

## COMPEX WLM200NX 802.11n a/b/g Dual-band Wireless miniPCI Module



The **WLM200NX** 20dBm miniPCI network adapter provides leading 802.11n a/b/g performance, supporting up to 300Mbps physical data rates and about 200Mbps of actual user throughput on both the uplink and downlink. Adding wireless N to your wireless device, it provides higher efficiency for everyday activities such as file transfers, Internet browsing, and media streaming. The **WLM200NX** miniPCI offers high output power of 100 mW, allowing an extended range of wireless coverage. Combined with excellent receiver sensitivity, the **WLM200NX** is one of the best choice for long distance links, or those where signal levels are reduced due to minor obstructions such as trees or building.

Atheros AR9220 single-chip and 2 antennas design supports 2 simultaneous traffic MIMO streams using up to 2 integrated Tx and Rx assuring a higher quality experience to enhance user's satisfaction

### Highlights:

- 802.11n draft compliance effectively interoperates with other chipsets.
- Operating in 2.4GHz and 5.8GHz bands, data rate up to 300Mbps for 40Mhz channel
- Supports IEEE 802.11a / 802.11b / 802.11g backward compatibility allowing inter-operability among multiple wifi networks.
- Maximum 20 dBm output power
- Atheros AR9220 chip, 2Tx2R spatial multiplexing technique
- Two UFL antenna connectors support MIMO functionality
- Transmission Power Control (TPC)
- Dynamic Frequency Selection (DFS)
- PCI Interface v2.3 (Type III-B Mini-PCI)

### Specification

|                   |  |
|-------------------|--|
| Chipset           | Atheros AR9220                                       |
| Interface Type    | PCI Interface v2.3 ( Type III-A miniPCI form factor) |
| Standards         | IEEE 802.11n Draft, IEEE 802.11a, 802.11b, 802.11g   |
| Operating Voltage | 3.3 V  |
| Power Consumption | 2W   |
| Antenna Connector | 2 x U.FL Antenna Connector                           |

|                                    |  |   |
|------------------------------------|--|---|
| <b>Frequency Bands</b>             | IEEE 802.11n   | 2.412 – 2.462GHz (US & Canada)<br>2.412 – 2.472GHz (Europe)<br>2.412 – 2.484GHz (Japan)   |
|                                    | IEEE 802.11a   | 5.150 – 5.350GHz, 5.470 - 5.725GHz, 5.725 – 5.850GHz (US & Canada)<br>5.150 – 5.350GHz, 5.470 - 5.725GHz, 5.725 – 5.875GHz (Europe)<br>5.150 – 5.250GHz, 5.270 - 5.350GHz, 5.470 – 5.725GHz (Japan) |
|                                    | IEEE 802.11g   | 2.412 – 2.462GHz (US & Canada)<br>2.412 – 2.472GHz (Europe)<br>2.412 – 2.484GHz (Japan)   |
|                                    | IEEE 802.11b   | 2.412 – 2.462GHz (US & Canada)<br>2.412 – 2.472GHz (Europe)<br>2.412 – 2.484GHz (Japan)   |
| <b>Modulation</b>                  | OFDM: BPSK, QPSK, 16QAM, 64QAM<br>DSSS: DBPSK, DQPSK, CCK  |   |
| <b>Radio &amp; EMC Certificate</b> | FCC Part 15.407 (5.150--5.350GHz & 5.470--5.725GHz & 5.725 ~ 5.825GHz),<br>FCC Part 15.247 (5.725 ~ 5.850GHz),<br>FCC Part 15.247 (2.400 ~ 2.4835GHz),<br>FCC CFR Title 47 Part 15 Subpart C: Section 15.207<br>FCC CFR Title 47 Part 15 Subpart C: Section 15.209<br>FCC CFR Title 47 Part 15 Subpart C: 15.215(c)<br>FCC CFR Title 47 Part 15 Subpart B: Class B ANSI C63.4<br>FCC OET 65<br>Limited module level approval.<br><br>ETSI, EN 301 893, EN 302 502, EN 300 328, EN 301 489- 1/17, EN 50392, EN 55022, EN 55024, EN 61000-3-2/3, EN 61000-4-3/4/5/6/11 |   |
| <b>ROHS Compliance</b>             | Yes  |   |
| <b>Environment Specifications</b>  | Operating: -20C to 70C<br>Storage: -20C to 90C   |   |
| <b>Humidity</b>                    | 5% to 95% (non-condensing)   |   |
| <b>Dimension</b>                   | 59.6 x 51 x 3 mm   |   |
| <b>Warranty</b>                    | 1 year   |   |

