

Qualcomm's QCA2066 2GHz, 5GHz and 6GHz TBS Tri-Band 802.11ax with Bluetooth Milan Designed for WLAN/BT and Low-Energy Communications

Model: WLT206H



KEY FEATURES

- Qualcomm Atheros QCA2062/2066
- 2 GHz, 2x2 MU-MIMO OFDMA Technology, up to 573.6 Mbps physical data rate
- 5 GHz, 2x2 MU-MIMO OFDMA Technology, up to 1201 Mbps physical data rate
- 6 GHz, 2x2 MU-MIMO OFDMA Technology, up to 2402 Mbps physical data rate
- Tri- Band 2/5/6GHz 2x2 WiFi 6E (802.11ax)
- M.2 E Key interface with PCIe 3.0
- 2 spatial streams (4SS)
- Enables seamless integration of WLAN/Bluetooth and low energy technology.
- Provides a highly integrated System-on-Chip (SoC) for 802.11ax WiFi, Bluetooth (BT) Milan.
- Supports Bluetooth 5.1 + ANT+ IC and Bluetooth Milan ready and backward compatibility with BT 1.2 and BT 2.X + enhanced data rate.
- Supports BT-WLAN coexistence and 5G/ISM coexistence

Specifications

Chipset	Qualcomm Atheros QCA2062/2066 'Verona' Series
Reference Design	VER02.1
Host Interface	M.2 E Key interface with PCIe 3.0
Bluetooth Host Interface	USB1.1
Operating Voltage	3.3V DC power supply and I/O supply of 1.8V or 3.3V
Power Consumption	6W
Wireless	2GHz 802.11b/g/n/ax, max 16 dBm per chain 5GHz 802.11a/n/ac/ax, max 16 dBm per chain 6GHz 802.11a/n/ac/ax, max 16 dBm per chain 2x MHF4 Connectors Support WiFi/ Bluetooth coexistence
Frequency Range	2GHz: 2.412-2.472GHz 5GHz: 5.150-5.85GHz 6GHz: 5.925-7.125GHz *Subject to local regulations
Modulation Techniques	802.11b: DSSS (DBPSK, DQPSK, CCK) 802.11a/g: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM) 802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM) 802.11ax: OFDMA (DPSK, QPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM)
Channel Spectrum Widths for WLAN	QCA2062: Supports 20/40MHz at 2.4 GHz, Supports 20/40/80MHz at 5 GHz QCA2066: Supports 20/40MHz at 2.4 GHz, Supports 20/40/80/160MHz at 5 GHz, Supports 20/40/80/160/320MHz at 6 GHz QCA2062: 2GHz+5GHz ; QCA2066:2GHz+5GHz or 5GHz + 6GHz
Standards for Bluetooth	Bluetooth 5.1
Data Rates for Bluetooth	2Mbps
Driver Support	Linux, Windows 10

*Configurations are subject to change without notifications.

Specifications

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Security	64/128-bits WEP, WPA, WPA2, WPA3, 802.1X
Environmental Temperature	Operating: -20°C to 70°C, Storage: -40°C to 85°C
Environmental Humidity, Non-Condensing	Operating: 5% to 95%, Storage: 5% to 90%
Dimensions (W × H × D) in mm	22 × 30 × 2.8

*Configurations are subject to change without notifications.

