

WIRELESS 11AC MODULES

Single Band 5GHz 3x3 802.11ac Wave 2 MiniPCle 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)
- MiniPCle 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	MiniPCle 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.

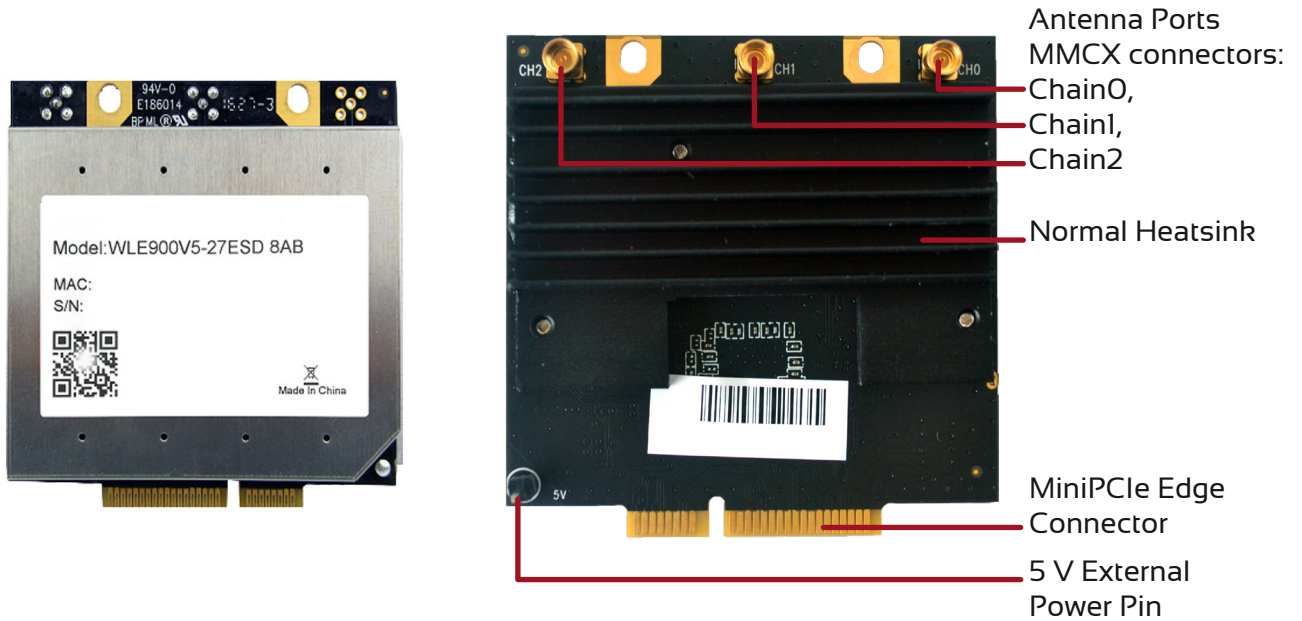
*Configurations are subject to change without notifications.

