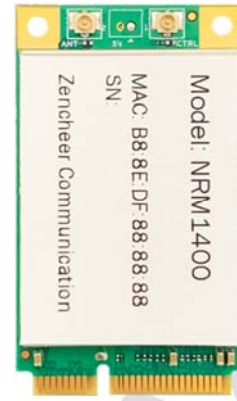


NRM1400 is a 1.4GHz licensed band wireless transceiver with Mini PCIe interface developed by Zencheer. NRM1400 is easy to integrated to customers' network processing board and It's suitable for short range NLOS point-to-point, point-to-multi-point and mesh network applications.

Key Features

- 1.433-1.443GHz Licensed Band
- Standard PCI Express Mini Card Size
- Output Power Up To 23dBm
- Rx Sensitivity Up To -88dBm



Specifications

| | |
|--------------------------------------|------------------------------------------------|
| Operating Frequency | 1.433-1.443GHz (or customized) |
| Channel Bandwidth | 5/10/20MHz |
| Available Channel¹ | |
| BW=5/10MHz | 1-3 |
| BW=20MHz | 2 |
| Output Power² | |
| BPSK | 23dBm |
| 64-QAM | 20dBm |
| Rx Sensitivity³ | |
| BPSK | -88dBm |
| 64-QAM | -70dBm |
| Modulation | OFDM BPSK/QPSK/16-QAM/64-QAM |
| Antenna | 1 IPX |
| Transmission Rate⁴ | 40Mbps |
| Interface⁵ | Mini PCI Express |
| Debug | |
| Tx Enable ⁶ | 1 IPX |
| Power Supply | 3.3V/1A, 5.0V/1A |
| Size | 50.9*29.9*5.8mm |
| Operating Range | Storage: 40°C~+125°C Operation: -20°C~+65°C |
| Weight | 10g |

Linux Driver

ATH9K
AP(WDS)/Client(WDS)/Ad-hoc/Mesh Mode Supported

Attachment

No

¹ Channel spacing: 5MHz

² Average power @BW=20MHz with 99% duty cycle

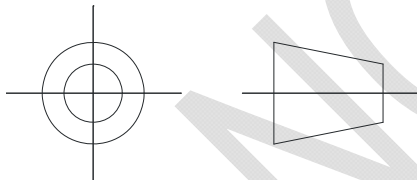
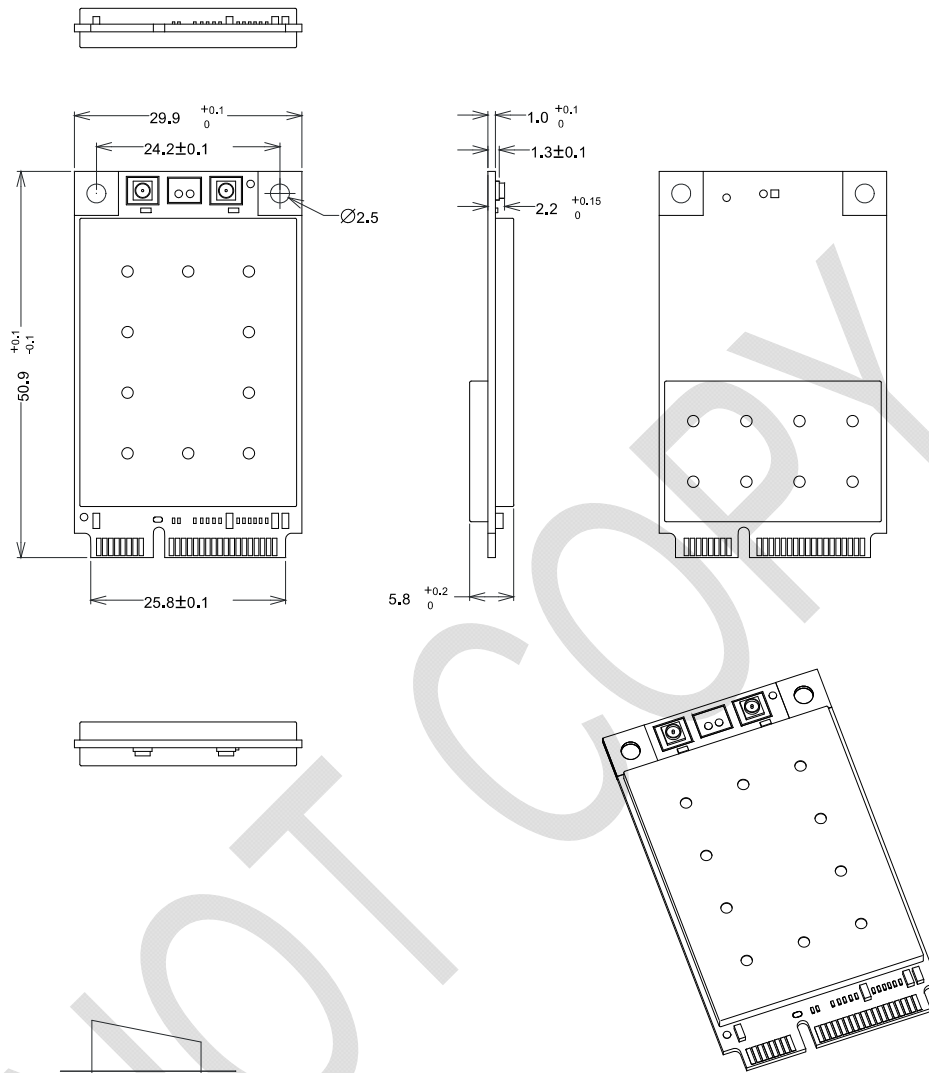
³ Rx sensitivity @BW=20MHz with 10% packet loss

