm	24dBm	±2dB		MCS 3	TBD	±2dB
	MCS 4	20dBm	23dBm	±2dB		MCS 4	TBD	±2dB
2.4GHz	MCS 5	20dBm	23dBm	±2dB	2.4GHz	MCS 5	TBD	±2dB
802.11be	MCS 6	19dBm	22dBm	±2dB	802.11be EHT40	MCS 6	TBD	±2dB
EHT40	MCS 7	19dBm	22dBm	±2dB	EH140	MCS 7	TBD	±2dB
	MCS 8	18dBm	21dBm	±2dB		MCS 8	TBD	±2dB
	MCS 9	18dBm	21dBm	±2dB		MCS 9	TBD	±2dB
	MCS 10	17dBm	20dBm	±2dB		MCS 10	TBD	±2dB
	MCS 11	17dBm	20dBm	±2dB		MCS 11	TBD	±2dB





#### RF Performance Table for 5 GHz

	Data Rate	TX Power (per chain)	TX Power (4 chains)	Tolerance			Data Rate	RX Specifications Sensitivity	Tolerance
	MCS 0	19dBm	22dBm	±2dB			MCS 0	TBD	±2dB
	MCS 1	19dBm	22dBm	±2dB			MCS 1	TBD	±2dB
	MCS 2	18dBm	21dBm	±2dB			MCS 2	TBD	±2dB
	MCS 3	18dBm	21dBm	±2dB			MCS 3	TBD	±2dB
	MCS 4	17dBm	20dBm	±2dB			MCS 4	TBD	±2dB
	MCS 5	17dBm	20dBm	±2dB			MCS 5	TBD	±2dB
5 GHz	MCS 6	16dBm	19dBm	±2dB		5 GHz	MCS 6	TBD	±2dB
802.11be EHT20	MCS 7	16dBm	19dBm	±2dB		802.11be EHT20	MCS 7	TBD	±2dB
LIII20	MCS 8	16dBm	19dBm	±2dB		LIII20	MCS 8	TBD	±2dB
	MCS 9	15dBm	18dBm	±2dB			MCS 9	TBD	±2dB
	MCS 10	14dBm	17dBm	±2dB			MCS 10	TBD	±2dB
	MCS 11	14dBm	17dBm	±2dB			MCS 11	TBD	±2dB
	MCS 12	13dBm	16dBm	±2dB			MCS 12	TBD	±2dB
	MCS 13	13dBm	16dBm	±2dB			MCS 13	TBD	±2dB
	MCS 0	19dBm	22dBm	±2dB			MCS 0	TBD	±2dB
	MCS 1	19dBm	22dBm	±2dB			MCS 1	твр	±2dB
	MCS 2	18dBm	21dBm	±2dB		- )	MCS 2	TBD	±2dB
	MCS 3	18dBm	21dBm	±2dB		10	MCS 3	TBD	±2dB
	MCS 4	17dBm	20dBm	±2dB	1		MCS 4	TBD	±2dB
5 GHz	MCS 5	17dBm	20dBm	±2dB		5 GHz	MCS 5	TBD	±2dB
802.11be	MCS 6	16dBm	19dBm	±2dB		802.11be	MCS 6	TBD	±2dB
EHT40	MCS 7	16dBm	19dBm	±2dB		EHT40	MCS 7	TBD	±2dB
	MCS 8	16dBm	19dBm	±2dB	T.		MCS 8	TBD	±2dB
	MCS 9	15dBm	18dBm	±2dB			MCS 9	TBD	±2dB
	MCS 10	14dBm	17dBm	±2dB			MCS 10	TBD	±2dB
	MCS 11	14dBm	17dBm	±2dB			MCS 11	TBD	±2dB
	MCS 12	13dBm	16dBm	±2dB			MCS 12	TBD	±2dB
	MCS 13	13dBm	16dBm	±2dB			MCS 13	TBD	±2dB
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### RF Performance Table for 5 GHz

