



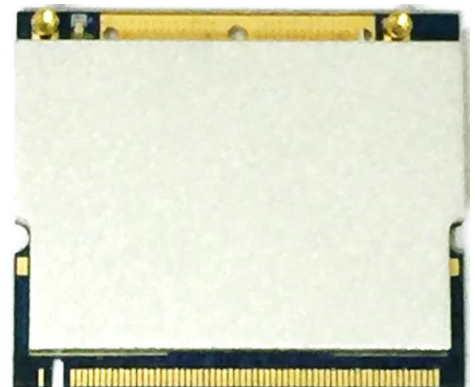
## nM2-4800

### 2x2 IEEE 802.11 a/n High Power Mini PCI Radio Module

nM2-4800 is an IEEE 802.11 a/n 4800 MHz to 5000 MHz Radio Module built over Vizmonet's innovative Built-to-Customize™ platform engineered for carrier class long range high data capacity applications.

With superior TX power efficient RF design, the product supports high TX Power offering best-in class EVM performance at higher modulation schemes. This facilitates to achieve long range without compromising data throughput.

With well-engineered RX Design, nM2-4800 offers ultra-low receive sensitivity to achieve long range. Custom designed filter used in nM2-4800, offers superior performance over noisy environment, unaffected by radiation emitted from other devices.



#### FEATURES

- IEEE 802.11n standards compliant operating in the Public Safety Band 4800 MHz to 5000 MHz
- Backward compatible with legacy IEEE 802.11a systems
- 2x2 MIMO with 2xMMCX Antenna connector supports spatial multiplexing
- High TX Power of up to +28 dBm for lower data rates
- Atheros AR9220 Chipset
- Mini PCI Type IIIA form factor – 59.6mm(W)x51mm(L)
- Military grade Shield Cover with option for integrated bracket to secure the Radio Module to OEM system
- Support for Customization for OEM integration
- Operating Temperature range (-20 deg C to +70 deg C)

**TECHNICAL SPECIFICATION**

**RADIO MODULE – GENERAL INFO**

Chipset Info	Atheros AR9220-AC1A
Operating Frequency Channels	4800 MHz ~ 5000 MHz
Security	WPA,WPA2, 802.11i with AES-CCM & TKIP Encryption, 802.1x, 64/128/152bit WEP
Data Rates Legacy 11a up to 54 Mbps	6Mbps, 9Mbps, 12Mbps, 24Mbps, 36Mbps, 48Mbps,54Mbps
11n HT20-1S up to 65Mbps @ 800GI, 72.2Mbps @ 400GI	MCS0,MCS1,MCS2,MCS3,MCS4,MCS5,MCS6,MCS7 –IEEE 802.11n HT20 Single Stream
11n HT20-2S up to 130Mbps @ 800GI, 144.4Mbps @ 400GI	MCS8,MCS9,MCS10,MCS11,MCS12,MCS13,MCS14,MCS15 – IEEE 802.11n HT20 Dual Stream
Channel Bandwidth	5 MHz/10 MHz/20 MHz
RoHS Compliance	Compliant
Operating System Support	Linux Open WRT and Ath9K driver

**INTERFACE SPECIFICATIONS**

Interface	PCI 32 bit,33 MHz, mini PCI Form Factor
Operating Voltage	3.3V
RF Antenna connector	Dual MMCX, VERTICAL

**PHYSICAL SPECIFICATIONS**

Mechanical Dimension (Assembled condition)	(L) 59.6 mm x (W) 51 mm x (H) 8.5 mm
Weight of the Module without ESD Bag	31 g
Weight of the module with ESD Bag	33 g

**CUSTOM FEATURES**

MAC ID	74-E2-77- 00 series
PCI Sub Vendor ID	168C
PCI Sub Device ID	1503
TX Power offset	6 dB
Labels	MAC Label x1 pc on the Radio Module Model Label x pc with dual barcode on the ESD bag

**REGULATORY INFORMATION**

Regulatory Approvals	TBD
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**PACKAGING INFORMATION**

100 Units per Carton Box	520 mm (L) x 240 mm (W) x 133 mm (H)
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**ORDERING INFORMATION**

nM2-4800	Mini PCI Radio Module, 2x2 IEEE 802.11 a/n , 4.8 GHz, 28 dBm
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**RADIO SPECIFICATION - RX**

Receiver Maximum input level (10% PER)	> -10 dBm
Receive Chain Noise Figure	5.5 dB
Frequency Accuracy	Within $\pm$ 15 PPM
Receiver Adjacent Channel Rejection (ACR) 10 to 20 MHz, 10% PER  6 Mbps HT20 MCS0,MCS8	> 30 dB > 30 dB
Receiver Alternate Channel Rejection (ALCR) 20 to 30 MHz, 10% PER  6 Mbps HT20 MCS0,MCS8	> 40 dB > 40 dB
Receiver Blocking	30 dB at 5350 MHz

