RabbitCore® RCM3700 Series

Microprocessor Core Module

Family of compact modules comes in three versions with varying memory sizes, providing a cost-competitive multi-serial to Ethernet solution.

Overview

The RabbitCore RCM3700 series extends beyond standard serial to Ethernet devices by providing up to six serial ports along with a rich embedded I/O control feature set such as PWM and Quadrature Decoder Inputs. Additionally, the modules include a backup battery for protected data storage and for the real-time clock.
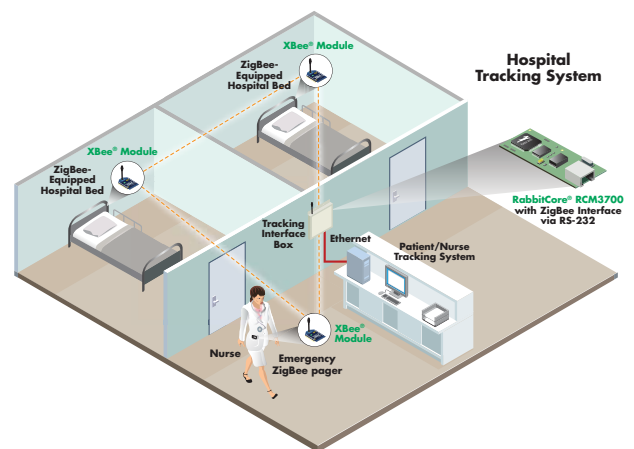
The software environment for the RCM3700 series offers an excellent platform for developing applications with web server capabilities, especially for remote monitoring and control. With a 1 MB on-board serial Flash, the RCM3700 series can store additional web pages or be used as a datalogger. The RCM3700 easily mounts onto a user-designed motherboard, making it ideal for new and existing applications. With an integrated hardware and software solution, the RCM3700 series ensures your product gets to market faster with lower development costs.

Development Kit

Development kit includes everything you need to get started.

Application Highlight

XBee® Module

ZigBee-Equipped Hospital Bed

Hospital Tracking System

XBee® Module

ZigBee-Equipped Hospital Bed

RabbitCore® RCM3700 with ZigBee Interface via RS-232

Tracking Interface Box

Ethernet

Patient/Nurse Tracking System

Nurse

Emergency ZigBee pager

XBee® Module

Potential Applications: Data logging, remote energy managment, solar panel control, security and surveillance.

Features/Benefits

- Up to 4 serial ports for multiple device connectivity

- 10Base-T with optional 10/100Base-T Ethernet

- Up to 512K Flash for code and up to 512K SRAM for data

- 1 MB of on-board serial Flash utilizing FAT file support for reliable data storage

- Embedded web server capability for remote monitoring and control

- Exceptionally fast performance for math, logic and I/O

Software

The Dynamic C® integrated development environment reduces the time and effort to write real-time software for embedded systems that use a Rabbit® microprocessor, enabling easy development of a wide range of applications.

The RabbitCore integrates editing, compiling, linking, loading and debugging into a single development environment as one function. There are no concerns about compatibility moving from one stage to another. Once your design is complete, you can debug it on the target hardware and see how your code works. Because it is a dialect of C, the Dynamic C language has all the statements and constructions of traditional C, plus extensions that make it easier to write reliable, real-time multi-tasking software.

Dynamic C also includes software components that can add functionality and value to your applications. Components can add functionality such as web server capability, filing system, remote firmware updates, and wired and wireless security. Compatible software components are listed below.

Software Components

Component		Description
RabbitWeb	**RabbitWeb™**	System of HTML tags used to easily create web interfaces to monitor and control embedded applications.
FAT	**File Allocation Table (FAT)**	Popular network-accessible file system for flashed based memories.
SSL	**Secure Sockets Layer (SSL) / Transport Layer Security (TLS)**	The industry standard for web security in embedded applications.
AES	**Advanced Encryption Standard (AES)**	128-bit encryption for transferring sensitive data.

The RCM3700 Development Kit Contents:

- RCM3700 module

- Prototyping board with standoffs/connectors

- USB cable to program RCM3700 via interface board

- Universal power supply

- Dynamic C CD-ROM, including product documentation on disk

- Getting Started instructions

- Registration card

The RCM3720 Development Kit Contents:
(also known as the Low-Cost Ethernet Connection Kit)

- RCM3720 module

- Prototyping board with standoffs/connectors

- USB cable to program RCM3720 via interface board

- Universal power supply

- Dynamic C CD-ROM, including product documentation on disk

- Getting Started instructions

- Registration card

RabbitCore® RCM3700 Specifications

Features	RCM3700	RCM3710	RCM3720
Microprocessor	Low-EMI Rabbit® 3000 at 22 MHz		
Ethernet Port	10Base-T interface, RJ-45, 2 LEDs		
Flash Memory	512K	256K	512K
SRAM	512K	128K	256K
Serial Flash Memory	1 MB		
Backup Battery	Connection for user-supplied backup battery (to support RTC and SRAM)		
General-Purpose I/O	33 parallel digital I/O lines: • 31 configurable I/O • 2 fixed outputs		
Additional I/O	Reset		
External I/O Bus	Can be configured for 8 data lines and 5 address lines (shared with parallel I/O lines), plus I/O read/write		
Serial Ports	Four 3.3V CMOS-compatible ports configurable as: • 4 asynchronous serial ports (with IrDA) or • 3 clocked serial ports (SPI) plus 1 HDLC (with IrDA) or • 1 clocked serial port (SPI) plus 2 HDLC serial ports (with IrDA)		
Serial Rate	Maximum asynchronous baud rate = CLK/8		
Slave Interface	A slave port allows the RCM3700 series to be used as an intelligent peripheral device slaved to a master processor, which may either be another Rabbit 3000 or any other type of processor		
Real-Time Clock	Yes		
Timers	Ten 8-bit timers (6 cascadable, 3 reserved for internal peripherals), one 10-bit timer with 2 match registers		
Watchdog/Supervisor	Yes		
Pulse-Width Modulators	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	4.75–5.25VDC 100 mA @ 22.1 MHz, 5V; 78 mA @ 11.05 MHz, 5V		
Operating Temperature	–40° C to +70° C		
Humidity	5% to 95%, non-condensing		
Connectors	One 2 x 20, 0.1" pitch		
Board Size	1.20" × 2.95" × 0.89" (30 mm × 75 mm × 23 mm)		
Pricing			
Price (Qty. 1) Part Number w/ Mounting Holes	20-101-1305	20-101-1328	20-101-1329
Development Kit Part Number w/ Mounting Holes	101-0681	N/A	101-0964

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