

## Dual Band 2.4/5GHz 2x2 802.11ac Wave 1 MiniPCle WiFi Module Designed for Dual Band Wireless Access Points

**Model: WLE600VX-I (85C)**



### KEY FEATURES

- Qualcomm Atheros QCA9892
- 2.4GHz, 2x2 MIMO OFDM Technology, up to 400Mbps physical data rate
- 5GHz, 2x2 MIMO OFDM Technology, up to 866.7Mbps physical data rate
- Dual Band 2.4/5GHz 2x2 WiFi 5 (802.11ac Wave 1)
- MiniPCle interface with PCIe 1.2
- Industrial Grade Chipset
- IEEE 802.11ac compliant & backward compatible with 802.11a/b/g/n
- 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, v time stamp, and w standards
- Supports Dynamic Frequency Selection (DFS)
- Cards are individually calibrated for Quality Assurance
- Supports 4.9GHz operation

## Specifications

Chipset	Qualcomm Atheros QCA9892 'Peregrine' Series
Reference Design	Qualcomm Atheros XB140
Host Interface	MiniPCle interface with PCIe 1.2
Operating Voltage	3.3V
Power Consumption	3.5W (Max)
Wireless	2.4GHz 802.11b/g/n, max 21dBm per chain 5GHz 802.11a/n/ac, max 18dBm per chain 2x U.FL Connectors
Frequency Range	2.412~2.472 GHz, 4.920~5.825GHz, selectable dual band
Modulation Techniques	OFDM: BPSK, QPSK, DBPSK, DQPSK, CCK, 16-QAM, 64-QAM, 256-QAM
Channel Spectrum Widths for WLAN	Supports 20/40MHz at 2.4GHz, Supports 20/40/80MHz at 5GHz
ESD Sensitivity	Class 1C
Supported Operating System	Supported by CompexWRT with Qualcomm Atheros reference wireless drivers or OpenWRT/LEDE with ath10k wireless drivers, on WPJ344, WPJ558, WPJ563, WPJ564, WPQ864, and WPQ865.
Certification	FCC, CE Certified, REACH and RoHS Compliance
Environmental Temperature (Industrial Grade)	Operating: -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	29.85 x 50.8 x 3.2

\*Configurations are subject to change without notifications.

## RF Performance Table for 2.4GHz

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

	Data Rate	RX Specifications Sensitivity	Tolerance
2.4GHz 802.11b	1Mbps	-95dBm	±2dB
	2Mbps	-94dBm	±2dB
	5.5Mbps	-92dBm	±2dB
	11Mbps	-90dBm	±2dB
2.4GHz 802.11g	6Mbps	-94dBm	±2dB
	9Mbps	-93dBm	±2dB
	12Mbps	-92dBm	±2dB
	18Mbps	-90dBm	±2dB
	24Mbps	-88dBm	±2dB
	36Mbps	-85dBm	±2dB
	48Mbps	-81dBm	±2dB
	54Mbps	-80dBm	±2dB
2.4GHz 802.11n HT20	MCS 0	-93dBm	±2dB
	MCS 1	-91dBm	±2dB
	MCS 2	-89dBm	±2dB
	MCS 3	-84dBm	±2dB
	MCS 4	-83dBm	±2dB
	MCS 5	-78dBm	±2dB
	MCS 6	-78dBm	±2dB
	MCS 7	-76dBm	±2dB
2.4GHz 802.11n HT40	MCS 0	-92dBm	±2dB
	MCS 1	-88dBm	±2dB
	MCS 2	-85dBm	±2dB
	MCS 3	-82dBm	±2dB
	MCS 4	-79dBm	±2dB
	MCS 5	-75dBm	±2dB
	MCS 6	-75dBm	±2dB
	MCS 7	-73dBm	±2dB