**WLM200NX TX Specifications**

|                            | <b>Data Rate</b>   | <b>TX Power<br/>(+/- 2dBm)</b>   |  |                            | <b>Data Rate</b>   | <b>TX Power<br/>(+/- 2dBm)</b>   |
|----------------------------|--|--|--|----------------------------|--|--|
| <b>802.11a</b>             | 6-24Mbps<br>36Mbps<br>48Mbps<br>54Mbps   | 18dBm<br>18dBm<br>17dBm<br>16dBm   |  | <b>802.11b/g</b>           | 6-24Mbps<br>36Mbps<br>48Mbps<br>54Mbps   | 20dBm<br>19.5dBm<br>18.5dBm<br>17dBm   |
| <b>2.4GHz 11n<br/>HT20</b> | MCS0<br>MCS1<br>MCS2<br>MCS3<br>MCS4<br>MCS5   | 18dBm<br>18dBm<br>18dBm<br>17.5dBm<br>17.5dBm<br>17dBm   |  | <b>2.4GHz 11n<br/>HT40</b> | MCS0<br>MCS1<br>MCS2<br>MCS3<br>MCS4<br>MCS5   | 18dBm<br>18dBm<br>17.5dBm<br>17dBm<br>16.5dBm<br>16dBm   |
|                            | MCS6<br>MCS7<br>MCS8<br>MCS9<br>MCS10<br>MCS11<br>MCS12<br>MCS13<br>MCS14<br>MCS15   | 16dBm<br>15dBm<br>18dBm<br>18dBm<br>18dBm<br>17.5dBm<br>17.5dBm<br>17dBm<br>16dBm<br>15dBm   |  |                            | MCS6<br>MCS7<br>MCS8<br>MCS9<br>MCS10<br>MCS11<br>MCS12<br>MCS13<br>MCS14<br>MCS15   | 15.5dBm<br>14.5dBm<br>18dBm<br>18dBm<br>17.5dBm<br>17dBm<br>16.5dBm<br>16dBm<br>15.5dBm<br>14.5dBm   |
| <b>5GHz 11n<br/>HT20</b>   | MCS0<br>MCS1<br>MCS2<br>MCS3<br>MCS4<br>MCS5<br>MCS6<br>MCS7<br>MCS8<br>MCS9<br>MCS10<br>MCS11<br>MCS12<br>MCS13<br>MCS14<br>MCS15 | 18dBm<br>18dBm<br>17.5dBm<br>17.5dBm<br>16.5dBm<br>16dBm<br>15dBm<br>12dBm<br>18dBm<br>18dBm<br>17.5dBm<br>17.5dBm<br>16.5dBm<br>16dBm<br>15dBm<br>12dBm |  | <b>5GHz 11n<br/>HT40</b>   | MCS0<br>MCS1<br>MCS2<br>MCS3<br>MCS4<br>MCS5<br>MCS6<br>MCS7<br>MCS8<br>MCS9<br>MCS10<br>MCS11<br>MCS12<br>MCS13<br>MCS14<br>MCS15 | 16.5dBm<br>16.5dBm<br>16.5dBm<br>16.5dBm<br>16.5dBm<br>14.5dBm<br>14dBm<br>9dBm<br>16.5dBm<br>16.5dBm<br>16.5dBm<br>16.5dBm<br>16.5dBm<br>14.5dBm<br>14dBm<br>9dBm |

