

4x4 802.11b/g/n Mini PCIe WiFi Module

Standard size form factor



Model: WLE1216V2-20-I

KEY FEATURES

- Qualcomm Atheros 'Cascade' QCA9994
- 2.4GHz max 20dBm output power (per chain)
- Heat sink allows free air operation
- IEEE 802.11b/g/n compliant, up to 800Mbps
- Multi-user MIMO (MU-MIMO) beamformer
- Mini PCI 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
- Designed for High Bandwidth Enterprise Wireless Access Points

Specifications

Chipset	QCA9994
System Memory	256Kbit serial I ² C bus EEPROM
Host Interface	Mini PCI Express 2.0 Standard
Operating Voltage	3.3V
Antenna Connector	4x U.FL
Frequency Range	2.412GHz to 2.472GHz
Certification	FCC & CE Certified
Power Consumption	6.68W (Max)
Supported Operating System	Supported by CompexWRT with Qualcomm Atheros reference wireless drivers or OpenWRT/LEDE with ath10k wireless drivers, on WPJ558, WPJ563, WPJ564, WPQ864, and WPQ865.
Modulation Techniques	CCK, OFDM: BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM
Industrial Temperature Range	Operating: -40°C to 85°C Storage: -40°C to 90°C
Environmental Humidity, non-condensing	Operating: 5% to 95% Storage: Max. 90%
ESD Sensitivity	Class 1B
Dimensions (W × H × D)	29.9mm × 50.8mm × 12.9mm

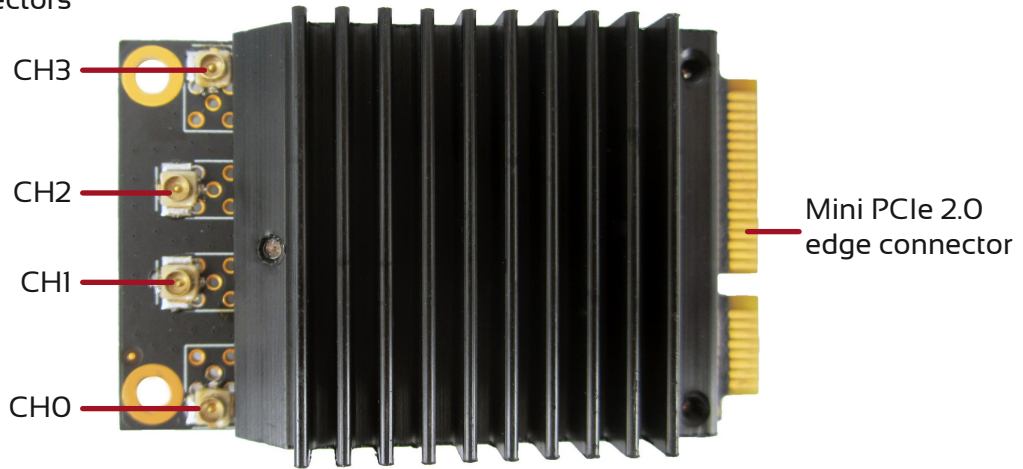
RF Performance Table

	Data Rate	TX Power (per chain)	TX Power (4 chains)	Tolerance
2.4GHz 802.11b	1Mbps	20dBm	26dBm	±2dB
	2Mbps	20dBm	26dBm	±2dB
	5.5Mbps	20dBm	26dBm	±2dB
	11Mbps	20dBm	26dBm	±2dB
2.4GHz 802.11g	6Mbps	20dBm	26dBm	±2dB
	9Mbps	20dBm	26dBm	±2dB
	12Mbps	20dBm	26dBm	±2dB
	18Mbps	20dBm	26dBm	±2dB
	24Mbps	19dBm	25dBm	±2dB
	36Mbps	19dBm	25dBm	±2dB
	48Mbps	18dBm	24dBm	±2dB
	54Mbps	17dBm	23dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	20dBm	26dBm	±2dB
	MCS 1	20dBm	26dBm	±2dB
	MCS 2	20dBm	26dBm	±2dB
	MCS 3	20dBm	26dBm	±2dB
	MCS 4	19dBm	25dBm	±2dB
	MCS 5	18dBm	24dBm	±2dB
	MCS 6	17dBm	23dBm	±2dB
	MCS 7	16dBm	22dBm	±2dB
	MCS8	15dBm	21dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	20dBm	26dBm	±2dB
	MCS 1	20dBm	26dBm	±2dB
	MCS 2	20dBm	26dBm	±2dB
	MCS 3	20dBm	26dBm	±2dB
	MCS 4	19dBm	25dBm	±2dB
	MCS 5	18dBm	24dBm	±2dB
	MCS 6	17dBm	23dBm	±2dB
	MCS 7	16dBm	22dBm	±2dB
	MCS 8	15dBm	21dBm	±2dB
	MCS 9	15dBm	21dBm	±2dB

