



2x2 2.4/5GHz 11ac miniPCIe Radio

Model: WLE600VX, WLE600VX-I

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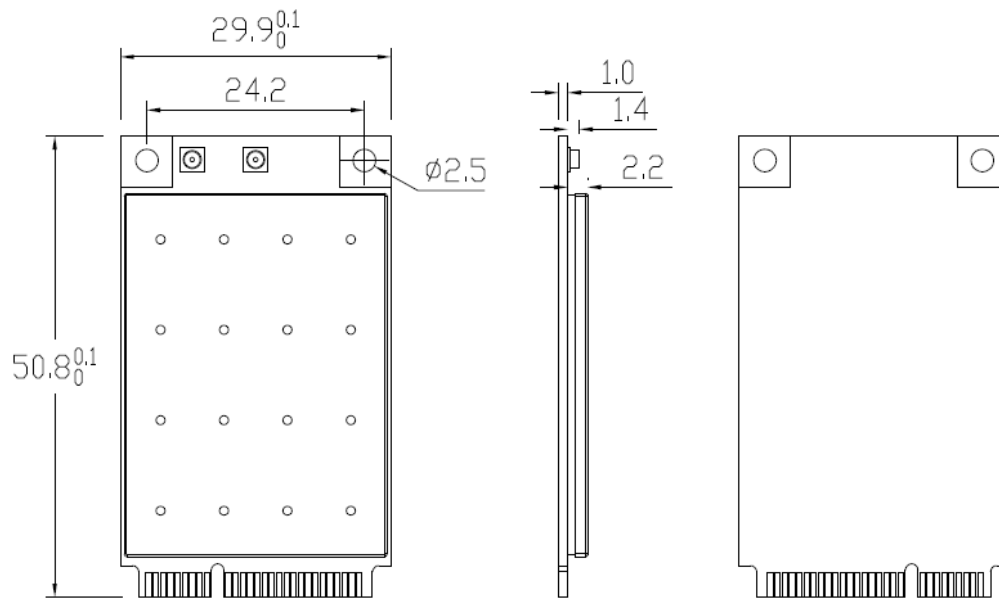
Features

- Qualcomm-Atheros QCA9892
- 2.4GHz max 24dBm & 5GHz max 23dBm output power
- IEEE 802.11ac compliant & backward compatible with 802.11a/b/g/n
- 2X2 MIMO Technology & up to 867Mbps
- MiniPCI Express 1.1 interface
- Supports Spatial Multiplexing, Maximal Ratio Combining (MRC), Space Time Block Code (STBC)
- Supports IEEE 802.11d, e, h, I, k, RO, v time stamp, and w standards
- Supports Client Dynamic Frequency Selection (DFS)
- Cards are individually calibrated for Quality Assurance
- Supported by either CompexWRT with Atheros Reference Wireless Driver

