

## WiFi 6E (802.11ax) 4x4 MU-MIMO OFDMA 6GHz Single Band Wireless Module

**Model: WLW3000H6**



### KEY FEATURES

- Qualcomm Atheros QCN9024/9074
- 6GHz band, 4x4 MU-MIMO OFDMA Technology, up to 4804Mbps physical data rate
- Single Band 6 GHz 4x4 WiFi 6E (802.11ax)
- M.2 E Key interface with PCIe 3.0
- 4 spatial streams (4SS)

## Specifications

Chipset	Qualcomm Atheros QCN9024/9074 'PINE' Series
System Memory	2Mbit serial I <sup>2</sup> C bus EEPROM
Reference Design	Qualcomm Atheros PN02.6
Host Interface	M.2 E Key interface with PCIe 3.0
Operating Voltage	5V
Power Consumption	16W
Wireless	6GHz 802.11a/n/ac/ax, max 20dBm per chain 4x U.FL Connectors
Frequency Range	US: 6.115 - 7.125GHz EU: 5.945 - 6.425GHz
Modulation Techniques	OFDMA: BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM, 4096-QAM
Channel Spectrum Widths for WLAN	Supports 20/40/80/160MHz at 6GHz
Operating Systems	OpenWRT
Certification	REACH and RoHS Compliance
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	57 x 60 x 6.3

\*Configurations are subject to change without notifications.

## RF Performance Table for 6GHz

	Data Rate	TX Power (per chain)	TX Power (4 chains)	Tolerance
6GHz 802.11a	6Mbps	20dBm	26dBm	±2dB
	9Mbps	20dBm	26dBm	±2dB
	12Mbps	20dBm	26dBm	±2dB
	18Mbps	20dBm	26dBm	±2dB
	24Mbps	20dBm	26dBm	±2dB
	36Mbps	20dBm	26dBm	±2dB
	48Mbps	20dBm	26dBm	±2dB
	54Mbps	20dBm	26dBm	±2dB
6GHz 802.11n/ac VHT20	MCS 0	20dBm	26dBm	±2dB
	MCS 1	20dBm	26dBm	±2dB
	MCS 2	20dBm	26dBm	±2dB
	MCS 3	20dBm	26dBm	±2dB
	MCS 4	20dBm	26dBm	±2dB
	MCS 5	20dBm	26dBm	±2dB
	MCS 6	20dBm	26dBm	±2dB
	MCS 7	20dBm	26dBm	±2dB
6GHz 802.11n/ac VHT40	MCS 8	16dBm	22dBm	±2dB
	MCS 0	20dBm	26dBm	±2dB
	MCS 1	20dBm	26dBm	±2dB
	MCS 2	20dBm	26dBm	±2dB
	MCS 3	20dBm	26dBm	±2dB
	MCS 4	20dBm	26dBm	±2dB
	MCS 5	20dBm	26dBm	±2dB
	MCS 6	20dBm	26dBm	±2dB
	MCS 7	20dBm	26dBm	±2dB
	MCS 8	16dBm	22dBm	±2dB
6GHz 802.11n/ac VHT80	MCS 9	16dBm	22dBm	±2dB
	MCS 0	20dBm	26dBm	±2dB
	MCS 1	20dBm	26dBm	±2dB
	MCS 2	20dBm	26dBm	±2dB
	MCS 3	20dBm	26dBm	±2dB
	MCS 4	20dBm	26dBm	±2dB
	MCS 5	20dBm	26dBm	±2dB
	MCS 6	20dBm	26dBm	±2dB
	MCS 7	20dBm	26dBm	±2dB
	MCS 8	16dBm	22dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
6GHz 802.11a	6Mbps	- 96dBm	±2dB
	9Mbps	- 94dBm	±2dB
	12Mbps	- 92dBm	±2dB
	18Mbps	- 90dBm	±2dB
	24Mbps	- 87dBm	±2dB
	36Mbps	- 86dBm	±2dB
	48Mbps	- 82dBm	±2dB
	54Mbps	- 79dBm	±2dB
6GHz 802.11n/ac VHT20	MCS 0	- 96dBm	±2dB
	MCS 1	- 94dBm	±2dB
	MCS 2	- 92dBm	±2dB
	MCS 3	- 89dBm	±2dB
	MCS 4	- 86dBm	±2dB
	MCS 5	- 83dBm	±2dB
	MCS 6	- 81dBm	±2dB
	MCS 7	- 79dBm	±2dB
6GHz 802.11n/ac VHT40	MCS 8	- 76dBm	±2dB
	MCS 0	- 93dBm	±2dB
	MCS 1	- 91dBm	±2dB
	MCS 2	- 89dBm	±2dB
	MCS 3	- 86dBm	±2dB
	MCS 4	- 84dBm	±2dB
	MCS 5	- 82dBm	±2dB
	MCS 6	- 80dBm	±2dB
	MCS 7	- 77dBm	±2dB
	MCS 8	- 74dBm	±2dB
6GHz 802.11n/ac VHT80	MCS 9	- 71dBm	±2dB
	MCS 0	- 90dBm	±2dB
	MCS 1	- 88dBm	±2dB
	MCS 2	- 86dBm	±2dB
	MCS 3	- 84dBm	±2dB
	MCS 4	- 81dBm	±2dB
	MCS 5	- 78dBm	±2dB
	MCS 6	- 75dBm	±2dB
	MCS 7	- 73dBm	±2dB
	MCS 8	- 70dBm	±2dB

