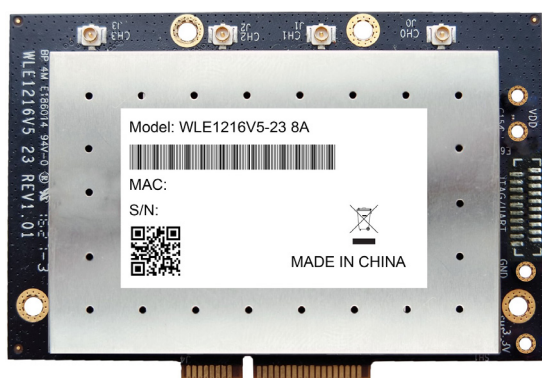


4x4 802.11ac Wave 2 Mini PCIe WiFi Module With 80+80MHz bandwidth support

Model: WLE1216V5-23



KEY FEATURES

- Qualcomm Atheros 'Cascade' QCA9984
- CUS239 Reference Design
- 5GHz max 23dBm output power (per chain)
- IEEE 802.11ac compliant & backward compatible with 802.11a/n, up to 1.73Gbps
- 2 spatial streams (2SS) MIMO 80+80MHz bandwidth support
- 4 spatial streams (4SS) Multi-user MIMO (MU-MIMO)
- 802.11ac explicit transmit beamforming (TxBF) and legacy implicit TxBF for both beamformer and beamformee
- MiniPCI Express 2.0 interface
- Supports Spatial Multiplexing, Cyclic-Delay Diversity (CDD), Low-Density Parity Check (LDPC) Codes, Maximal Ratio Combining (MRC), Space Time Block Code (STBC)
- Supports IEEE 802.11d, e, h, i, j, k, r, u, v time stamp, w, and z standards
- Supports Dynamic Frequency Selection (DFS)
- Designed for High Bandwidth Enterprise Wireless Access Points

Specifications

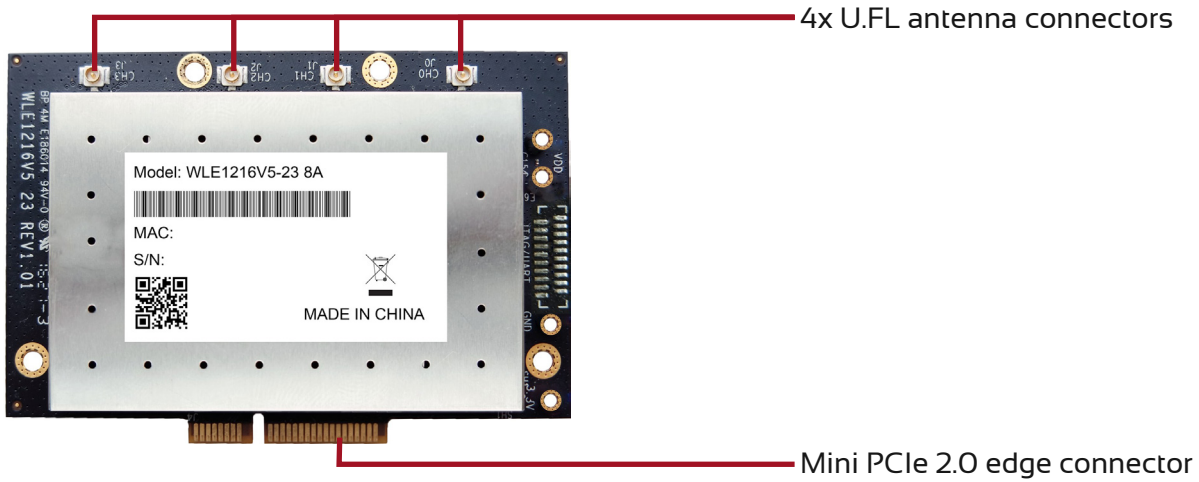
Chipset	QCA9984
Host Interface	MiniPCI-Express 2.0 Standard
Operating Voltage	5V
Antenna Connector	4x U.FL
Frequency Range	5.180GHz to 5.825GHz
Power Consumption	13W (Max)
Supported Operating System	Supported by CompexWRT (v3.x and above) with Qualcomm Atheros reference wireless drivers; on WPJ558, WPJ563, and WPJ564: throughput up to 800Mbps; on WPQ864 and WPQ865: throughput up to 1300Mbps; or OpenWRT/LEDE with ath10k wireless drivers.
Modulation Techniques	OFDM: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
Certification	REACH & RoHS Compliance
Environmental Temperature	Operating: -20°C to 70°C, Storage: -40°C to 90°C
Environmental Humidity, non-condensing	Operating: 5% to 95%, Storage: Max. 90%
ESD Sensitivity	Class 1C
Dimensions (W x H x D) in mm	73.7 x 51.0 x 5.5

