RCM3200 RabbitCore™

Microprocessor Core Module

Models RCM3200, RCM3210, RCM3220

The RCM3200 RabbitCore microprocessor core module is the ideal option for designers who want to rapidly develop and implement embedded systems with a 44MHz clock and optional 10/100Base-T Ethernet connectivity. Measuring only 2.73" × 1.85" (69 × 47 mm), the RCM3200 operates at 3.3 V (with 5 V-tolerant I/O), and features 6 serial ports. Built-in low-EMI features, including a clock spectrum spreader, practically eliminate EMI problems, helping OEMs pass CE and regulatory RF emissions tests.

Powered by the Rabbit 3000 microprocessor, the RCM3200 is equipped with up to 512K Flash, 512K program execution SRAM and 256K data SRAM, quadrature decoder, PWM outputs, and pulse capture capabilities. Two 34-pin connection headers provide 52 digital I/O shared with the 6 serial ports and alternate I/O features. Two models offer an integrated 10/100Base-T Ethernet port, allowing real-time local or worldwide connectivity.

The RCM3200 features a battery-backable real-time clock, glueless memory and I/O interfacing, and low-power "sleepy" modes. A fully enabled slave port permits easy master-slave interfacing with another processor-based system, and an alternate I/O bus can be configured for 8 data lines and 6 address lines (shared with parallel I/O). The Rabbit 3000 processor's compact, C-friendly instruction set and high clock speeds produce exceptionally fast results for math, logic, and I/O.

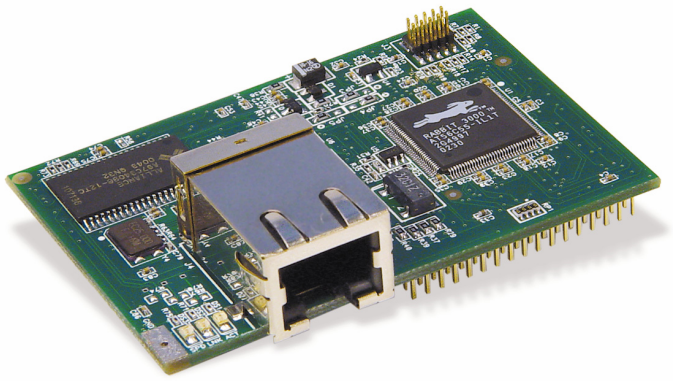
RabbitCores mount directly on a user-designed motherboard and act as the controlling microprocessor for the user's system. RabbitCores can interface with all manner of CMOS-compatible digital devices through the user's motherboard. Programs are developed with our industry-proven Dynamic C® development system, a C-language environment that includes an editor, compiler, and in-circuit debugger (Dynamic C SE is included in low-cost development kits). Efficient hardware and software integration facilitates rapid design and development. User programs can be compiled, executed, and debugged using Dynamic C and a programming cable—no in-circuit emulator is required. An extensive library of drivers and sample programs is provided, along with royalty-free TCP/IP stack with source.

Features

- With or without 10/100Base-T Ethernet
- Rabbit 3000™ microprocessor at 44.2 MHz
- 3.3 V operation
- Low-EMI for CE and other RF emissions tests
- Up to 512K Flash
- Up to 512K SRAM (program), 256K SRAM (data)
- 52 digital I/O
- 6 serial ports (IrDA, SDLC/HDLC, Async, SPI)

Design Advantages

- Ready-made platform for fast time-to-market
- Compact size simplifies integration
- Dynamic C® development environment for real-time development and debugging
- Exceptionally fast performance for math, logic, I/O



Actual Size
2.73" × 1.85" ×
0.86"

Designing with RabbitCores

The RabbitCore family of microprocessor core modules is designed to facilitate rapid development and implementation of embedded systems. RabbitCores are powered by high-performance 8-bit Rabbit microprocessors with extensive integrated features and a C-friendly instruction set designed for use with the Dynamic C® development system. The RabbitCore mounts on a user-designed motherboard and acts as the controlling microprocessor for the user's system. Small in size but packed with powerful features, these core modules give designers a complete package for control and communication.

The integrated Ethernet port frees designers from the limitations of serial-port communications and control and permits instant local or worldwide connectivity using low-cost networking hardware. Embedded systems using the Ethernet RabbitCore module can be controlled and monitored (as well as programmed and debugged when using appropriate accessory hardware) across any network or the Internet.

Programming the RCM3200

Programs are developed using our industry-proven Dynamic C software development system. An extensive library of drivers and sample programs is provided, along with royalty-free TCP/IP stack with source.

RabbitCore RCM3200 Specifications			
FEATURE	**RCM3200**	**RCM3210**	**RCM3220**
Microprocessor	Rabbit 3000 at 44.2 MHz	Rabbit 3000 at 29.4 MHz	Rabbit 3000 at 44.2 MHz
EMI Reduction	Spectrum spreader for reduced EMI (radiated emissions)		
Ethernet Port	10/100Base-T, RJ-45, 3 LEDs		None
Flash	512K	256K	512K
SRAM	512K program + 256K data	128K	512K program + 256K data
Backup Battery	Connection for user-supplied battery (to support RTC and SRAM)		
General-Purpose I/O	52 digital I/O • 44 configurable I/O • 4 fixed inputs • 4 fixed outputs		
Additional Inputs	2 Startup Mode, Reset In		
Additional Outputs	Status, Reset Out		
Auxiliary I/O Bus	8 data and 6 address (shared with I/O), plus I/O Read-Write		

Serial Ports	Six 3.3 V CMOS-compatible:
	• 6 configurable as asynchronous (with IrDA),
	  • 4 configurable as clocked serial (SPI)
	  • 2 configurable as SDLC/HDLC (with IrDA)
	• 1 asynchronous clocked serial port dedicated for programming
	• Support for MIR/SIR IrDA transceiver		

Serial Rate	Max. asynchronous baud rate = CLK/8		
Slave Interface	Slave port permits use as master or intelligent peripheral with Rabbit-based or other master controller		
Real-Time Clock	Yes		
Timers	Ten 8-bit timers (6 cascadable from the first) and one 10-bit timer with 2 match registers		
Watchdog/ Supervisor	Yes		
Pulse-Width Modulators	10-bit free-running counter and four pulse-width registers		
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, 255 mA @ 3.3 V		
Operating Temp.	–40°C to +70°C		
Humidity	5–95%, noncondensing		
Connectors	Two 2 x 17 (2 mm pitch), 1.27 mm programming		
Board Size	2.73" × 1.85" × 0.86" (69 × 47 × 22 mm)		2.73" x 1.85" x 0.48" (69 x 47 x 12 mm)
Pricing (qty. 1/100/1000) Part Number	$89 / 72 / 63 101-0520	$84 / 69 / 59 101-0521	$79 / 65 / 55 101-0522
Development Kit Part Number	$349 U.S. 101-0552 Int'l 101-0553	$349 U.S. 101-0552 Int'l 101-0553	$349 U.S. 101-0552 Int'l 101-0553

Low-Cost Development Kit comes complete with:

- RCM3200 RabbitCore
- Prototyping board
- AC adapter (U.S. only)
- Dynamic C SE development system (not a trial version) with royalty-free TCP/IP stack in source form and complete documentation on CD-ROM
- Serial cable for programming and debugging
- Getting Started manual