

## Single Band 5GHz 3x3 MIMO 802.11ac Mini PCIe WiFi Module

Designed for High Power Enterprise Wireless Access Points

**Model: WLE900V5-27**



### KEY FEATURES

- Qualcomm Atheros QCA9880
- CUS223 (High Power) Reference Design
- 5GHz max 27dBm output power (per chain) , 30dBm (aggregate)
- IEEE 802.11ac compliant & backward compatible with 802.11a/n
- 3x3 MIMO Technology, up to 1.3Gbps
- Built-in ESD Protection with ESD/EMP Immunity Threshold: 15KeV<sup>1</sup>
- Mini PCI Express edge connector
- 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
- Supported by either CompexWRT with Atheros Reference Wireless Driver OR OpenWRT with ath10k Wireless Driver on WPJ344

## Specifications

Chipset	QCA9880
Host Interface	PCI Express 1.2 Standard
Operating Voltage	DC 3.3V, 5V <sup>2</sup>
Antenna Connector	3x MMCX
Frequency Range	5.180 ~ 5.825 GHz
Certification	RoHS Compliant
Power Consumption	10W (Max)
Modulation Techniques	BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM
Temperature Range	Operating: -40°C to 70°C with normal heatsink, -40°C to 80°C with large heatsink Storage: -40°C to 90°C
Humidity	Operating: 5% to 95% (non-condensing) Storage: Max. 90% (non-condensing)
Dimensions (W x H x D)	50 x 51 x 12.5 mm with normal heatsink, 95 x 51 x 13 mm with large heatsink

1. Module grounding cable included.

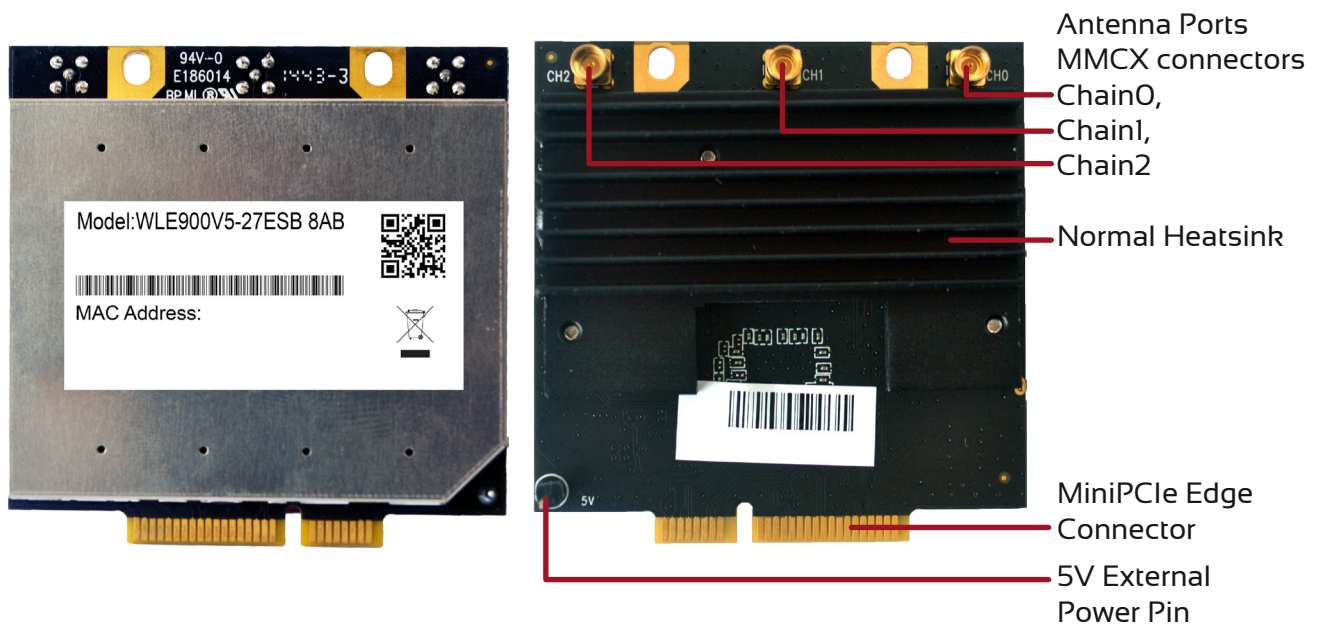
2. 5V supply is compulsory. Enable this by placing jumper on pin pair J5 on the WPJ344/WPJ558 board. Otherwise supply to the 5V external power pin.