RF Performance Table

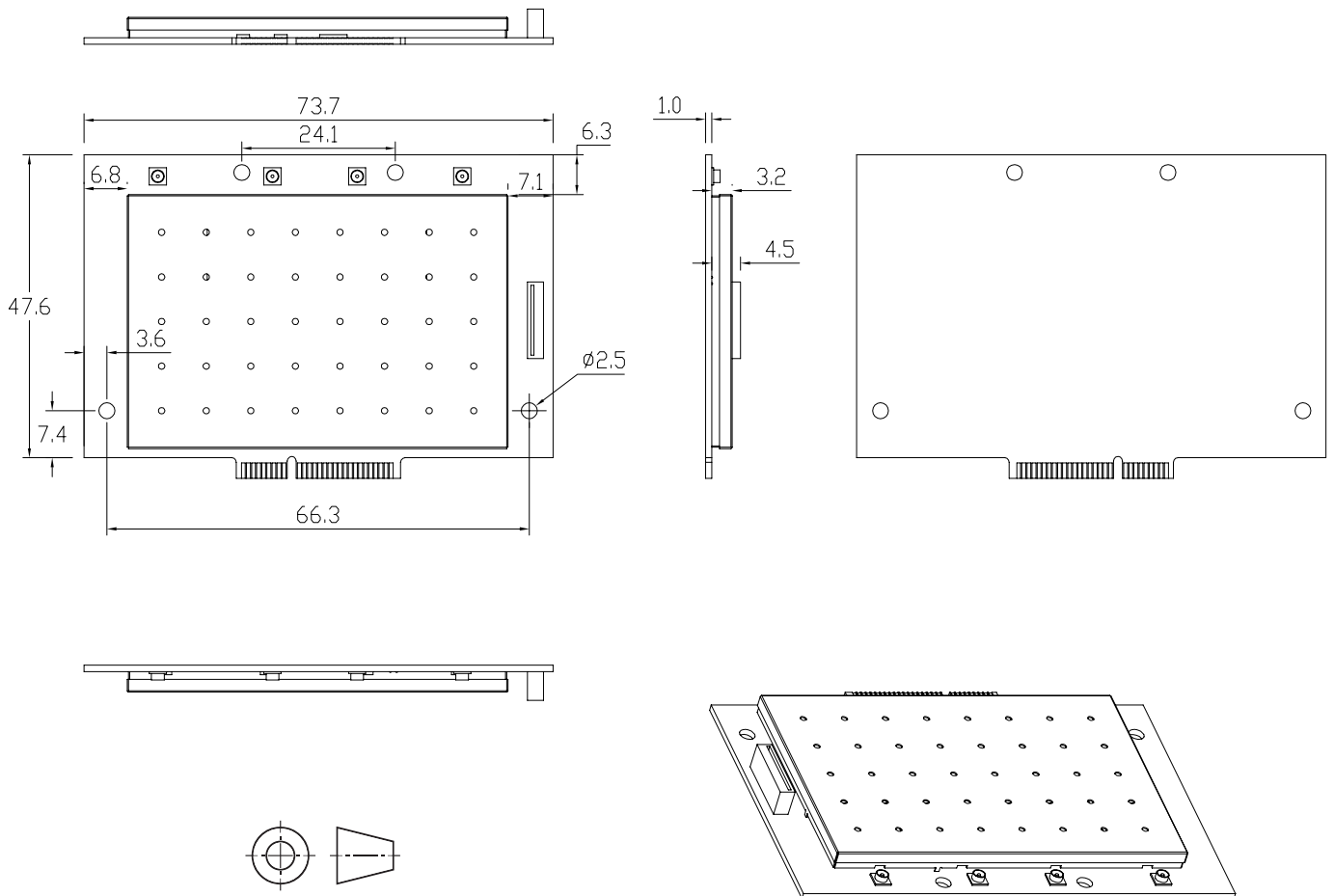
	Data Rate	TX Power (per chain)	TX Power (4 chains)	Tolerance
5GHz 802.11a	6Mbps	23dBm	29dBm	±2dB
	9Mbps	23dBm	29dBm	±2dB
	12Mbps	23dBm	29dBm	±2dB
	18Mbps	23dBm	29dBm	±2dB
	24Mbps	23dBm	29dBm	±2dB
	36Mbps	23dBm	29dBm	±2dB
	48Mbps	23dBm	29dBm	±2dB
	54Mbps	22dBm	28dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	23dBm	29dBm	±2dB
	MCS 1	23dBm	29dBm	±2dB
	MCS 2	23dBm	29dBm	±2dB
	MCS 3	23dBm	29dBm	±2dB
	MCS 4	23dBm	29dBm	±2dB
	MCS 5	23dBm	29dBm	±2dB
	MCS 6	22dBm	28dBm	±2dB
	MCS 7	21dBm	27dBm	±2dB
	MCS 8	20dBm	26dBm	±2dB
5GHz 802.11n/ac VHT40	MCS 0	23dBm	29dBm	±2dB
	MCS 1	23dBm	29dBm	±2dB
	MCS 2	23dBm	29dBm	±2dB
	MCS 3	23dBm	29dBm	±2dB
	MCS 4	23dBm	29dBm	±2dB
	MCS 5	23dBm	29dBm	±2dB
	MCS 6	22dBm	28dBm	±2dB
	MCS 7	21dBm	27dBm	±2dB
	MCS 8	20dBm	26dBm	±2dB
	MCS 9	20dBm	26dBm	±2dB
5GHz 802.11ac VHT80	MCS 0	23dBm	29dBm	±2dB
	MCS 1	23dBm	29dBm	±2dB
	MCS 2	23dBm	29dBm	±2dB
	MCS 3	23dBm	29dBm	±2dB
	MCS 4	23dBm	29dBm	±2dB
	MCS 5	23dBm	29dBm	±2dB
	MCS 6	22dBm	28dBm	±2dB
	MCS 7	21dBm	27dBm	±2dB
	MCS 8	20dBm	26dBm	±2dB
	MCS 9	20dBm	26dBm	±2dB
5GHz 802.11ac VHT80+80	MCS 0	23dBm	29dBm	±2dB
	MCS 1	23dBm	29dBm	±2dB