RF Performance Table for 5GHz

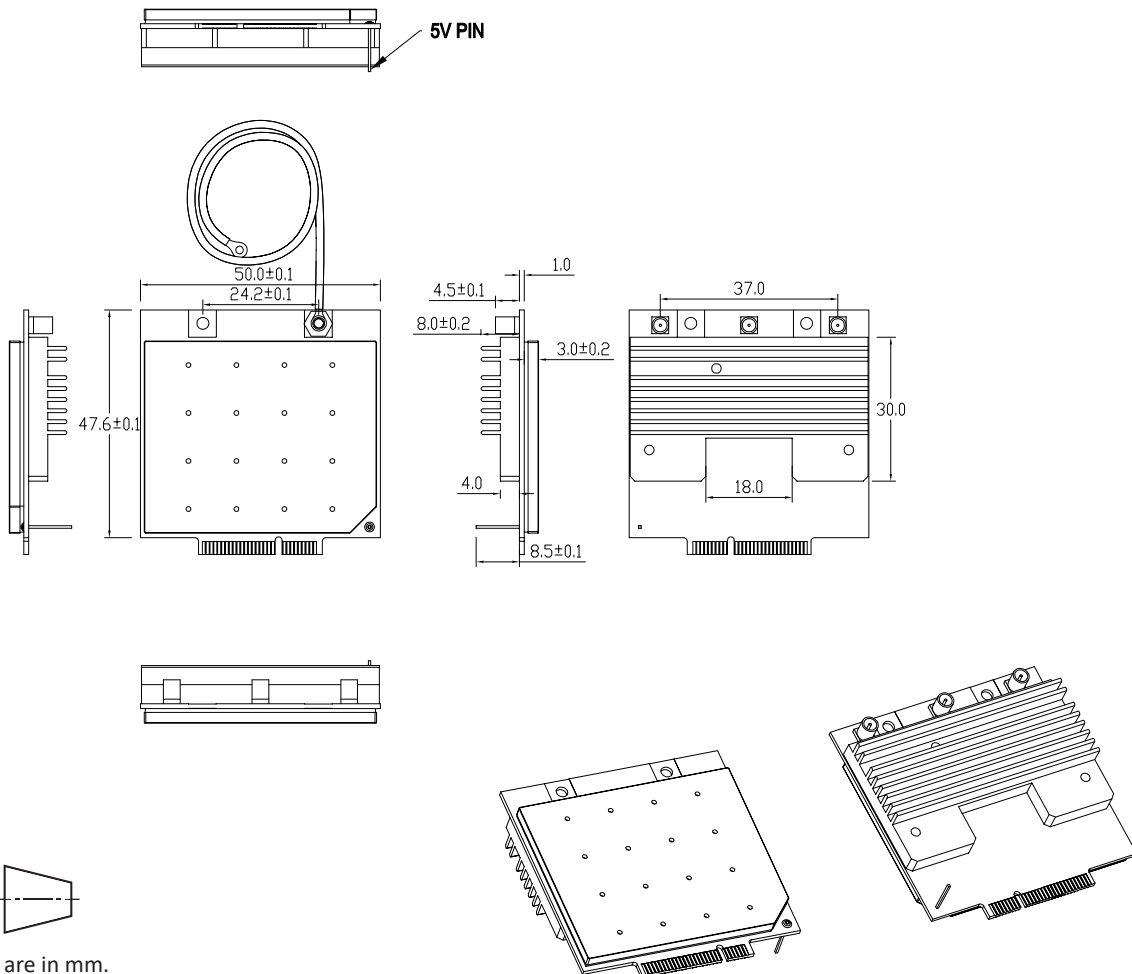
	Data Rate	TX Power (per chain)	TX Power (3 chains)	Tolerance
5GHz 802.11a	6Mbps	27dBm	32dBm	±2dB
	9Mbps	27dBm	32dBm	±2dB
	12Mbps	27dBm	32dBm	±2dB
	18Mbps	27dBm	32dBm	±2dB
	24Mbps	27dBm	32dBm	±2dB
	36Mbps	25dBm	30dBm	±2dB
	48Mbps	24dBm	29dBm	±2dB
	54Mbps	23dBm	28dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	26dBm	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