## RF Performance Table

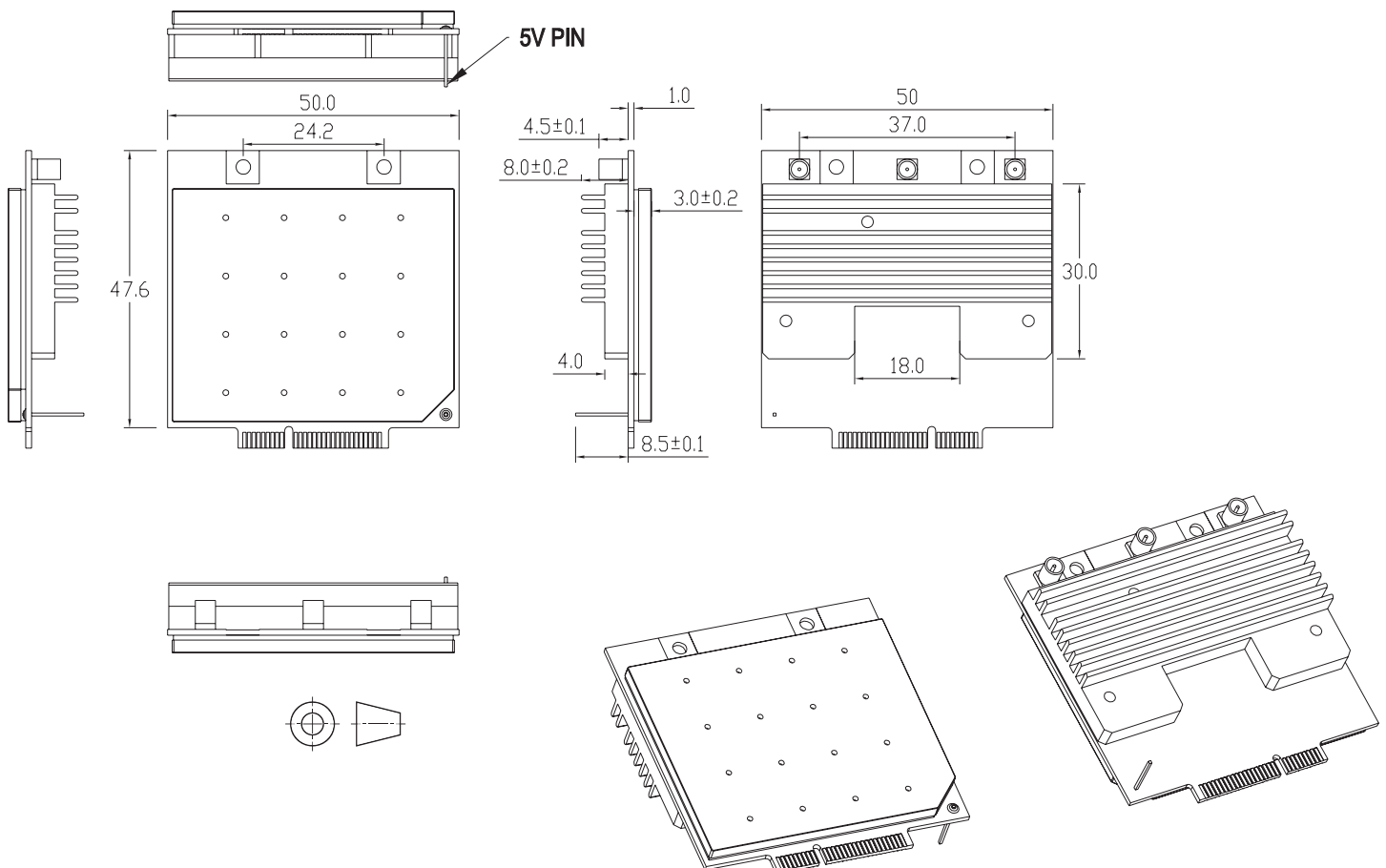
	Data Rate	TX Power (per chain)	TX Power (3 chains)	Tolerance
5GHz 802.11a	6Mbps	27dBm	32dBm	±2dB
	9Mbps	27dBm	32dBm	±2dB
	12Mbps	27dBm	32dBm	±2dB
	18Mbps	27dBm	32dBm	±2dB
	24Mbps	27dBm	32dBm	±2dB
	36Mbps	25dBm	30dBm	±2dB
	48Mbps	24dBm	29dBm	±2dB
	54Mbps	23dBm	28dBm	±2dB
5GHz 802.11n/ac VHT20	MCS 0	26dBm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

