

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

Model: **WLT7002E25D-E** | **WLT7002E25DF-E**



KEY FEATURES

- Qualcomm QCN6224/6274 '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 4324 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 QCN6224/6274 '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	M.2 E Key Interface with PCIe 3.0
Operating Voltage	3.3V
Power Consumption	TBD
Wireless	2x2 2.4GHz 802.11b/g/n/ax/be, max 20dBm per chain 2x2 5GHz 802.11a/n/ax/be, max 20dBm per chain 2 x 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 20/40/80/160/240MHz 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 52 X 13 mm

*Configurations are subject to change without notifications.

**Can be requested from respective sales executive.

RF Performance Table at 2.4GHz

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

RF Performance Table at 5GHz

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

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11be EHT20	MCS 0	TBD	±2dB
	MCS 1	TBD	±2dB
	MCS 2	TBD	±2dB
	MCS 3	TBD	±2dB
	MCS 4	TBD	±2dB
	MCS 5	TBD	±2dB
	MCS 6	TBD	±2dB
	MCS 7	TBD	±2dB
	MCS 8	TBD	±2dB
	MCS 9	TBD	±2dB
	MCS 10	TBD	±2dB
	MCS 11	TBD	±2dB
	MCS 12	TBD	±2dB
	MCS 13	TBD	±2dB
5GHz 802.11be EHT40	MCS 0	TBD	±2dB
	MCS 1	TBD	±2dB
	MCS 2	TBD	±2dB
	MCS 3	TBD	±2dB
	MCS 4	TBD	±2dB
	MCS 5	TBD	±2dB
	MCS 6	TBD	±2dB
	MCS 7	TBD	±2dB
	MCS 8	TBD	±2dB
	MCS 9	TBD	±2dB
	MCS 10	TBD	±2dB
	MCS 11	TBD	±2dB
	MCS 12	TBD	±2dB
	MCS 13	TBD	±2dB
5GHz 802.11be EHT80	MCS 0	TBD	±2dB
	MCS 1	TBD	±2dB
	MCS 2	TBD	±2dB
	MCS 3	TBD	±2dB
	MCS 4	TBD	±2dB
	MCS 5	TBD	±2dB
	MCS 6	TBD	±2dB
	MCS 7	TBD	±2dB
	MCS 8	TBD	±2dB
	MCS 9	TBD	±2dB
	MCS 10	TBD	±2dB
	MCS 11	TBD	±2dB
	MCS 12	TBD	±2dB
	MCS 13	TBD	±2dB