	Data Rate	TX Power (per chain)	TX Power (4 chains)	Tolerance			Data Rate	RX Specifications Sensitivity	Tolerance
	MCS 0	19dBm	22dBm	±2dB			MCS 0	TBD	±2dB
	MCS 1	19dBm	22dBm	±2dB			MCS 1	TBD	±2dB
	MCS 2	18dBm	21dBm	±2dB			MCS 2	TBD	±2dB
	MCS 3	18dBm	21dBm	±2dB			MCS 3	TBD	±2dB
	MCS 4	17dBm	20dBm	±2dB			MCS 4	TBD	±2dB
	MCS 5	17dBm	20dBm	±2dB			MCS 5	TBD	±2dB
5 GHz	MCS 6	16dBm	19dBm	±2dB		5 GHz	MCS 6	TBD	±2dB
802.11be EHT80	MCS 7	16dBm	19dBm	±2dB		802.11be EHT80	MCS 7	TBD	±2dB
LIII00	MCS 8	16dBm	19dBm	±2dB		LIII00	MCS 8	TBD	±2dB
	MCS 9	15dBm	18dBm	±2dB			MCS 9	TBD	±2dB
	MCS 10	14dBm	17dBm	±2dB			MCS 10	TBD	±2dB
	MCS 11	14dBm	17dBm	±2dB			MCS 11	TBD	±2dB
	MCS 12	13dBm	16dBm	±2dB			MCS 12	TBD	±2dB
	MCS 13	13dBm	16dBm	±2dB			MCS 13	TBD	±2dB
	MCS 0	19dBm	22dBm	±2dB			MCS 0	TBD	±2dB
	MCS 1	19dBm	22dBm	±2dB		- 1	MCS 1	твр	±2dB
	MCS 2	18dBm	21dBm	±2dB			MCS 2	TBD	±2dB
	MCS 3 18dBm 21dBm ±2	±2dB		1	MCS 3	TBD	±2dB		
	MCS 4	17dBm	20dBm	±2dB	1		MCS 4	TBD	±2dB
5GHz	MCS 5	17dBm	20dBm	±2dB		5 GHz	MCS 5	TBD	±2dB
802.11be	MCS 6	16dBm	19dBm	±2dB		802.11be	MCS 6	TBD	±2dB
EHT160	MCS 7	16dBm	19dBm	±2dB		EHT160	MCS 7	TBD	±2dB
	MCS 8	16dBm	19dBm	±2dB			MCS-8	TBD	±2dB
	MCS 9	15dBm	18dBm	±2dB			MCS 9	TBD	±2dB
	MCS 10	14dBm	17dBm	±2dB			MCS 10	TBD	±2dB
	MCS 11	14dBm	17dBm	±2dB			MCS 11	TBD	±2dB
	MCS 12	13dBm	16dBm	±2dB			MCS 12	TBD	±2dB
	MCS 13	13dBm	16dBm	±2dB			MCS 13	TBD	±2dB
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#### RF Performance Table for 6 GHz

	Data Rate	TX Power (per chain)	TX Power (4 chains)	Tolerance			Data Rate	RX Specifications Sensitivity	Tolerance
	MCS 0	18dBm	21dBm	±2dB			MCS 0	TBD	±2dB
	MCS 1	17dBm	20dBm	±2dB			MCS 1	TBD	±2dB
	MCS 2	17dBm	20dBm	±2dB			MCS 2	TBD	±2dB
	MCS 3	16dBm	19dBm	±2dB			MCS 3	TBD	±2dB
	MCS 4	15dBm	18dBm	±2dB			MCS 4	TBD	±2dB
	MCS 5	15dBm	18dBm	±2dB			MCS 5	TBD	±2dB
6 GHz	MCS 6	14dBm	17dBm	±2dB		6 GHz	MCS 6	TBD	±2dB
802.11be EHT20	MCS 7	14dBm	17dBm	±2dB		802.11be EHT20	MCS 7	TBD	±2dB
LIII20	MCS 8	13dBm	16dBm	±2dB		LIII20	MCS 8	TBD	±2dB
	MCS 9	12dBm	15dBm	±2dB			MCS 9	TBD	±2dB
	MCS 10	12dBm	15dBm	±2dB			MCS 10	TBD	±2dB
	MCS 11	12dBm	15dBm	±2dB			MCS 11	TBD	±2dB
	MCS 12	11dBm	14dBm	±2dB		-	MCS 12	TBD	±2dB
	MCS 13	11dBm	14dBm	±2dB			MCS 13	TBD	±2dB
	MCS 0	18dBm	21dBm	±2dB			MCS 0	TBD	±2dB
	MCS 1	17dBm	20dBm	±2dB			MCS 1	твр	±2dB
	MCS 2	17dBm	20dBm	±2dB		- )	MCS 2	TBD	±2dB
	MCS 3	16dBm	19dBm	±2dB		10	MCS 3	TBD	±2dB
	MCS 4	15dBm	18dBm	±2dB	1		MCS 4	TBD	±2dB
6 GHz	MCS 5	15dBm	18dBm	±2dB		6 GHz	MCS 5	TBD	±2dB
802.11be	MCS 6	14dBm	17dBm	±2dB		802.11be	MCS 6	TBD	±2dB
EHT40	MCS 7	14dBm	17dBm	±2dB		EHT40	MCS 7	TBD	±2dB
	MCS 8	13dBm	16dBm	±2dB			MCS 8	TBD	±2dB
	MCS 9	12dBm	15dBm	±2dB			MCS 9	TBD	±2dB
	MCS 10	12dBm	15dBm	±2dB			MCS 10	TBD	±2dB
	MCS 11	12dBm	15dBm	±2dB			MCS 11	TBD	±2dB
	MCS 12	11dBm	14dBm	±2dB			MCS 12	TBD	±2dB
	MCS 13	11dBm	14dBm	±2dB			MCS 13	TBD	±2dB





