

# Selection Guide

RCM2000/3000 RabbitCore™

02/05

## Shared Features of the RCM2000/3000 RabbitCore Series

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

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## Distinguishing Features of the RCM2000 RabbitCore Series

Feature	RCM2000	RCM2010	RCM2020	RCM2100	RCM2110	RCM2120	RCM2130	RCM2200	RCM2210	RCM2250	RCM2260	RCM2300
<b>CPU Speed</b>	25.8 MHz		18.4 MHz	22.1 MHz								
<b>Ethernet</b>	None			10Base-T RJ-45, 2 LEDs		None		10Base-T RJ-45, 2 LEDs	10Base-T raw signals	10Base-T RJ-45, 2 LEDs	10Base-T raw signals	None
<b>Flash Memory</b>	256K			512K	256K	512K	256K			512K		256K
<b>SRAM</b>	512K	128K		512K	128K	512K	128K			512K		128K
<b>Extended Memory</b>	None											
<b>Analog Inputs</b>	None											
<b>General Purpose I/O*</b>	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	
<b>Add'l Inputs</b>	2 Startup Mode, Reset											
<b>Add'l Outputs</b>	Watchdog, Reset						Status, Reset					
<b>External I/O</b>	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					
<b>Serial Ports</b>	Four 5 V CMOS-compatible • 4 configurable as asynchronous • 2 configurable as clocked serial ( <i>SP1</i> )						Four 5 V CMOS-compatible • 4 configurable as asynchronous • 2 configurable as clocked serial ( <i>SP1</i> )**					
<b>Power</b>	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	
<b>Operating Temp.</b>	–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	
<b>Board Size</b>	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)	
<b>Connectors</b>	2 x 20, 2 mm IDC headers						2 x 13, 2 mm IDC headers					
<b>Part Number</b>	101-0404	101-0405	101-0383	101-0434	101-0435	101-0436	101-0446	101-0454	101-0488	101-0494	101-0955	101-0453
<b>Development Kit Part Number</b>	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	RCM3210	RCM3220	RCM3300	RCM3310	RCM3360	RCM3370
<b>CPU Speed</b>	29.4 MHz				44.2 MHz	29.4	44.2 MHz				
<b>Ethernet</b>	10Base-T, RJ-45, 2 LEDs		None		10/100Base-T, RJ-45, 3 LEDs		None	10/100Base-T, RJ-45, 3 LEDs			
<b>Flash Memory</b>	512K (2 x 256K)	256K	512K (2 x 256K)	256K	512K	256K	512K				
<b>SRAM</b>	512K	128K	512K	128K	512K program + 256K data	128K	512K program + 256K data	512K program + 512K data			
<b>Extended Memory</b>	None							8 MB Serial Flash	4MB Serial Flash	16 MB NAND Flash ( <i>chip</i> )	None
	Removable Flash Memory										
<b>Analog Inputs</b>	None										
<b>General Purpose I/O*</b>	52 digital I/O • 44 configurable I/O • 4 fixed inputs • 4 fixed outputs		54 digital I/O • 46 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		52 parallel digital I/O • 44 configurable I/O • 4 fixed inputs • 4 fixed outputs	
<b>Add't Inputs</b>	2 Startup Mode, Reset										
<b>Add't Outputs</b>	Status, Reset										
<b>External I/O</b>	6 address ( <i>shared with I/O</i> ), 8 data, plus I/O Rd, I/O Wr							5 address ( <i>shared with I/O</i> ), 8 data, plus I/O Rd, I/O Wr			
<b>Serial Ports</b>	Six 3.3 V CMOS-compatible: • 6 configurable as asynchronous ( <i>with IrDA</i> ) • 4 configurable as clocked serial ( <i>SPI</i> ) • 2 configurable as SDLC/HDLC							Five 3.3 V CMOS-compatible: • 5 configurable as asynchronous ( <i>with IrDA</i> ), • 3 configurable as clocked serial ( <i>SPI</i> ) • 2 configurable as SDLC/HDLC • 1 asynchronous serial port ( <i>programming</i> )		Six 3.3 V CMOS-compatible: • 6 configurable as asynchronous ( <i>with IrDA</i> ) • 4 configurable as clocked serial ( <i>SPI</i> ) • 2 configurable as SDLC/HDLC • 1 asynchronous serial port dedicated ( <i>programming</i> )	
<b>Power</b>	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			
<b>Operating Temp.</b>	–40°C to +70°C		–40°C to +85°C		–40°C to +70°C						
<b>Board Size</b>	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)						
<b>Connectors</b>	Two 2 x 17, 2 mm IDC headers										
<b>Part Number</b>	101-0507	101-0508	101-0517	101-0518	101-0520	101-0521	101-0522	101-0691	101-0698	101-0949	101-0950
<b>Development Kit Part Number</b>	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		U.S. 101-0953 Int'l 101-0954	

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

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Feature	RCM3400	RCM3410	RCM3600	RCM3610	RCM3700	RCM3710	RCM3720
<b>CPU Speed</b>	29.4 MHz		22.1 MHz				
<b>Ethernet</b>	Reference Design for 10/100Base-T Mac ID installed		None		10Base-T, RJ-45		
<b>Flash Memory</b>	512K	256K	512K	256K	512K	256K	512K
<b>SRAM</b>	512K	256K	512K	128K	512K	128K	256K
<b>Extended Memory</b>	None				1MB Serial Flash		
<b>Analog Inputs</b>	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				
<b>General Purpose I/O*</b>	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				
<b>Add't Inputs</b>	2 Startup Mode, Reset In, CONVERT		Reset			None	
<b>Add't Outputs</b>	Status, Reset Out, BVREF		None				
<b>External I/O</b>	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				
<b>Serial Ports</b>	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)				
<b>Power</b>	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		
<b>Operating Temp.</b>	–40°C to +85°C				–40°C to +70°C		
<b>Board Size</b>	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)		
<b>Connectors</b>	Two 2 x 17, 1.27 mm IDC Headers		Single 2 x 20, 0.1" IDC header				
<b>Part Number</b>	101-0561	101-0562	101-0672	101-0673	101-0674	101-0675	101-0961
<b>Development Kit Part Number</b>	U.S. 101-0587 Int'l 101-0588		U.S. 101-0678 Int'l 101-0679		U.S. 101-0680 Int'l 101-0681		U.S. 101-0963 Int'l 101-0964

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