⁴ Maximum TCP transmission rate @BW=20MHz with multi stream

⁵ Pin definition please refer to appendix 1

⁶ Output high (3.3V) case in Tx state and output low (0V) case in Rx state

Mechanical Dimension



All dimensions are in mm.

Appendix 1 NRM1400 Pin Definition

| Number | Name | Description | Number | Name | Description |
|--------|-----------|-----------------------------|--------|----------|-----------------------------|
| 1 | WAKE_L | Enable, optional | 27 | GND | GND, required |
| 2 | 3.3V | 3.3V power supply, required | 28 | 1.5V | No connection |
| 3 | RESERVED | I/O | 29 | GND | GND, required |
| 4 | GND | GND, required | 30 | SMB_CLK | No connection |
| 5 | RESERVED | No connection | 31 | PETNO | Tx, required |
| 6 | 1.5V | No connection | 32 | SMB_DATA | No connection |
| 7 | CLKREQ_L | Clock request, optional | 33 | PETPO | Tx+, required |
| 8 | UIM_PWR | No connection | 34 | GND | GND, required |
| 9 | GND | GND, required | 35 | GND | GND, required |
| 10 | UIM_DATA | No connection | 36 | USB_D- | No connection |
| 11 | REFCLK- | Reference clock-, required | 37 | RESERVED | 5V power supply, required |
| 12 | UIM_CLK | No connection | 38 | USB_D+ | No connection |
| 13 | REFCLK+ | Reference clock+, required | 39 | RESERVED | 5V power supply, required |
| 14 | UIM_RESET | No connection | 40 | GND | GND, required |
| 15 | GND | GND, required | 41 | RESERVED | 5V power supply, required |
| 16 | UIM_VPP | No connection | 42 | LED_WWAN | No connection |
| 17 | UIM_C8 | No connection | 43 | RESERVED | GND, optional |
| 18 | GND | GND, required | 44 | LED_WLAN | I/O, optional |
| 19 | UIM_C4 | No connection | 45 | RESERVED | GND, optional |
| 20 | W_DISABLE | I/O, optional | 46 | LED_WPAN | No connection |
| 21 | GND | GND, required | 47 | RESERVED | No connection |
| 22 | PERST | Reset, required | 48 | 1.5V | No connection |
| 23 | PERNO | Rx-, required | 49 | RESERVED | No connection |
| 24 | 3.3V AUX | No connection | 50 | GND | GND, required |
| 25 | PERPO | Rx+, required | 51 | RESERVED | No connection |
| 26 | GND | GND, required | 52 | 3.3V | 3.3V power supply, required |