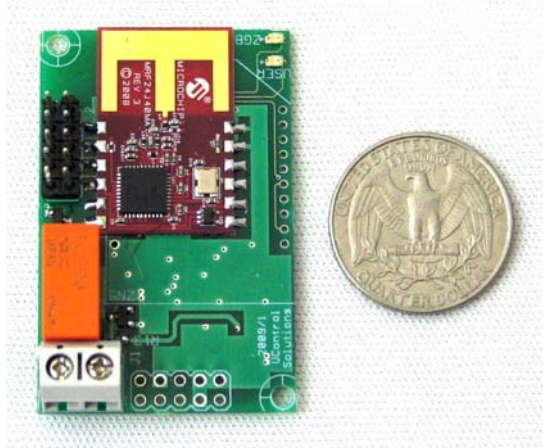




# Net-Bee MiWi™



**Net-Bee MiWi™** is a simple, but powerful controller for home or industrial wireless applications. The **Net-Bee MiWi™ controller** gives designers **2.4GHz 802.15.4** transceiver connectivity in a low-cost, high-performance single-board, rich with Digital and Analog I/O's.

The **MiWi™** Wireless Networking Protocol is a simple protocol designed for low data rate, short distance, and low-cost networks.

Design your applications with an easy to use integrated **C** compiler designed specifically for Net-Bee Wireless Controller. Use the included Libraries to speed up your development.

## Features:

- Small Size: 52x33x15mm.
- Microchip PIC18F24K20 controller@64MHz.
- 16KB Flash of User Memory Applications.
- 2.4 GHz MRF24J40MA 802.15.4 Module.
- Free space range: **Net-Bee MiWi - 300m**
- Internal antenna for **Net-Bee MiWi**.
- 3 Protected Digital Inputs ( $\pm 250v$  Surges).
- 3 channels, 10-bit A/D Inputs.
- SPDT Relay Output.
- Battery Operation - **20 $\mu$ A** in Sleep Mode.
- Wake-Up on External triggers.
- Internal Timer for Wake-Up.
- Normal and Sleep Mode operation.
- Up to 1024 nodes on a Network.
- Included libraries for easy implementation.

## Specification:

### Power Requirement

Input Voltage Range	8-16 VDC
Input Current, RF Off@32kHz	20 uA@12Vdc
Input Current, RF Transmitting	35 mA@12Vdc

### Inputs Characteristic

Number of inputs	3
Number of commons	1
Input impedance	6.6KOhm
Input voltage "ON" level	2.5 – 40 Vdc
Surge protection	$\pm 250$ V

### Analog Characteristic

Number of channels	3
Input Range	0-5 Vdc or 4-20mA: on input 3
Resolution	10-bit
Conversion Time	6 $\mu$ S

### Output Characteristic

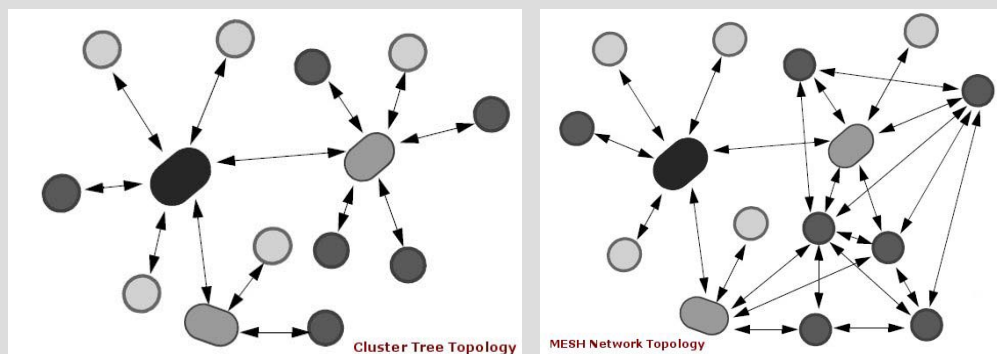
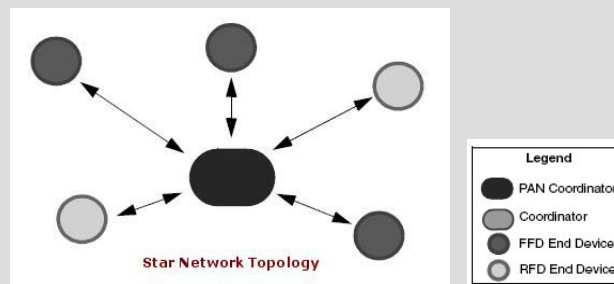
Type of Output	Dry contact.
Rating	50Vdc@0.5A



