WIRELESS-AC 2X2 27DBM NETWORK MINI PCIE ADAPTER

Model: WLE600V5-27ESD

Features

- Qualcomm-Atheros QCA9882,Peregrine Series

- Maximum 27dBm output power (per chain), 30dBm (aggregate)

- IEEE 802.11ac complaint & backward compatible with 802.11a/n

- 2X2 MIMO Technology & up to 867Mbps

- MiniPCI Express 1.1 interface

- Supports Spatial Multiplexing, low-density parity check (LDPC), Maximal Ratio Combining (MRC), Space Time Block Code (STBC)

- Supports IEEE 802.11d, e, h, I, k, RO, v time stamp, and w standards

- Cards are individually calibrated for Quality Assurance

- Supported by either CompexWRT with Atheros Reference Wireless Driver OR OpenWRT with ath10k Wireless Driver on WPJ344

Applications (combined with WPJ344)

- Indoor AP

- Outdoor AP

- 802.11ac/an CPE

- 802.11ac/an Point to Point

- Base Station

Technical Specifications

System Information	
Chipset	QCA9882,Peregrine Series
Host Interface	PCI-Express 1.1 Standard
Operating Voltage	3.3 VDC, 5V (compulsory and external)[1]
Power Consumption	7.4W
Antenna Connector	2 x MMCX Antenna Connector
Frequency Range	5.150 ~ 5.250, 5.725 ~ 5.850 GHz
Modulation Techniques	OFDM: BPSK, QPSK, 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 50 x 3.2 (H x W x D)

TX Specifications

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance		Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
802.11a	6Mbps	27dBm	30dBm	±2dB	**5GHz 11n/ac HT20**	MCS 0	27dBm	30dBm	±2dB
	9Mbps	27dBm	30dBm	±2dB		MCS 1	26dBm	29dBm	±2dB
	12Mbps	27dBm	30dBm	±2dB		MCS 2	26dBm	29dBm	±2dB
	18Mbps	27dBm	30dBm	±2dB		MCS 3	25dBm	28dBm	±2dB
	24Mbps	27dBm	30dBm	±2dB		MCS 4	25dBm	28dBm	±2dB
	36Mbps	25dBm	28dBm	±2dB		MCS 5	25dBm	28dBm	±2dB
	48Mbps	25dBm	28dBm	±2dB		MCS 6	24dBm	27dBm	±2dB
	54Mbps	24dBm	27dBm	±2dB		MCS 7	23dBm	26dBm	±2dB
						MCS 8	23dBm	26dBm	±2dB
						MCS 9	22dBm	25dBm	±2dB
5GHz 11n/ac HT40	MCS 0	27dBm	30dBm	±2dB	**5GHz 11ac HT80**	MCS 0	27dBm	30dBm	±2dB
	MCS 1	26dBm	29dBm	±2dB		MCS 1	26dBm	29dBm	±2dB
	MCS 2	26dBm	29dBm	±2dB		MCS 2	26dBm	29dBm	±2dB
	MCS 3	25dBm	28dBm	±2dB		MCS 3	26dBm	29dBm	±2dB
	MCS 4	25dBm	28dBm	±2dB		MCS 4	26dBm	29dBm	±2dB
	MCS 5	25dBm	28dBm	±2dB		MCS 5	25dBm	28dBm	±2dB
	MCS 6	24dBm	27dBm	±2dB		MCS 6	25dBm	28dBm	±2dB
	MCS 7	23dBm	26dBm	±2dB		MCS 7	24dBm	27dBm	±2dB
	MCS 8	23dBm	26dBm	±2dB		MCS 8	23dBm	26dBm	±2dB
	MCS 9	22dBm	25dBm	±2dB		MCS 9	22dBm	25dBm	±2dB

