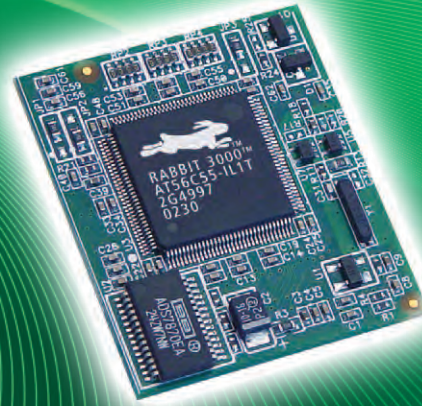# RabbitCore®
RCM3400 Series

Microprocessor Core Module

The compact, analog-enabled RabbitCore is designed for embedded applications that require analog functionality.
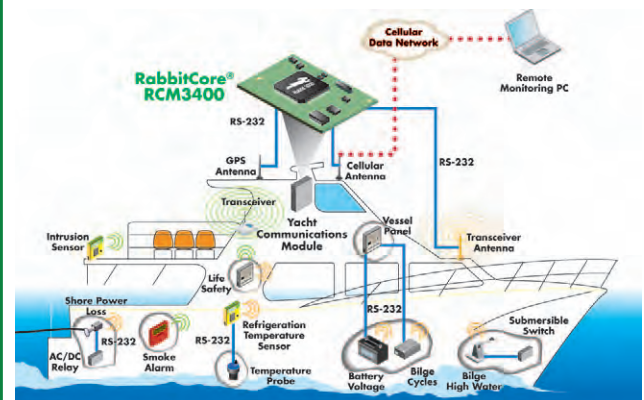
Overview

The RabbitCore RCM3400 series, featuring the Rabbit® 3000 microprocessor, is designed for embedded control and monitoring applications requiring analog functionality. Its small size and ease of use when paired with Dynamic C® allow engineers to develop a control and monitoring solution for many of today's embedded applications. The Ethernet-ready RCM3400 series comes pre-assigned with a MAC ID, along with a development board 10Base-T reference design. Built-in low EMI features, including a clock spectrum spreader, practically eliminate EMI problems, helping to pass CE and RF emissions tests.

Rabbit hardware and Dynamic C are designed in a complementary fashion for maximum performance and ease of use in embedded systems. The additional software components in Dynamic C allow you to add functionality for embedded application customization.

Application Highlight

Potential Applications: Device intelligence, embedded control, sensor reading, serial device coordinator, handheld remote devices, and GPS/AVL applications.

Features/Benefits

- **Rabbit 3000 microprocessor at 30 MHz**
- **Up to 512K Flash/512K SRAM**
- **8 channel 12-bit A/D with programmable gain**
- **47 digital I/O and 5 serial ports (IrDA, HDLC, asynch, SPI)**
- **MAC ID installed**
- **Compact size simplifies integration**
- **Ready-made platform for fast time-to-market, up to 3 months of design integration time savings**
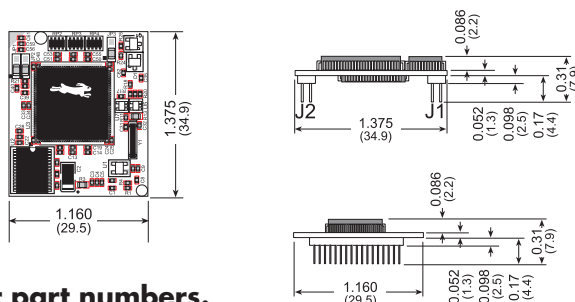- **Low-cost embedded microprocessor module**

Specifications	RCM3400	RCM3410
Feature		
Microprocessor	Rabbit® 3000 at 30 MHz	
Flash Memory	512K	512K
SRAM	512K	512K
Backup Battery	Connection for user-supplied backup battery (to support RTC and SRAM)	
Analog Inputs • A/D Converter Resolution • A/D Conversion Time (including 120 µs raw count and Dynamic C)	8 channels single-ended or 4 channels differential Programmable gain 1, 2, 4, 5, 8, 10, 16, and 20 V/V	
	12 bits (11 bits single-ended)	
	180 µs	
General-Purpose I/O	47 parallel digital I/O lines: • 41 configurable I/O • 3 fixed inputs • 3 fixed outputs	
Additional Inputs	Startup mode (2), reset in, CONVERT	
Additional Outputs	Status, reset out, VREF	
Auxiliary I/O Bus	Can be configured for 8 data lines and 6 address lines (shared with parallel I/O lines), plus I/O read/write	
Serial Ports	5 shared high-speed, CMOS-compatible ports: • All 5 configurable as asynchronous, 3 as clocked serial (SPI), and 2 as SDLC/HDLC • 1 asynchronous serial port dedicated for programming • Support for MIR/SIR IrDA transceiver	
Serial Rate	Maximum asynchronous baud rate = CLK/8	
Slave Interface	A slave port allows the RCM3400 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), 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	3.0–3.45VDC @ 29.4 MHz, 2.8–3.45VDC @ 14.7 MHz 97 mA @ 3.3V, 29.4 MHz; 57 mA @ 3.0V, 14.7 MHz	
Operating Temperature	-40° C to +85° C	
Humidity	5% to 95%, non-condensing	
Connectors	Two 2 × 17, 1.27 mm pitch	
Board Size	1.160" × 1.375" × 0.31" (29.5 mm ×34.9 mm × 7.9 mm)	
Pricing		
Price and Part Number	$69; 20-101-0561	$59; 20-101-0562
Development Kit and Part Number	$399; 101-0587	None

Visit www.digiembedded.com for part numbers.

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