

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

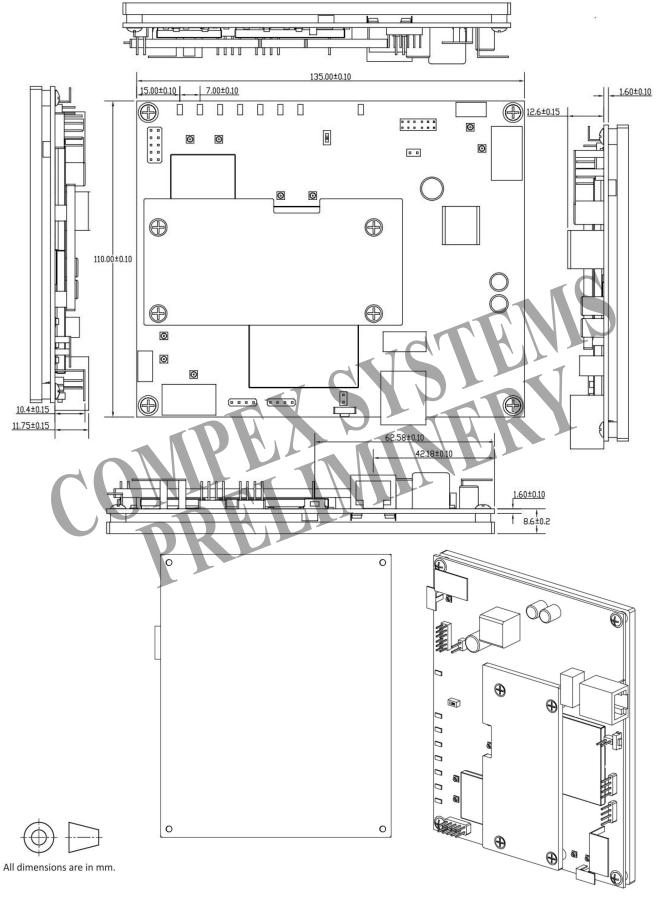
	Data Rate	TX Power (per chain)	TX Power (4 chains)	Tolerance			Data Rate	RX Specifications Sensitivity	Tolerance
	MCS 0	18dBm	21dBm	±2dB			MCS 0	TBD	±2dB
	MCS 1	17dBm	20dBm	±2dB			MCS 1	TBD	±2dB
	MCS 2	17dBm	20dBm	±2dB			MCS 2	TBD	±2dB
	MCS 3	16dBm	19dBm	±2dB			MCS 3	TBD	±2dB
	MCS 4	15dBm	18dBm	±2dB			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



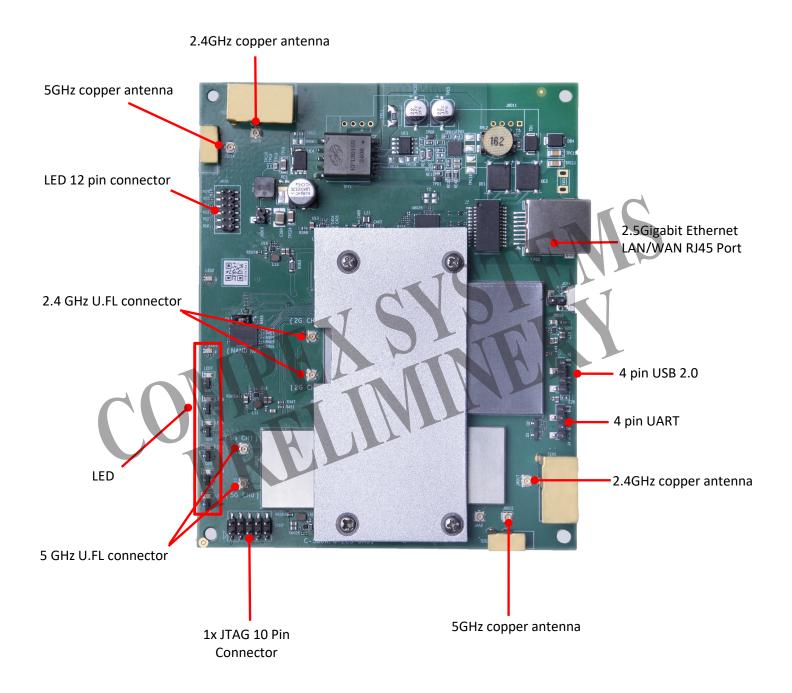
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Component Map







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

