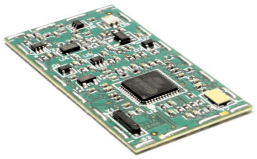
ZMN2405HP 2.4GHz High Power Single Chip ZigBee™ Wireless Mesh Networking Module

Small in size, the low cost ZMN2405HP module is ideal for ZigBee applications needing higher RF power (+18dBm, software adjustable from -2dBm to +18dBm) 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. Based on the CC2430 SoC, the sleep current is less than 3uA for the entire module.



ZigBee/802.15.4. The ZMN2405HP includes the ZigBee 2006 stack as well as Cirronet's CSM profile eliminating the need for any firmware development. The ZMN2405HP 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 Coordinator or Router. Each node type can be ordered separately or the module's bootloader can be used to load the appropriate firmware during manufacture.

Industrial Networking. With +18dBm of transmit power (adjustable to +10dBm for use in the EU), the ZMN2405HP has the power to communicate in industrial and high noise environments. The ZMN2405HP 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 ZMN2405HP is uniquely designed with Cirronet's proprietary technology that guarantees industrial grade performance.

Rapid & Cost-Effective Integration. The ZMN2405HP 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 & ETSI Certifications. Cirronet has obtained FCC and ETSI certifications 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 20 years of experience in RF goes into every ZMN2405HP 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 Cirronet's unsurpassed technical support to help get their products to market on time.

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
- High Power (+18dBm)
- Small size, light weight
- FCC & ETSI certified for unlicensed operation

Benefits:

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

CIRRONET™
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ZMN2405HP Specifications

General Specifications

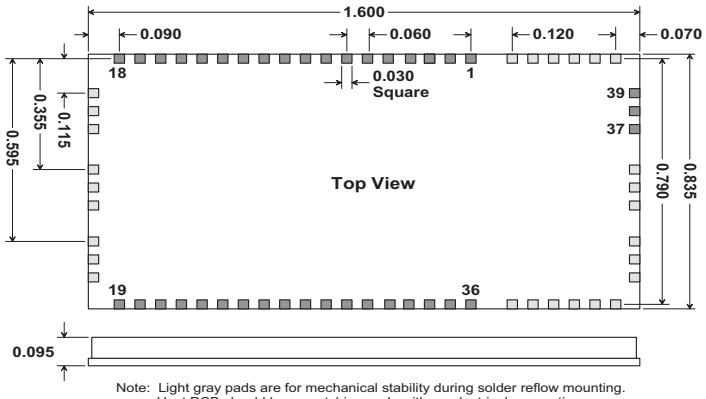
RF Frequency	2401 - 2475 MHz
Spreading Method	Direct Sequence
Modulation	O-QPSK
Transmit Power	+18dBm into 50 ohms (Software adjustable from -2dBm to +18dBm allowing ETSI certification)
Receive Sensitivity	-95 dBm for 10^{-5} BER
RF Channels	15
RF Data Rate	250 Kbps
I/O	1 – SPI Port 6 – General purpose I/O lines 3 – 7 - 12-bit ADCs 2 – PWMs 1 – UART
Operating Voltage	3.3Vdc – 5.5Vdc
Current Consumption	Sleep – <3 µA@3.3V typical Receive – 33 mA@3.3V typical Transmit – 130 mA@3.3V typical
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/DD	Pin 28 - GND
Pin 13 - /RESET	Pin 27 - ADCZ
Pin 14 - ACT/DC	Pin 26 - ADCY
Pin 15 - NC	Pin 25 - ADCX
Pin 16 - ADC REF	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

ZMN2405HP Outline and Mounting Dimensions



Note: Light gray pads are for mechanical stability during solder reflow mounting.
Host PCB should have matching pads with no electrical connection.

10/2007