#### RF Performance Table for 6 GHz

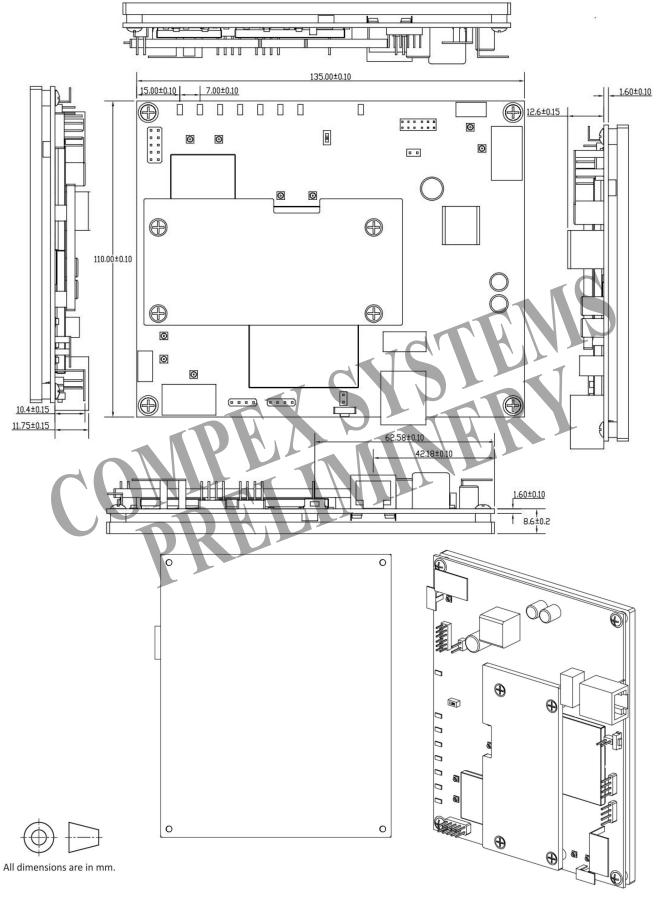
	Data Rate	TX Power (per chain)	TX Power (4 chains)	Tolerance			Data Rate	RX Specifications Sensitivity	Tolerance
	MCS 0	18dBm	21dBm	±2dB			MCS 0	TBD	±2dB
	MCS 1	17dBm	20dBm	±2dB			MCS 1	TBD	±2dB
	MCS 2	17dBm	20dBm	±2dB			MCS 2	TBD	±2dB
	MCS 3	16dBm	19dBm	±2dB			MCS 3	TBD	±2dB
	MCS 4	15dBm	18dBm	±2dB			MCS 4	TBD	±2dB
	MCS 5	15dBm	18dBm	±2dB			MCS 5	TBD	±2dB
6 GHz 802.11be	MCS 6	14dBm	17dBm	±2dB		6 GHz 802.11be	MCS 6	TBD	±2dB
EHT80	MCS 7	14dBm	17dBm	±2dB		EHT80	MCS 7	TBD	±2dB
LIII00	MCS 8	13dBm	16dBm	±2dB		LIII00	MCS 8	TBD	±2dB
	MCS 9	12dBm	15dBm	±2dB			MCS 9	TBD	±2dB
	MCS 10	12dBm	15dBm	±2dB			MCS 10	TBD	±2dB
	MCS 11	12dBm	15dBm	±2dB			MCS 11	TBD	±2dB
	MCS 12	11dBm	14dBm	±2dB			MCS 12	TBD	±2dB
	MCS 13	11dBm	14dBm	±2dB			MCS 13	TBD	±2dB
	MCS 0	17dBm	20dBm	±2dB			MCS 0	TBD	±2dB
	MCS 1	17dBm	20dBm	±2dB			MCS 1	твр	±2dB
	MCS 2	17dBm	20dBm	±2dB			MCS 2	твр	±2dB
	MCS 3	16dBm	19dBm	±2dB		- 1	MCS 3	TBD	±2dB
	MCS 4	15dBm	18dBm	±2dB	802.1	6 GHz 802.11be	MCS 4	TBD	±2dB
6 GHz	MCS 5	15dBm	18dBm	±2dB			MCS-5	TBD	±2dB
802.11be	MCS 6	14dBm	17dBm	±2dB			MCS 6	TBD	±2dB
EHT160	MCS 7	14dBm	17dBm	±2dB		EHT160	MCS 7	TBD	±2dB
	MCS 8	13dBm	16dBm	±2dB	Ľ		MCS-8	TBD	±2dB
	MCS 9	12dBm	15dBm	±2dB			MCS 9	TBD	±2dB
	MCS 10	12dBm	15dBm	±2dB			MCS 10	TBD	±2dB
	MCS 11	12dBm	15dBm	±2dB			MCS 11	TBD	±2dB
	MCS 12	11dBm	14dBm	±2dB			MCS 12	TBD	±2dB
	MCS 13	11dBm	14dBm	±2dB			MCS 13	TBD	±2dB
	MCS 0	17dBm	20dBm	±2dB			MCS 0	TBD	±2dB
	MCS 1	17dBm	20dBm	±2dB			MCS 1	TBD	±2dB
	MCS 2	17dBm	20dBm	±2dB			MCS 2	TBD	±2dB
	MCS 3	16dBm	19dBm	±2dB	1		MCS 3	TBD	±2dB
	MCS 4	15dBm	18dBm	±2dB			MCS 4	TBD	±2dB
6 GHz	MCS 5	15dBm	18dBm	±2dB		6 GHz	MCS 5	TBD	±2dB
802.11be	MCS 6	14dBm	17dBm	±2dB		802.11be	MCS 6	TBD	±2dB
EHT320	MCS 7	14dBm	17dBm	±2dB		EHT320	MCS 7	TBD	±2dB
	MCS 8	13dBm	16dBm	±2dB			MCS 8	TBD	±2dB
	MCS 9	12dBm	15dBm	±2dB					
							MCS 9 MCS 10	TBD TBD	±2dB ±2dB
	MCS 10	12dBm	15dBm	±2dB					
	MCS 11	12dBm	15dBm	±2dB			MCS 11	TBD	±2dB
	MCS 12	11dBm	14dBm	±2dB			MCS 12	TBD	±2dB
	MCS 13	11dBm	14dBm	±2dB			MCS 13	TBD	±2dB



