ZigBee™/802.15.4

Application Kit

Key Features

- RabbitCore™ module running @ 22.1 MHz, and 10Base-T Ethernet. 512K Flash, 256K SRAM, 1MB Serial Flash as on-board memory, and 33 GPIO lines
- Three MaxStream® ZigBee wireless modules and cables for simple connections
- Sample programs and libraries that allow for simple digital I/O feedback and control, Ethernet to ZigBee gateway functionality, mesh networking communication
- RabbitWeb™ simplified html programming software with refresh mechanism
- User-friendly web interface for ZigBee/802.15.4 network setup, RF modem configuration, and firmware update functions.

Design Advantages:

- Reference application that uses a low-cost, low-power ZigBee 802.15.4 infrastructure to connect Rabbit-based devices
- Supports topologies: point-to-point, point-to-multipoint and mesh
- Easily scalable for commercial deployment applications
- RabbitCore can function as a network coordinator, gateway, or control device

Applications

- Low-cost wireless embedded control applications
- Ideal for remote monitoring of equipment, devices, assets
- Simple data logging applications
- Mesh networking control
- Wireless I/O Control
- Controlling XBee™ equipped devices

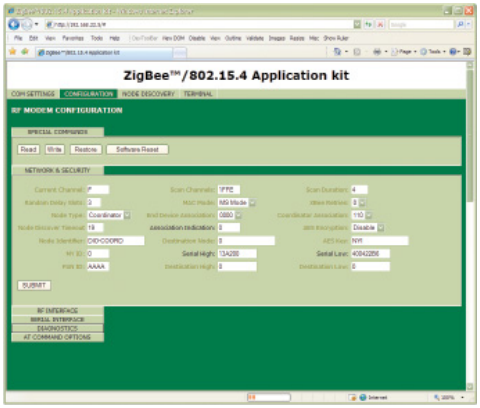
ZigBee/802.15.4 Application Kit - Control and communicate using a low-cost, low-power, embedded wireless solution

The ZigBee/802.15.4 Application Kit combines MaxStream's XBee RF modem with the popular RCM3720 RabbitCore module along with an easy-to-use interface to help customers build a practical ZigBee wireless control network. ZigBee paired with the RCM3720 provides a low-cost, robust wireless infrastructure that allows users to monitor and control remote devices within a wireless meshed network.

ZigBee™ is a wireless technology known for its reliable, low-cost, lower power characteristics, based on the established IEEE 802.15.4 standard for packet-based, wireless data transport. Rabbit's ZigBee/802.15.4 Application Kit provides all the tools to integrate a ZigBee wireless module into your Rabbit-based solutions.

The kit contains three MaxStream® ZigBee modules for full application reference. One ZigBee module is connected to an Ethernet enabled RCM3720 RabbitCore Module. The RCM3720 runs at 22.1 MHz, and provides 10Base-T Ethernet. 512K Flash, 256K SRAM, 1MB Serial Flash as on-board memory, and 33 GPIO lines. The other two ZigBee modules are standalone node devices.

Samples, libraries and firmware helps to integrate a ZigBee network into a Rabbit-based embedded solution. A user-configurable interface allows users to



Easy-to-Use RF Modem Configuration Screen

set up a network, discover other similar ZigBee devices, and control LEDs and switches from an RF Interface board as a node device. The samples illustrate how a user can connect via the various topologies such as point-to-point, point-to-multipoint, and mesh. The kit serves as a template for countless wireless applications where low power and low data rates are required.

Rabbit and MaxStream Teamwork

Rabbit Semiconductor and MaxStream are teaming up to supply embedded control and wireless solutions for customers to develop a ZigBee wireless control system. MaxStream's wireless modems are easy-to-use and provide reliable delivery of critical data between devices. The flexibility of the XBee/XBee-PRO RF Modules creates the perfect fusion of range, power-conservation, performance and networking features to ensure accurate and reliable RF communications. For more information regarding MaxStream's products and services, you may visit their website at *www.maxstream.net*, email *rf-xperts@maxstream.net*, or call toll-free (866) 765-9885.

Zigbee™ /802.15.4 Application Kit Specifications		
Features		RF Interface Module
RF Modem (Frequency)		MaxStream® XBee™ (ISM 2.4 GHz)
Compliance		802.15.4 standard (ZigBee™ compliant)
Performance	Indoor Range	100 ft (30 m)
	Outdoor Line-of Sight Range	300 ft (90 m)
	Transmit Power Output	1 mW (0 dBm)
	RF Data Rate	250,000 bps
	Receiver Sensititvity	-92 dBm (1% PER)
Antenna		Chip antenna
Supported Network Topologies		Point-to-point, Point-to-multipoint, Peer-to-peer, Mesh
Number of RF Channels		16 direct-sequence channels (software-selectable)
Filtration Options		PAN ID, Channel, Source/destination addresses
Power (typical)	Transmit	55 mA @ 3.5–6.0 V
	Idle/Receive	60 mA @ 3.5–6.0 V
Battery Pack		3 AAA each battery pack
Operating Temperature		–40°C to +70°C
Humidity		5% to 95%, non-condensing
Connectors		Two 2 × 10, 0.1" pitch sockets; One power connector One 2 × 5, 2 mm pitch serial header; One 2 × 5, 0.1" pitch serial header
RF Interface Module Size		2.00" × 2.00" × 0.50" (51 mm × 51 mm × 13 mm) (XBee™ RF modem extends 0.2" beyond edge of board)

Features	RCM3720
RabbitCore Module	Rabbit® 3000 processor at 22.1 MHz
Ethernet Port	10Base-T interface, RJ-45, 2 LEDs
Flash Memory	512K
SRAM	256K
Serial Flash Memory	1Mbyte
General-Purpose I/O	33 parallel digital I/0 lines: • 31 configurable I/O • 2 fixed outputs
Serial Ports	Two 3.3 V CMOS-compatible ports configurable as: • 2 asynchronous serial ports (with IrDA) or • 1 clocked serial ports (SPI) plus 1 HDLC (with IrDA)
Serial Rate	Maximum asynchronous baud rate = CLK/8
Real-Time Clock	Yes
Watchdog Supervisor	Yes
Pulse-Width Modulator	4 PWM output channels with 10-bit free-running counter and priority interrupts
Input Capture/ Quadrature Decoder	2-channel input capture can be used to time input signals from various port pins • 1 quadrature decoder unit accepts inputs from external incremental encoder modules or • 1 quadrature decoder unit shared with 2 PWM channels
Power	4.75–5.25 V DC, 100 mA @ 22.1 MHz, 5 V; 78 mA @ 11.05 MHz, 5 V
Operating Temperature	–40°C to +70°C
Humidity	5% to 95%, non-condensing
Connectors	One 2 × 20, 0.1" pitch header; One 2 × 5 header for programming with 1.27 mm pitch; One RJ-45 Ethernet jack
Board Size	1.20" × 2.95" × 0.89" (30 mm × 75 mm × 23 mm)

Kit Pricing	
Pricing (qty. 1)	$399
Part Number	101-1137

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