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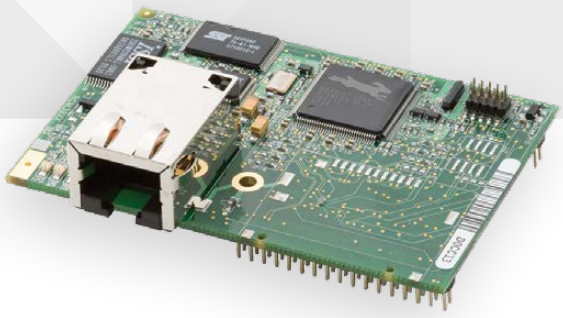
Understanding Embedded - Microcontroller, Microprocessor, FPGA Modules

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	Not For New Designs
Module/Board Type	MPU Core
Core Processor	Rabbit 3000
Co-Processor	-
Speed	44.2MHz
Flash Size	512KB
RAM Size	768KB
Connector Type	2 IDC Headers 2x17
Size / Dimension	1.85" x 2.73" (47mm x 69mm)
Operating Temperature	-40°C ~ 85°C
Purchase URL	https://www.e-xfl.com/product-detail/digi-international/20-101-1179

MICROPROCESSOR
CORE MODULE



RABBITCORE® RCM3209 SERIES

Ideal for engineers who want to rapidly develop and implement embedded systems with optional 10/100Base-T Ethernet connectivity

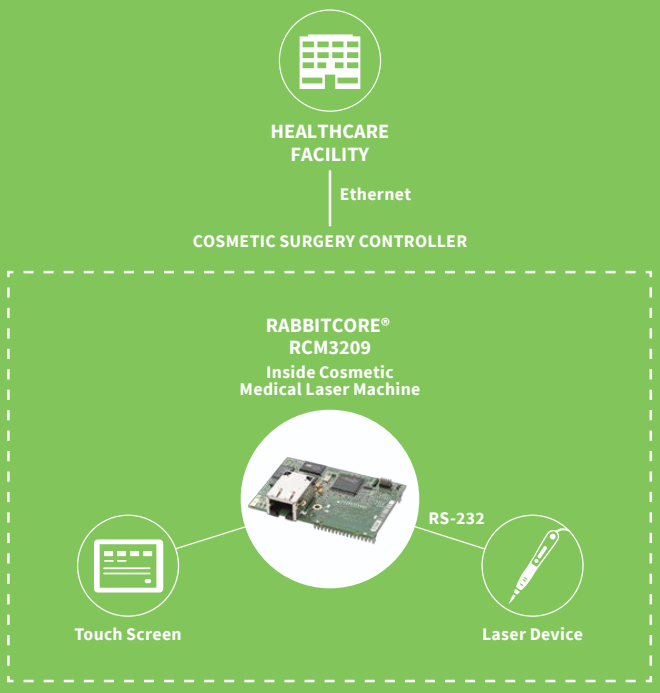
Based on the Rabbit® 3000, the RabbitCore RCM3209 series provides the capability to integrate real-time control and Ethernet connectivity into your design. Engineers are freed from the limitations of serial port communications, allowing worldwide connectivity using low-cost networking hardware. The RCM3209 series replaces the previous RCM3200 versions as it adds the full industrial temperature spec.

The RCM3209 series and Dynamic C® are designed in a complementary fashion for maximum performance and ease-of-use. Rabbit's industry-proven Dynamic C is a C language environment that includes an editor, compiler and in-circuit debugger; no in-circuit emulator is required. An extensive library of drivers, sample programs and royalty-free TCP/IP stack with source code is included.

BENEFITS

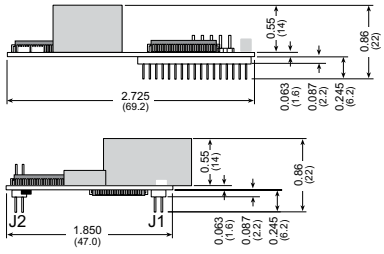
- Rabbit 3000 microprocessor at 44 MHz
- Optional 10/100Base-T Ethernet
- 512K Flash / 256K SRAM / 512K Program Execution SRAM
- 52 digital I/O and 6 serial ports for multiple device connecvity options
- Software debugging directly on target hardware

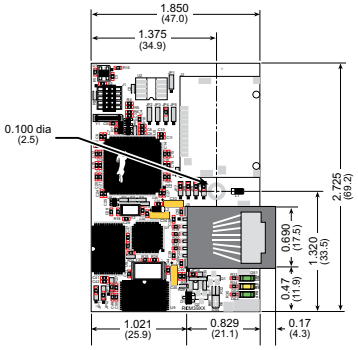
APPLICATION EXAMPLE



RELATED PRODUCTS

SPECIFICATIONS	RCM3209	RCM3229
FEATURE		
MICROPROCESSOR	Rabbit® 3000 at 44 MHz	
EMI REDUCTION	Spectrum spreader for reduced EMI (radiated emissions)	
ETHERNET PORT	10/100Base-T, RJ-45, 3 LEDs	N/A
FLASH MEMORY	512K	
DATA SRAM	256K	
PROGRAM EXECUTION SRAM	512K	
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 6 address lines (shared with parallel I/O lines), plus I/O read/write	
SERIAL PORTS	6 shared high-speed, CMOS-compatible ports: • All 6 configurable as asynchronous (with IrDA), 4 as clocked serial (SPI), and 2 as SDLC/HDLC (with IrDA) • 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 RCM3209/RCM3229 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	
POWER	3.15V to 3.45 VDC 325 mA @ 3.3V	3.15V to 3.45VDC 190 mA @ 3.3V
QUADRATURE DECODER	Edge connectors for interface with 52-pin mini PCI Express socket	
OPERATING TEMPERATURE	–40° C to +85° C	
HUMIDITY	5% to 95%, non-condensing	
CONNECTORS	Two 2 × 17, 2 mm pitch	
BOARD SIZE	1.850" × 2.725" × 0.86" (47 mm × 69 mm × 22 mm)	





PART NUMBERS	DESCRIPTION
20-101-1179	RCM3209
101-0552	RCM3209 Development Kit Universal

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