RF Performance Table for 2.4 GHz

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
2.4GHz 802.11b	1 Mbps	16dBm	19dBm	±2dB
	2 Mbps	16dBm	19dBm	±2dB
	5.5 Mbps	16dBm	19dBm	±2dB
	11 Mbps	16dBm	19dBm	±2dB
2.4GHz 802.11g	6 Mbps	15dBm	18dBm	±2dB
	9 Mbps	15dBm	18dBm	±2dB
	12 Mbps	15dBm	18dBm	±2dB
	18 Mbps	15dBm	18dBm	±2dB
	24 Mbps	14dBm	17dBm	±2dB
	36 Mbps	14dBm	17dBm	±2dB
	48 Mbps	14dBm	17dBm	±2dB
	54 Mbps	14dBm	17dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	15dBm	18dBm	±2dB
	MCS 1	15dBm	18dBm	±2dB
	MCS 2	15dBm	18dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	14dBm	17dBm	±2dB
	MCS 6	14dBm	17dBm	±2dB
	MCS 7	14dBm	17dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	15dBm	18dBm	±2dB
	MCS 1	15dBm	18dBm	±2dB
	MCS 2	15dBm	18dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	14dBm	17dBm	±2dB
	MCS 6	14dBm	17dBm	±2dB
	MCS 7	14dBm	17dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
2.4GHz 802.11b	1 Mbps	-99dBm	±2dB
	2 Mbps	-95dBm	±2dB
	5.5 Mbps	-93dBm	±2dB
	11 Mbps	-90dBm	±2dB
2.4GHz 802.11g	6 Mbps	-95dBm	±2dB
	9 Mbps	-92dBm	±2dB
	12 Mbps	-91dBm	±2dB
	18 Mbps	-89dBm	±2dB
	24 Mbps	-86dBm	±2dB
	36 Mbps	-83dBm	±2dB
	48 Mbps	-79dBm	±2dB
	54 Mbps	-77dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	-94dBm	±2dB
	MCS 1	-93dBm	±2dB
	MCS 2	-90dBm	±2dB
	MCS 3	-87dBm	±2dB
	MCS 4	-84dBm	±2dB
	MCS 5	-80dBm	±2dB
	MCS 6	-77dBm	±2dB
	MCS 7	-75dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	-91dBm	±2dB
	MCS 1	-90dBm	±2dB
	MCS 2	-87dBm	±2dB
	MCS 3	-84dBm	±2dB
	MCS 4	-81dBm	±2dB
	MCS 5	-77dBm	±2dB
	MCS 6	-75dBm	±2dB
	MCS 7	-73dBm	±2dB

RF Performance Table for 2.4 GHz

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
2.4GHz 802.11ax HE20	MCS 0	15dBm	18dBm	±2dB
	MCS 1	15dBm	18dBm	±2dB
	MCS 2	15dBm	18dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	14dBm	17dBm	±2dB
	MCS 6	14dBm	17dBm	±2dB
	MCS 7	14dBm	17dBm	±2dB
	MCS 8	13dBm	16dBm	±2dB
	MCS 9	13dBm	16dBm	±2dB
	MCS 10	12dBm	15dBm	±2dB
	MCS 11	12dBm	15dBm	±2dB
2.4GHz 802.11ax HE40	MCS 0	15dBm	18dBm	±2dB
	MCS 1	15dBm	18dBm	±2dB
	MCS 2	15dBm	18dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	14dBm	17dBm	±2dB
	MCS 6	14dBm	17dBm	±2dB
	MCS 7	14dBm	17dBm	±2dB
	MCS 8	13dBm	16dBm	±2dB
	MCS 9	13dBm	16dBm	±2dB
	MCS 10	12dBm	15dBm	±2dB
	MCS 11	12dBm	15dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
2.4GHz 802.11ax HE20	MCS 0	-94dBm	±2dB
	MCS 1	-92dBm	±2dB
	MCS 2	-90dBm	±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	-69dBm	±2dB
	MCS 10	-66dBm	±2dB
	MCS 11	-65dBm	±2dB
2.4GHz 802.11ax HE40	MCS 0	-92dBm	±2dB
	MCS 1	-90dBm	±2dB
	MCS 2	-87dBm	±2dB
	MCS 3	-84dBm	±2dB
	MCS 4	-80dBm	±2dB
	MCS 5	-76dBm	±2dB
	MCS 6	-75dBm	±2dB
	MCS 7	-74dBm	±2dB
	MCS 8	-70dBm	±2dB
	MCS 9	-68dBm	±2dB
	MCS 10	-64dBm	±2dB
	MCS 11	-63dBm	±2dB