**WLM200NX RX Specifications**

|                   | <b>Data Rate</b>   |  | <b>Sensitivity</b><br>(Maximum/Typical +/- 2dBm) |  |  |
|-------------------|--|--|--|--|--|
| 802.11b           | 1M<br>5.5M<br>11M  |  | -96 / -92dBm<br>-94 / -90dBm<br>-91 / -87dBm     |  |  |
|                   | <b>Data Rate</b>   | <b>Sensitivity</b><br>(Maximum/Typical +/- 2dBm)   |  | <b>Data Rate</b>   | <b>Sensitivity</b><br>(Maximum/Typical +/- 2dBm)   |
| 802.11a           | 6Mbps<br>9Mbps<br>12Mbps<br>18Mbps<br>24Mbps<br>36Mbps<br>48Mbps<br>54Mbps   | -95 / -91dBm<br>-95 / -91dBm<br>-95 / -91dBm<br>-94 / -90dBm<br>-90 / -86dBm<br>-87 / -83dBm<br>-83 / -79dBm<br>-82 / -78dBm   | 802.11g  | 6Mbps<br>9Mbps<br>12Mbps<br>18Mbps<br>24Mbps<br>36Mbps<br>48Mbps<br>54Mbps   | -96 / -92dBm<br>-96 / -92dBm<br>-96 / -92dBm<br>-95 / -91dBm<br>-92 / -88dBm<br>-89 / -85dBm<br>-85 / -81dBm<br>-83 / -79dBm   |
| 802.11a/n<br>HT20 | MCS0<br>MCS1<br>MCS2<br>MCS3<br>MCS4<br>MCS5<br>MCS6<br>MCS7<br>MCS8<br>MCS9<br>MCS10<br>MCS11<br>MCS12<br>MCS13<br>MCS14<br>MCS15 | -91 / -87dBm<br>-90 / -86dBm<br>-88 / -84dBm<br>-85 / -81dBm<br>-82 / -78dBm<br>-78 / -74dBm<br>-77 / -73dBm<br>-74 / -70dBm<br>-91 / -87dBm<br>-88 / -84dBm<br>-86 / -82dBm<br>-83 / -79dBm<br>-80 / -76dBm<br>-75 / -71dBm<br>-73 / -69dBm<br>-70 / -66dBm | 802.11b/g/n<br>HT20                              | MCS0<br>MCS1<br>MCS2<br>MCS3<br>MCS4<br>MCS5<br>MCS6<br>MCS7<br>MCS8<br>MCS9<br>MCS10<br>MCS11<br>MCS12<br>MCS13<br>MCS14<br>MCS15 | -90 / -86dBm<br>-90 / -86dBm<br>-89 / -85dBm<br>-87 / -82dBm<br>-84 / -79dBm<br>-79 / -75dBm<br>-78 / -74dBm<br>-75 / -71dBm<br>-90 / -86dBm<br>-89 / -85dBm<br>-87 / -83dBm<br>-84 / -80dBm<br>-81 / -77dBm<br>-76 / -72dBm<br>-74 / -68dBm<br>-71 / -67dBm |
| 802.11a/n<br>HT40 | MCS0<br>MCS1<br>MCS2<br>MCS3<br>MCS4<br>MCS5<br>MCS6<br>MCS7<br>MCS8<br>MCS9<br>MCS10<br>MCS11<br>MCS12<br>MCS13<br>MCS14<br>MCS15 | -95 / -91dBm<br>-95 / -91dBm<br>-95 / -91dBm<br>-94 / -90dBm<br>-90 / -86dBm<br>-87 / -83dBm<br>-83 / -79dBm<br>-82 / -78dBm<br>-95 / -91dBm<br>-95 / -91dBm<br>-95 / -91dBm<br>-94 / -90dBm<br>-90 / -86dBm<br>-87 / -83dBm<br>-83 / -79dBm<br>-82 / -78dBm | 802.11b/g/n<br>HT40                              | MCS0<br>MCS1<br>MCS2<br>MCS3<br>MCS4<br>MCS5<br>MCS6<br>MCS7<br>MCS8<br>MCS9<br>MCS10<br>MCS11<br>MCS12<br>MCS13<br>MCS14<br>MCS15 | -95 / -91dBm<br>-95 / -91dBm<br>-95 / -91dBm<br>-94 / -90dBm<br>-90 / -86dBm<br>-87 / -83dBm<br>-83 / -79dBm<br>-82 / -78dBm<br>-95 / -91dBm<br>-95 / -91dBm<br>-95 / -91dBm<br>-94 / -90dBm<br>-90 / -86dBm<br>-87 / -83dBm<br>-83 / -79dBm<br>-82 / -78dBm |

Dimension:

