

Zigbee Module MC20ZB is an extension module for Nvis Microcontroller development platforms. The module has been designed for students and practicing engineers to gain invaluable practical experience on the principle and applications of microcontroller & Zigbee module. The objective is to have a clear understanding of how Zigbee module is interfaced and controlled with microcontroller.

Zigbee modules are embedded solutions providing wireless end-point connectivity to devices. These modules use the Zigbee networking protocol for fast point-to-multipoint or peer-to-peer networking.

The Zigbee modules interface to a host device through a logic-level asynchronous serial port. Through its serial port, the module can communicate with any logic and voltage compatible UART, or through a level translator to any serial device.

Features

- ▶ **Wireless communication via Zigbee series 2 module**
- ▶ **On board 4nos 10-bit ADC**
- ▶ **On board 2 digital input switches**
- ▶ **On board PWM interface**
- ▶ **On board Power saving mode**
- ▶ **On board RSSI indicator**
- ▶ **On board Sleep mode indicator**
- ▶ **On board LED for indicator**
- ▶ **USB board for PC interface**
- ▶ **On board +5V and +3.3V Supply**
- ▶ **Board can be used as a standalone product**
- ▶ **Zigbee firmware up gradation using USB board**
- ▶ **Expansion connectors for Microcontroller**
- ▶ **Every pin is marked in order to make the work easier**

Scope of Learning

- ▶ To study the implementation, analysis and interfacing of Zigbee module
- ▶ To study implementation & analysis of peer to peer, star & mesh networking
- ▶ To study and learn to Interface Zigbee module with microcontroller
- ▶ To study and learn to use internal peripherals (ADC, PWM & I/O) of Zigbee module
- ▶ To study and design Wireless Sensor Network
- ▶ To study and design Automation applications



Node



Base



Technical Specifications

| | |
|---------------------------------|--|
| Indoor/Urban range | : Up to 80 ft |
| Outdoor RF line-of-sight range: | Up to 250 ft |
| Transmit Power output | : 1 mW (0dbm) |
| RF data rate | : 250 Kbps |
| Supply Voltage | : 2.8 - 3.4V |
| Transmit Current (typical) | : 45 mA (@ 3.3V) |
| Idle/Receive Current (typical) | : 50 mA (@ 3.3V) |
| Frequency | : ISM 2.4 GHz |
| Antenna | : Wire type |
| Network topologies | : Point to point, Star, Mesh |
| ADC | : 4 nos 10-Bit ADC (internal) |
| PWM output | : 0 to + 3.3V |
| Digital input | : 2 switches |
| LED | : +5V |
| Power Supply | : From Scientech 620X Series and Nvis 500X Series Microcontroller development platforms. |

Product Tutorial : Online (on www.NvisTech.com)

| | |
|-----------------|---------------------------|
| Interface | : 20 pin FRC cable |
| Dimensions (mm) | : W 175 x D 130 x H 28 |
| Weight | : 220 gms (approximately) |

Included Accessories

| | |
|------------------|----------|
| USB board | : 1 no. |
| Zigbee module S2 | : 2 nos. |
| USB A to B cable | : 1 no. |
| Patch cords | : 6 nos. |

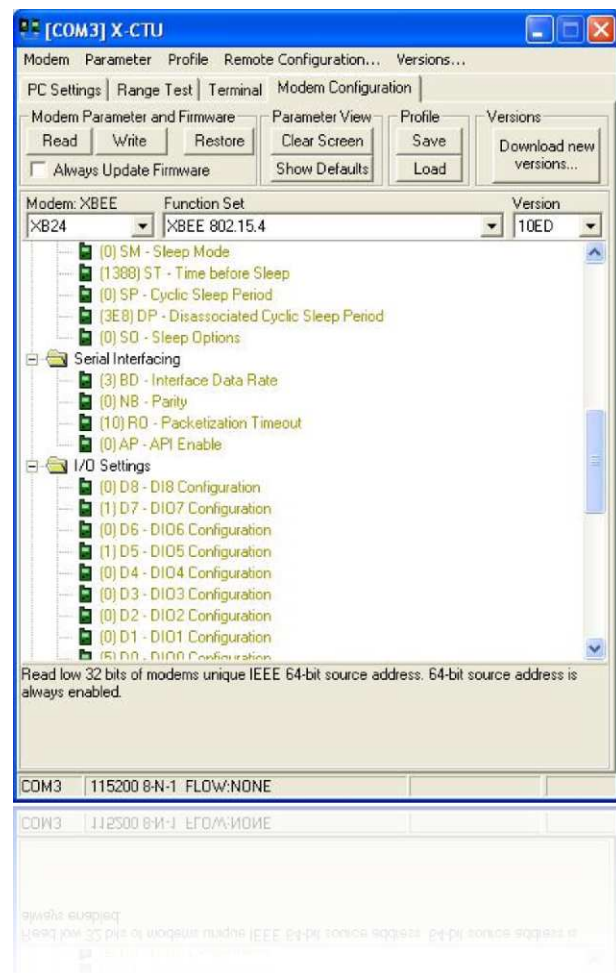
Note:

- ▶ This module is compatible with Scientech 620X Series and Nvis 5001A/2/3/4/4A/5 Series Microcontroller development platforms.
- ▶ To run MC20ZB module with Nvis 5004, add-on board is required.
- ▶ Star and Mesh networking can be created using multiple MC20ZB modules.

Applications

- ▶ Home Automation
- ▶ Security System
- ▶ Data Management
- ▶ Wireless Data logging
- ▶ Weather monitoring
- ▶ Robotics

Zigbee Configuration Software



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