RF Performance Table for 5 GHz

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
5GHz 802.11a	6Mbps	16dBm	19dBm	±2dB
	9Mbps	16dBm	19dBm	±2dB
	12Mbps	16dBm	19dBm	±2dB
	18Mbps	15dBm	18dBm	±2dB
	24Mbps	14dBm	17dBm	±2dB
	36Mbps	14dBm	17dBm	±2dB
	48Mbps	13dBm	16dBm	±2dB
	54Mbps	12dBm	15dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	16dBm	19dBm	±2dB
	MCS 1	16dBm	19dBm	±2dB
	MCS 2	16dBm	19dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	14dBm	17dBm	±2dB
	MCS 6	13dBm	16dBm	±2dB
	MCS 7	12dBm	15dBm	±2dB
5GHz 802.11n/ac VHT40	MCS 8	12dBm	15dBm	±2dB
	MCS 0	16dBm	19dBm	±2dB
	MCS 1	16dBm	19dBm	±2dB
	MCS 2	16dBm	19dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	13dBm	16dBm	±2dB
	MCS 6	13dBm	16dBm	±2dB
5GHz 802.11n/ac VHT80	MCS 7	12dBm	15dBm	±2dB
	MCS 8	12dBm	15dBm	±2dB
	MCS 9	11dBm	14dBm	±2dB
	MCS 0	16dBm	19dBm	±2dB
	MCS 1	16dBm	19dBm	±2dB
	MCS 2	15dBm	18dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11a	6Mbps	-96dBm	±2dB
	9Mbps	-92dBm	±2dB
	12Mbps	-91dBm	±2dB
	18Mbps	-89dBm	±2dB
	24Mbps	-86dBm	±2dB
	36Mbps	-83dBm	±2dB
	48Mbps	-79dBm	±2dB
	54Mbps	-78dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	-95dBm	±2dB
	MCS 1	-93dBm	±2dB
	MCS 2	-90dBm	±2dB
	MCS 3	-87dBm	±2dB
	MCS 4	-84dBm	±2dB
	MCS 5	-80dBm	±2dB
	MCS 6	-79dBm	±2dB
	MCS 7	-76dBm	±2dB
5GHz 802.11n/ac VHT40	MCS 8	-73dBm	±2dB
	MCS 0	-96dBm	±2dB
	MCS 1	-92dBm	±2dB
	MCS 2	-88dBm	±2dB
	MCS 3	-84dBm	±2dB
	MCS 4	-81dBm	±2dB
	MCS 5	-77dBm	±2dB
	MCS 6	-76dBm	±2dB
5GHz 802.11n/ac VHT80	MCS 7	-75dBm	±2dB
	MCS 8	-72dBm	±2dB
	MCS 9	-70dBm	±2dB
	MCS 0	-90dBm	±2dB
	MCS 1	-87dBm	±2dB
	MCS 2	-84dBm	±2dB
	MCS 3	-81dBm	±2dB
	MCS 4	-78dBm	±2dB

RF Performance Table for 5 GHz

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
5GHz 802.11ax HE20	MCS 0	16dBm	19dBm	±2dB
	MCS 1	16dBm	19dBm	±2dB
	MCS 2	16dBm	19dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	14dBm	17dBm	±2dB
	MCS 6	13dBm	16dBm	±2dB
	MCS 7	12dBm	15dBm	±2dB
	MCS 8	12dBm	15dBm	±2dB
	MCS 9	11dBm	14dBm	±2dB
	MCS 10	11dBm	14dBm	±2dB
	MCS 11	11dBm	14dBm	±2dB
5GHz 802.11ax HE40	MCS 0	16dBm	19dBm	±2dB
	MCS 1	16dBm	19dBm	±2dB
	MCS 2	16dBm	19dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	13dBm	16dBm	±2dB
	MCS 6	13dBm	16dBm	±2dB
	MCS 7	12dBm	15dBm	±2dB
	MCS 8	12dBm	15dBm	±2dB
	MCS 9	11dBm	14dBm	±2dB
	MCS 10	10dBm	13dBm	±2dB
	MCS 11	10dBm	13dBm	±2dB
5GHz 802.11ax HE80	MCS 0	16dBm	19dBm	±2dB
	MCS 1	16dBm	19dBm	±2dB
	MCS 2	15dBm	18dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	13dBm	16dBm	±2dB
	MCS 6	12dBm	15dBm	±2dB
	MCS 7	12dBm	15dBm	±2dB
	MCS 8	11dBm	14dBm	±2dB
	MCS 9	11dBm	14dBm	±2dB
	MCS 10	10dBm	13dBm	±2dB
	MCS 11	10dBm	13dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11ax HE20	MCS 0	-94dBm	±2dB
	MCS 1	-92dBm	±2dB
	MCS 2	-90dBm	±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	-69dBm	±2dB
	MCS 10	-66dBm	±2dB
	MCS 11	-64dBm	±2dB
5GHz 802.11ax HE40	MCS 0	-93dBm	±2dB
	MCS 1	-90dBm	±2dB
	MCS 2	-87dBm	±2dB
	MCS 3	-84dBm	±2dB
	MCS 4	-81dBm	±2dB
	MCS 5	-76dBm	±2dB
	MCS 6	-75dBm	±2dB
	MCS 7	-74dBm	±2dB
	MCS 8	-70dBm	±2dB
	MCS 9	-69dBm	±2dB
	MCS 10	-64dBm	±2dB
	MCS 11	-63dBm	±2dB
5GHz 802.11ax HE80	MCS 0	-90dBm	±2dB
	MCS 1	-86dBm	±2dB
	MCS 2	-84dBm	±2dB
	MCS 3	-81dBm	±2dB
	MCS 4	-77dBm	±2dB
	MCS 5	-73dBm	±2dB
	MCS 6	-72dBm	±2dB
	MCS 7	-70dBm	±2dB
	MCS 8	-68dBm	±2dB
	MCS 9	-66dBm	±2dB
	MCS 10	-62dBm	±2dB
	MCS 11	-60dBm	±2dB

