# RCM4200 RabbitCore™

MODELS | RCM4200 | RCM4210 |

*Microprocessor Core Module*

**Key Features**

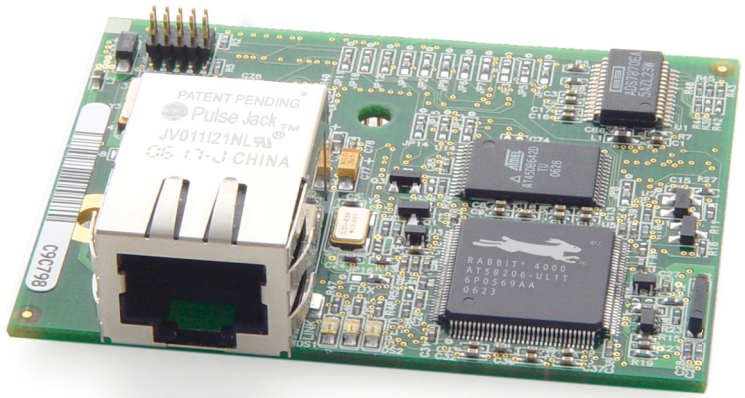
- Rabbit® 4000 microprocessor running at up to 58.98 MHz
- 10/100Base-T Ethernet, RJ-45 jack
- 4 Mbytes or 8 Mbytes Serial Flash for mass data storage
- 512K Flash/512K SRAM
- 8-channel, 12-bit A/D converter option
- Up to 35 GPIO with multi-layer alternate pin functions
- Up to 5 serial ports
- Synchronized 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.

## 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<br>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)<br>Part Number (RoHs) | $109/$89<br>20-101-1131 | $99/$81<br>20-101-1132 |
| Development Kit<br>Part Number | $269<br>U.S. 101-1155 Int'l 101-1156 | |

RABBIT Semiconductor

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