## RF Performance Table for 5GHz

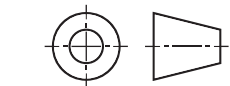
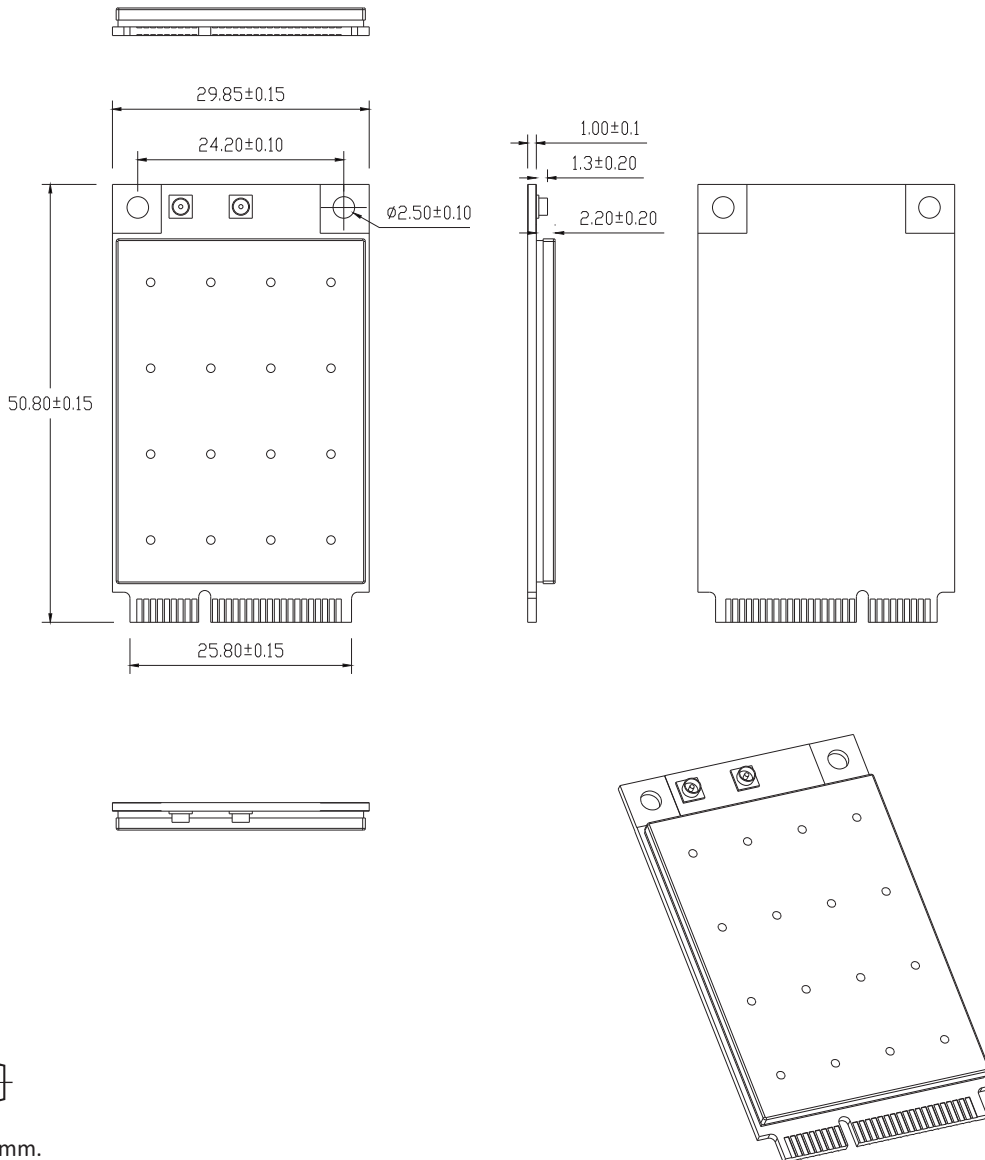
	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
5GHz 802.11a	6Mbps	18dBm	21dBm	±2dB
	9Mbps	18dBm	21dBm	±2dB
	12Mbps	18dBm	21dBm	±2dB
	18Mbps	18dBm	21dBm	±2dB
	24Mbps	18dBm	21dBm	±2dB
	36Mbps	18dBm	21dBm	±2dB
	48Mbps	16dBm	19dBm	±2dB
	54Mbps	15dBm	18dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	18dBm	21dBm	±2dB
	MCS 1	18dBm	21dBm	±2dB
	MCS 2	18dBm	21dBm	±2dB
	MCS 3	18dBm	21dBm	±2dB
	MCS 4	18dBm	21dBm	±2dB
	MCS 5	17dBm	20dBm	±2dB
	MCS 6	16dBm	19dBm	±2dB
	MCS 7	14dBm	17dBm	±2dB
	MCS 8	13dBm	16dBm	±2dB
5GHz 802.11n/ac VHT40	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	15dBm	18dBm	±2dB
	MCS 7	14dBm	17dBm	±2dB
	MCS 8	13dBm	16dBm	±2dB
	MCS 9	13dBm	16dBm	±2dB
5GHz 802.11ac VHT80	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	15dBm	18dBm	±2dB
	MCS 7	14dBm	17dBm	±2dB
	MCS 8	13dBm	16dBm	±2dB
	MCS 9	13dBm	16dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11a	6Mbps	-94dBm	±2dB
	9Mbps	-94dBm	±2dB
	12Mbps	-92dBm	±2dB
	18Mbps	-90dBm	±2dB
	24Mbps	-86dBm	±2dB
	36Mbps	-84dBm	±2dB
	48Mbps	-81dBm	±2dB
	54Mbps	-80dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	-93dBm	±2dB
	MCS 1	-90dBm	±2dB
	MCS 2	-87dBm	±2dB
	MCS 3	-83dBm	±2dB
	MCS 4	-80dBm	±2dB
	MCS 5	-77dBm	±2dB
	MCS 6	-74dBm	±2dB
	MCS 7	-73dBm	±2dB
	MCS 8	-71dBm	±2dB
5GHz 802.11n/ac VHT40	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	-73dBm	±2dB
	MCS 8	-69dBm	±2dB
	MCS 9	-66dBm	±2dB
5GHz 802.11ac VHT80	MCS 0	-88dBm	±2dB
	MCS 1	-86dBm	±2dB
	MCS 2	-84dBm	±2dB
	MCS 3	-81dBm	±2dB
	MCS 4	-77dBm	±2dB
	MCS 5	-74dBm	±2dB
	MCS 6	-73dBm	±2dB
	MCS 7	-70dBm	±2dB
	MCS 8	-67dBm	±2dB
	MCS 9	-65dBm	±2dB

## Component Map



## Mechanical Dimensions



All dimensions are in mm.

## Ordering Configuration

Item Code	Model	Description
WLE600VX 7CA000S-IE	WLE600VX-I (85C)	Industrial Grade 2x2 802.11 a/b/g/n/ac 2.4GHz/5GHz miniPCIe card