RCM4300 RabbitCore®

MODELS | RCM4300 | RCM4310 |

*Core Module With miniSD™ Capability*

Key Features

- Rabbit 4000 microprocessor running @ 58.98 MHz
- Supports up to 1GB miniSD memory card
- Organize data with FAT file structure
- 1MB of SRAM for shared code and data
- 512K bytes of battery-backed SRAM
- 10/100Base-T Ethernet port (RJ-45 connector)
- 12-bit A/D converter (RCM4300 only)
- Up to 36 general-purpose I/O lines configurable
- Up to 6 serial ports
- Small size: 1.84" × 2.85" × 0.84" (47 mm × 72 mm × 21 mm)

Design Advantages:

- Hot-swappable mass storage
- Supports over 1MB SRAM for algorithmic-intensive applications
- Analog inputs for reading instrument and sensor outputs
- Low-cost and easily deployable platform for non-critical embedded security
- Feature set and performance to implement a web-enabled graphic user interface

Applications

- Data logging
- Automatic meter reading
- Tank monitoring
- Utilities and power systems
- Factory automation
- Instrumentation
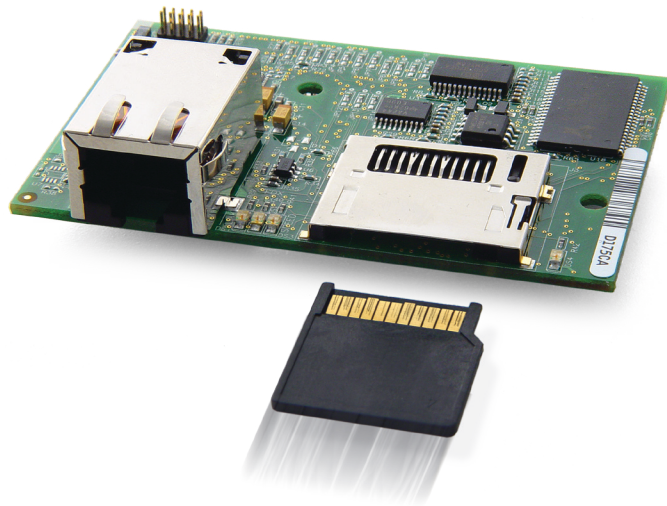
RCM4300 — More Memory for Data Intensive Applications

The RCM4300, based on the Rabbit 4000 microprocessor, delivers more mass storage than any other RabbitCore module. You can implement up to 1GB (gigabyte) of industry-standard miniSD memory that can be hot-swapped for another card if desired. The miniSD memory card supports the FAT file structure to offer a convenient method of organizing data and sharing it with other systems.

In addition, Rabbit's Dynamic C® (version 10.21) software supports MCS™ (Megabyte Code Support) to use up to 1 megabyte of on-board SRAM for shared memory and code space. Also included on the board is 512K bytes of battery-backed SRAM (battery not included) to maintain code and data during power down mode.

The RCM4300 is pin-compatible with other RCM4xxx core modules, enabling easy migration from other designs.

Furthermore, Rabbit offers modules with the same form-factor as the RCM4300 that have either Wi-Fi (RCM4400W) or with ZigBee® (RCM4510W), should those connective technologies be required.

For designs that require more I/O, consider the Rabbit RIO chip to add both general I/O and special-feature I/O, such as PWM and input capture. For more information, please visit: http://www.rabbit.com/products/RIO.

RABBIT™

The RCM4300 series also includes the RCM4310, which is a lower cost version of the RCM4300 that offers less SRAM and removes the analog input support.

For more details, please go to the RCM4300 User's Manual at: http://www.rabbit.com/docs/manuals/RCM4300/RC4300UM.pdf

Developing with the RCM4300

The development kit has all the essentials needed to design a microprocessor-based embedded system with mass storage. The kit includes an RCM4300 with a miniSD card, a prototyping board, accessories, and development tools to get you up and running quickly. Along with our industry-proven Dynamic C® Integrated Development Environment (IDE) that includes a full-featured C compiler, editor, and in-circuit debugger, the RCM4300 supports a FAT file system for mass storage (used with the on-board SD card), RabbitWeb for creating dynamic HTML interfaces, and Rabbit's Transport Layer Security (TLS/SSL) implementation for secure web transactions.

Dynamic C® Add-on Modules

Rabbit delivers add-on modules for Dynamic C to help you complete your design in less time and with higher system reliability. These proven software modules, included with the RCM4300 development kit, allow you to add just the right features to support your design requirements.

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

RCM4300 RabbitCore® Specifications		
Feature	RCM4300	RCM4310
Microprocessor	Rabbit® 4000 @ 58.98 MHz	
EMI Reduction	Spectrum spreader for reduced EMI (radiated emissions)	
Ethernet Port	10/100Base-T, RJ-45, 3 LEDs	
Data SRAM	512K (8-bit)	
Shared Code/Data and Program Execution Fast SRAM	1MB (8-bit)	512K (8-bit)
Serial Flash Memory (used for program storage)	2MB	1MB
Flash Memory (mass data storage)	miniSD™ Card 128MB – 1GB (NAND Flash)	miniSD™ Card 128MB – 1GB (NAND Flash)
LED Indicators	LINK/ACT (link/activity) FDX/COL (full-duplex/collisions) SPEED (on for 100Base-T Ethernet connection) SD (minSD™ card info TBD)	
Backup Battery	Connection for user-supplied backup battery (to support RTC and data SRAM)	
General-Purpose I/O	28 parallel digital I/O lines, configurable with four layers of alternate functions	36 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 • 12-bit resolution (11-bit single ended) • 180 us conversion time	—
CMOS Compatible Serial Ports	Up to 5 serial ports ports (shared with programming port, A/D converter, miniSD Card, and serial flash)	Up to 6 serial ports ports (shared with programming port, A/D converter, miniSD Card, and serial flash)
Serial Rate	Maximum asynchronous baud rate = CLK/8	
Slave Interface	Slave port allows the RCM4300 to be used as an intelligent peripheral device slaved to a master processor	
Real-Time Clock	Yes	
Timers	Ten 8-bit and one 16-bit	
Watchdog/Supervisor	Yes	
Pulse-Width Modulators	4 PWM registers with 10-bit free-running counter and priority interrupts	
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 (pins unloaded)	350mA @ 3.3V (typ).	
Operating Temperature	Without SD card: -20° C to +85° C. With SD card: Varies according to card specs	
Humidity	5% to 95%, non-condensing	
Connectors	One 2 × 25, 1.27 mm pitch IDC signal header. One miniSD™ card socket One 2 × 5, 1.27 mm pitch IDC programming header	
Board Size	1.84″ × 2.85″ × 0.84″ (47 mm × 72 mm × 21 mm)	
Pricing		
Price (qty. 1/100) Part Number	$114/$101 20-101-1138	$99/$81 20-101-1139
Development Kit Part Number	$299 101-1177	