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#### **Mechanical Dimensions**



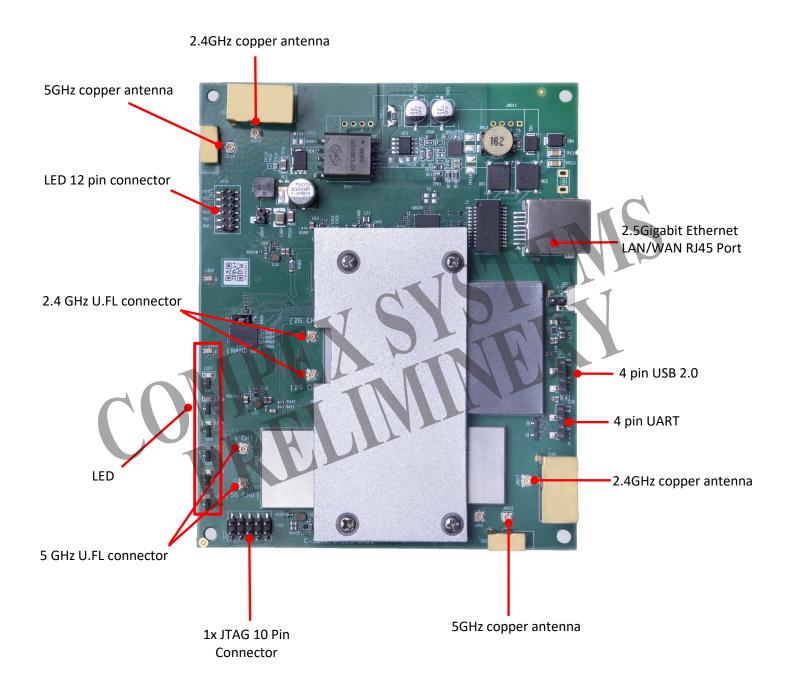
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### Component Map







### Firmware / Software

Firmware

OpenWRT 23.05

### **Development Kits**

SDK	SDKs with QCA binary drivers are available for software developers.
Accessory	JTAG Programmer, Serial Converter, Power Supply Only if available

### **Ordering Options**

Item Code	Processor	Onboard WiFi radio
WPQ530 6A01PR8F1GB-TE	IPQ5322	CIT H, M-P

