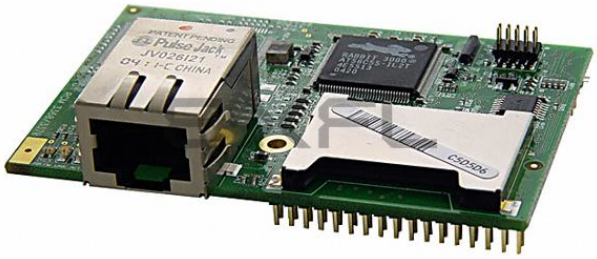

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Understanding Embedded - Microcontroller, Microprocessor, FPGA Modules

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	44.2MHz
Flash Size	512KB (Internal), 16MB (External)
RAM Size	1MB
Connector Type	2 IDC Headers 2x17, 1 IDC Header 2x5
Size / Dimension	1.85" x 2.73" (47mm x 69mm)
Operating Temperature	-40°C ~ 70°C
Purchase URL	https://www.e-xfl.com/product-detail/digi-international/20-101-0949

Selection Guide

RCM2000/3000 RabbitCore™

Shared Features of the **RCM2000/3000** RabbitCore Series

Feature	RCM2XXX	RCM3XXX
EMI Reduction	Spectrum spreader for reduced EMI *(radiated emissions)*	
Serial Rate	Max. asynchronous burst rate = CLK/32	Max. asynchronous burst rate = CLK/8
Backup Battery	Connection for user-supplied battery *(to support RTC and SRAM)*	
Slave Interface	Permits use as master or intelligent peripheral with Rabbit-based or other master controller	
Real-Time Clock	Yes, battery backable	
Timers	Five 8-bit timers *(four cascadable from the first)* and one 10-bit timer with 2 match registers	Ten 8-bit timers *(six cascadable from the first, three reserved for internal peripherals)* and one 10-bit timer with 2 match registers
Watchdog	Yes	
Humidity	5–95%, noncondensing	
Pulse-Width Modulation	N/A	8-bit free running counter and four 10-bit pulse-width registers
Input Capture	N/A	2-channel input capture can be used to time input signals from various port pins
Quadrature Decoder	N/A	2-channel quadrature decoder accepts inputs from external incremental encoder modules

continued next page ▶▶

RABBIT Semiconductor Z-WORLD

Distinguishing Features of the **RCM2000** RabbitCore Series

Feature	RCM2000	RCM2010	RCM2020	RCM2100	RCM2110	RCM2120	RCM2130	RCM2200	RCM2210	RCM2250	RCM2300
CPU Speed	25.8 MHz		18.4 MHz	22.1 MHz							
Ethernet	None			10Base-T RJ-45, 2 LEDs		None		10Base-T RJ-45, 2 LEDs	10Base-T raw signals	10Base-T RJ-45, 2 LEDs	None
Flash Memory	256K			512K	256K	512K		256K		512K	256K
SRAM	512K	128K		512K	128K	512K		128K		512K	128K
Serial Flash	None										
Analog Inputs	None										
General Purpose I/O*	40 parallel I/O • 26 configurable I/O • 8 fixed inputs • 6 fixed outputs			34 parallel I/O • 20 configurable I/O • 8 fixed inputs • 6 fixed outputs		40 parallel I/O • 26 configurable I/O • 8 fixed inputs • 6 fixed outputs		26 parallel I/O • 16 configurable I/O • 7 fixed inputs • 3 fixed outputs			29 parallel I/O • 17 config. I/O • 8 fixed inputs • 4 fixed outputs
Add'l Inputs	2 Startup Mode, Reset										
Add'l Outputs	Watchdog, Reset			Status, Clock, Watchdog, Reset				Status, Reset			
External I/O	13 address, 8 data, I/O Read-Write, Buffer Enable			13 buffered address lines, 8 buffered data lines, I/O Read-Write, Buffer Enable				4 address, 8 data, I/O Read-Write			
Serial Ports	Four 5 V CMOS-compatible • 4 configurable as asynchronous • 2 configurable as clocked serial *(SPI)*							Four 5 V CMOS-compatible • 4 configurable as asynchronous • 2 configurable as clocked serial *(SPI)***			
Power	4.75–5.25 V DC • 130 mA		4.75–5.25 V DC • 98 mA	4.75–5.25 V DC • 140 mA				4.75–5.25 V DC • 134 mA			4.75–5.25 V DC • 108 mA
Operating Temp.	–40°C to +85°C			–40°C to +70°C		–40°C to +80°C		–40°C to +70°C			–40°C to +85°C
Board Size	2.3″ x 1.9″ x 0.5″ *(58 x 48 x 13 mm)*			3.5″ x 2.0″ x 0.86″ *(89 x 51 x 22 mm)*		3.5″ x 2.0″ x 0.5″ *(89 x 51 x 13 mm)*		2.3″ x 1.6″ x 0.86″ *(59 x 41 x 22 mm)*			1.60″ x 1.15″ x 0.47″ *(41 x 29 x 12 mm)*
Connectors	2 x 20, 2 mm IDC headers							2 x 13, 2 mm IDC headers			
Part Number	101-0404	101-0405	101-0383	101-0434	101-0435	101-0436	101-0446	101-0454	101-0488	101-0494	101-0453
Development Kit Part Number	U.S.101-0398 Int'l 101-0399			U.S. 101-0451 Int'l 101-0452				U.S. 101-0475 Int'l 101-0478			U.S. 101-0480 Int'l 101-0481

