

Single Band 5GHz 3x3 802.11ac Wave 2 MiniPCIe WiFi Module Designed for High Power Enterprise Wireless Access Points

Model: WLE900V5-27ESD



KEY FEATURES

- Qualcomm Atheros QCA9880
- 5GHz, 3x3 MIMO OFDM Technology, up to 1300Mbps physical data rate
- Single Band 5GHz 3x3 WiFi 5 (802.11ac Wave 2)
- MiniPCIe interface with PCIe 1.2
- IEEE 802.11ac compliant & backward compatible with 802.11a/n
- Built-in ESD Protection with ESD/EMP Immunity Threshold: 15 KeV¹
- 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 QCA9880 'Peregrine' Series
Reference Design	Qualcomm Atheros CUS223
Host Interface	MiniPCIe interface with PCIe 1.2
Operating Voltage	3.3V, 5V ²
Power Consumption	10W (Max)
Wireless	5GHz 802.11a/n/ac, max 25dBm per chain 3x MMCX Connectors
Frequency Range	5.150~5.825GHz
Modulation Techniques	BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM
Channel Spectrum Widths for WLAN	Supports 20/40/80MHz at 5GHz
Supported Operating System	Supported by CompexWRT with Qualcomm Atheros reference wireless drivers or OpenWRT/LEDE with ath10k wireless drivers
Certification	CE RED, REACH and RoHS Compliance
Environmental Temperature	Operating: -20°C to 70°C with normal heatsink, -40°C to 80°C with large heatsink; 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	50.0 x 51.0 x 12.5 with normal heatsink, 95.0 x 51.0 x 13.0 with large heatsink

1. Module grounding cable included.

2. 5V supply is compulsory. Enable this by placing jumper on pin pair J5 on the WPJ344/WPJ558 board. Otherwise supply to the 5V external power pin.

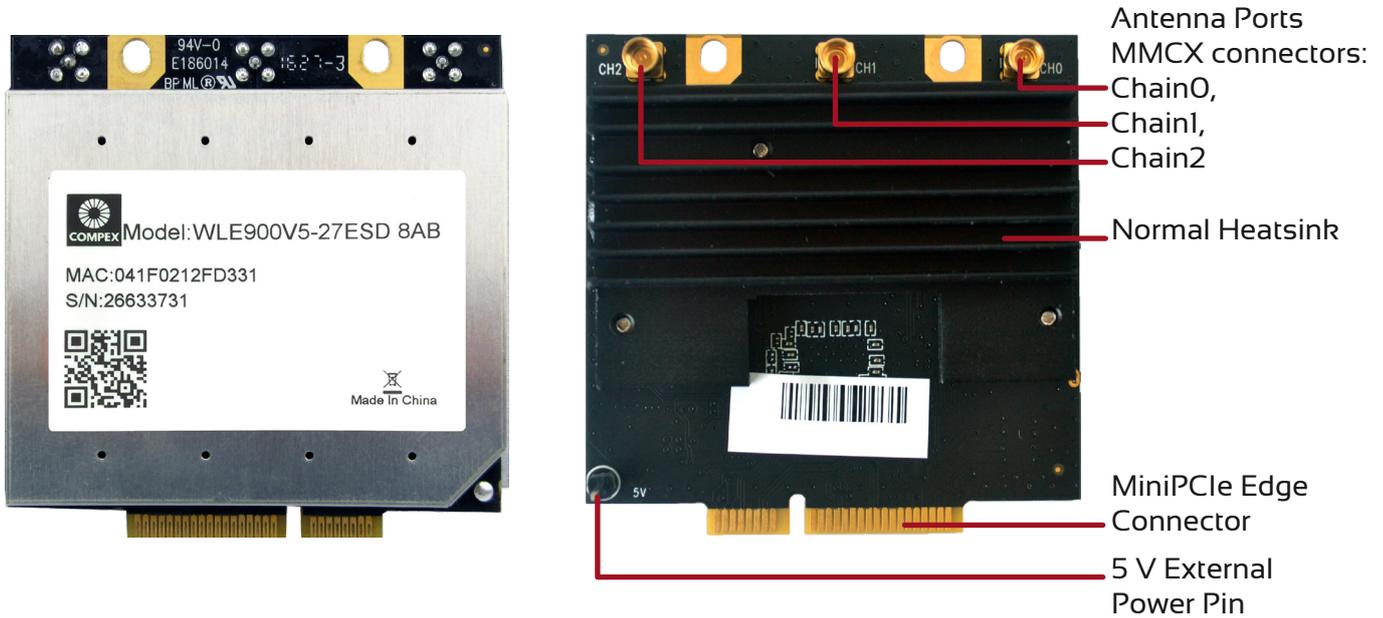
*Configurations are subject to change without notifications.

