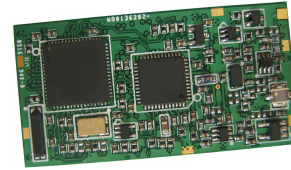


# ZMN-2400HP 2.4GHZ HIGH POWER ZIGBEE™ WIRELESS MESH NETWORKING MODULE

Occupying less than one square inch of space, the low cost ZMN2400HP module is ideal for applications needing higher RF power (+18dBm, +20dBm w/dipole antenna) and for higher data rate applications, including industrial sensors, building and home automation, and any other applications requiring ZigBee's unique capabilities. The 2.4GHz, license-free band is also more widely accepted internationally.



Actual size

**ZigBee/802.15.4.** The ZMN2400HP is fully 802.15.4 and can be upgraded to the latest level ZigBee software. The ZMN2400HP can operate as a reduced function device (RFD) for end devices to consume the least amount of power, or as a full function device (FFD) to act as a base radio in a star network or a router in a mesh network.

**Industrial Networking.** With +18dBm of transmit power, the ZMN2400HP has the power to communicate in industrial and high noise environments. The ZMN2400HP also has a full industrial temperature operating range, -40°C to +85°C. Building on Cirronet's many years of developing products for industrial applications, the ZMN2400HP is uniquely designed with Cirronet's proprietary technology that guarantees industrial grade performance.

**Rapid & Cost-Effective Integration.** The ZMN-2400HP is treated just like other integrated circuits. Even though it is a complete RF module, it is reflow soldered to the host PCB - there is no need for expensive, unreliable connectors and with its small

footprint, there is no size penalty for using a module. Cirronet has relied on its experience in helping hundreds of OEM integrate Cirronet modules to create a full set of development and configuration tools.

**FCC Certification/CE Marked.** Cirronet has built the ZMN-2400 module to allow FCC certification and CE Marking as a module. This means FCC & CE type acceptance testing is not required for the device into which the module is integrated, saving you money and getting your product to market faster.

**Let us be your experts.** Cirronet has delivered high-performance wireless products since 1987. To find out how to put our experience to work for you, call **+1.678.684.2000** or visit our website at **[www.cirronet.com](http://www.cirronet.com)**

## FEATURES:

- 2.4 GHz Direct Sequence Spread Spectrum technology
- Ad hoc mesh network
- High Power (+18dBm)
- Small size, light weight
- FCC certified & CE marked for unlicensed operation

## BENEFITS:

- Worldwide license-free operation
- Fast acquisition time
- Redundant, self healing network
- Supports large number of nodes
- Ideal for noisy, industrial applications
- Easy to integrate
- Shortens time to market
- Low cost



**CIRRONET.**  
An ISO 9001:2000 Certified Company

# ZMN2400HP SPECIFICATIONS

## GENERAL SPECIFICATIONS

RF Frequency	2401 - 2483.5 MHz
Spreading Method	Direct Sequence
Modulation	O-QPSK
Transmit Power	+18dBm into 50 ohms (+20dBm with dipole antenna to meet ETSI limit)
Receive Sensitivity	-95 dBm for 10 <sup>-5</sup> BER
RF Channels	16
RF Data Rate	250 Kbps
I/O	1 – SPI Port 6 – General purpose I/O lines 3 – 10-bit ADCs 2 – PWMs 1 – UART
Operating Voltage	3.3Vdc – 5.5Vdc
Current Consumption	Sleep – 25 $\mu$ A@3.3V Receive – 50 mA@3.3V Transmit – 150 mA@3.3V
Operating Temperature	-40°C to +85°C

## CONNECTOR PINOUT

Pin 1 - Vcc	Pin 39 - GND
Pin 2 - GND	Pin 38 - RF
Pin 3 - PWMA	Pin 37 - GND
Pin 4 - PWMB	Pin 36 - GND
Pin 5 - GPIO0	Pin 35 - NC
Pin 6 - GPIO1	Pin 34 - GND
Pin 7 - GPIO2	Pin 33 - GND
Pin 8 - GPIO3	Pin 32 - SPI_MISO
Pin 9 - GPIO4	Pin 31 - SPI_MOSI
Pin 10 - GPIO5	Pin 30 - SPI_SCLK
Pin 11 - GND	Pin 29 - SPI_EN
Pin 12 - LINK/TDO	Pin 28 - GND
Pin 13 - /TRST	Pin 27 - ADCZ
Pin 14 - ACT/TCK	Pin 26 - ADCY
Pin 15 - STAT1/TMS	Pin 25 - ADCX
Pin 16 - STAT0/TDI	Pin 24 - /RESET
Pin 17 - GND	Pin 23 - NC
Pin 18 - GND	Pin 22 - UART_TX
Pin 19 - GND	Pin 21 - UART_RX
Pin 20 - GND	

## PHYSICAL SPECIFICATIONS