	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
5GHz 802.11n/ac VHT40	MCS 8	-74dBm	±2dB
	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
5GHz 802.11ac VHT80	MCS 7	-77dBm	±2dB
	MCS 8	-73dBm	±2dB
	MCS 9	-71dBm	±2dB
	MCS 0	-89dBm	±2dB
	MCS 1	-88dBm	±2dB
	MCS 2	-85dBm	±2dB
	MCS 3	-81dBm	±2dB
	MCS 4	-79dBm	±2dB

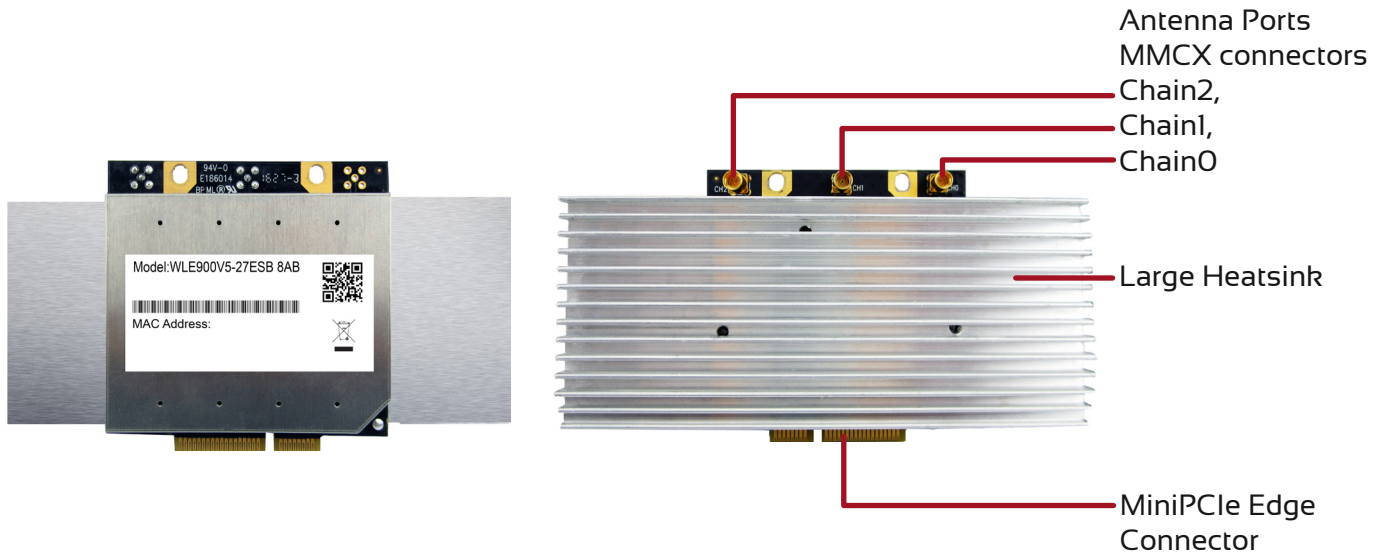
## Connector Map with Normal Heatsink



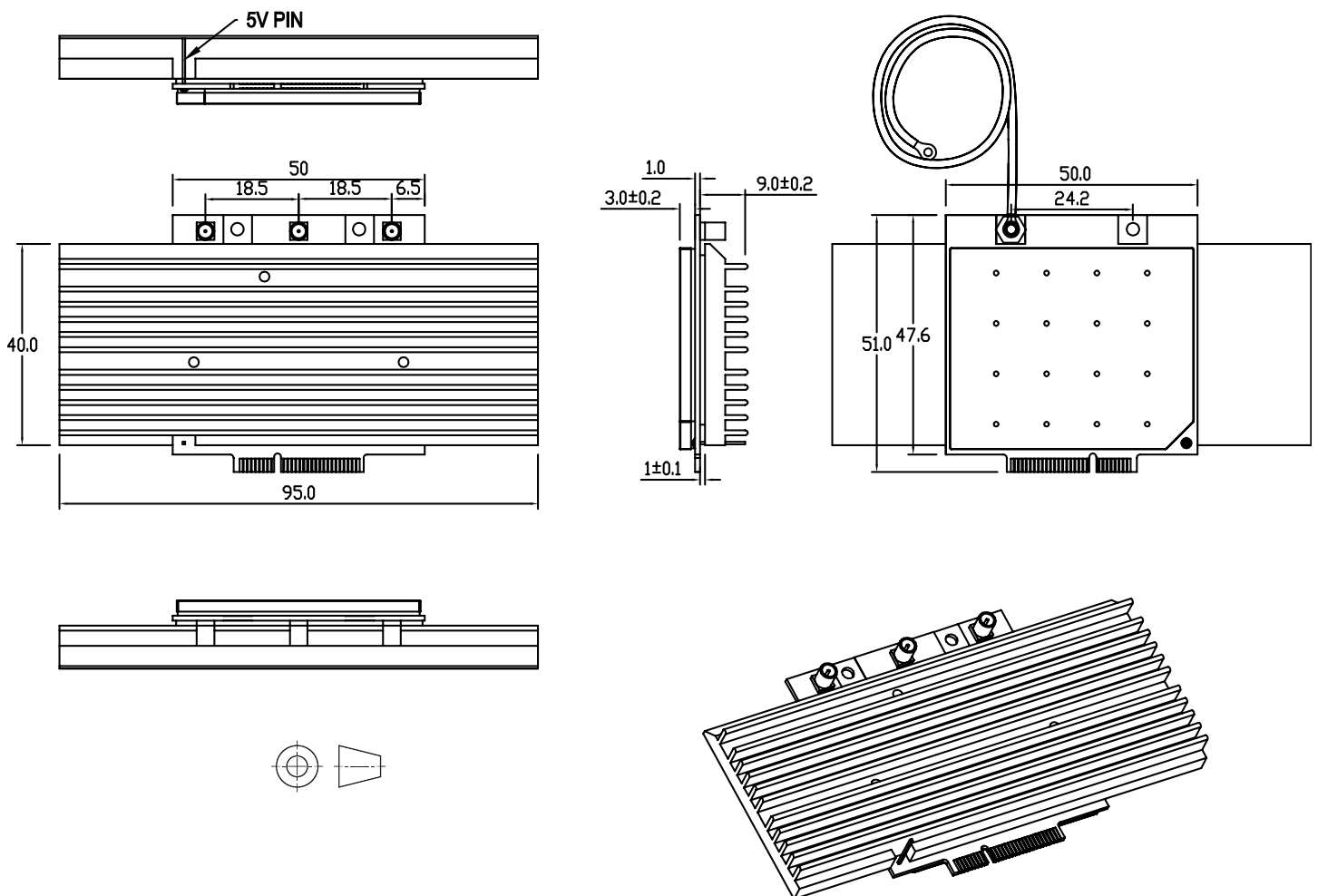
## Mechanical Dimensions with Normal Heatsink



## Connector Map with Large Heatsink Option



## Mechanical Dimensions with Large Heatsink Option



## Ordering Configuration

Item Code	Chipset	Form factor	Card Information
WLE900V5-27 8AB000ESD	Atheros 9880	Wide size card	3x3 802.11ac 5GHz High Power with Normal Heatsink
WLE900V5-27 8AB000ESD-LH	Atheros 9880	Wide size card	3x3 802.11ac 5GHz High Power with Large Heatsink

## Packaging Information

Packaging Type	Dimensions	Gross Weight	Dimensional Weight
For WLE900V5-27 8AB000ESD with normal heatsink: Carton Box (250 units)	422 x 410 x 240 mm	11.28 kg	8.5 kg
For WLE900V5-27 8AB000ESD-LH with large heatsink: Carton Box (150 units)	422 x 410 x 240 mm	13.95 kg	8.5 kg