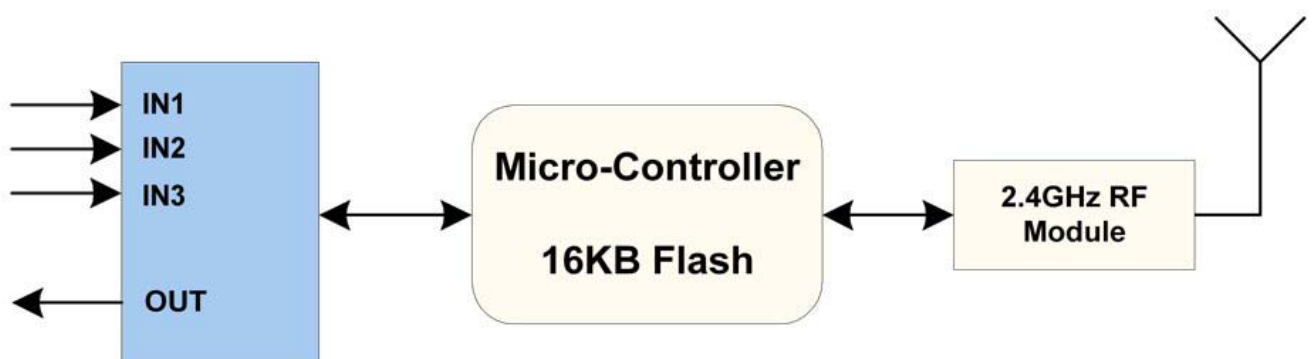
### What is Microchip MiWi™ protocol:

The MiWi™ Wireless Networking Protocol is a simple protocol designed for low data rate, short distance, low-cost networks. Fundamentally based on IEEE 802.15.4™ for wireless personal area networks (WPANs), the MiWi protocol provides an **easy-to-use** alternative for wireless communication like ZigBee.

A network using the MiWi™ protocol is capable of having a maximum of 1024 nodes on a network. Each coordinator is capable of having 127 children, with a maximum of 8 coordinators in a network. Packets can travel a maximum of 4 hops in the network and 2 hops maximum from the PAN coordinator.

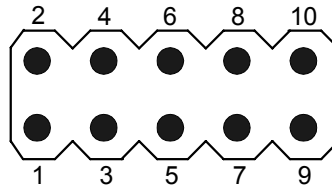


### Net-Bee Wireless Controller





### J1 User Pin Description:



Pin Number	Pin Description	Pin Number	Pin Description
1	Input 1	2	Input 2
3	Input 3	4	Common
5	4-20mA Jumper	6	4-20mA Jumper
7	Common	8	Common
9	Power (+)	10	Power (-)

### Net-Bee MiWi Applications:

- **Industrial Automation:**
  - Monitoring,
  - Sensors,
  - Controls
- **Building Automation:**
  - Security,
  - Lighting,
  - HVAC,
  - Access and Closures
- **Medical/Healthcare:**
  - Sensor Monitors,
  - Diagnostics,
  - Dispensing
- **Home Automation:**
  - Security,
  - Lighting,
  - Appliance Control,
  - HVAC
- **Instrumentation:**
  - Remote Monitoring,
  - Remote Meter Reading

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