RF Performance Table at 5GHz

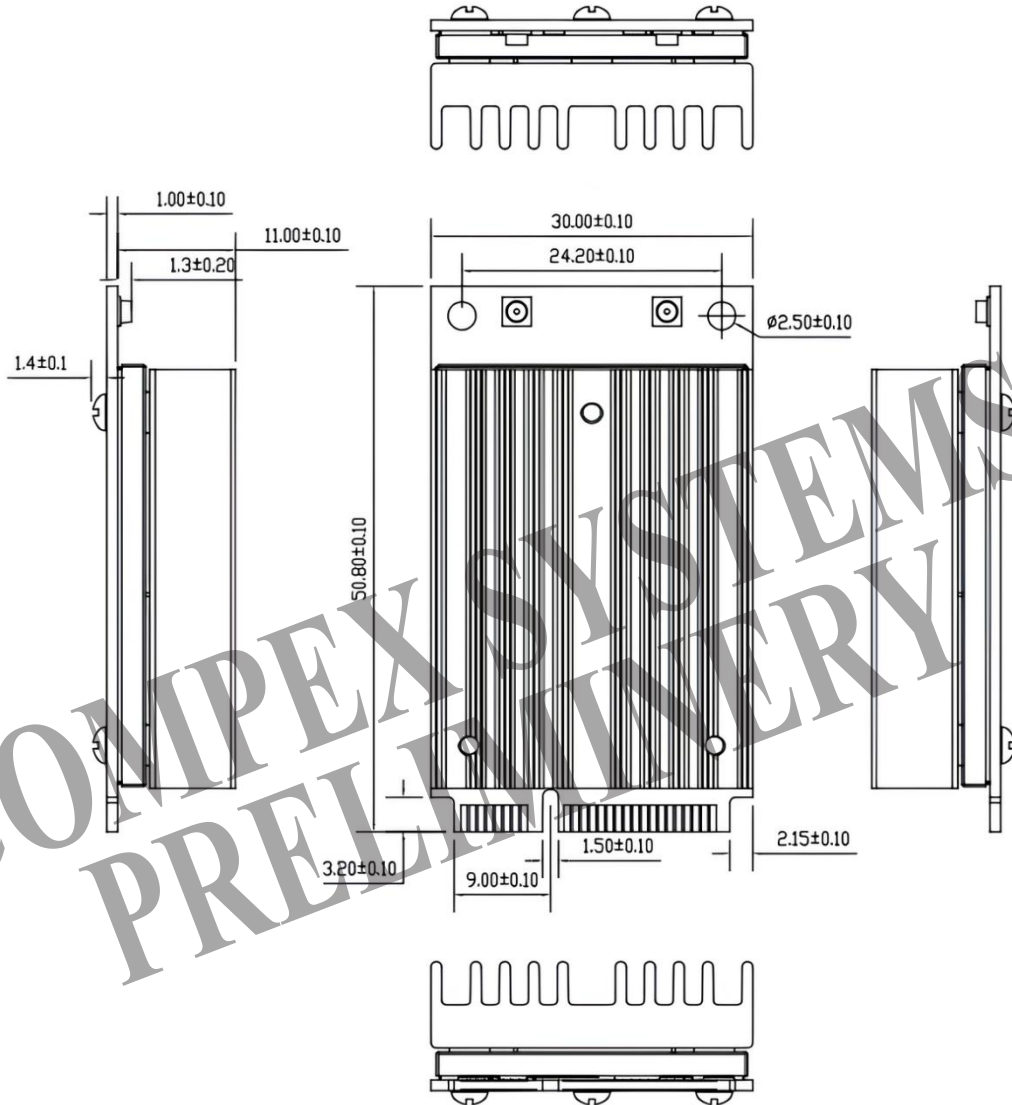
	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance		Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11be EHT160	MCS 0	18dBm	21dBm	±2dB	5GHz 802.11be EHT160	MCS 0	TBD	±2dB
	MCS 1	18dBm	21dBm	±2dB		MCS 1	TBD	±2dB
	MCS 2	17dBm	20dBm	±2dB		MCS 2	TBD	±2dB
	MCS 3	16dBm	19dBm	±2dB		MCS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

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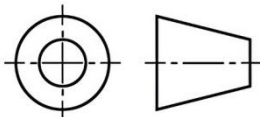
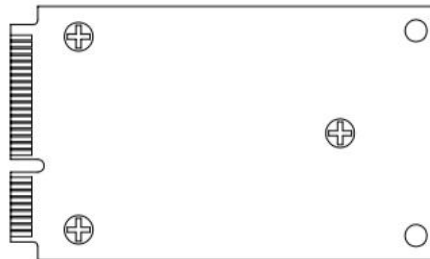
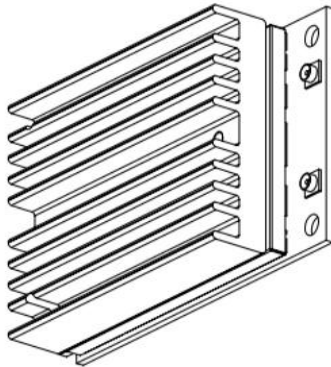
Component Map



Mechanical Dimensions



v



All dimensions are in mm

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Ordering Configuration

Item Code	Model	Description
WLT7002E25 7A0624XEN-TE WLT7002E25 7A0674XEN-TE	WLT7002E25D-E	QCN6224/6274 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
WLT7002E25 7B0974XEN-TE	WLT7002E25DE-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
WLT7002E25 7A0624XEB-TE WLT7002E25 7A0674XEB-TE	WLT7002E25DF-E	QCN6224/6274 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 with LTE Coexistence Filter
WLT7002E25 7B0974XEB-TE	WLT7002E25DFE-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 with LTE Coexistence Filter

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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	✓	✓	✓