

WiFi 7 (802.11BE) 2x2 MU-MIMO 2.4+5GHz Dual Band Dual Concurrent Wireless Module

Model: WLE7002E25



KEY FEATURES

- Qualcomm QCN6274 'Waikiki' series for Commercial Grade
- Qualcomm QCN9274 'Waikiki' series for Industrial Grade
- 2.4GHz, 2x2 MU-MIMO, up to 688 Mbps physical data rate
- 5GHz, 2x2 MU-MIMO, up to 2882 Mbps physical data rate
- Dual-Band Concurrent 2.4+5GHz WiFi 7 (802.11be)
- MiniPCIe Interface with PCIe 3.0
- Based on WK03.2 reference design
- Supports up to 4096-QAM
- -20°C to 70°C operating temperature for commercial grade
- -40°C to 85°C operating temperature for industrial grade

Specifications

Chipset	Qualcomm QCN6274 'Waikiki' series for Commercial grade Qualcomm QCN9274 'Waikiki' series for Industrial grade
System Memory	2Mbit serial I ² C bus EEPROM
Reference Design	WK03.2
Host Interface	MiniPCIe Interface with PCIe 3.0
Operating Voltage	3.3V
Power Consumption	8W(Max)
Wireless	2.4GHz 802.11b/g/n/ax/be, max 22dBm per chain 5GHz 802.11a/n/ax/be, max 21dBm per chain 4x U.FL Connectors
Frequency Range	2.4 GHz: 2.412~2.472GHz 5 GHz: 5.150~5.825GHz
Modulation Techniques	OFDMA: BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM, 1024QAM, 4096QAM
Channel Spectrum Widths for WLAN	Supports 20/40MHz at 2.4GHz Supports 20/40/80/160MHz at 5GHz
Operating Systems	OpenWRT
Certification	REACH & RoHS Compliance
Environmental Temperature	Operating(Commercial Grade): -20°C to 70°C, Storage: -40°C to 90°C Operating(Industrial Grade): -40°C to 85°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	30 X 50.8 X 13 mm

*Configurations are subject to change without notifications.

**Can be requested from respective sales executive.

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RF Performance Table at 2.4GHz

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
2.4GHz 802.11be EHT20	MCS 0	20dBm	23dBm	±2dB
	MCS 1	20dBm	23dBm	±2dB
	MCS 2	20dBm	23dBm	±2dB
	MCS 3	20dBm	23dBm	±2dB
	MCS 4	19dBm	22dBm	±2dB
	MCS 5	18dBm	21dBm	±2dB
	MCS 6	17dBm	20dBm	±2dB
	MCS 7	16dBm	19dBm	±2dB
	MCS 8	15dBm	18dBm	±2dB
	MCS 9	15dBm	18dBm	±2dB
	MCS 10	14dBm	17dBm	±2dB
	MCS 11	14dBm	17dBm	±2dB
	MCS 12	13dBm	16dBm	±2dB
	MCS 13	12dBm	15dBm	±2dB
2.4GHz 802.11be EHT40	MCS 0	20dBm	23dBm	±2dB
	MCS 1	20dBm	23dBm	±2dB
	MCS 2	20dBm	23dBm	±2dB
	MCS 3	20dBm	23dBm	±2dB
	MCS 4	19dBm	22dBm	±2dB
	MCS 5	18dBm	21dBm	±2dB
	MCS 6	17dBm	20dBm	±2dB
	MCS 7	16dBm	19dBm	±2dB
	MCS 8	15dBm	18dBm	±2dB
	MCS 9	15dBm	18dBm	±2dB
	MCS 10	14dBm	17dBm	±2dB
	MCS 11	14dBm	17dBm	±2dB
	MCS 12	13dBm	16dBm	±2dB
	MCS 13	12dBm	15dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
2.4GHz 802.11be EHT20	MCS 0	-96dBm	±2dB
	MCS 1	-95dBm	±2dB
	MCS 2	-93dBm	±2dB
	MCS 3	-90dBm	±2dB
	MCS 4	-87dBm	±2dB
	MCS 5	-83dBm	±2dB
	MCS 6	-81dBm	±2dB
	MCS 7	-79dBm	±2dB
	MCS 8	-76dBm	±2dB
	MCS 9	-73dBm	±2dB
	MCS 10	-70dBm	±2dB
	MCS 11	-68dBm	±2dB
	MCS 12	-64dBm	±2dB
	MCS 13	-61dBm	±2dB
2.4GHz 802.11be EHT40	MCS 0	-95dBm	±2dB
	MCS 1	-93dBm	±2dB
	MCS 2	-90dBm	±2dB
	MCS 3	-88dBm	±2dB
	MCS 4	-85dBm	±2dB
	MCS 5	-81dBm	±2dB
	MCS 6	-79dBm	±2dB
	MCS 7	-77dBm	±2dB
	MCS 8	-73dBm	±2dB
	MCS 9	-71dBm	±2dB
	MCS 10	-67dBm	±2dB
	MCS 11	-65dBm	±2dB
	MCS 12	-61dBm	±2dB
	MCS 13	-58dBm	±2dB