RF Performance Table for 5GHz

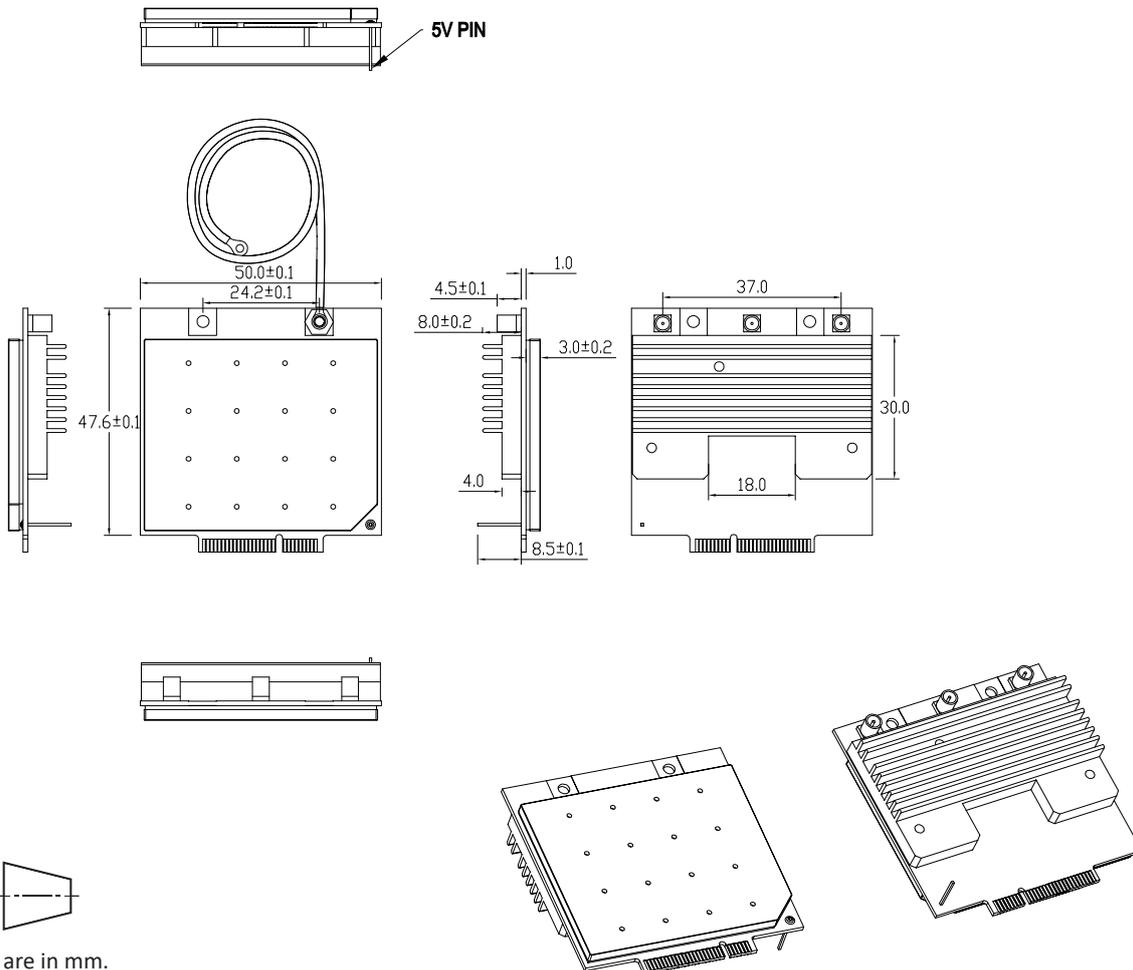
	Data Rate	TX Power (per chain)	TX Power (3 chains)	Tolerance
5GHz 802.11a	6Mbps	27dBm	32dBm	±2dB
	9Mbps	27dBm	32dBm	±2dB
	12Mbps	27dBm	32dBm	±2dB
	18Mbps	27dBm	32dBm	±2dB
	24Mbps	27dBm	32dBm	±2dB
	36Mbps	25dBm	30dBm	±2dB
	48Mbps	24dBm	29dBm	±2dB
	54Mbps	23dBm	28dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	26dBm	31dBm	±2dB
	MCS 1	25dBm	30dBm	±2dB
	MCS 2	25dBm	30dBm	±2dB
	MCS 3	24dBm	29dBm	±2dB
	MCS 4	24dBm	29dBm	±2dB
	MCS 5	23dBm	28dBm	±2dB
	MCS 6	22dBm	27dBm	±2dB
	MCS 7	21dBm	26dBm	±2dB
	MCS 8	20dBm	25dBm	±2dB
5GHz 802.11n/ac VHT40	MCS 0	26dBm	31dBm	±2dB
	MCS 1	25dBm	30dBm	±2dB
	MCS 2	25dBm	30dBm	±2dB
	MCS 3	24dBm	29dBm	±2dB
	MCS 4	24dBm	29dBm	±2dB
	MCS 5	23dBm	28dBm	±2dB
	MCS 6	22dBm	27dBm	±2dB
	MCS 7	21dBm	26dBm	±2dB
	MCS 8	20dBm	25dBm	±2dB
	MCS 9	19dBm	24dBm	±2dB
5GHz 802.11ac VHT80	MCS 0	26dBm	31dBm	±2dB
	MCS 1	25dBm	30dBm	±2dB
	MCS 2	25dBm	30dBm	±2dB
	MCS 3	24dBm	29dBm	±2dB