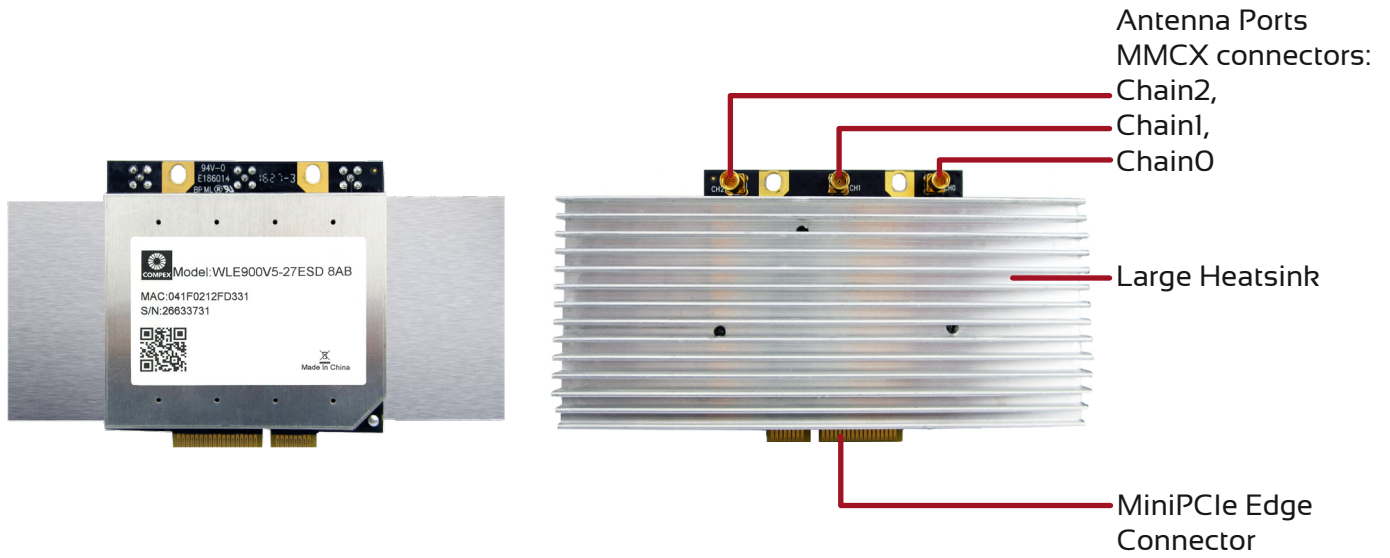
Component Map with Normal Heatsink



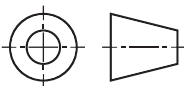
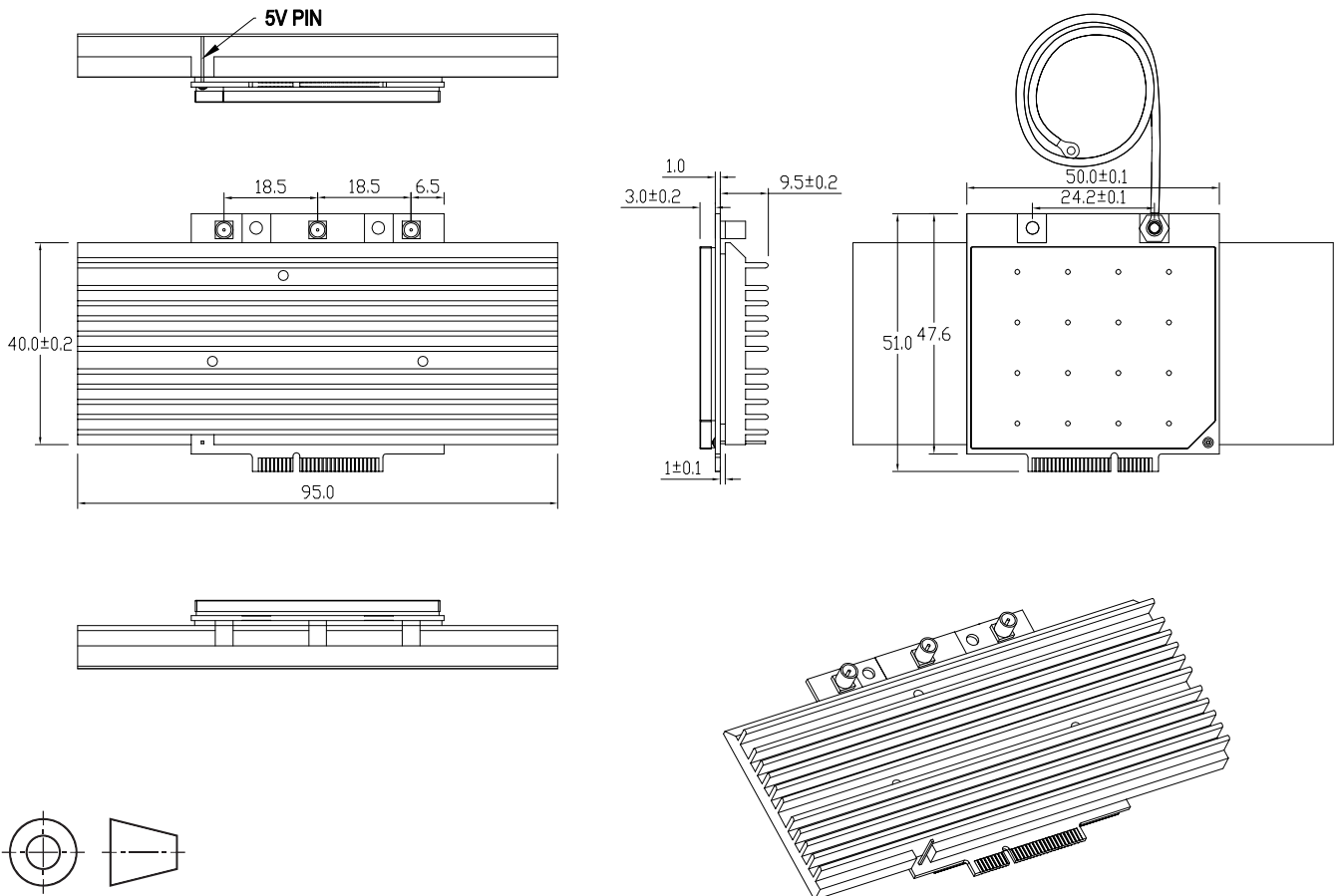
Mechanical Dimensions with Normal Heatsink



Component Map with Large Heatsink Option



Mechanical Dimensions with Large Heatsink Option



All dimensions are in mm.

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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