RF Performance Table at 5GHz

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
5GHz 802.11be EHT20	MCS 0	20dBm	23dBm	±2dB
	MCS 1	20dBm	23dBm	±2dB
	MCS 2	19dBm	22dBm	±2dB
	MCS 3	19dBm	22dBm	±2dB
	MCS 4	19dBm	22dBm	±2dB
	MCS 5	18dBm	21dBm	±2dB
	MCS 6	17dBm	20dBm	±2dB
	MCS 7	17dBm	20dBm	±2dB
	MCS 8	16dBm	19dBm	±2dB
	MCS 9	16dBm	19dBm	±2dB
	MCS 10	15dBm	18dBm	±2dB
	MCS 11	14dBm	17dBm	±2dB
	MCS 12	13dBm	16dBm	±2dB
	MCS 13	13dBm	16dBm	±2dB
5GHz 802.11be EHT40	MCS 0	20dBm	23dBm	±2dB
	MCS 1	20dBm	23dBm	±2dB
	MCS 2	19dBm	22dBm	±2dB
	MCS 3	19dBm	22dBm	±2dB
	MCS 4	19dBm	22dBm	±2dB
	MCS 5	18dBm	21dBm	±2dB
	MCS 6	17dBm	20dBm	±2dB
	MCS 7	17dBm	20dBm	±2dB
	MCS 8	16dBm	19dBm	±2dB
	MCS 9	16dBm	19dBm	±2dB
	MCS 10	15dBm	18dBm	±2dB
	MCS 11	14dBm	17dBm	±2dB
	MCS 12	13dBm	16dBm	±2dB
	MCS 13	13dBm	16dBm	±2dB
5GHz 802.11be EHT80	MCS 0	20dBm	23dBm	±2dB
	MCS 1	20dBm	23dBm	±2dB
	MCS 2	19dBm	22dBm	±2dB
	MCS 3	19dBm	22dBm	±2dB
	MCS 4	19dBm	22dBm	±2dB
	MCS 5	18dBm	21dBm	±2dB
	MCS 6	17dBm	20dBm	±2dB
	MCS 7	17dBm	20dBm	±2dB
	MCS 8	16dBm	19dBm	±2dB
	MCS 9	16dBm	19dBm	±2dB
	MCS 10	15dBm	18dBm	±2dB
	MCS 11	14dBm	17dBm	±2dB
	MCS 12	13dBm	16dBm	±2dB
	MCS 13	12dBm	15dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11be EHT20	MCS 0	-96dBm	±2dB
	MCS 1	-94dBm	±2dB
	MCS 2	92dBm	±2dB
	MCS 3	-88dBm	±2dB
	MCS 4	-85dBm	±2dB
	MCS 5	-81dBm	±2dB
	MCS 6	-79dBm	±2dB
	MCS 7	-77dBm	±2dB
	MCS 8	-74dBm	±2dB
	MCS 9	-71dBm	±2dB
	MCS 10	-68dBm	±2dB
	MCS 11	-65dBm	±2dB
	MCS 12	-61dBm	±2dB
	MCS 13	-58dBm	±2dB
5GHz 802.11be EHT40	MCS 0	-94dBm	±2dB
	MCS 1	-91dBm	±2dB
	MCS 2	-89dBm	±2dB
	MCS 3	-84dBm	±2dB
	MCS 4	-82dBm	±2dB
	MCS 5	-78dBm	±2dB
	MCS 6	-76dBm	±2dB
	MCS 7	-75dBm	±2dB
	MCS 8	-71dBm	±2dB
	MCS 9	-68dBm	±2dB
	MCS 10	-65dBm	±2dB
	MCS 11	-62dBm	±2dB
	MCS 12	-59dBm	±2dB
	MCS 13	-56dBm	±2dB
5GHz 802.11be EHT80	MCS 0	-90dBm	±2dB
	MCS 1	-88dBm	±2dB
	MCS 2	-85dBm	±2dB
	MCS 3	-82dBm	±2dB
	MCS 4	-79dBm	±2dB
	MCS 5	-75dBm	±2dB
	MCS 6	-73dBm	±2dB
	MCS 7	-72dBm	±2dB
	MCS 8	-68dBm	±2dB
	MCS 9	-65dBm	±2dB
	MCS 10	-61dBm	±2dB
	MCS 11	-59dBm	±2dB
	MCS 12	-56dBm	±2dB
	MCS 13	-52dBm	±2dB

