WiFi 7 (802.11BE) 2×2 MU-MIMO 5 GHz High Power Single Band Wireless Module

Model: WLWE7002E5-27



KEY FEATURES

- Qualcomm QCN9274-I 'Waikiki' series for Industrial Grade
- 5GHz, 2×2 MU-MIMO, up to 4323 Mbps physical data rate
- Single Band 5G 2x2 WiFi 7 (802.11be)
- MiniPCIe Interface with PCIe 3.0
- Based on WK01.5 reference design
- Supports up to 4096-QAM
- -20°C to 70°C operating temperature*

**For industrial-grade environmental temperature requirements, please contact our sales representative for a customized heatsink solution.*

Specifications

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Chipset	Qualcomm QCN9274-I 'Waikiki' series for Industrial grade
System Memory	2Mbit serial I²C bus EEPROM
Reference Design	WK01.5
Host Interface	MiniPCIe Interface with PCIe 3.0
Operating Voltage	3.3V 5V
Power Consumption	8.5W (Max)
Wireless	5GHz 802.11a/n/ac/ax/be, max 27dBm per chain 2x MMCX Connectors
Frequency Range	4.920~5.825GHz
Modulation Techniques	OFDMA: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM,1024-QAM, 4096-QAM
Channel Spectrum Widths for WLAN	Supports 20/40/80/160/240MHz at 5GHz
Operating Systems	Linux
Certification	REACH & RoHS Compliance
Environmental Temperature [1]	Operating temperature: -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 62.7 X 14.2 mm

**Configurations are subject to change without notifications.*
***Can be requested from respective sales executive.*

[1] For industrial-grade environmental temperature requirements, please contact our sales representative for a customized heatsink solution.

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RF Performance Table at 5GHz

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
5GHz 802.11be EHT20	MCS 0	27dBm	30dBm	±2dB
	MCS 1	27dBm	30dBm	±2dB
	MCS 2	26dBm	29dBm	±2dB
	MCS 3	25dBm	28dBm	±2dB
	MCS 4	24dBm	27dBm	±2dB
	MCS 5	24dBm	27dBm	±2dB
	MCS 6	23dBm	26dBm	±2dB
	MCS 7	23dBm	26dBm	±2dB
	MCS 8	22dBm	25dBm	±2dB
	MCS 9	21dBm	24dBm	±2dB
	MCS 10	20dBm	23dBm	±2dB
	MCS 11	20dBm	23dBm	±2dB
	MCS 12	19dBm	22dBm	±2dB
	MCS 13	19dBm	22dBm	±2dB
5GHz 802.11be EHT40	MCS 0	27dBm	30dBm	±2dB
	MCS 1	27dBm	30dBm	±2dB
	MCS 2	26dBm	29dBm	±2dB
	MCS 3	25dBm	28dBm	±2dB
	MCS 4	24dBm	27dBm	±2dB
	MCS 5	24dBm	27dBm	±2dB
	MCS 6	23dBm	26dBm	±2dB
	MCS 7	23dBm	26dBm	±2dB
	MCS 8	22dBm	25dBm	±2dB
	MCS 9	21dBm	24dBm	±2dB
	MCS 10	20dBm	23dBm	±2dB
	MCS 11	20dBm	23dBm	±2dB
	MCS 12	19dBm	22dBm	±2dB
	MCS 13	19dBm	22dBm	±2dB
5GHz 802.11be EHT80	MCS 0	27dBm	30dBm	±2dB
	MCS 1	27dBm	30dBm	±2dB
	MCS 2	26dBm	29dBm	±2dB
	MCS 3	25dBm	28dBm	±2dB
	MCS 4	24dBm	27dBm	±2dB
	MCS 5	24dBm	27dBm	±2dB
	MCS 6	23dBm	26dBm	±2dB
	MCS 7	23dBm	26dBm	±2dB
	MCS 8	22dBm	25dBm	±2dB
	MCS 9	21dBm	24dBm	±2dB
	MCS 10	20dBm	23dBm	±2dB
	MCS 11	20dBm	23dBm	±2dB
	MCS 12	19dBm	22dBm	±2dB
	MCS 13	19dBm	22dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11be EHT20	MCS 0	-94dBm	±2dB
	MCS 1	-92dBm	±2dB
	MCS 2	-89dBm	±2dB
	MCS 3	-87dBm	±2dB
	MCS 4	-83dBm	±2dB
	MCS 5	-79dBm	±2dB
	MCS 6	-78dBm	±2dB
	MCS 7	-76dBm	±2dB
	MCS 8	-72dBm	±2dB
	MCS 9	-71dBm	±2dB
	MCS 10	-67dBm	±2dB
	MCS 11	-66dBm	±2dB
	MCS 12	-62dBm	±2dB
	MCS 13	-59dBm	±2dB
5GHz 802.11be EHT40	MCS 0	-91dBm	±2dB
	MCS 1	-89dBm	±2dB
	MCS 2	-87dBm	±2dB
	MCS 3	-84dBm	±2dB
	MCS 4	-81dBm	±2dB
	MCS 5	-76dBm	±2dB
	MCS 6	-75dBm	±2dB
	MCS 7	-73dBm	±2dB
	MCS 8	-70dBm	±2dB
	MCS 9	-68dBm	±2dB
	MCS 10	-65dBm	±2dB
	MCS 11	-62dBm	±2dB
	MCS 12	-58dBm	±2dB
	MCS 13	-57dBm	±2dB
5GHz 802.11be EHT80	MCS 0	-88dBm	±2dB
	MCS 1	-86dBm	±2dB
	MCS 2	-84dBm	±2dB
	MCS 3	-81dBm	±2dB
	MCS 4	-78dBm	±2dB
	MCS 5	-74dBm	±2dB
	MCS 6	-73dBm	±2dB
	MCS 7	-71dBm	±2dB
	MCS 8	-68dBm	±2dB
	MCS 9	-66dBm	±2dB
	MCS 10	-63dBm	±2dB
	MCS 11	-61dBm	±2dB
	MCS 12	-58dBm	±2dB
	MCS 13	-55dBm	±2dB