RF Performance Table for 5GHz

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
6GHz 802.11ax HE160	MCS 0	16dBm	19dBm	±2dB
	MCS 1	16dBm	19dBm	±2dB
	MCS 2	15dBm	18dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	12dBm	15dBm	±2dB
	MCS 6	11dBm	14dBm	±2dB
	MCS 7	11dBm	14dBm	±2dB
	MCS 8	11dBm	14dBm	±2dB
	MCS 9	11dBm	14dBm	±2dB
	MCS 10	10dBm	13dBm	±2dB
	MCS 11	9dBm	12dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
6GHz 802.11ax HE160	MCS 0	-94dBm	±2dB
	MCS 1	-92dBm	±2dB
	MCS 2	-90dBm	±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	-69dBm	±2dB
	MCS 10	-66dBm	±2dB
	MCS 11	-64dBm	±2dB

RF Performance Table for 6GHz

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
6GHz 802.11ax HE20	MCS 0	16dBm	19dBm	±2dB
	MCS 1	16dBm	19dBm	±2dB
	MCS 2	16dBm	19dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	14dBm	17dBm	±2dB
	MCS 6	13dBm	16dBm	±2dB
	MCS 7	12dBm	15dBm	±2dB
	MCS 8	12dBm	15dBm	±2dB
	MCS 9	11dBm	14dBm	±2dB
	MCS 10	11dBm	14dBm	±2dB
	MCS 11	11dBm	14dBm	±2dB
6GHz 802.11ax HE40	MCS 0	16dBm	19dBm	±2dB
	MCS 1	16dBm	19dBm	±2dB
	MCS 2	16dBm	19dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	13dBm	16dBm	±2dB
	MCS 6	13dBm	16dBm	±2dB
	MCS 7	12dBm	15dBm	±2dB
	MCS 8	12dBm	15dBm	±2dB
	MCS 9	11dBm	14dBm	±2dB
	MCS 10	10dBm	13dBm	±2dB
	MCS 11	10dBm	13dBm	±2dB
6GHz 802.11ax HE80	MCS 0	16dBm	19dBm	±2dB
	MCS 1	16dBm	19dBm	±2dB
	MCS 2	15dBm	18dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	13dBm	16dBm	±2dB
	MCS 6	12dBm	15dBm	±2dB
	MCS 7	12dBm	15dBm	±2dB
	MCS 8	11dBm	14dBm	±2dB
	MCS 9	11dBm	14dBm	±2dB
	MCS 10	10dBm	13dBm	±2dB
	MCS 11	10dBm	13dBm	±2dB

