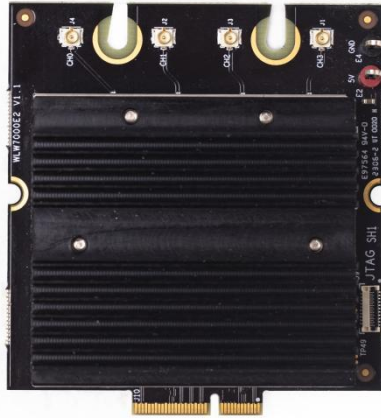COMPEX

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

Model: WLW7002E25

KEY FEATURES

- Qualcomm QCN6274 'Waikiki' series for Commercial Grade
- Qualcomm QCN9274 'Waikiki' series for Industrial Grade
- 2.4GHz, 2×2 MU-MIMO, up to 688 Mbps physical data rate
- 5GHz, 2×2 MU-MIMO, up to 2882 Mbps physical data rate
- Dual-Band Concurrent 2.4+5GHz WiFi 7 (802.11be)
- M.2 E Key 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 I²C bus EEPROM
Reference Design	WK03.2
Host Interface	M.2 E Key interface with PCIe 3.0
Operating Voltage	5V
Power Consumption	13.3W (max)
Wireless	2.4GHz 802.11b/g/n/ax/be, max 23dBm per chain 5GHz 802.11a/n/ax/be, max 21dBm per chain 4x U.FL Connectors
Frequency Range	2.4GHz: 2.412~2.472GHz 5GHz: 5.15~5.825GHz
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	Linux
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	62.7 X 57 X 15mm

Configurations are subject to change without notifications.

**Can be requested from respective sales executive.*

RF Performance Table at 2.4GHz

Data Rate	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
2.4GHz 802.11be EHT20	MCS 0	22dBm	25dBm	±2dB
	MCS 1	22dBm	25dBm	±2dB
	MCS 2	22dBm	25dBm	±2dB
	MCS 3	22dBm	25dBm	±2dB
	MCS 4	22dBm	25dBm	±2dB
	MCS 5	22dBm	25dBm	±2dB
	MCS 6	22dBm	25dBm	±2dB
	MCS 7	22dBm	25dBm	±2dB
	MCS 8	21dBm	24dBm	±2dB
	MCS 9	21dBm	24dBm	±2dB
	MCS 10	20dBm	23dBm	±2dB
	MCS 11	20dBm	23dBm	±2dB
	MCS 12	20dBm	23dBm	±2dB
	MCS 13	20dBm	23dBm	±2dB
2.4GHz 802.11be EHT40	MCS 0	22dBm	25dBm	±2dB
	MCS 1	22dBm	25dBm	±2dB
	MCS 2	22dBm	25dBm	±2dB
	MCS 3	22dBm	25dBm	±2dB
	MCS 4	22dBm	25dBm	±2dB
	MCS 5	22dBm	25dBm	±2dB
	MCS 6	22dBm	25dBm	±2dB
	MCS 7	22dBm	25dBm	±2dB
	MCS 8	21dBm	24dBm	±2dB
	MCS 9	21dBm	24dBm	±2dB
	MCS 10	20dBm	23dBm	±2dB
	MCS 11	20dBm	23dBm	±2dB
	MCS 12	20dBm	23dBm	±2dB
	MCS 13	20dBm	23dBm	±2dB