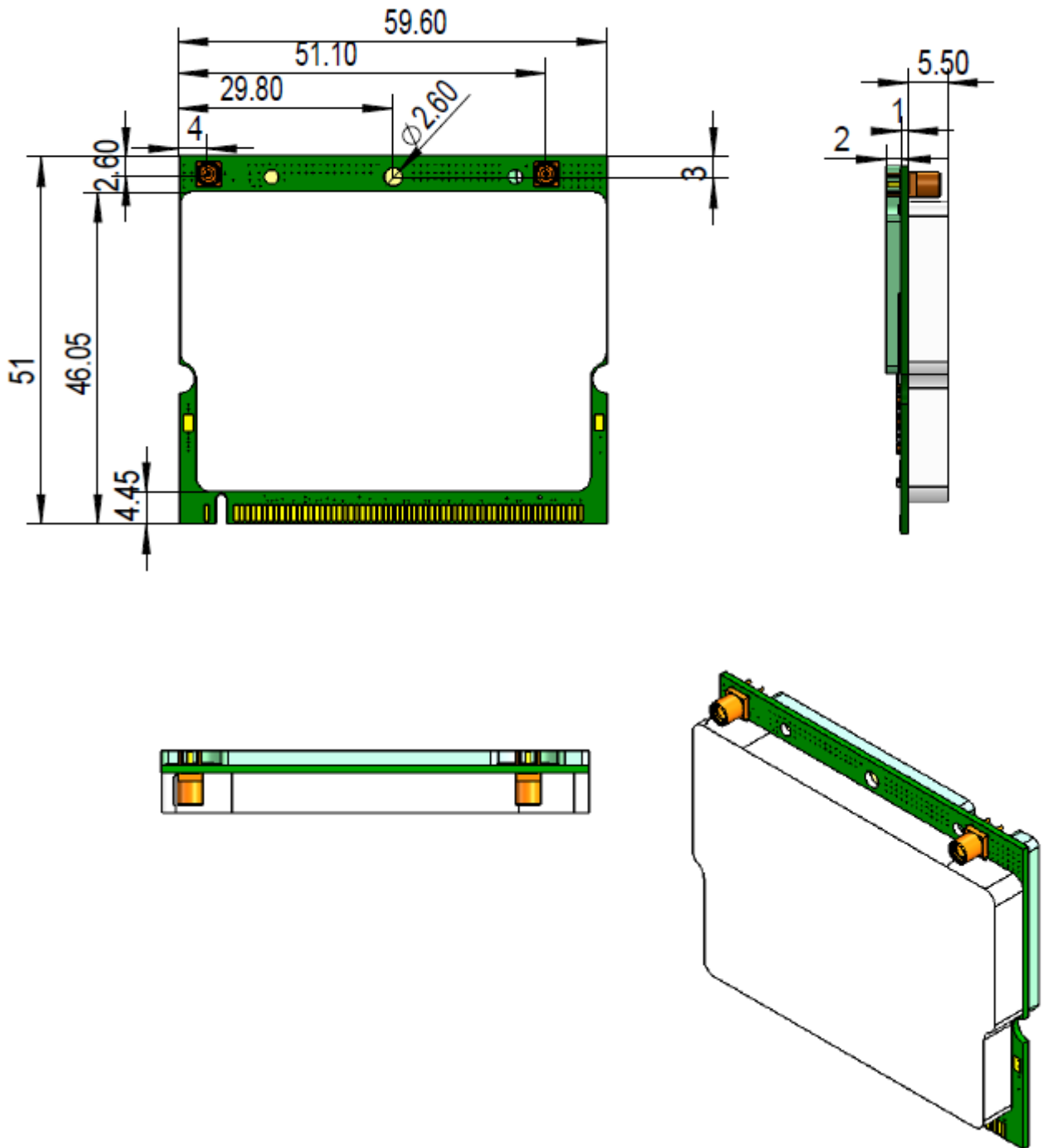
**RADIO SPECIFICATION - TX**

Transmit Spectral mask  At 11 MHz Offset At 20 MHz Offset At 30 MHz Offset	> -20 dB > -28 dB > -40 dB
RF Power control Step	0.5 dBm
Second Harmonic Spurious Emission	-45 dB
Third Harmonic Spurious Emission	-45 dB
Transmitter Spurious Emission	Complying FCC 47 CFR Part 90 Sub Part Y Requirements

**RADIO SPECIFICATION - TX/RX**

RADIO TX/RX PERFORMANCE, FOR 2 CHAINS, 20 MHz CH BW						
	DATA RATE	MODULATION	TX POWER $\pm$ 1 dBm	TX CURRENT (A) AT 3.3V $\pm$ 0.1A	RX SENSITIVITY $\pm$ 2 dBm	RX CURRENT(A) AT 3.3V $\pm$ 0.1A
11 a	6 Mbps	BPSK	28	1.8	-94	0.20
	9 Mbps	BPSK	28	1.8	-94	0.20
	12 Mbps	QPSK	28	1.8	-93	0.20
	18 Mbps	QPSK	28	1.8	-92	0.20
	24 Mbps	16QAM	28	1.8	-90	0.20
	36 Mbps	16QAM	27	1.5	-85	0.20
	48 Mbps	64QAM	25	1.35	-81	0.20
	54 Mbps	64QAM	24	1.25	-79	0.20
11 n HT 20	MCS0/8	BPSK	27	1.5	-93	0.20
	MCS1/9	QPSK	27	1.5	-93	0.20
	MCS2/10	QPSK	27	1.5	-90	0.20
	MCS3/11	16QAM	27	1.5	-87	0.20
	MCS4/12	16QAM	27	1.5	-84	0.20
	MCS5/13	64QAM	25	1.35	-80	0.20
	MCS6/14	64QAM	20	1.1	-78	0.20
	MCS7/15	64QAM	18	1.0	-77	0.20

**MECHANICAL DIMENSIONS**



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