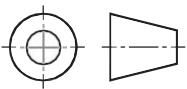
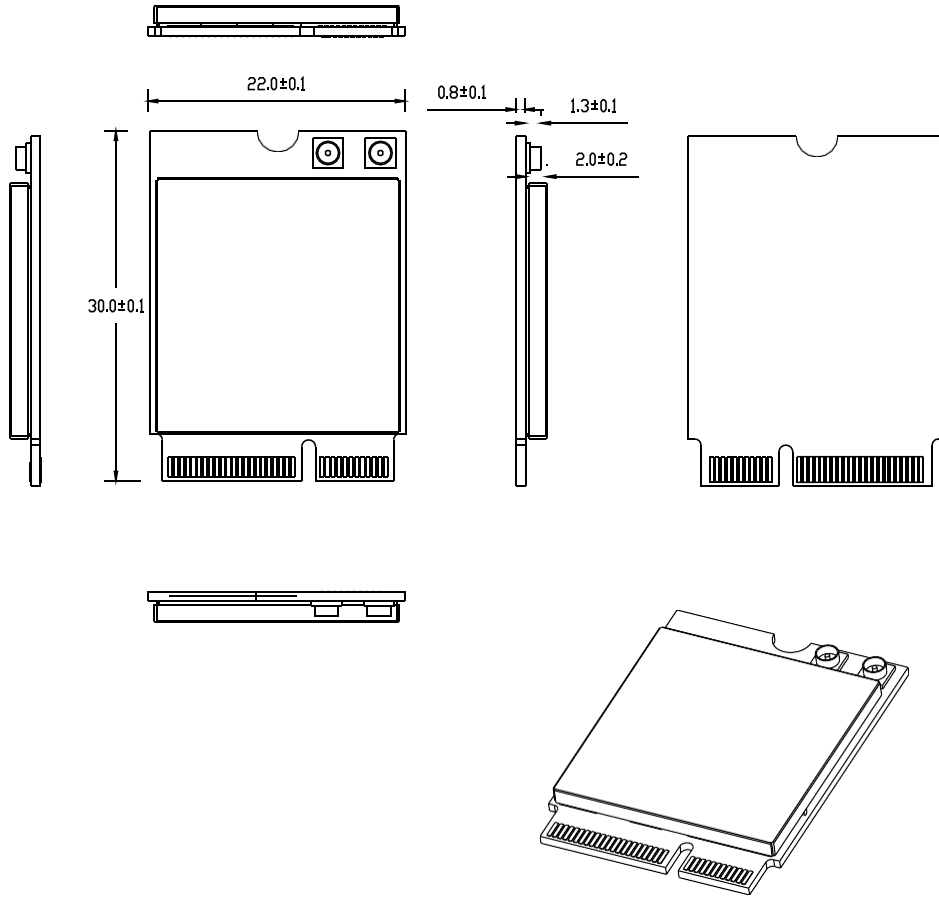
	Data Rate	RX Specifications Sensitivity	Tolerance
6GHz 802.11ax HE20	MCS 0	-94dBm	±2dB
	MCS 1	-92dBm	±2dB
	MCS 2	-89dBm	±2dB
	MCS 3	-86dBm	±2dB
	MCS 4	-82dBm	±2dB
	MCS 5	-79dBm	±2dB
	MCS 6	-77dBm	±2dB
	MCS 7	-75dBm	±2dB
	MCS 8	-72dBm	±2dB
	MCS 9	-69dBm	±2dB
	MCS 10	-67dBm	±2dB
	MCS 11	-65dBm	±2dB
6GHz 802.11ax HE40	MCS 0	-91dBm	±2dB
	MCS 1	-89dBm	±2dB
	MCS 2	-86dBm	±2dB
	MCS 3	-83dBm	±2dB
	MCS 4	-80dBm	±2dB
	MCS 5	-77dBm	±2dB
	MCS 6	-75dBm	±2dB
	MCS 7	-73dBm	±2dB
	MCS 8	-70dBm	±2dB
	MCS 9	-67dBm	±2dB
	MCS 10	-65dBm	±2dB
	MCS 11	-62dBm	±2dB
6GHz 802.11ax HE80	MCS 0	-88dBm	±2dB
	MCS 1	-85dBm	±2dB
	MCS 2	-83dBm	±2dB
	MCS 3	-80dBm	±2dB
	MCS 4	-77dBm	±2dB
	MCS 5	-74dBm	±2dB
	MCS 6	-72dBm	±2dB
	MCS 7	-70dBm	±2dB
	MCS 8	-67dBm	±2dB
	MCS 9	-65dBm	±2dB
	MCS 10	-62dBm	±2dB
	MCS 11	-60dBm	±2dB