Data Rate	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	22dBm	25dBm	±2dB
	MCS 1	22dBm	25dBm	±2dB
	MCS 2	22dBm	25dBm	±2dB
	MCS 3	22dBm	25dBm	±2dB
	MCS 4	22dBm	25dBm	±2dB
	MCS 5	22dBm	25dBm	±2dB
	MCS 6	21dBm	24dBm	±2dB
	MCS 7	21dBm	24dBm	±2dB
	MCS 8	20dBm	23dBm	±2dB
	MCS 9	20dBm	23dBm	±2dB
	MCS 10	20dBm	23dBm	±2dB
	MCS 11	20dBm	23dBm	±2dB
	MCS 12	20dBm	23dBm	±2dB
	MCS 13	20dBm	23dBm	±2dB
5GHz 802.11be EHT40	MCS 0	22dBm	25dBm	±2dB
	MCS 1	22dBm	25dBm	±2dB
	MCS 2	22dBm	25dBm	±2dB
	MCS 3	22dBm	25dBm	±2dB
	MCS 4	22dBm	25dBm	±2dB
	MCS 5	22dBm	25dBm	±2dB
	MCS 6	21dBm	24dBm	±2dB
	MCS 7	21dBm	24dBm	±2dB
	MCS 8	20dBm	23dBm	±2dB
	MCS 9	20dBm	23dBm	±2dB
	MCS 10	20dBm	23dBm	±2dB
	MCS 11	20dBm	23dBm	±2dB
	MCS 12	20dBm	23dBm	±2dB
	MCS 13	20dBm	23dBm	±2dB
5GHz 802.11be EHT80	MCS 0	22dBm	25dBm	±2dB
	MCS 1	22dBm	25dBm	±2dB
	MCS 2	22dBm	25dBm	±2dB
	MCS 3	22dBm	25dBm	±2dB
	MCS 4	22dBm	25dBm	±2dB
	MCS 5	22dBm	25dBm	±2dB
	MCS 6	21dBm	24dBm	±2dB
	MCS 7	21dBm	24dBm	±2dB
	MCS 8	20dBm	23dBm	±2dB
	MCS 9	20dBm	23dBm	±2dB
	MCS 10	20dBm	23dBm	±2dB
	MCS 11	20dBm	23dBm	±2dB
	MCS 12	20dBm	23dBm	±2dB
	MCS 13	20dBm	23dBm	±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	-73dBm	±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	22dBm	25dBm	±2dB
	MCS 1	22dBm	25dBm	±2dB
	MCS 2	22dBm	25dBm	±2dB
	MCS 3	22dBm	25dBm	±2dB
	MCS 4	22dBm	25dBm	±2dB
	MCS 5	22dBm	25dBm	±2dB
	MCS 6	21dBm	24dBm	±2dB
	MCS 7	21dBm	24dBm	±2dB
	MCS 8	20dBm	23dBm	±2dB
	MCS 9	20dBm	23dBm	±2dB
	MCS 10	20dBm	23dBm	±2dB
	MCS 11	20dBm	23dBm	±2dB
	MCS 12	20dBm	23dBm	±2dB
	MCS 13	20dBm	23dBm	±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

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Component Map

U.FL Connectors

CH0   CH1   CH2   CH3

Ground Pin

5V External
Power Pin
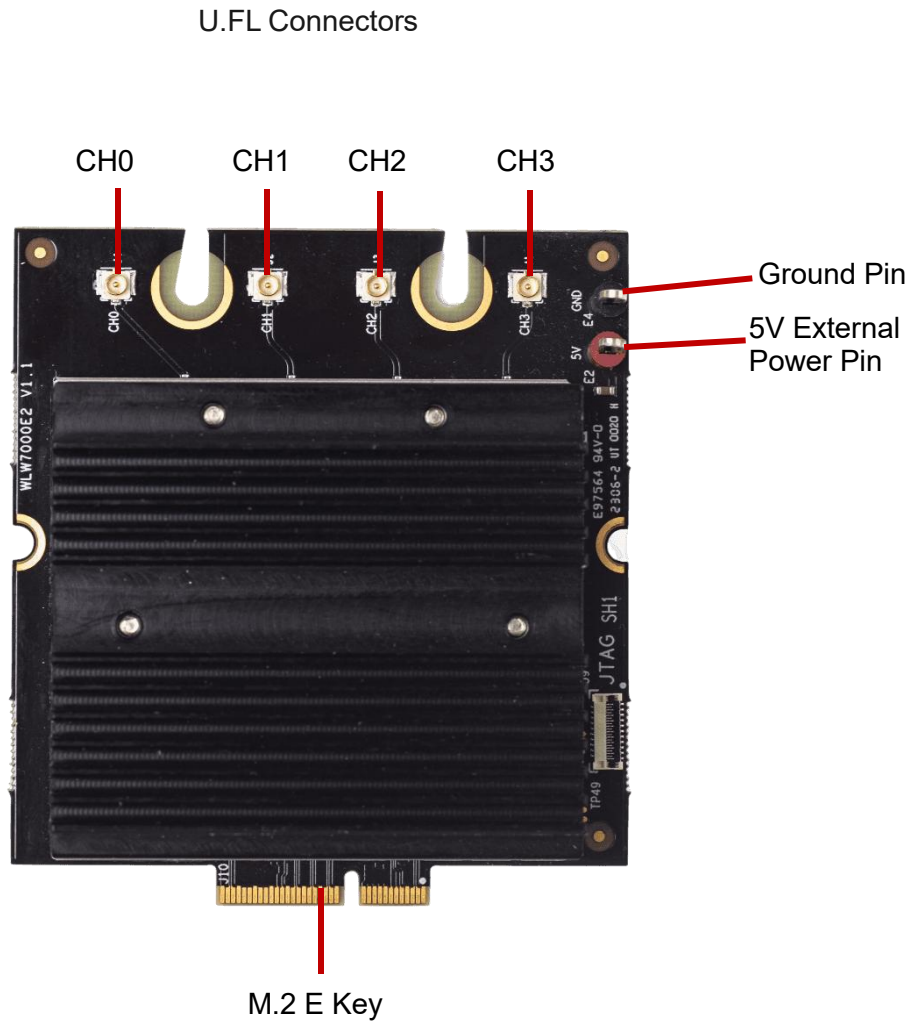
M.2 E Key

Mechanical Dimensions

All dimensions are in mm.

