RCM4200 RabbitCore™

MODELS | RCM4200 | RCM4210 |

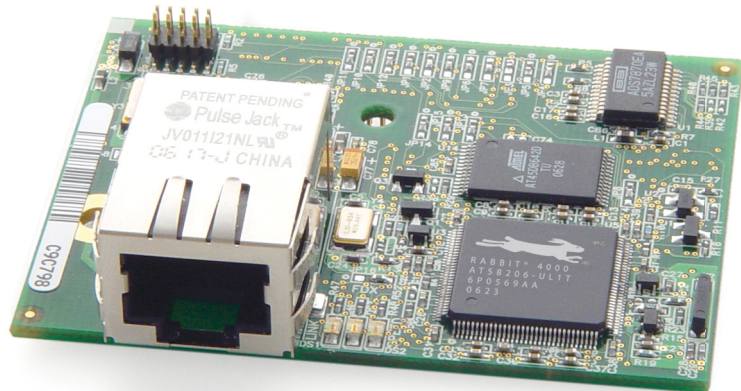*Microprocessor Core Module*

Key Features

- Rabbit® 4000 microprocessor running at up to 58.98 MHz
- 10/100Base-T Ethernet, RJ-45 jack
- 4 Mbytes or 8 Mbytes Serial Flash for mass data storage
- 512K Flash/512K SRAM
- 8-channel, 12-bit A/D converter option
- Up to 35 GPIO with multi-layer alternate pin functions
- Up to 5 serial ports
- Synchronized PWM channels with 16-bit counter
- Optimized for use with Dynamic C® - a powerful integrated development environment

Design Advantages:

- Designed for embedded networking with intelligence and I/O control
- Serves web pages, controls remote devices, links equipment to the internet
- Security-key feature with "tamper detect" and encryption capabilities adds peace of mind for OEMs and systems integrators
- Complete microprocessor, on-board memory, royalty-free TCP/IP stack, and hundreds of sample programs reduces time-to-market

Applications

- Serial-to-Ethernet applications
- Data-logging via Ethernet
- Remote monitoring and communications
- Web-enabling devices
- Device/data management and control

RCM4200 – 10/100 Ethernet Connectivity

The RCM4200 family of microprocessor core modules are powerful embedded control devices that offer intelligence, 10/100Base-T Ethernet connectivity, optional analog, and ample memory for sophisticated data logging and serial to Ethernet applications.

The RCM4200 RabbitCore modules are equipped with 10/100 Ethernet connectivity, combined with 4 Mbytes or 8 Mbytes serial flash memory storage for intensive communication and data logging applications. The optional on-board 12-bit analog channels diversify your device connectivity options.

At the heart of the RCM4200 is the Rabbit 4000 microprocessor which features a clock speed of up to 58.98 MHz. Other features include hardware DMA, auxiliary I/O, quadrature decoder, input capture, GPIO lines shared with up to five serial ports, and four levels of alternate pin functions that include variable phase PWM. The Rabbit 4000 boasts an additional 500+ new operational code instructions that increases the processing efficiency, from its predecessor the Rabbit 3000.

The RCM4200 RabbitCore modules are easily interchangeable with other RCM4xxx based products due to electrical and functional compatibility. With a small footprint of 1.84"x2.42" (47mm x 61mm), the RCM4200 is compact and can easily be mounted directly onto a user-designed motherboard, allowing CMOS-compatible digital devices to interface via the user's motherboard.

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Developing with the RCM4200

The RCM4200 Development Kits come complete with a RabbitCore module, a prototyping board, accessory parts and all development tools specifically designed to get you up and running in minutes! Development Kits come with our industry-proven Dynamic C integrated development software that includes an editor, compiler, and in-circuit debugger. Programming is easy with hundreds of samples and libraries that can be used as building blocks to your code.

Rabbit's royalty-free approach to TCP/IP support and security encryption provides developers the lowest development cost, and all the tools for a robust, embedded implementation.

Dynamic C Add-on Modules

Dynamic C Add-on modules provide added functionality and customization to your embedded applications. Software is available via download or CD-ROM.

Secure Socket Layer
Industry standard web security for embedded applications

RabbitWeb
Easily create web interfaces to monitor and control embedded applications

FAT File System
Popular, network-accessible file system for flash memories

Advanced Encryption Standard
128-bit encryption for transfer of sensitive data

Point-to-Point Protocol
TCP/IP functionality for serial and PPPoE connections

Library Encryption Executable
Program to encrypt Dynamic C library source files

RCM4200 RabbitCore Specifications		
Features	RCM4200	RCM4210
Microprocessor	Rabbit 4000 @ 58.98 MHz	Rabbit 4000 @ 29.49 MHz
EMI Reduction	Spectrum spreader for reduced EMI (radiated emissions)	
Ethernet Port	10/100Base-T, RJ-45, 3 LEDs	
Data SRAM	512K (8-bit)	
Program Execution Fast SRAM	512K (8-bit)	—
Flash Memory	512K (8-bit)	
Serial Flash Memory	8 Mbytes	4 Mbytes
Backup Battery	Connection for user-supplied backup battery (to support RTC and data SRAM)	
General Purpose I/O	25 parallel digital I/O lines configurable with four layers of alternate functions	35 parallel digital I/O lines configurable with four layers of alternate functions
Additional Inputs	2 startup mode, reset in, CONVERT	2 startup mode, reset in
Additional Outputs	Status, reset out, analog VREF	Status, reset out
Analog Inputs	8 channels single-ended, or 4 channels differential. Programmable gain 1, 2, 4, 5, 8, 10, 16, and 20 V/V	—
A/D Converter Resolution	12 bits (11 bits single-ended)	
A/D Conversion Time (including 120 µs raw count and Dynamic C)	180 µs	
Auxiliary I/O Bus	8 data lines, 6 address lines (shared with parallel I/O lines) plus I/O read/write	
Serial Ports	Configurable as asynchronous (with IrDA), 4 as clocked serial (SPI), and 1 as SDLC/HDLC	
	Up to 4 serial ports (shared with programming port, A/D converter, and serial flash)	Up to 5 serial ports (shared with programming port, and serial flash)
Serial Rate	Maximum asynchronous baud rate = CLK/8	
Slave Interface	Slave port allows the RabbitCore module 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	3 channels synchronized PWM with 10-bit counter 3 channels variable-phase or synchronized PWM with 16-bit counter	4 channels synchronized PWM with 10-bit counter 4 channels variable-phase or synchronized PWM with 16-bit counter
Input Capture	4 input capture channels can be used to time input signals from various port pins	
Quadrature Decoder	1 channel accepts inputs from external incremental encoder modules	2 channels accept inputs from external incremental encoder modules
Power (pins unloaded)	3.0–3.6 V DC	
	240 mA @ 3.3 V (typ.), 275 mA at 3.6 V and 85°C (max.)	200 mA @ 3.3 V (typ.), 225 mA at 3.6 V and 85°C (max.)
Operating Temperature	-40°C to +85°C	
Humidity	5% to 95%, non-condensing	
Connectors	One 2 × 25, 1.27 mm pitch IDC signal header One 2 × 5, 1.27 mm pitch IDC programming header	
Board Size	1.84" × 2.42" × 0.84" (47 mm × 61 mm × 21 mm)	
Pricing		
Pricing (qty. 1/100) Part Number (RoHs)	$109/$89 20-101-1131	$99/$81 20-101-1132
Development Kit Part Number	$269 U.S. 101-1155	Int'l 101-1156

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