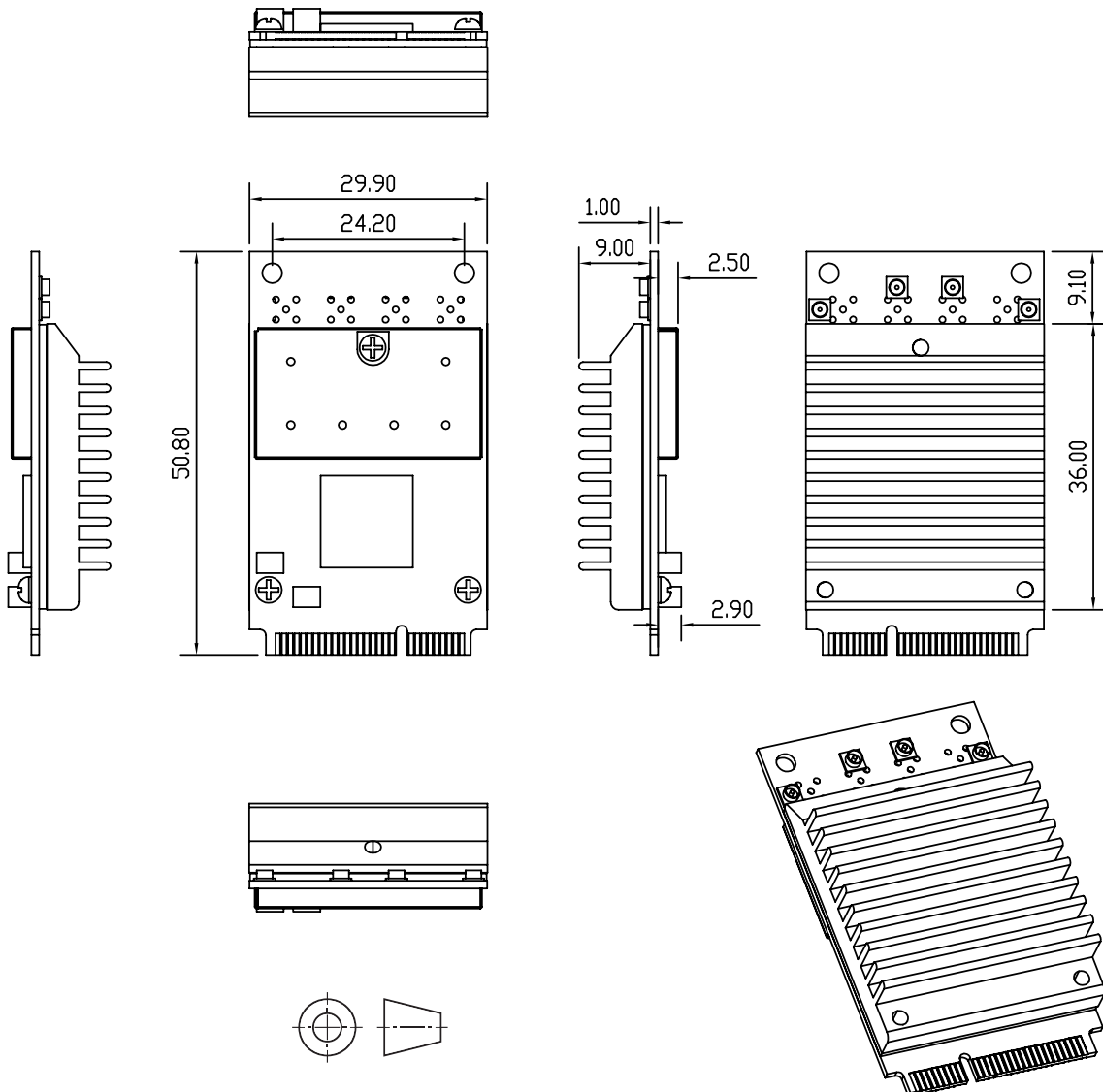
	Data Rate	RX Specifications Sensitivity	Tolerance
2.4GHz 802.11b	1Mbps	-95dBm	±2dB
	2Mbps	-93dBm	±2dB
	5.5Mbps	-91dBm	±2dB
	11Mbps	-89dBm	±2dB
2.4GHz 802.11g	6Mbps	-93dBm	±2dB
	9Mbps	-90dBm	±2dB
	12Mbps	-88dBm	±2dB
	18Mbps	-85dBm	±2dB
	24Mbps	-83dBm	±2dB
	36Mbps	-80dBm	±2dB
	48Mbps	-77dBm	±2dB
	54Mbps	-73dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	-93dBm	±2dB
	MCS 1	-90dBm	±2dB
	MCS 2	-87dBm	±2dB
	MCS 3	-85dBm	±2dB
	MCS 4	-81dBm	±2dB
	MCS 5	-78dBm	±2dB
	MCS 6	-76dBm	±2dB
	MCS 7	-73dBm	±2dB
	MCS 8	-69dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	-92dBm	±2dB
	MCS 1	-89dBm	±2dB
	MCS 2	-86dBm	±2dB
	MCS 3	-82dBm	±2dB
	MCS 4	-78dBm	±2dB
	MCS 5	-73dBm	±2dB
	MCS 6	-72dBm	±2dB
	MCS 7	-70dBm	±2dB
	MCS 8	-68dBm	±2dB
	MCS 9	-65dBm	±2dB

Feature Guide

U.FL connectors



Mechanical Dimensions



Ordering Configuration

Item Code	Model	Description
WLE1216V2-20 7B00001.02-I	WLE1216V2-20-I	Industrial Grade 4x4 802.11b/g/n 2.4GHz miniPCle card