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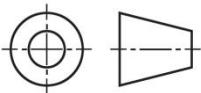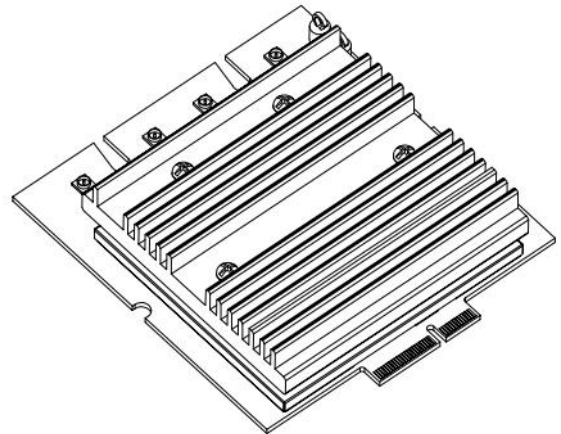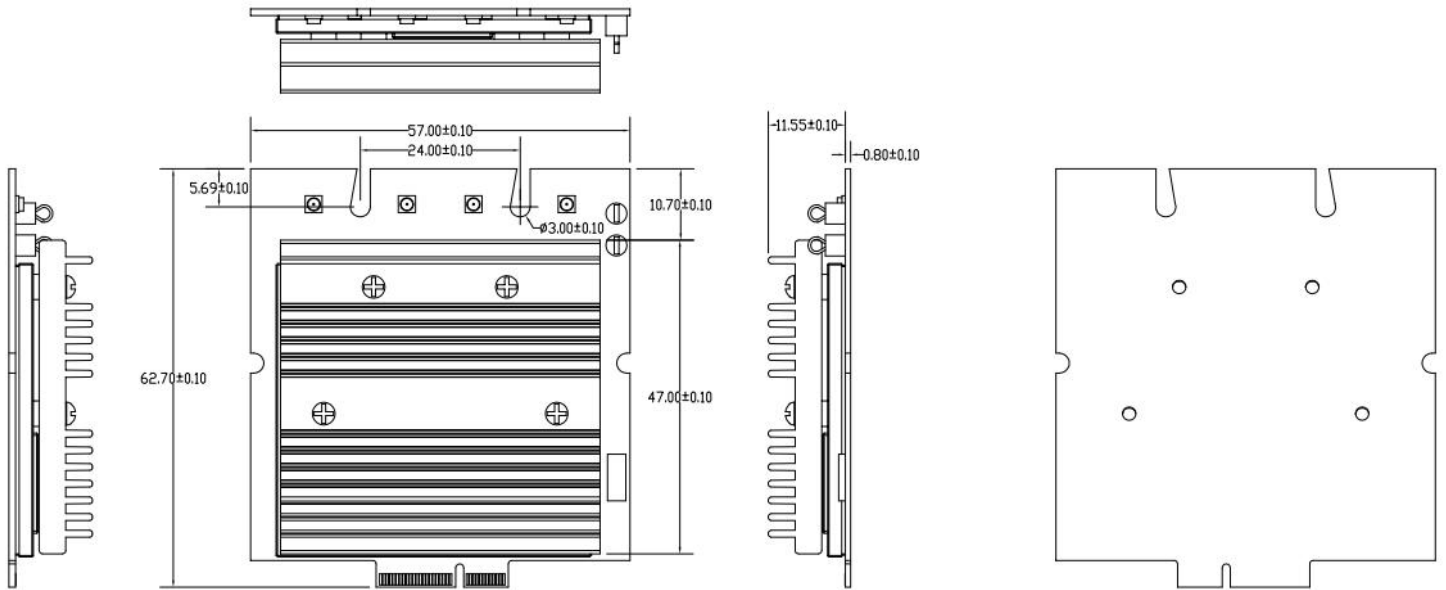
Ordering Configuration

Item Code	Model	Description
WLW7002E25 8A0674S-TE	WLW7002E25	QCN6274 2x2 802.11a/b/g/n/ac/ax/be support 2.4+5GHz Dual-Band Concurrent M.2 E Key interface with PCIe 3.0
WLW7002E25 8A0974S-TE	WLW7002E25-I	QCN9274 2x2 802.11a/b/g/n/ac/ax/be support 2.4+5GHz Dual-Band Concurrent M.2 E Key interface with PCIe 3.0

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