

## Dual Band 2x2 MIMO 802.11n Mini PCIe Module Designed for Dual Band Wireless Access Points

**Model: WLE200NX**



### KEY FEATURES

- Qualcomm Atheros AR9280
- Atheros XB92 Reference Design
- Dual-band 2x2 MIMO spatial multiplexing technique
- 2.4GHz max 18dBm & 5GHz max 17dBm output power (per chain)
- IEEE 802.11n compliant & backward compatible with 802.11a/b/g
- 2x2 MIMO Technology, up to 300Mbps for each band
- Mini PCI Express edge connector
- Supports WPA2 encryption (IEEE 802.11i) and 802.1X authentication
- Supports Transmit Power Control (IEEE 802.11h)
- Dynamic Frequency Selection (DFS)
- Supports IEEE 802.11d and e
- Industrial Grade Option Available (WLE200NX-I)

## Specifications

Chipset	AR9280
Host Interface	Mini PCI Express 1.1 Standard
Operating Voltage	3.3V DC
Antenna Connector	2x U.FL
Frequency Range	2.4GHz: 2.412 ~ 2.484 GHz, or 5GHz: 5.150 ~ 5.875 GHz, selectable dual band
Certification	FCC & CE Certified, REACH & RoHS Compliance
Power Consumption	1.5W (Standby), 3.7W (Max)
Supported Operating System	Supported by CompexWRT with Qualcomm Atheros reference wireless drivers or OpenWRT/LEDE with ath9k wireless drivers, on WPJ342, WPJ344, WPJ531, WPJ558, WPJ563, WPJ564, WPQ864, and WPQ865.
Modulation Techniques	OFDM: BPSK, QPSK, 16-QAM, 64-QAM
Environmental Temperature Range	Operating: -20°C to 70°C Storage: -40°C to 90°C
Environmental Humidity, non-condensing	Operating: 5% to 95% Storage: Max. 90%
ESD Sensitivity	Class 1C
Dimensions (W x H x D)	30.0 mm x 50.9 mm x 3.2 mm

## RF Performance Table for 2.4GHz

	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
2.4GHz 802.11b	1Mbps	18dBm	21dBm	±2dB
	2Mbps	18dBm	21dBm	±2dB
	5.5Mbps	18dBm	21dBm	±2dB
	11Mbps	18dBm	21dBm	±2dB
2.4GHz 802.11g	6Mbps	17dBm	20dBm	±2dB
	9Mbps	17dBm	20dBm	±2dB
	12Mbps	17dBm	20dBm	±2dB
	18Mbps	17dBm	20dBm	±2dB
	24Mbps	17dBm	20dBm	±2dB
	36Mbps	17dBm	20dBm	±2dB
	48Mbps	16dBm	19dBm	±2dB
2.4GHz 802.11n HT20	54Mbps	15dBm	18dBm	±2dB
	MCS 0	17dBm	20dBm	±2dB
	MCS 1	17dBm	20dBm	±2dB
	MCS 2	17dBm	20dBm	±2dB
	MCS 3	17dBm	20dBm	±2dB
	MCS 4	17dBm	20dBm	±2dB
	MCS 5	17dBm	20dBm	±2dB
	MCS 6	14dBm	17dBm	±2dB
2.4GHz 802.11n HT40	MCS 7	10dBm	13dBm	±2dB
	MCS 0	17dBm	20dBm	±2dB
	MCS 1	17dBm	20dBm	±2dB
	MCS 2	17dBm	20dBm	±2dB
	MCS 3	17dBm	20dBm	±2dB
	MCS 4	17dBm	20dBm	±2dB
	MCS 5	17dBm	20dBm	±2dB
	MCS 6	14dBm	17dBm	±2dB
MCS 7	9dBm	12dBm	±2dB	