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RF Performance Table at 5GHz

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
5GHz 802.11be EHT160	MCS 0	27dBm	30dBm	±2dB
	MCS 1	27dBm	30dBm	±2dB
	MCS 2	26dBm	29dBm	±2dB
	MCS 3	25dBm	28dBm	±2dB
	MCS 4	24dBm	27dBm	±2dB
	MCS 5	24dBm	27dBm	±2dB
	MCS 6	23dBm	26dBm	±2dB
	MCS 7	23dBm	26dBm	±2dB
	MCS 8	22dBm	25dBm	±2dB
	MCS 9	21dBm	24dBm	±2dB
	MCS 10	20dBm	23dBm	±2dB
	MCS 11	20dBm	23dBm	±2dB
	MCS 12	19dBm	22dBm	±2dB
	MCS 13	19dBm	22dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11be EHT160	MCS 0	-87dBm	±2dB
	MCS 1	-84dBm	±2dB
	MCS 2	-82dBm	±2dB
	MCS 3	-79dBm	±2dB
	MCS 4	-76dBm	±2dB
	MCS 5	-72dBm	±2dB
	MCS 6	-71dBm	±2dB
	MCS 7	-70dBm	±2dB
	MCS 8	-66dBm	±2dB
	MCS 9	-65dBm	±2dB
	MCS 10	-60dBm	±2dB
	MCS 11	-58dBm	±2dB
	MCS 12	-56dBm	±2dB
	MCS 13	-54dBm	±2dB