RX Specifications

	DataRate	Sensitivity	Tolerance		DataRate	Sensitivity	Tolerance
802.11a	6Mbps	-94dBm	±2dB	**5GHz 11n/ac HT20**	MCS 0	-94dBm	±2dB
	9Mbps	-94dBm	±2dB		MCS 1	-94dBm	±2dB
	12Mbps	-94dBm	±2dB		MCS 2	-92dBm	±2dB
	18Mbps	-92dBm	±2dB		MCS 3	-88dBm	±2dB
	24Mbps	-89dBm	±2dB		MCS 4	-84dBm	±2dB
	36Mbps	-86dBm	±2dB		MCS 5	-81dBm	±2dB
	48Mbps	-82dBm	±2dB		MCS 6	-78dBm	±2dB
	54Mbps	-80dBm	±2dB		MCS 7	-77dBm	±2dB
					MCS 8	-74dBm	±2dB
					MCS 9	-71dBm	±2dB
5GHz 11n/ac HT40	MCS 0	-93dBm	±2dB	**5GHz 11ac HT80**	MCS 0	-89dBm	±2dB
	MCS 1	-91dBm	±2dB		MCS 1	-88dBm	±2dB
	MCS 2	-90dBm	±2dB		MCS 2	-85dBm	±2dB
	MCS 3	-85dBm	±2dB		MCS 3	-81dBm	±2dB
	MCS 4	-82dBm	±2dB		MCS 4	-79dBm	±2dB
	MCS 5	-78dBm	±2dB		MCS 5	-75dBm	±2dB
	MCS 6	-77dBm	±2dB		MCS 6	-74dBm	±2dB
	MCS 7	-75dBm	±2dB		MCS 7	-72dBm	±2dB
	MCS 8	-73dBm	±2dB		MCS 8	-70dBm	±2dB
	MCS 9	-71dBm	±2dB		MCS 9	-68dBm	±2dB

1 Customers have to connect a 5V power supply to the pin on WLE600V5-27

Ordering Information

Item Code	Chipset	Form factor	Card Informations
WLE600V5-27 8AB000ESD	Atheros 9882	Wide size	2x2 11ac 5GHz High Power miniPCIe Radio

Instruction procedure

Plug the module into the hosts and update the driver in the system of the hosts.
Get the proper driver from the website http://www.compex.com.sg/.

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 28.37 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.

RF exposure warning
This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.
The equipment must not be co-located or operating in conjunction with any other antenna or transmitter.

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.

The antenna gain which being use as below:

Antenna Type	Frequency Band (GHz)	Manufacturer	Tx Paths	Max Directional Gain (dBi)
Panel Antenna 1#	5.1 ~ 5.8	Lanbowan Communications Ltd.	2	25
Panel Antenna 2#	5.1 ~ 5.8	Kenbotong Communication LTD	2	19
Panel Antenna 3#	5.1 ~ 5.8	Compex Systems Pte Ltd	2	17
Panel Antenna 4#	5.1 ~ 5.8	Compex Systems Pte Ltd	2	15
Panel Antenna 5#	5.1 ~ 5.8	Kenbotong Communication LTD	2	10
Panel Antenna 6#	5.1 ~ 5.8	Smart Ant Inc	2	7
Panel Antenna 7#	5.1 ~ 5.8	Compex Systems Pte Ltd	2	5
Panel Antenna 8#	5.1 ~ 5.8	Compex Systems Pte Ltd	2	5
Dipole Antenna 1#	5.1 ~ 5.8	Kunshan Wavelink Electronic Co., Ltd.	2	2

(1) The modules 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
(3) 5.2GHz frequency band support the max antenna gain 25dBi, 5.8GHz frequency band support the max antenna gain 7dBi.

OEM integration instructions：
This device is intended only for OEM integrators under the following conditions：
The module is only limited to installation in mobile or fixed applications. The antenna must be installed such that 28.37 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.)

OEM integration instructions：
In the event that these conditions cannot be met (for example certain laptop configuration or co-location with another transmitter), then the FCC authorization for this module in combination with the host equipment is no longer considered valid and the FCC ID of the module cannot be used on the final product. In these and circumstance，the OEM integrator will be responsible for re-evaluating. The end product (including the transmitter) and obtaining a separate FCC authorization

End product labeling：
This transmitter module is authorization only for use in device where the antenna may be installed such that 28.37 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: TK4WLE600V5-27ESD or Contains FCC ID: TK4WLE600V5-27ESD"

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.