	Data Rate	RX Specifications Sensitivity	Tolerance
2.4GHz 802.11b	1Mbps	-94dBm	±2dB
	2Mbps	-94dBm	±2dB
	5.5Mbps	-94dBm	±2dB
	11Mbps	-92dBm	±2dB
2.4GHz 802.11g	6Mbps	-94dBm	±2dB
	9Mbps	-94dBm	±2dB
	12Mbps	-93dBm	±2dB
	18Mbps	-91dBm	±2dB
	24Mbps	-87dBm	±2dB
	36Mbps	-83dBm	±2dB
	48Mbps	-81dBm	±2dB
2.4GHz 802.11n HT20	54Mbps	-79dBm	±2dB
	MCS 0	-94dBm	±2dB
	MCS 1	-93dBm	±2dB
	MCS 2	-91dBm	±2dB
	MCS 3	-86dBm	±2dB
	MCS 4	-84dBm	±2dB
	MCS 5	-81dBm	±2dB
	MCS 6	-78dBm	±2dB
2.4GHz 802.11n HT40	MCS 7	-73dBm	±2dB
	MCS 0	-90dBm	±2dB
	MCS 1	-88dBm	±2dB
	MCS 2	-86dBm	±2dB
	MCS 3	-83dBm	±2dB
	MCS 4	-80dBm	±2dB
	MCS 5	-76dBm	±2dB
	MCS 6	-74dBm	±2dB
MCS 7	-72dBm	±2dB	

## RF Performance Table for 5GHz

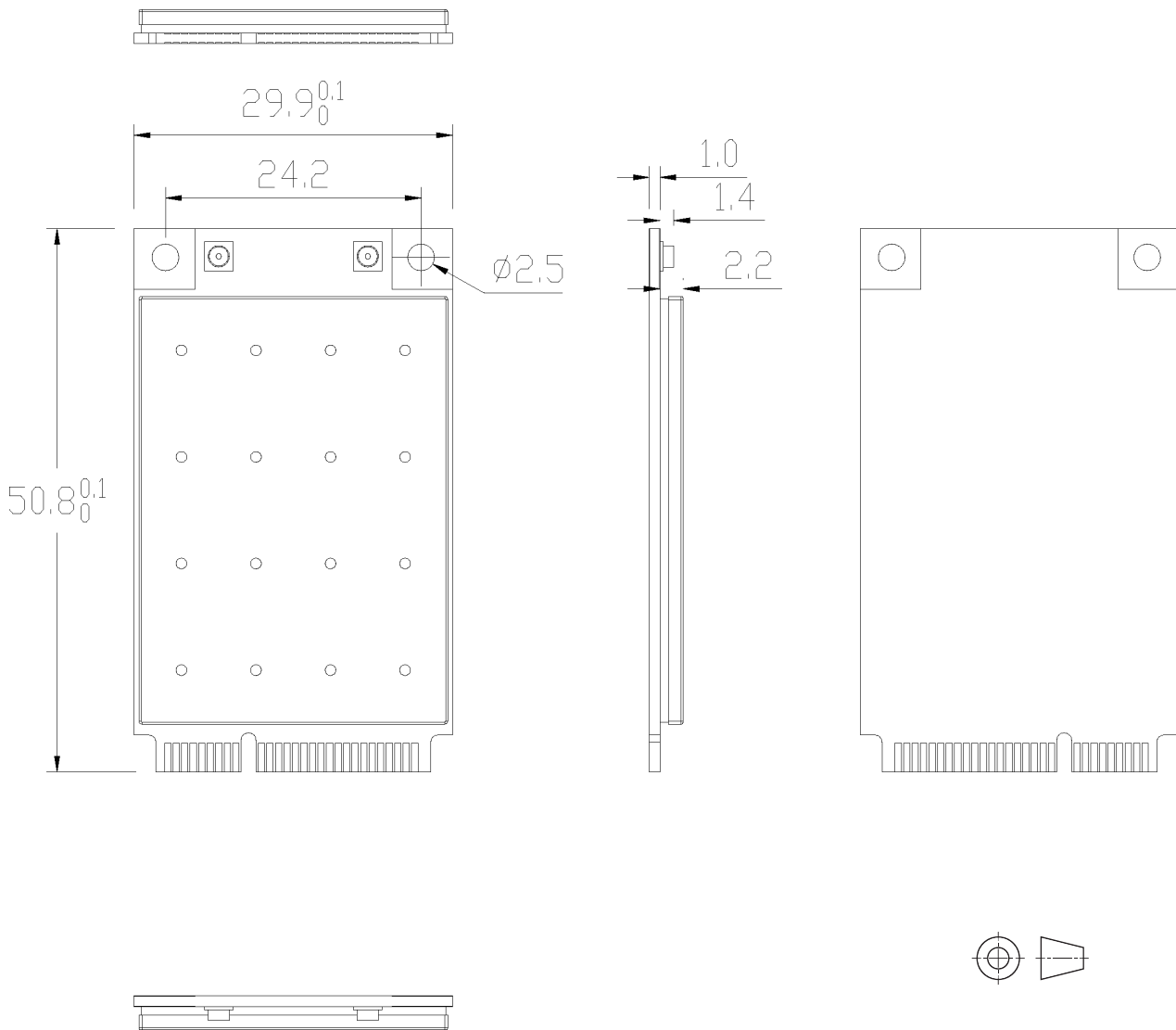
	Data Rate	TX Power (per chain)	TX Power (2 chains)	Tolerance
5GHz 802.11a	6Mbps	17dBm	20dBm	±2dB
	9Mbps	17dBm	20dBm	±2dB
	12Mbps	17dBm	20dBm	±2dB
	18Mbps	17dBm	20dBm	±2dB
	24Mbps	17dBm	20dBm	±2dB
	36Mbps	15dBm	18dBm	±2dB
	48Mbps	13dBm	16dBm	±2dB
	54Mbps	12dBm	15dBm	±2dB
5GHz 802.11n VHT20	MCS 0	17dBm	20dBm	±2dB
	MCS 1	17dBm	20dBm	±2dB
	MCS 2	17dBm	20dBm	±2dB
	MCS 3	17dBm	20dBm	±2dB
	MCS 4	17dBm	20dBm	±2dB
	MCS 5	16dBm	19dBm	±2dB
	MCS 6	13dBm	16dBm	±2dB
	MCS 7	9dBm	12dBm	±2dB
5GHz 802.11n VHT40	MCS 0	17dBm	20dBm	±2dB
	MCS 1	17dBm	20dBm	±2dB
	MCS 2	17dBm	20dBm	±2dB
	MCS 3	17dBm	20dBm	±2dB
	MCS 4	17dBm	20dBm	±2dB
	MCS 5	16dBm	19dBm	±2dB
	MCS 6	13dBm	16dBm	±2dB
	MCS 7	9dBm	12dBm	±2dB