RF Performance Table at 5GHz

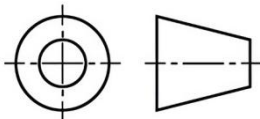
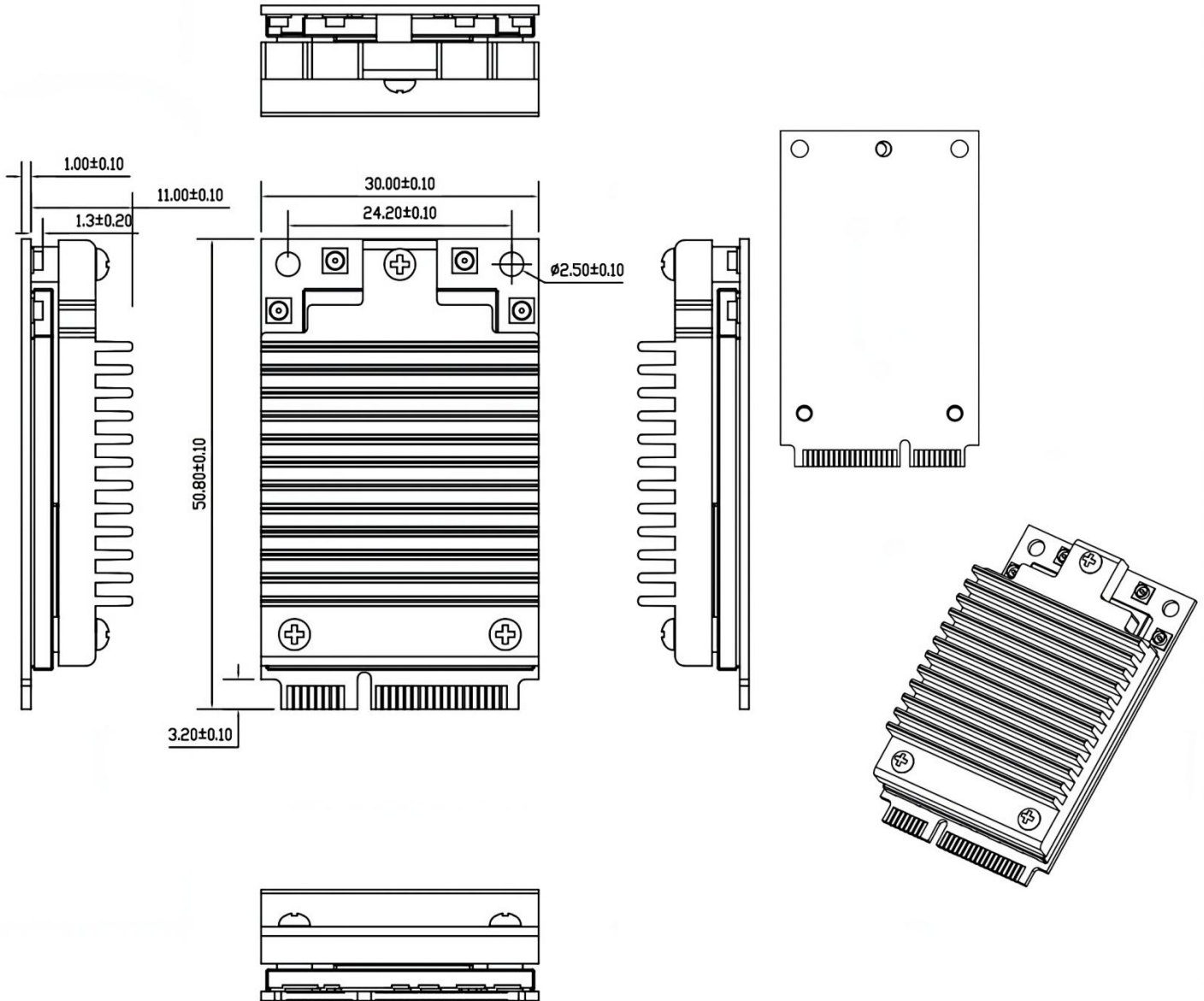
	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
5GHz 802.11be EHT160	MCS 0	20dBm	23dBm	±2dB
	MCS 1	20dBm	23dBm	±2dB
	MCS 2	19dBm	22dBm	±2dB
	MCS 3	19dBm	22dBm	±2dB
	MCS 4	19dBm	22dBm	±2dB
	MCS 5	18dBm	21dBm	±2dB
	MCS 6	17dBm	20dBm	±2dB
	MCS 7	16dBm	19dBm	±2dB
	MCS 8	16dBm	19dBm	±2dB
	MCS 9	15dBm	18dBm	±2dB
	MCS 10	15dBm	18dBm	±2dB
	MCS 11	14dBm	17dBm	±2dB
	MCS 12	13dBm	16dBm	±2dB
	MCS 13	12dBm	15dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11be EHT160	MCS 0	-88dBm	±2dB
	MCS 1	-85dBm	±2dB
	MCS 2	-83dBm	±2dB
	MCS 3	-80dBm	±2dB
	MCS 4	-77dBm	±2dB
	MCS 5	-72dBm	±2dB
	MCS 6	-70dBm	±2dB
	MCS 7	-68dBm	±2dB
	MCS 8	-64dBm	±2dB
	MCS 9	-62dBm	±2dB
	MCS 10	-58dBm	±2dB
