



# AX-931

802.11ax (4X4) PCI Express Mini Card



The AX-931 with Qualcomm® 802.11ax technology is a highly integrated wireless local area network (WLAN) system-on-chip (SoC) and is equipped with PCI Express 3.0 interface and M.2 E key slot. The AX-931 performs AP and STA functionality with 4x4 MIMO and 4 spatial streams, enabling applications such as video streaming, AR & VR, high-speed tethering, etc.

|                          |   |  |
|--------------------------|---|--|
| Hardware                 | Standards   | IEEE 802.11ax  |
|                          | Host Interface  | PCI Express 3.0 interface, M.2 E-key   |
|                          | Operating Voltage   | 3.3V/5V  |
|                          | Operating Frequency   | 6.105GHz~7.125GHz  |
|                          | Modulation  | 802.11n: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)<br>802.11ac: OFDM (BPSK, QPSK, 16-QAM, 64-QAM, 256-QAM)<br>802.11ax: OFDMA (BPSK, QPSK, DBPSK, DQPSK, 16-QAM, 64-QAM, 256-QAM, 1024-QAM, 4096-QAM) |
|                          | Output Power  | 802.11ax: Max. 23dBm (per chain)   |
|                          | Power Consumption   | ≤15W   |
|                          | Receive Sensitivity   | 802.11ax<br>HE20 MCS0 < -82dBm / MCS11 < -52dBm<br>HE40 MCS0 < -79dBm / MCS11 < -49dBm<br>HE80 MCS0 < -76dBm / MCS11 < -46dBm  |
|                          | Antenna Connector   | 4x U.FL Connectors   |
| Physical Characteristics | <b>Weight</b>   | <b>Dimensions</b>  |
|                          | 20g   | 60 (L) x 57 (W) x 4.1 (H) mm (Tolerance±0.15mm)  |
| Environmental            | <b>Operating</b>  | <b>Storage</b>   |
|                          | Temperature: -20°C to 70°C<br>Humidity: 95%<br>(non-condensing) | Temperature: -40°C to 90°C<br>Humidity: 90%<br>(non-condensing)  |
| Safety Approval          | RoHS/REACH Compliance   |  |

**PIN Definition**

| No. | Description | No. | Description  | No. | Description   | No. | Description  | No. | Description |
|-----|-------------|-----|--------------|-----|---------------|-----|--------------|-----|-------------|
| 1   | GND         | 2   | 3V3          | 3   | NC            | 4   | 3V3          | 5   | NC          |
| 6   | PCIE_LED0   | 7   | GND          | 8   | UART_TXD      | 9   | NC           | 10  | UART_RXD    |
| 11  | NC          | 12  | NC           | 13  | NC            | 14  | NC           | 15  | 5V          |
| 16  | PCIE_LED1   | 17  | 5V           | 18  | GND           | 19  | 5V           | 20  | NC          |
| 21  | 5V          | 22  | NC           | 23  | 5V            | 24  | Key          | 25  | Key         |
| 26  | Key         | 27  | Key          | 28  | Key           | 29  | Key          | 30  | Key         |
| 31  | Key         | 32  | NC           | 33  | GND           | 34  | NC           | 35  | PCIE_RX0+   |
| 36  | NC          | 37  | PCIE_RX0-    | 38  | PTA2_BT_PRIO  | 39  | GND          | 40  | PTA2_WL_ACT |
| 41  | PCIE_TX0+   | 42  | PTA2_BT_ACT  | 43  | PCIE_TX0-     | 44  | PTA1_BT_PRIO | 45  | GND         |
| 46  | PTA1_WL_ACT | 47  | PCIE_REFCLK+ | 48  | PTA1_BT_ACT   | 49  | PCIE_REFCLK- | 50  | NC          |
| 51  | GND         | 52  | PCIE_RST     | 53  | PCIE_CLKREQ_N | 54  | NC           | 55  | PCIE_WAKE_N |
| 56  | PCIE_WDIS_N | 57  | GND          | 58  | NC            | 59  | PCIE_RX1+    | 60  | NC          |
| 61  | PCIE_RX1-   | 62  | NC           | 63  | GND           | 64  | NC           | 65  | PCIE_TX1+   |
| 66  | NC          | 67  | PCIE_TX1-    | 68  | NC            | 69  | GND          | 70  | NC          |
| 71  | NC          | 72  | 3V3          | 73  | NC            | 74  | 3V3          | 75  | GND         |