	MCS 4	24dBm	29dBm	±2dB
	MCS 5	23dBm	28dBm	±2dB
	MCS 6	22dBm	27dBm	±2dB
	MCS 7	21dBm	26dBm	±2dB
	MCS 8	20dBm	25dBm	±2dB
	MCS 9	19dBm	24dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11a	6Mbps	-94dBm	±2dB
	9Mbps	-94dBm	±2dB
	12Mbps	-94dBm	±2dB
	18Mbps	-92dBm	±2dB
	24Mbps	-89dBm	±2dB
	36Mbps	-86dBm	±2dB
	48Mbps	-82dBm	±2dB
	54Mbps	-80dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	-94dBm	±2dB
	MCS 1	-94dBm	±2dB
	MCS 2	-92dBm	±2dB
	MCS 3	-88dBm	±2dB
	MCS 4	-84dBm	±2dB
	MCS 5	-81dBm	±2dB
	MCS 6	-78dBm	±2dB
	MCS 7	-77dBm	±2dB
	MCS 8	-74dBm	±2dB
5GHz 802.11n/ac VHT40	MCS 0	-94dBm	±2dB
	MCS 1	-94dBm	±2dB
	MCS 2	-92dBm	±2dB
	MCS 3	-88dBm	±2dB
	MCS 4	-84dBm	±2dB
	MCS 5	-81dBm	±2dB
	MCS 6	-78dBm	±2dB
	MCS 7	-77dBm	±2dB
	MCS 8	-73dBm	±2dB
	MCS 9	-71dBm	±2dB
5GHz 802.11ac VHT80	MCS 0	-89dBm	±2dB
	MCS 1	-88dBm	±2dB
	MCS 2	-85dBm	±2dB
	MCS 3	-81dBm	±2dB
	MCS 4	-79dBm	±2dB
	MCS 5	-75dBm	±2dB
	MCS 6	-74dBm	±2dB
	MCS 7	-72dBm	±2dB
	MCS 8	-70dBm	±2dB
	MCS 9	-68dBm	±2dB