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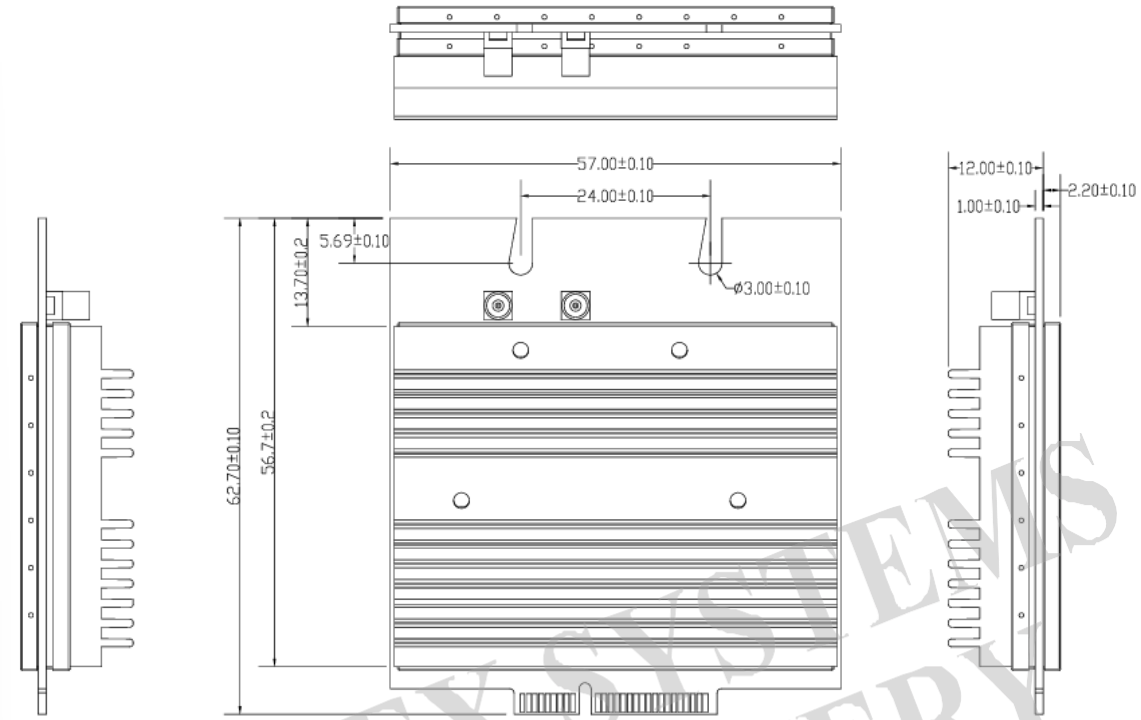
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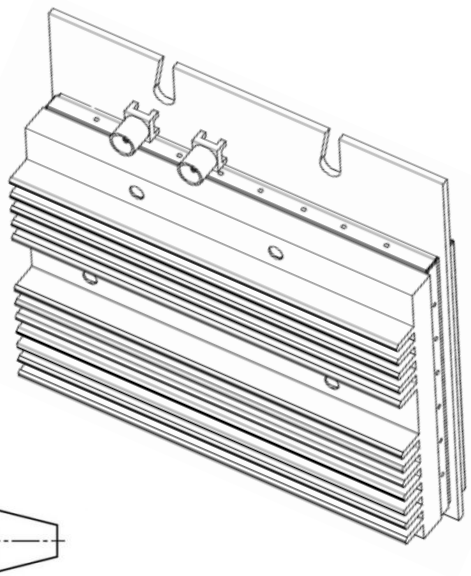
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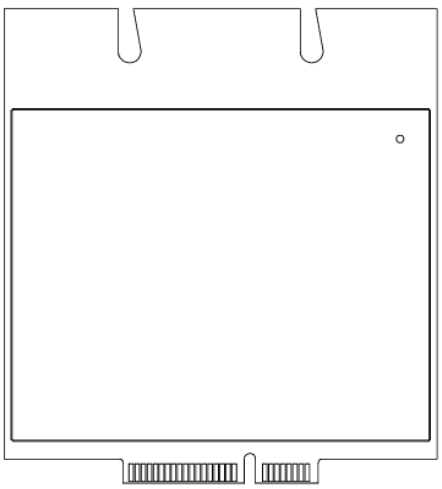
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Mechanical Dimensions



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All dimensions are in mm

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Ordering Configuration

Item Code	Model	Description
WLWE7002E5-27 7B000NX-TE	WLWE7002E5-27-I	QCN9274-I 2x2 802.11a/n/ac/ax/be Support 5GHz High Power Single Band MiniPCIe interface with PCIe 3.0 Module

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Chipsets Comparisons

		QCN6224	QCN6274	QCN9274
Band Operation	4 Single Band	✓	✓	✓
	2+2 Dual Band	✓	✓	✓
	2.4GHz	✓	✓	✓
	4.9GHz	-	-	✓
	5GHz	✓	✓	✓
	6GHz	-	✓	✓
	Channel Support	Up to 160MHz at 5GHz	Up to 320MHz at 6GHz	Up to 320MHz at 6GHz
Performance	4K QAM	✓	✓	✓
	#clients	128	256	512
	#OFDMA users	8	16	37
	DL OFDMA + TxBF	-	✓	✓
	DL/UL MU-MIMO	✓	✓	✓
Advanced 11be Features	WFA certified MLO	✓	✓	✓
	Puncture	Static	Static	Static & Dynamic
Others	DPD	✓	✓	✓
	FIPS	-	-	✓
Software Packages	Provisioned Multi Link	✓	✓	✓
	Dense Deployment	✓	✓	✓
	Location & RF Sensing	✓	✓	✓

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