*** Grouped in 8-bit ports and shared with serial ports**
****1 clocked line available only on programming header**

Distinguishing Features of the **RCM3000** RabbitCore Series

Feature	RCM3000	RCM3010	RCM3100	RCM3110	RCM3200	RCM3220	RCM3300	RCM3310
CPU Speed	29.4 MHz				44.2 MHz			
Ethernet	10Base-T, RJ-45, 2 LEDs		None		10/100Base-T, RJ-45, 3 LEDs	None	10/100Base-T, RJ-45, 3 LEDs	
Flash Memory	512K *(2 x 256K)*	256K	512K *(2 x 256K)*	256K	512K			
SRAM	512K	128K	512K	128K	512K program + 256K data		512K program + 512K data	
Serial Flash	None						8 MB	4MB
Analog Inputs	None							
General Purpose I/O*	52 digital I/O • 44 configurable I/O • 4 fixed inputs • 4 fixed outputs				52 digital I/O • 44 configurable I/O • 4 fixed inputs • 4 fixed outputs		49 parallel digital I/O • 43 configurable I/O • 3 fixed inputs • 3 fixed outputs	
Add'l Inputs	2 Startup Mode, Reset							
Add'l Outputs	Status, Reset							
External I/O	6 address *(shared with I/O)*, 8 data, plus I/O Rd, I/O Wr						5 address *(shared with I/O)*, 8 data, plus I/O Rd, I/O Wr	
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						Five 3.3 V CMOS-compatible: • 5 configurable as asynchronous *(with IrDA)*, • 3 configurable as clocked serial *(SPI)* • 2 configurable as SDLC/HDLC • 1 asynchronous serial port *(programming)*	
Power	3.15–3.45 V DC • 150 mA		3.15–3.45 V DC • 75 mA		3.15–3.45 V DC • 255 mA		3.15–3.45 V DC • 350 mA @ 3.3 V	
Operating Temp.	–40°C to +70°C		–40°C to +85°C		–40°C to +70°C			
Board Size	2.73″ × 1.85″ × 0.86″ *(69 x 47 x 22 mm)*		1.85″ × 1.65″ × 0.55″ *(47 x 42 x 14 mm)*		2.73″ × 1.85″ × 0.86″ *(69 x 47 x 22 mm)*		2.73″ × 1.85″ × 0.86″ *(69 x 47 x 22 mm)*	
Connectors	Two 2 x 17, 2 mm IDC headers							
Part Number	101-0507	101-0508	101-0517	101-0518	101-0520	101-0522	101-0691	101-0698
Development Kit Part Number	U.S. 101-0523 Int'l 101-0524		U.S. 101-0533 Int'l 101-0534		U.S. 101-0552 Int'l 101-0553		U.S. 101-0704 Int'l 101-0705	

*** Grouped in 8-bit ports and shared with serial ports**

Feature	RCM3400	RCM3410	RCM3600	RCM3610	RCM3700	RCM3710
CPU Speed	29.4 MHz		22.1 MHz			
Ethernet	Reference Design for 10/100Base-T Mac ID installed		None		10Base-T, RJ-45	
Flash Memory	512K	256K	512K	256K	512K	256K
SRAM	512K	256K	512K	128K	512K	128K
Serial Flash	None				1MB	
Analog Inputs	8 channels single-ended *(11-bit)* or 4 channels differ. *(12-bit)*, Prog. gain 1, 2, 4, 5, 8, 10, 16, and 20 V/V.		None			
General Purpose I/O*	47 digital I/O • 41 configurable I/O • 3 fixed inputs • 3 fixed outputs		33 parallel digital I/O lines • 31 configurable I/O • 2 fixed outputs			
Add'l Inputs	2 Startup Mode, Reset In, CONVERT		Reset			
Add'l Outputs	Status, Reset Out, BVREF		None			
External I/O	6 address *(shared with I/O)*, 8 data, plus I/O Rd, I/O Wr		5 address *(shared with I/O)*, 8 data, plus I/O Rd, I/O Wr			
Serial Ports	Five 3.3 V CMOS-compatible: • 4 configurable as asynchronous *(with IrDA)* • 3 as clocked serial *(SPI)*, 2 as SDLC/HDLC *(with IrDA)* • 1 asynchronous serial port *(programming)* • Support for MIR/SIR IrDA transceiver		Four 3.3 V CMOS-compatible: • 4 configurable as asynchronous *(with IrDA)* • 3 as clocked serial *(SPI)* and 1 as SDLC/HDLC *(with IrDA)*, or 1 SPI and 2 SDLC/HDLC • 1 asynchronous serial port *(programming)*			
Power	3.0–3.45 V DC • 97 mA @ 29.4 MHz; 2.8–3.45 V DC • 57 mA @ 14.7 MHz		4.75-12.6 VDC • 60 mA @ 22.1 MHz; 38 mA @ 11.06 MHz		4.75-5.25 VDC • 100 mA @ 22.1 MHz; 78 mA @ 11.06 MHz	
Operating Temp.	–40°C to +85°C				–40°C to +70°C	
Board Size	1.38" × 1.16" × 0.31" *(35 x 29 x 7.4 mm)*		2.10" × 1.20" × 0.62" *(53 x 30 x 16 mm)*		2.95" × 1.20" × 0.88" *(75 x 30 x 22 mm)*	
Connectors	Two 2 x 17, 1.27 mm IDC Headers		Single 2 x 20, 0.1" IDC header			
Part Number	101-0561	101-0562	101-0672	101-0673	101-0674	101-0675
Development Kit Part Number	U.S. 101-0587 Int'l 101-0588	U.S. 101-0587 Int'l 101-0588	U.S. 101-0678 Int'l 101-0679	U.S. 101-0678 Int'l 101-0679	U.S. 101-0680 Int'l 101-0681	U.S. 101-0680 Int'l 101-0681

*** Grouped in 8-bit ports and shared with serial ports**