RCM3100 RabbitCore™

MODELS | RCM3100 | RCM3110 |

Microprocessor Core Module

Key Features

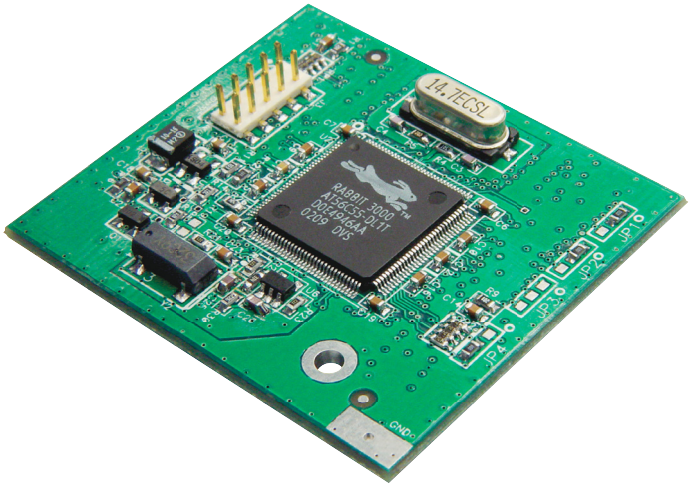
- Powerful Rabbit® 3000 microprocessor at 29.4 MHz
- Low power 3.3 V operation
- Low-EMI (typically <10 dB µV/m @ 3 m)
- Up to 512K Flash/512K SRAM
- 54 digital I/O
- 6 serial ports (IrDA, SDLC/HDLC, Async, SPI)
- Low power "sleepy" modes (< 2mA)

Design Advantages:

- Easy plug-in module for quick development
- Low cost embedded control
- Industry proven integrated development environment
- Abundant samples and libraries
- Easily links to multiple serial devices

Applications

- Device intelligence
- Embedded control
- Sensor reading
- Serial device coordinator
- GPS/AVL applications



RCM3100 – Embedded device control and intelligence

The RCM3100 RabbitCore microprocessor core module is a cost effective solution for embedded engineers to add intelligence and I/O control to a wide variety of peripheral devices. Powered by the Rabbit® 3000 microprocessor, the compact RCM3100 boasts powerful features and a small footprint, 1.85" × 1.65" (47 × 42 mm), to simplify integration.

Available in two models, the RCM3100 operates at 29.4 MHz, 3.3 V (with 5 V-tolerant I/O) The RCM3100 is equipped with up to 512K each of Flash and SRAM, low-EMI features, quadrature encoder inputs, PWM outputs, and pulse capture and measurement capabilities. Two 34-pin connection headers provide 54 digital I/O shared with the 6 serial ports and alternate I/O features, configured for 8 data lines and 6 address lines (shared with parallel I/O). The RCM3100 is pin compatible with the Ethernet RCM3000, facilitating cost-effective implementation of both Ethernet and non-Ethernet systems. The RCM3100 features a battery-backable real-time clock, glueless memory, and low power "sleepy" modes (<2mA). A fully enabled 8-bit slave port permits easy master-slave interfacing with another processor-based system. The Rabbit 3000 processor's compact, C-friendly instruction set and high clock speeds produce exceptionally fast results for math, logic, and I/O.

Developing with RabbitCores

The RabbitCore family of microprocessor core modules is designed to facilitate rapid development of embedded systems. RabbitCores mounts on a user-designed motherboard and acts as the controlling microprocessor for the user's system. Small in size, packed with powerful features, and armed with the Dynamic C software with sample libraries, these core modules give designers a complete package for control and communication.

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.

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

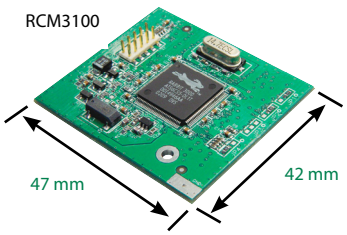
Point-to-Point Protocol
TCP/IP functionality for serial and PPPoE connections

Library Encryption Executable
Program to encrypt Dynamic C library source files

µC/OS-II Real-Time Kernel
Real-time preemptive, prioritized operating system

Rabbit Field Utility (RFU)
Source code for the Rabbit Field Utility

RCM3100 RabbitCore Specifications		
Feature	RCM3100	RCM3110
Microprocessor	Rabbit® 3000 at 29.4 MHz	
EMI Reduction	Spectrum spreader for reduced EMI (radiated emissions)	
Flash Memory	512K (2 × 256K)	256K
SRAM	512K	128K
Backup Battery	Connection for user-supplied backup battery to (support RTC and SRAM)	
General-Purpose I/O	z54 parallel digital I/0 lines: • 46 configurable I/O • 4 fixed inputs • 4 fixed outputs	
Additional Digital Inputs	2 startup mode, reset in	
Additional Digital Outputs	Status, reset out	
Auxiliary I/O Bus	8 data lines and 6 address lines (shared with I/O) plus I/O read/write	
Serial Ports	6 shared high-speed, CMOS-compatible ports: • 6 configurable as asynchronous (with IrDA), 4 as clocked serial (SPI), and 2 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	A slave port allows the RCM3100 to be used as a master or as an intelligent peripheral device with Rabbit-based or any other type of processor	
Real-Time Clock	Yes	
Timers	Ten 8-bit timers (6 cascadable from the first), 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 V to 3.45 V DC 75 mA @ 3.3 V	
Operating Temperature	–40°C to +85°C	
Humidity	5% to 95%, non-condensing	
Connectors (for connection to headers J4 and J5)	Two 2 ×17, 2 mm pitch	
Board Size	1.850″ × 1.650″ × 0.55″ (47 mm × 42 mm × 14 mm)	
Pricing		
Pricing (qty. 1/100/1000 Part Number	$65 / 50 / 43 20-101-0517	$45 / 35 / 29 20-101-0518
Development Kit Part Number	$239 U.S. 101-0533 Int'l 101-0534	



RCM3100 Development Kit comes complete with:

- RCM3100 RabbitCore Module
- Prototyping Board
- Serial cable for programming and debugging
- Dynamic C® integrated development software
- Getting Started Instructions
- Complete product documentation on CD including the Rabbit 3000 reference manual
- AC adapter (U.S. only)
- Rabbit 3000 pin specifications poster

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