	MCS 11	-56dBm	±2dB
	MCS 12	-53dBm	±2dB
	MCS 13	-50dBm	±2dB

Component Map



Mechanical Dimensions



All dimensions are in mm

Ordering Configuration

Item Code	Model	Description
WLE7002E25 7A0674S-TE	WLE7002E25 SKY FEM	QCN6274 2x2 802.11a/b/g/n/ac/ax/be support 2.4+5GHz Dual-Band Concurrent MiniPCIe interface with PCIe 3.0 Module
WLE7002E25 7B0974S-I-TE	WLE7002E25-I SKY FEM	QCN9274 2x2 802.11a/b/g/n/ac/ax/be support 2.4+5GHz Dual-Band Concurrent MiniPCIe interface with PCIe 3.0 Module
WLE7002E25 7A0674K-TE	WLE7002E25 KCT FEM	QCN6274 2x2 802.11a/b/g/n/ac/ax/be support 2.4+5GHz Dual-Band Concurrent MiniPCIe interface with PCIe 3.0 Module
WLE7002E25 7B0974K-I-TE	WLE7002E25-I KCT FEM	QCN9274 2x2 802.11a/b/g/n/ac/ax/be support 2.4+5GHz Dual-Band Concurrent MiniPCIe interface with PCIe 3.0 Module