Technical Specifications

System Information							
Chipset	QCA9892						
Host Interface	PCI-Express 1.1 Standard						
Operating Voltage	3.3 VDC						
Power Consumption	3.5W						
Antenna Connector	2 x U.F L						
Frequency Range	2.4G: 2.412 ~ 2.462 GHz 5G: 5.180 ~ 5.825 GHz						
Modulation Techniques	BPSK, QPSK, DBPSK,DQPSK,CCK,16-QAM, 64-QAM, 256-QAM						
RoHS Compliance	Yes						
Temperature Range	Operating: -20°C to 70°C; Storage: -40°C to 90°C						
Humidity	Operating:5% to 95% (non-condensing) Storage: Max.90% (non-condensing)						
Dimensions (mm)	50.95 x 30 x 3.2 (H x W x D)						
Band	TX Specifications				RX Specifications		
	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance	Data Rate	Sensitivity	Tolerance
802.11bg	6-24Mbps	22dBm	N/A	±0.5dB	6Mbps	-94dBm	±2dB
	36Mbps	21dBm	N/A	±0.5dB	36Mbps	-86dBm	±2dB
	48Mbps	20dBm	N/A	±0.5dB	48Mbps	-82dBm	±2dB
	54Mbps	19dBm	N/A	±0.5dB	54Mbps	-80dBm	±2dB
2.4GHz 11n HT20	MCS 0	N/A	24dBm	±0.5dB	MCS 0	-94dBm	±2dB
	MCS 1	N/A	24dBm	±0.5dB	MCS1	-94dBm	±2dB
	MCS 2	N/A	24dBm	±0.5dB	MCS2	-92dBm	±2dB
	MCS 3	N/A	23dBm	±0.5dB	MCS 3	-88dBm	±2dB
	MCS 4	N/A	23dBm	±0.5dB	MCS 4	-84dBm	±2dB
	MCS 5	N/A	23dBm	±0.5dB	MCS 5	-81dBm	±2dB
	MCS 6	N/A	21dBm	±0.5dB	MCS 6	-78dBm	±2dB
	MCS 7	N/A	19dBm	±0.5dB	MCS 7	-77dBm	±2dB
2.4GHz 11n HT40	MCS 0	N/A	19dBm	±0.5dB	MCS 0	-93dBm	±2dB
	MCS 1	N/A	19dBm	±0.5dB	MCS1	-91dBm	±2dB
	MCS 2	N/A	19dBm	±0.5dB	MCS2	-90dBm	±2dB
	MCS 3	N/A	17dBm	±0.5dB	MCS 3	-85dBm	±2dB
	MCS 4	N/A	17dBm	±0.5dB	MCS 4	-82dBm	±2dB
	MCS 5	N/A	17dBm	±0.5dB	MCS 5	-78dBm	±2dB
	MCS 6	N/A	16dBm	±0.5dB	MCS 6	-77dBm	±2dB
	MCS 7	N/A	16dBm	±0.5dB	MCS 7	-75dBm	±2dB
802.11a	6-24Mbps	N/A	21dBm	±0.5dB	6Mbps	-94dBm	±2dB
	36Mbps	N/A	20dBm	±0.5dB	36Mbps	-86dBm	±2dB
	48Mbps	N/A	19dBm	±0.5dB	48Mbps	-82dBm	±2dB
	54Mbps	N/A	18dBm	±0.5dB	54Mbps	-80dBm	±2dB
5GHz 11an/ac HT20	MCS0	N/A	23dBm	±0.5dB	MCS0	-93dBm	±2dB
	MCS1	N/A	23dBm	±0.5dB	MCS1	-91dBm	±2dB
	MCS2	N/A	23dBm	±0.5dB	MCS2	-90dBm	±2dB
	MCS3	N/A	22dBm	±0.5dB	MCS3	-85dBm	±2dB
	MCS4	N/A	22dBm	±0.5dB	MCS4	-82dBm	±2dB
	MCS5	N/A	20dBm	±0.5dB	MCS5	-78dBm	±2dB
	MCS6	N/A	19dBm	±0.5dB	MCS6	-77dBm	±2dB
	MCS7	N/A	19dBm	±0.5dB	MCS7	-75dBm	±2dB
	MCS8	N/A	18dBm	±0.5dB	MCS8	-73dBm	±2dB
	MCS9	N/A	18dBm	±0.5dB	MCS9	-71dBm	±2dB
5GHz 11n/ac HT40	MCS0	N/A	23dBm	±0.5dB	MCS0	-93dBm	±2dB
	MCS1	N/A	23dBm	±0.5dB	MCS1	-91dBm	±2dB
	MCS2	N/A	23dBm	±0.5dB	MCS2	-90dBm	±2dB
	MCS3	N/A	21dBm	±0.5dB	MCS3	-85dBm	±2dB
	MCS4	N/A	21dBm	±0.5dB	MCS4	-82dBm	±2dB
	MCS5	N/A	19dBm	±0.5dB	MCS5	-78dBm	±2dB
	MCS6	N/A	18dBm	±0.5dB	MCS6	-77dBm	±2dB
	MCS7	N/A	18dBm	±0.5dB	MCS7	-75dBm	±2dB
	MCS8	N/A	17dBm	±0.5dB	MCS8	-73dBm	±2dB
	MCS9	N/A	17dBm	±0.5dB	MCS9	-71dBm	±2dB
5GHz11ac HT80	MCS0	N/A	20dBm	±0.5dB	MCS0	-89dBm	±2dB
	MCS1	N/A	20dBm	±0.5dB	MCS1	-88dBm	±2dB
	MCS2	N/A	20dBm	±0.5dB	MCS2	-85dBm	±2dB
	MCS3	N/A	19dBm	±0.5dB	MCS3	-81dBm	±2dB
	MCS4	N/A	19dBm	±0.5dB	MCS4	-79dBm	±2dB
	MCS5	N/A	19dBm	±0.5dB	MCS5	-75dBm	±2dB
	MCS6	N/A	18dBm	±0.5dB	MCS6	-74dBm	±2dB
	MCS7	N/A	18dBm	±0.5dB	MCS7	-72dBm	±2dB
	MCS8	N/A	17dBm	±0.5dB	MCS8	-70dBm	±2dB
	MCS9	N/A	17dBm	±0.5dB	MCS9	-68dBm	±2dB