## RF Performance Table for 6GHz

	Data Rate	TX Power (per chain)	TX Power (4 chains)	Tolerance
6GHz 802.11ax HE20	MCS 0	20dBm	26dBm	±2dB
	MCS 1	20dBm	26dBm	±2dB
	MCS 2	20dBm	26dBm	±2dB
	MCS 3	20dBm	26dBm	±2dB
	MCS 4	20dBm	26dBm	±2dB
	MCS 5	20dBm	26dBm	±2dB
	MCS 6	20dBm	26dBm	±2dB
	MCS 7	20dBm	26dBm	±2dB
	MCS 8	16dBm	22dBm	±2dB
	MCS 9	16dBm	22dBm	±2dB
	MCS 10	14dBm	20dBm	±2dB
	MCS 11	14dBm	20dBm	±2dB
6GHz 802.11ax HE40	MCS 0	20dBm	26dBm	±2dB
	MCS 1	20dBm	26dBm	±2dB
	MCS 2	20dBm	26dBm	±2dB
	MCS 3	20dBm	26dBm	±2dB
	MCS 4	20dBm	26dBm	±2dB
	MCS 5	20dBm	26dBm	±2dB
	MCS 6	20dBm	26dBm	±2dB
	MCS 7	20dBm	26dBm	±2dB
	MCS 8	16dBm	22dBm	±2dB
	MCS 9	16dBm	22dBm	±2dB
	MCS 10	14dBm	20dBm	±2dB
	MCS 11	14dBm	20dBm	±2dB
6GHz 802.11ax HE80	MCS 0	20dBm	26dBm	±2dB
	MCS 1	20dBm	26dBm	±2dB
	MCS 2	20dBm	26dBm	±2dB
	MCS 3	20dBm	26dBm	±2dB
	MCS 4	20dBm	26dBm	±2dB
	MCS 5	20dBm	26dBm	±2dB
	MCS 6	20dBm	26dBm	±2dB
	MCS 7	20dBm	26dBm	±2dB
	MCS 8	16dBm	22dBm	±2dB
	MCS 9	16dBm	22dBm	±2dB
	MCS 10	14dBm	20dBm	±2dB
	MCS 11	14dBm	20dBm	±2dB