	MCS 2	23dBm	29dBm	±2dB
	MCS 3	23dBm	29dBm	±2dB
	MCS 4	23dBm	29dBm	±2dB
	MCS 5	23dBm	29dBm	±2dB
	MCS 6	22dBm	28dBm	±2dB
	MCS 7	21dBm	27dBm	±2dB
	MCS 8	20dBm	26dBm	±2dB
	MCS 9	20dBm	26dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11a	6Mbps	-96dBm	±2dB
	9Mbps	-94dBm	±2dB
	12Mbps	-93dBm	±2dB
	18Mbps	-89dBm	±2dB
	24Mbps	-87dBm	±2dB
	36Mbps	-85dBm	±2dB
	48Mbps	-83dBm	±2dB
	54Mbps	-82dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	-96dBm	±2dB
	MCS 1	-94dBm	±2dB
	MCS 2	-92dBm	±2dB
	MCS 3	-88dBm	±2dB
	MCS 4	-85dBm	±2dB
	MCS 5	-84dBm	±2dB
	MCS 6	-82dBm	±2dB
	MCS 7	-80dBm	±2dB
	MCS 8	-76dBm	±2dB
5GHz 802.11n/ac VHT40	MCS 0	-93dBm	±2dB
	MCS 1	-90dBm	±2dB
	MCS 2	-88dBm	±2dB
	MCS 3	-85dBm	±2dB
	MCS 4	-84dBm	±2dB
	MCS 5	-82dBm	±2dB
	MCS 6	-80dBm	±2dB
	MCS 7	-78dBm	±2dB
	MCS 8	-75dBm	±2dB
	MCS 9	-72dBm	±2dB
5GHz 802.11ac VHT80	MCS 0	-89dBm	±2dB
	MCS 1	-86dBm	±2dB
	MCS 2	-84dBm	±2dB
	MCS 3	-81dBm	±2dB
	MCS 4	-79dBm	±2dB
	MCS 5	-75dBm	±2dB
	MCS 6	-73dBm	±2dB
	MCS 7	-71dBm	±2dB
	MCS 8	-69dBm	±2dB
	MCS 9	-67dBm	±2dB

Feature Guide



Mechanical Dimensions



Ordering Configuration

Item Code	Model	Description
WLE1216V5-23 8A00001.01	WLE1216V5-23	4x4 802.11a/n/ac 5GHz miniPCIe card