Dimension Drawing



Ordering Information

Item Code	Chipset	Form factor	Card Information
WLE600VX	Atheros 9892	Full size	2x2 802.11ac 2.4G/5G PCIe mini card

Compliance Information

FCC Compliance Statement:

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.

This device must accept any interference received, including interference that may cause undesired operation. Product that is a radio transmitter is labeled with FCC ID.

FCC Caution:

- (1) Exposure to Radio Frequency Radiation. This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter. End-users and installers must be provided with antenna installation instructions and transmitter operating conditions for satisfying RF exposure compliance.
- (2) Any changes or modifications not expressly approved by the grantee of this device could void the user's authority to operate the equipment.
- (3) This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.
- (4) Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

IMPORTANT NOTE: In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

- (1) The module's FCC ID is not visible when installed in the host, or
- (2) If the host is marketed so that end users do not have straight forward commonly used methods for access to remove the module so that the FCC ID of the module is visible; then an additional permanent




Caution1:

When the module uses the frequency band 5150 - 5250 MHz & 5725 - 5850 MHz, the module should be applied to the P-T-P end-product, 5250 - 5350 MHz & 5470 - 5725 MHz can't use in these type products.

Caution2:

Both of the WLAN 2.4GHz Band and WLAN 5GHz Band can't transmit simultaneously.

The antenna gain which being use as below:

Antenna Type	Frequency Band (MHz)	Model	Model	Max Peak Antenna Gain (dBi)
	5150 ~ 5875	MTI Wireless Edge Ltd.	MT-485001	18.0
	4900 ~ 5875	PENSON Wireless, Inc., Taiwan	OM24580703	7.0
	2412 ~ 2462	PENSON Wireless, Inc., Taiwan	OM24580703	5.0

OEM integration instructions:

This device is intended only for OEM integrators under the following conditions:
 The antenna must be installed such that 20 cm is maintained between the antenna and users, and the transmitter module may not be co-located with any other transmit or antenna. The module shall be only used with the integral antenna(s) that has been originally tested and certified with this module.

As long as 3 conditions above are met, further transmitter test will not be required.

However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirement with this module installed (for example, digital device emission, PC peripheral requirements, etc.)

End product labeling:

This transmitter module is authorization only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: “Contains Transmitter Module FCC ID: TK4WLE600VX or Contains FCC ID: TK4WLE600VX”.

Information that must be placed in the end user manual:

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user’s manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.