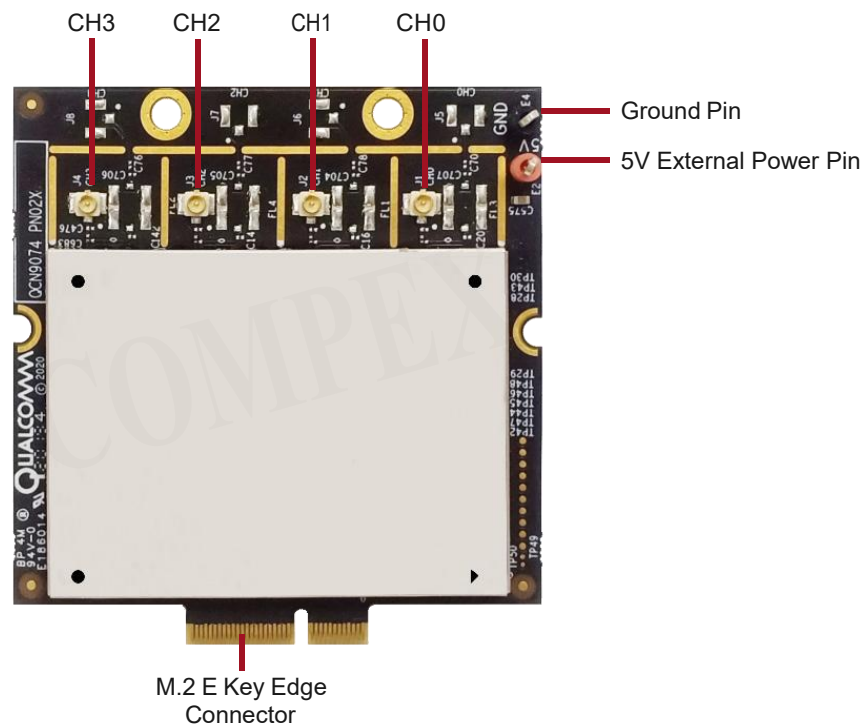
	Data Rate	RX Specifications Sensitivity	Tolerance
6GHz 802.11ax HE20	MCS 0	- 95dBm	±2dB
	MCS 1	- 93dBm	±2dB
	MCS 2	- 91dBm	±2dB
	MCS 3	- 89dBm	±2dB
	MCS 4	- 86dBm	±2dB
	MCS 5	- 85dBm	±2dB
	MCS 6	- 82dBm	±2dB
	MCS 7	- 80dBm	±2dB
	MCS 8	- 76dBm	±2dB
	MCS 9	- 74dBm	±2dB
	MCS 10	- 71dBm	±2dB
	MCS 11	- 69dBm	±2dB
6GHz 802.11ax HE40	MCS 0	- 94dBm	±2dB
	MCS 1	- 92dBm	±2dB
	MCS 2	- 89dBm	±2dB
	MCS 3	- 87dBm	±2dB
	MCS 4	- 84dBm	±2dB
	MCS 5	- 82dBm	±2dB
	MCS 6	- 80dBm	±2dB
	MCS 7	- 77dBm	±2dB
	MCS 8	- 74dBm	±2dB
	MCS 9	- 71dBm	±2dB
	MCS 10	- 69dBm	±2dB
	MCS 11	- 67dBm	±2dB
6GHz 802.11ax HE80	MCS 0	- 90dBm	±2dB
	MCS 1	- 88dBm	±2dB
	MCS 2	- 85dBm	±2dB
	MCS 3	- 84dBm	±2dB
	MCS 4	- 82dBm	±2dB
	MCS 5	- 80dBm	±2dB
	MCS 6	- 77dBm	±2dB
	MCS 7	- 74dBm	±2dB
	MCS 8	- 72dBm	±2dB
	MCS 9	- 68dBm	±2dB
	MCS 10	- 64dBm	±2dB
	MCS 11	- 61dBm	±2dB