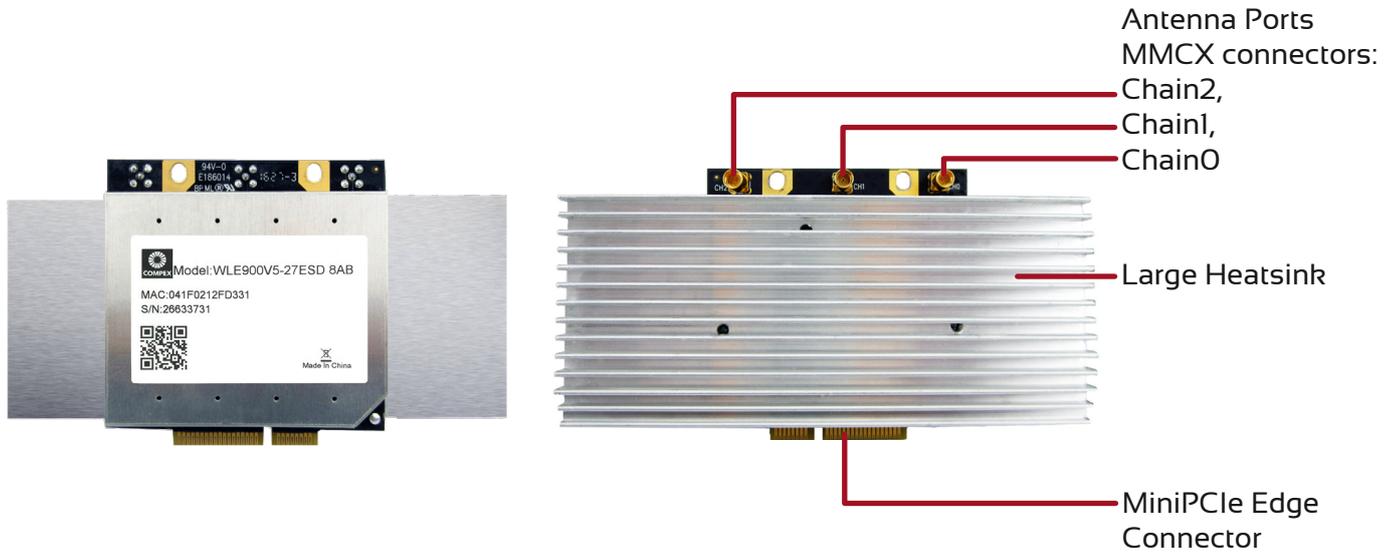
Component Map with Normal Heatsink



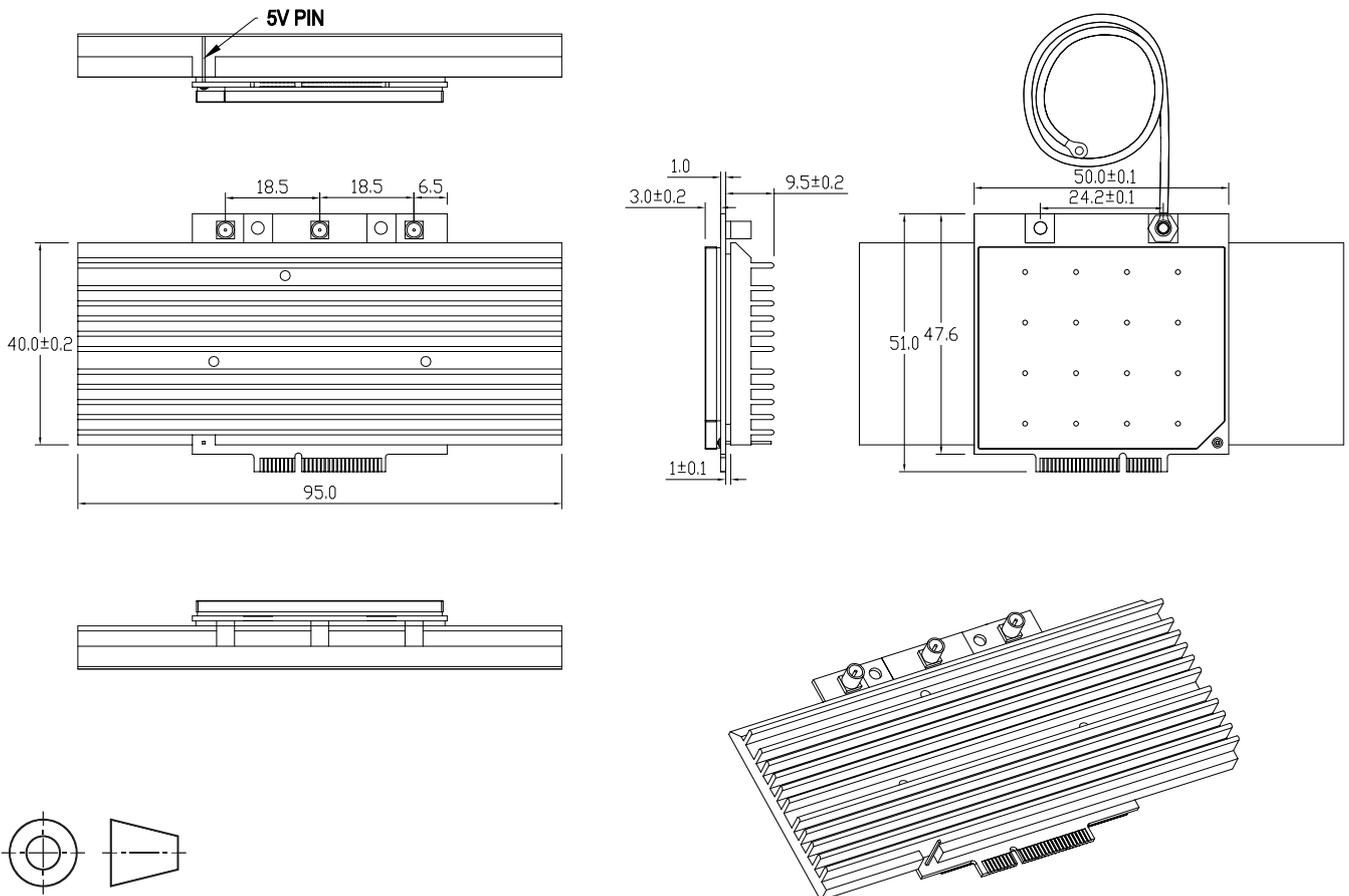
Mechanical Dimensions with Normal Heatsink



Component Map with Large Heatsink Option



Mechanical Dimensions with Large Heatsink Option



All dimensions are in mm.

Ordering Configuration

Item Code	Model	Description
WLE900V5-27 8AB000ESD	WLE900V5-27ESD	3x3 802.11a/n/ac 5GHz High Power with Normal Heatsink
WLE900V5-27 8AB000ESD-LH	WLE900V5-27ESD	3x3 802.11a/n/ac 5GHz High Power with Large Heatsink