

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

Model: WLE600VX



KEY FEATURES

- Qualcomm Atheros QCA9882
- 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 1.1
- 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, k, r, v time stamp, and w standards
- Supports Dynamic Frequency Selection (DFS)
- Cards are individually calibrated for Quality Assurance

Specifications

| | |
|--|--|
| Chipset | Qualcomm Atheros QCA9882 'Peregrine' Series |
| Reference Design | Qualcomm Atheros XB140 |
| Host Interface | MiniPCle interface with PCIe 1.1 |
| 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 20dBm per chain 2x U.FL Connectors |
| Frequency Range | 2.412~2.472GHz, 5.150~5.825GHz, selectable dual band |
| Modulation Techniques | OFDM: BPSK, QPSK, DBPSK, DQPSK, 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, IC Certified, REACH and 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% |
| Dimensions (W x H x D) in mm | 29.85 × 50.8 × 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 |
| 2.4GHz 802.11n HT20 | 54Mbps | 18dBm | 21dBm | ±2dB |
| | 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 |
| 2.4GHz 802.11n HT40 | MCS 7 | 16dBm | 19dBm | ±2dB |
| | 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 |
| 2.4GHz 802.11n HT20 | 54Mbps | -80dBm | ±2dB |
| | 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 |
| 2.4GHz 802.11n HT40 | MCS 7 | -76dBm | ±2dB |
| | 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

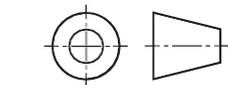
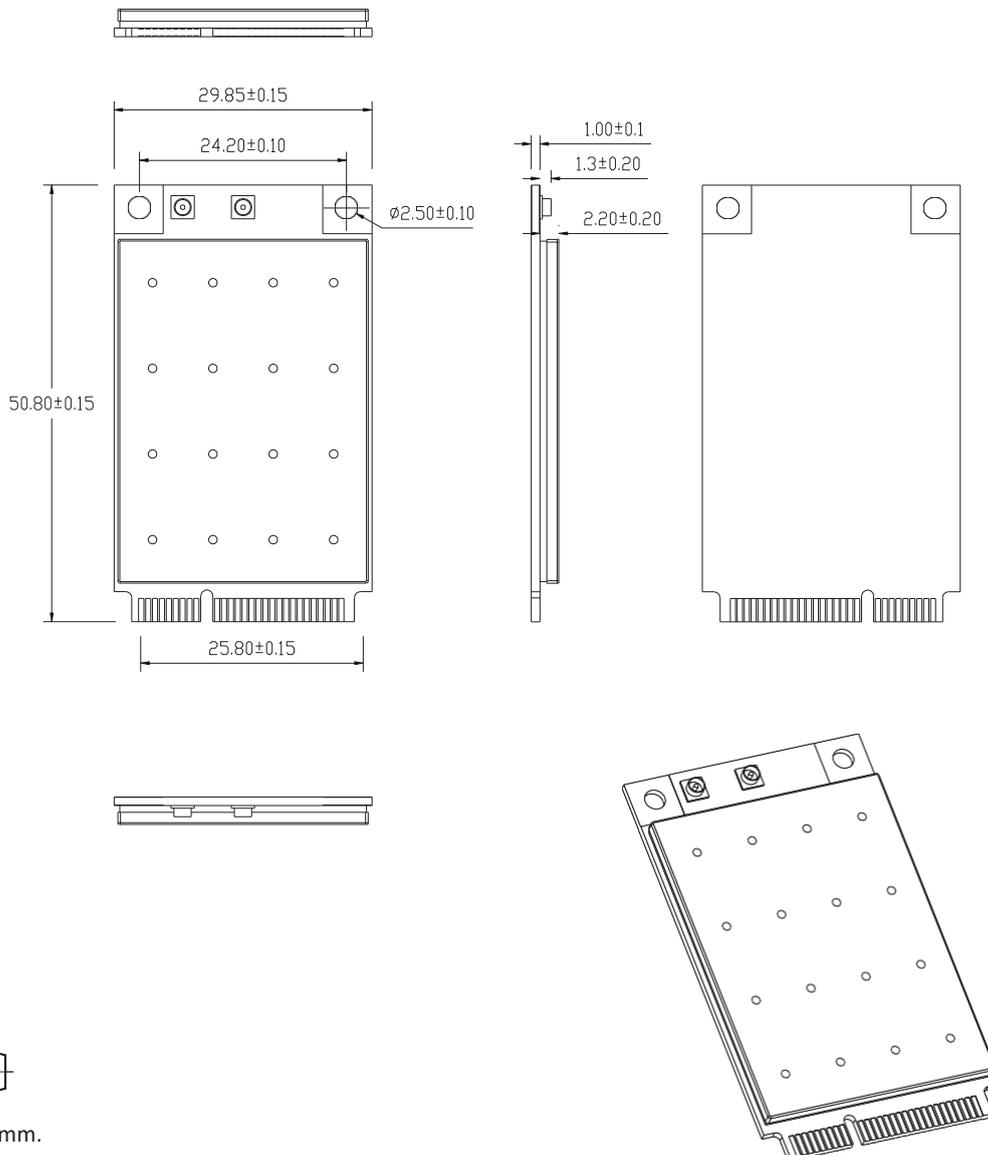
| | Data Rate | TX Power (per chain) | TX Power (2 chains) | Tolerance |
|-----------------------------|-----------|----------------------|---------------------|-----------|
| 5GHz 802.11a | 6Mbps | 20dBm | 23dBm | ±2dB |
| | 9Mbps | 20dBm | 23dBm | ±2dB |
| | 12Mbps | 20dBm | 23dBm | ±2dB |
| | 18Mbps | 20dBm | 23dBm | ±2dB |
| | 24Mbps | 20dBm | 23dBm | ±2dB |
| | 36Mbps | 18dBm | 21dBm | ±2dB |
| | 48Mbps | 16dBm | 19dBm | ±2dB |
| | 54Mbps | 15dBm | 18dBm | ±2dB |
| 5GHz 802.11n/ac VHT20 | MCS 0 | 19dBm | 22dBm | ±2dB |
| | MCS 1 | 19dBm | 22dBm | ±2dB |
| | MCS 2 | 19dBm | 22dBm | ±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 |
| 5GHz 802.11n/ac VHT40 | MCS 8 | 13dBm | 16dBm | ±2dB |
| | 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 |
| 5GHz 802.11n/ac VHT80 | MCS 9 | 13dBm | 16dBm | ±2dB |
| | 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 |
| 5GHz 802.11n/ac VHT40 | MCS 8 | -71dBm | ±2dB |
| | 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 |
| 5GHz 802.11n/ac VHT80 | MCS 9 | -66dBm | ±2dB |
| | 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 7AA000S | WLE600VX | 2x2 802.11a/b/g/n/ac 2.4GHz/5GHz miniPCIe card |