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Occupying less than one square inch of space, the low cost, low power ZMN-2400 module is ideal for higher data rate applications including industrial sensors, building and home automation and any other applications requiring low power consumption RF communications. The 2.4GHz, license-free band is also widely accepted internationally.
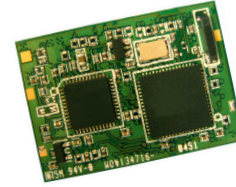
Actual size

ZigBee/802.15.4. The ZMN-2400 is fully 802.15.4 and ZigBee compliant, running a ZigBee stack with Cirronet's CSM profile. The ZMN-2400 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. Although well-suited for home and commercial environments, the ZMN-2400 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 ZMN-2400 is uniquely designed with Cirronet's proprietary technology that guarantees industrial-grade performance.

Rapid & Cost-Effective Integration. The ZMN-2400 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 OEMs 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.

Experience. Cirronet's extensive RF experience goes into every ZMN-2400 module. Our RF know-how and practical engineering have made Cirronet the choice of hundreds of OEMs. OEMs know they can rely on Cirronet products and can count on Cirronet's unsurpassed technical support to help them get their products to market.

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**

Features:

- 2.4 GHz direct sequence spread spectrum technology
- Ad hoc mesh network
- Low power consumption
- 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 battery operation
- Easy to integrate
- Shortens time to market
- Low cost

CIRRONET™

An ISO 9001:2000 Certified Company

ZMN2400 Specifications

General Specifications

RF Frequency	2401 - 2483.5 MHz
Spreading Method	Direct sequence
Modulation	O-QPSK
Transmit Power	0 dBm into 50 ohms
Receive Sensitivity	-94 dBm for 10^{-5} 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	2.7Vdc – 5.5Vdc
Current Consumption	Sleep – 25 μA@3.3V Receive – 35 mA@3.3V Transmit – 30 mA@3.3V
Operating Temperature	-40°C to +85°C

Connector Pinout

Pin 1 - VBATT	Pin 36 - GND
Pin 2 - GND	Pin 35 - RF
Pin 3 - PWMA	Pin 34 - GND
Pin 4 - PWMB	Pin 33 - GND
Pin 5 - GPIO0	Pin 32 - MISO
Pin 6 - GPIO1	Pin 31 - MOSI
Pin 7 - GPIO2	Pin 30 - SCLK
Pin 8 - GPIO3	Pin 29 - $\overline{\text{EN}}$
Pin 9 - GPIO4	Pin 28 - GND
Pin 10 - GPIO5	Pin 27 - ADC3
Pin 11 - GND	Pin 26 - ADC2
Pin 12 - TDO	Pin 25 - ADC1
Pin 13 - TRST	Pin 24 - RESET
Pin 14 - TCK	Pin 23 - TX_$\overline{\text{RX}}$
Pin 15 - TMS	Pin 22 - UART_TX
Pin 16 - TDI	Pin 21 - UART_RX
Pin 17 - GND	Pin 20 - GND
Pin 18 - GND	Pin 19 - GND

Physical Specifications