RF Performance Table for 6GHz

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
6GHz 802.11ax HE160	MCS 0	16dBm	19dBm	±2dB
	MCS 1	16dBm	19dBm	±2dB
	MCS 2	15dBm	18dBm	±2dB
	MCS 3	15dBm	18dBm	±2dB
	MCS 4	14dBm	17dBm	±2dB
	MCS 5	12dBm	15dBm	±2dB
	MCS 6	11dBm	14dBm	±2dB
	MCS 7	11dBm	14dBm	±2dB
	MCS 8	11dBm	14dBm	±2dB
	MCS 9	11dBm	14dBm	±2dB
	MCS 10	10dBm	13dBm	±2dB
	MCS 11	9dBm	12dBm	±2dB

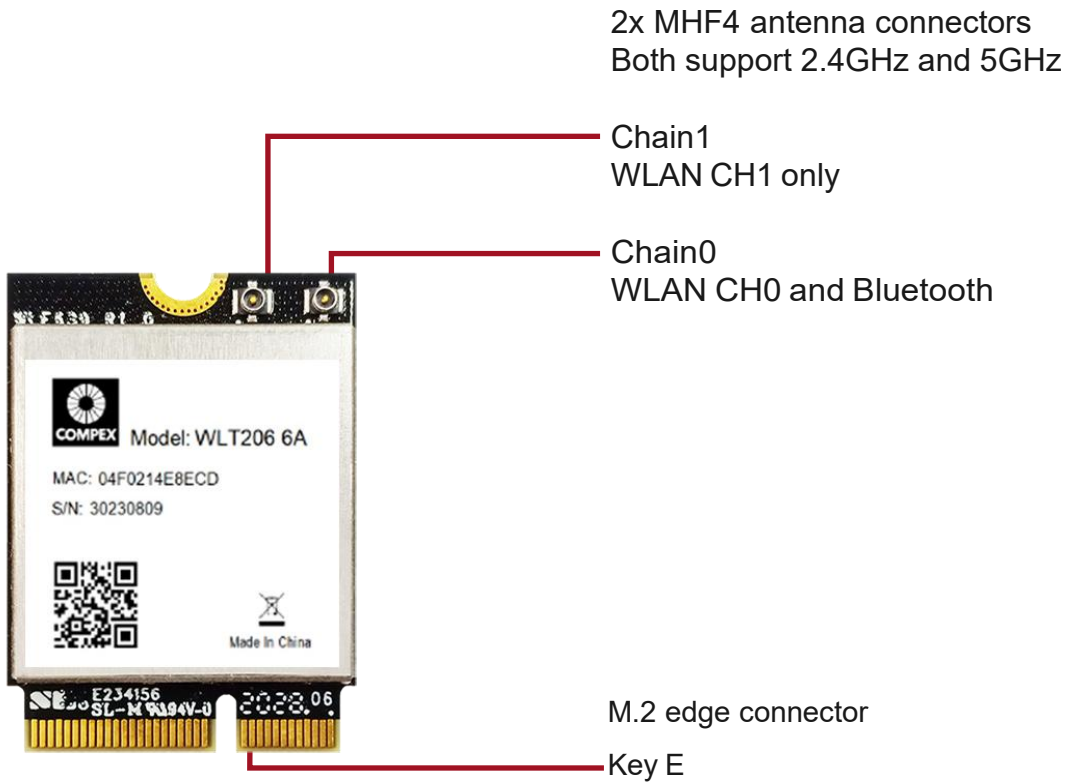
	Data Rate	RX Specifications Sensitivity	Tolerance
6GHz 802.11ax HE160	MCS 0	-84dBm	±2dB
	MCS 1	-82dBm	±2dB
	MCS 2	-80dBm	±2dB
	MCS 3	-77dBm	±2dB
	MCS 4	-73dBm	±2dB
	MCS 5	-70dBm	±2dB
	MCS 6	-69dBm	±2dB
	MCS 7	-67dBm	±2dB
	MCS 8	-63dBm	±2dB
	MCS 9	-60dBm	±2dB
	MCS 10	-57dBm	±2dB
	MCS 11	-55dBm	±2dB

Mechanical Dimensions



All dimensions are in mm.

Component Map



Ordering Configuration

Item Code	Model	Description
WLT206H256 6A0066- TE	WLT206H	2x2 802.11a/b/g/n/ac/ax tri-band simultaneous M.2 module, support BLE5.1