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Understanding [Embedded - Microcontroller, Microprocessor, FPGA Modules](#)

Embedded - Microcontroller, Microprocessor, and FPGA Modules are fundamental components in modern electronic systems, offering a wide range of functionalities and capabilities. Microcontrollers are compact integrated circuits designed to execute specific control tasks within an embedded system. They typically include a processor, memory, and input/output peripherals on a single chip. Microprocessors, on the other hand, are more powerful processing units used in complex computing tasks, often requiring external memory and peripherals. FPGAs (Field Programmable Gate Arrays) are highly flexible devices that can be configured by the user to perform specific logic functions, making them invaluable in applications requiring customization and adaptability.

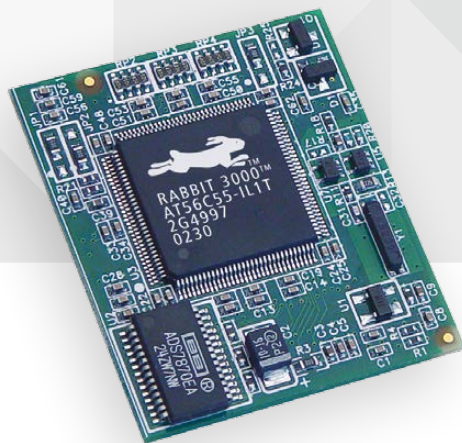
Applications of [Embedded - Microcontroller,](#)

Details

Product Status	Obsolete
Module/Board Type	MPU Core
Core Processor	Rabbit 3000
Co-Processor	-
Speed	29.4MHz
Flash Size	512KB
RAM Size	512KB
Connector Type	2 IDC Headers 2x17
Size / Dimension	1.16" x 1.38" (29.5mm x 34.9mm)
Operating Temperature	-40°C ~ 85°C
Purchase URL	https://www.e-xfl.com/product-detail/digi-international/101-0561



MICROPROCESSOR
CORE MODULE



RABBITCORE® RCM3400 SERIES

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

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.

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

RELATED PRODUCTS



RabbitCore®
RCM3000
Series



RabbitCore®
RCM3100
Series



RabbitCore®
RCM4300
Series

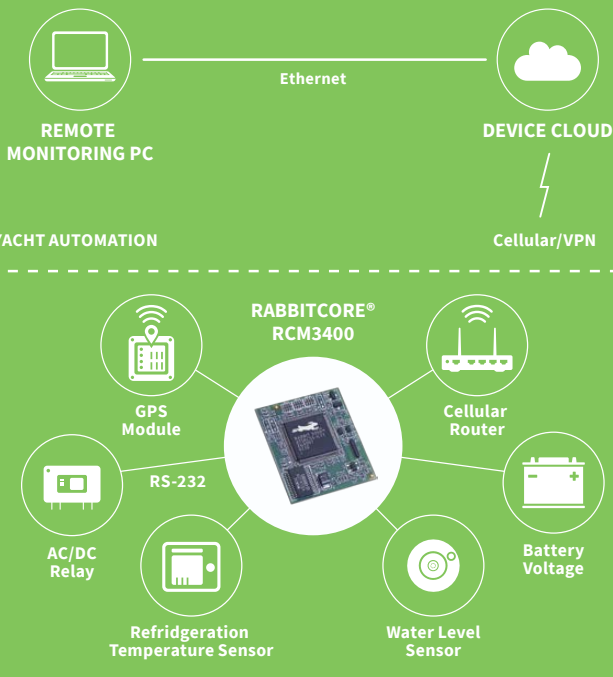


RabbitCore®
RCM3600
Series

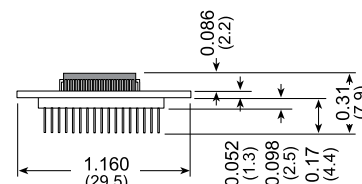
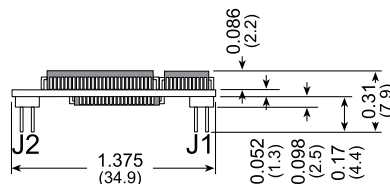
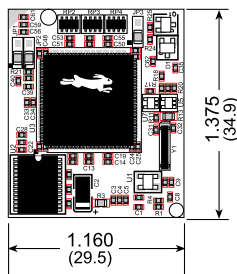


Dynamic C®

APPLICATION EXAMPLE



SPECIFICATIONS		RCM3400	RCM3410
FEATURE			
MICROPROCESSOR	Rabbit® 3000 at 30 MHz		
FLASH MEMORY	512K		256K
SRAM	512K		256K
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 MS 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: <ul style="list-style-type: none"> • 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: <ul style="list-style-type: none"> • 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 cascable), 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	3.0–3.45 VDC @ 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)		



PART NUMBERS	DESCRIPTION
20-101-0561	RCM3400
20-101-0562	RCM3410

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