RCM3900 RabbitCore® Series

MODELS | RCM3900 | RCM3910 |

Microprocessor Core Module

Key Features

- Rabbit® 3000 microprocessor running @ 44.2 MHz
- Extended operating temperature range: -20° C to +85° C
- Small size: 1.85" x 2.73" x 0.86" (47 mm x 69 mm x 22 mm)
- 10/100Base-T Ethernet
- Fixed and hot-swappable mass-storage memory options
- Provision for customer-supplied backup battery

Design Advantages

- Known good hardware to reduce design effort
- Up to 1 GB mass storage which can be used with standardized directory structure
- Dynamic C® integrated development environment supports easier, lower-risk design of embedded systems applications
- Debug software directly on the target hardware

Applications

- Data archiving and upload
- Tank monitoring
- Automatic meter reading
- Remote energy management
- Security and surveillance

RCM3900 – Ethernet and Extended Temperature

The RCM3900 RabbitCore modules are compact devices that incorporate the Rabbit 3000 microprocessor, memory and removable memory. Both of the RCM3900 modules have an integrated 10/100Base-T Ethernet port which allows you to build LAN and Internet-enabled systems as easily as building any serial communications system.

RabbitCore modules mount directly onto a user-designed motherboard acting as the controlling microprocessor for the embedded system. The RCM3900 receives its +5 V power from the motherboard and interfaces with many different CMOS-compatible devices through the motherboard.

The RCM3900 has fast program execution SRAM and data SRAM, flash memory and the circuitry necessary for reset and management of battery backup of the Rabbit 3000's internal real-time clock and the data SRAM. Two 34-pin headers bring out the Rabbit 3000 I/O bus lines, parallel ports and serial ports.

The RCM3900 modules' mass storage can use the Dynamic C software FAT file system software module to store data and use the same directory file structure commonly used on PCs. A removable

miniSD™ Card can be hot-swapped to transfer data quickly and easily using a standardized file system that can be read directly from the RCM3900 module, or removed and read using a miniSD card reader.

Developing with RabbitCores

A Development Kit provides the essentials that you need to design your own microprocessor-based system, and includes a complete Dynamic C® software development system. The Development Kits also contains a prototyping board that will allow you to evaluate the RCM3900 module and to prototype circuits that interface to the module. You will also be able to write and test software for the RCM3900 modules.

The RabbitCore line of microprocessor core modules is designed to facilitate rapid development and implementation of embedded systems. Develop programs with our industry-proven Dynamic C development system, a C-language environment that includes an editor, compiler and in-circuit debugger.

Download you program from your PC via USB or serial port, and debug right on the target hardware – no in-circuit emulation is required. This environment reduces effort and speeds hardware and software integration. Rabbit provides an extensive library of drivers and sample programs, along with royalty-free TCP/IP stack with source.

RCM3900 RabbitCore® Specifications		
Features	RCM3900	RCM3910
Microprocessor	Rabbit® 3000 @ 44.2 MHz	
EMI Reduction	Spectrum spreader for reduced EMI (radiated emissions)	
Ethernet Port	10/100Base-T, RJ-45, 3 LEDs	
SRAM	512K program (fast SRAM) + 512K data	
Flash Memory (program)	512K	
Memory (data storage)	32 MB (fixed NAND flash) + 128 MB–1 GB miniSD™ Card	128 MB–1 GB miniSD™ Card
LED Indicators	LINK/ACT (link/activity) FDX/COL (full-duplex/collisions) SPEED (on for 100Base-T Ethernet connection) CE/BSY (NAND flash enabled/user-programmable)	
Backup Battery	Connection for user-supplied backup battery (to support RTC and data SRAM)	
General-Purpose I/O	52 parallel digital I/0 lines: • 44 configurable I/O • 4 fixed inputs • 4 fixed outputs	
Additional Inputs	Startup mode (2), reset in	
Additional Outputs	Status, reset out	
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	Five 3.3 V, CMOS-compatible ports (shared with I/O) • All 5 configurable as asynchronouse (with IrDA) • 3 configurable as clocked serial (SPI) • 2 configurable as SDL/HDLC • 1 asynchronous serial port dedicated for programming	
Serial Rate	Maximum asynchronous baud rate = CLK/8	
Slave Interface	A slave port allows the RCM3900/RCM3910 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 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	3.15–3.45 V DC 325 mA @ 44.2 MHz, 3.3 V	
Operating Temperature	-20° C to +85° C	
Humidity	5% to 95%, non-condensing	
Connectors	Two 2 × 17, 2 mm pitch One 2 × 5 for programming with 1.27 mm pitch One miniSD™ Cardsocket	
Board Size	1.850" × 2.725" × 0.86" (47 mm × 69 mm × 22 mm)	
Pricing		
Pricing (qty. 1/100) Part Number (RoHs)	$105 / $89 20-101-1196	$98 / $79 20-101-1197
Development Kit Part Number	$399 101-1226	

Rabbit® 2900 Spafford Street Davis, CA 95618 USA Tel 1.888.411.7228 Tel 530.757.8400 Fax 530.757.8402