	Data Rate	RX Specifications Sensitivity	Tolerance
5GHz 802.11a	6Mbps	-94dBm	±2dB
	9Mbps	-94dBm	±2dB
	12Mbps	-93dBm	±2dB
	18Mbps	-91dBm	±2dB
	24Mbps	-88dBm	±2dB
	36Mbps	-85dBm	±2dB
	48Mbps	-82dBm	±2dB
	54Mbps	-77dBm	±2dB
5GHz 802.11n VHT20	MCS 0	-93dBm	±2dB
	MCS 1	-91dBm	±2dB
	MCS 2	-87dBm	±2dB
	MCS 3	-85dBm	±2dB
	MCS 4	-82dBm	±2dB
	MCS 5	-79dBm	±2dB
	MCS 6	-76dBm	±2dB
	MCS 7	-74dBm	±2dB
5GHz 802.11n VHT40	MCS 0	-90dBm	±2dB
	MCS 1	-88dBm	±2dB
	MCS 2	-85dBm	±2dB
	MCS 3	-82dBm	±2dB
	MCS 4	-79dBm	±2dB
	MCS 5	-76dBm	±2dB
	MCS 6	-75dBm	±2dB
	MCS 7	-73dBm	±2dB

## Connector Map



## Mechanical Dimensions



## Ordering Configuration

Item Code	Model	Description
WLE200NX 7A0000S	WLE200NX	802.11a/b/g/n Mini PCIe card