

# RabbitCore® RCM4510W

ZigBee® RF Core Module

The RabbitCore RCM4510 offers a full featured, pin-compatible ZigBee mesh solution for your embedded design.



## Overview

The RabbitCore RCM4510W is a Rabbit® 4000 compact core module that features pin-compatibility with other 4000 based core modules. The RCM4510 is designed to mount directly to a user-supplied motherboard and acts as the microprocessor for the embedded system. Integrated on the RCM4510W is a Digi XBee® RF module, which supports two network protocols: Ember 2.5 stack and the ZigBee PRO Feature Set.

The RCM4510W allows OEMs and integrators to create an easy-to-use, low-power, wireless mesh network as part of the control solution for embedded applications.

The RCM4510W Development Kit provides all the essentials needed to design a wireless microprocessor system. The kit includes a RabbitCore RCM4510W core module, a prototyping board, accessory parts, Dynamic C® integrated development environment, and an extensive library of drivers and sample programs. To learn more, please visit [www.rabbit.com/products/RCM4500W](http://www.rabbit.com/products/RCM4500W).

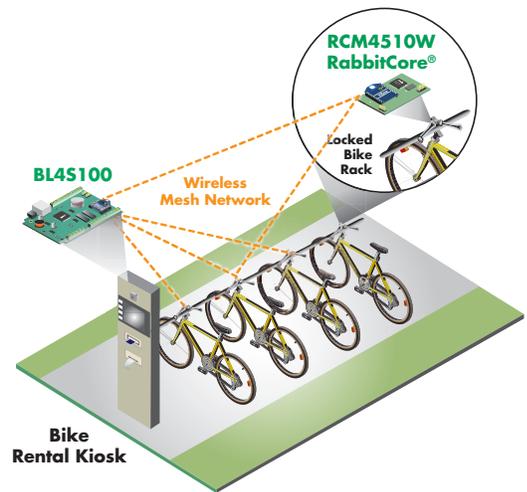
### Development Kit

The RCM4510W development kit includes everything you need to get started.

**\$299**



### Application Highlight



**Potential Applications:** Data Acquisition, Point-of-Sale (POS), Building Automation

### Features and Benefits

- Rabbit 4000 at 29.49 MHz
- Designed for ZigBee connectivity
- 512 K Flash, 512 K data SRAM
- Up to 40 general-purpose I/O line configurable
- Web Server capability
- Wireless mesh networking capability
- Low power

# RabbitCore® RCM4510W Specifications

Features	RCM4510W (ZNet 2.5)	RCM4510W (ZB)
Microprocessor	Rabbit® 4000 @ 29.49 MHz	
Flash Memory	512K	
Data SRAM	512K	
Backup Battery	Connection for user-supplied backup battery (to support RTC and data SRAM)	
General Purpose I/O	Up to 49 parallel digital I/O lines: <ul style="list-style-type: none"> <li>• Up to 40 Rabbit 4000 pins configurable with 4 layers of alternate functions</li> <li>• Up to 9 XBee RF module pins, 4 of which may be configured as analog inputs*</li> </ul>	
Additional Inputs	Startup mode (2), reset in	
Additional Outputs	Status, reset out	
Analog Inputs *	channels single-ended 0–1.2 V DC	
A/D Converter Resolution	10 bits	
A/D Conversion Time (including raw count and Dynamic C)	40 ms	
Auxiliary I/O Bus	Can be configured for 8 data lines and 6 address lines (shared with parallel I/O lines), plus I/O read/write	
Serial Ports	6 high-speed, CMOS-compatible ports: <ul style="list-style-type: none"> <li>• All 6 configurable as asynchronous (with IrDA),</li> <li>• 4 as clocked serial (SPI), and 2 as SDLC/HDLC</li> <li>• 1 asynchronous clocked serial port shared with programming port</li> </ul>	
Serial Rate	Maximum asynchronous baud rate = CLK/8	
Slave Interface	Slave port allows the RCM4510W to be used as an intelligent peripheral device slaved to a master processor	
Real-Time Clock	Yes	
Timers	Ten 8-bit timers (6 cascadable from the first), one 10-bit timer with 2 match registers, and one 16-bit timer with 4 outputs and 8 set/reset registers	
Watchdog/Supervisor	Yes	
Pulse-Width Modulators	4 channels variable-phase or synchronized PWM with 16-bit counter	
Input Capture	2-channel input capture can be used to time input signals from various port pins	
Quadrature Decoder	2-channel quadrature decoder accepts inputs from external incremental encoder modules	
Power with ZigBee Modem (pins unloaded)	3.3 V DC ±5% 150 mA @ 3.3 V while transmitting/receiving 80 mA @ 3.3 V while not transmitting/receiving <20 µA @ 3.3 V while asleep	
Operating Temperature	-40° C to +85° C	
Humidity	5% to 95%, noncondensing	
Connectors	One 2 × 7, 2 mm pitch IDC signal header One 2 × 25, 1.27 mm pitch IDC signal header One 2 × 5, 1.27 mm pitch IDC programming header	
Board Size with ZigBee® Modem	1.84" × 2.85" × 0.54" (47 mm × 72 mm × 14 mm)	
Development Kit	101-1188	
ZigBee® Module		
RF Module	XBee® ZNet 2.5	XBee® ZB
Network Protocol	Ember 2.5 Stack	ZigBee PRO Feature Set
Pricing		
Price (qty. 1/100)	\$89 / \$72	\$89 / \$72
Part Number	20-101-1207	20-101-1269
Development Kit Part Number	-	\$299 101-1293



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