## RF Performance Table for 6GHz

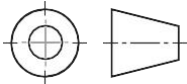
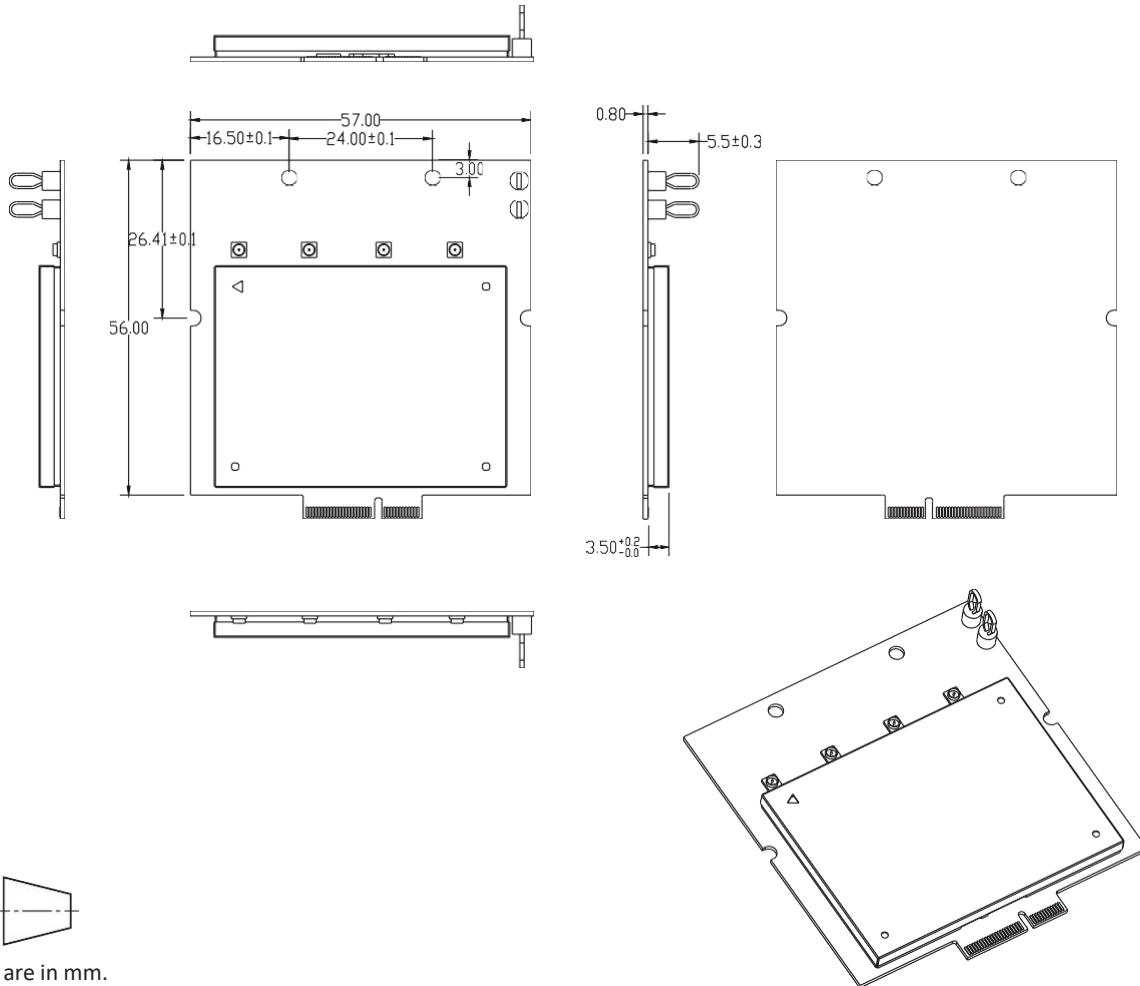
	Data Rate	TX Power (per chain)	TX Power (4 chains)	Tolerance
6GHz 802.11ax HE160	MCS 0	19dBm	25dBm	±2dB
	MCS 1	19dBm	25dBm	±2dB
	MCS 2	19dBm	25dBm	±2dB
	MCS 3	19dBm	25dBm	±2dB
	MCS 4	18dBm	24dBm	±2dB
	MCS 5	18dBm	24dBm	±2dB
	MCS 6	18dBm	24dBm	±2dB
	MCS 7	18dBm	24dBm	±2dB
	MCS 8	14dBm	20dBm	±2dB
	MCS 9	14dBm	20dBm	±2dB
	MCS 10	10dBm	16dBm	±2dB
	MCS 11	10dBm	16dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
6GHz 802.11ax HE160	MCS 0	-87dBm	±2dB
	MCS 1	-85dBm	±2dB
	MCS 2	-85dBm	±2dB
	MCS 3	-81dBm	±2dB
	MCS 4	-78dBm	±2dB
	MCS 5	-76dBm	±2dB
	MCS 6	-73dBm	±2dB
	MCS 7	-71dBm	±2dB
	MCS 8	-68dBm	±2dB
	MCS 9	-66dBm	±2dB
	MCS 10	-63dBm	±2dB
	MCS 11	-59dBm	±2dB

## Component Map



## Mechanical Dimensions



All dimensions are in mm.

## Ordering Configuration

Item Code	Model	Description
WLW3000H6U 8A0924S	WLW3000H6U (QCN9024)	4x4 802.11a/n/ac/ax M.2 Module Support UNII-5 to UNII-8 Band
WLW3000H6U 8A0974S	WLW3000H6U (QCN9074)	4x4 802.11a/n/ac/ax M.2 Module Support UNII-5 to UNII-8 Band
WLW3000H6E 8A0924S	WLW3000H6E (QCN9024)	4x4 802.11a/n/ac/ax M.2 Module Support UNII-5 Band (EU Version)
WLW3000H6E 8A0974S	WLW3000H6E (QCN9074)	4x4 802.11a/n/ac/ax M.2 Module Support UNII-5 Band (EU Version)