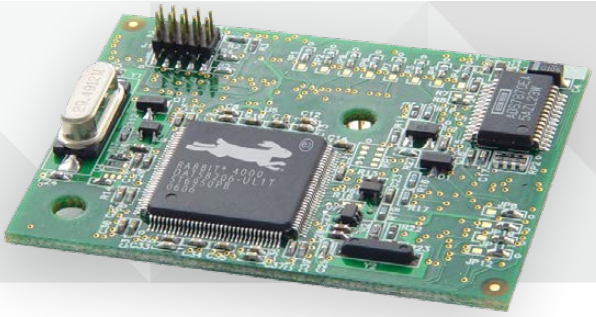
MICROPROCESSOR
CORE MODULE



DIGI RABBITCORE RCM4100 SERIES

A compact core module ideal for device control for embedded applications that require I/O control, data handling and peripheral connectivity

The RabbitCore RCM4100 series is the entry platform for the Rabbit® 4000 family of core modules. The RCM4100 is designed to mount directly to a user-supplied motherboard and acts as the microprocessor of the embedded system. The microprocessor features 40 GPIO lines shared with up to six CMOS-compatible serial ports, and four levels of alternate pin functions that include variable phase PWM, quadrature decoder, and input capture.

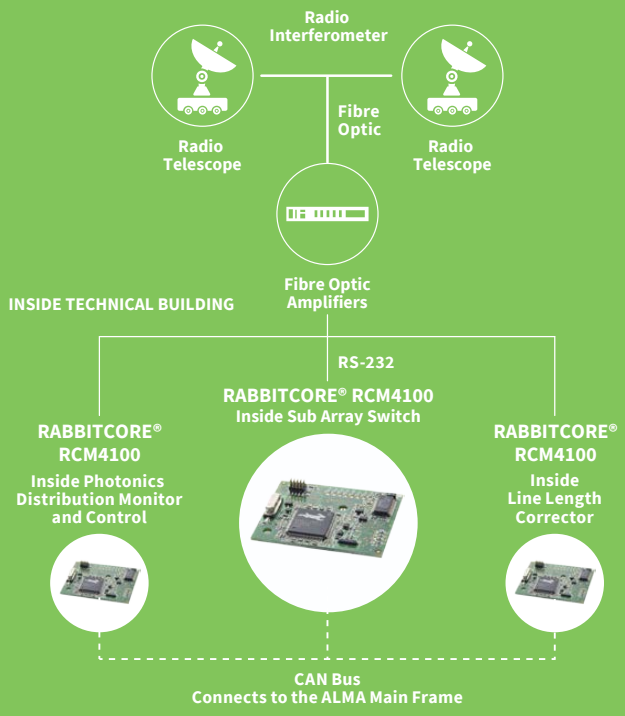
The RCM4100 series, with its robust feature set, ample memory, low-power modes and analog channels, is available for multiple peripheral connectivity options such us as a cellular modem or ZigBee device.

Evaluation of the RCM4100 is easy with the RabbitCore RCM4100 development kit, which provides all the necessary hardware and software to quickly get started.

BENEFITS

- Rabbit 4000 running up to 59 MHz
- 512K Flash, 256K / 512K Data SRAM
- Up to 40 GPIO, up to 6 CMOS-compatible serial ports
- Auxiliary I/O feature for reducing processor bus loading
- 8 channels 12-bit A/D converter (RCM4100)
- Ideal for device intelligence and control
- Well suited for easy integration with peripheral technologies such as GPS, cellular modems, RFID readers, sensors, etc.

APPLICATION EXAMPLE



RELATED PRODUCTS



SPECIFICATIONS	RCM4100	RCM4110	RCM4120
FEATURES			
MICROPROCESSOR	Rabbit® 4000 at 59 MHz	Rabbit® 4000 at 29 MHz	Rabbit® 4000 at 59 MHz
FLASH MEMORY	512K		
DATA SRAM	512K	256K	512K
FAST PROGRAM-EXECUTION SRAM	512K	None	512K
BACKUP BATTERY	Connection for user-supplied backup battery (to support RTC and data SRAM)		
GENERAL PURPOSE I/O	29 parallel digital I/0 lines: Configurable with 4 layers of alternate functions	40 parallel digital I/0 lines: Configurable with 4 layers of alternate functions	
ADDITIONAL INPUTS	Startup mode (2), reset in, CONVERT	Startup mode (2), reset in	
ADDITIONAL OUTPUTS	Status, reset out, analog VREF	Status, reset out	
ANALOG INPUTS - A/D CONVERTER RESOLUTION	8 channels single-ended or 4 channels differential. Programmable gain 1, 2, 4, 5, 8, 10, 16 and 20 V/V	None	None
- A/D CONVERTER RESOLUTION	12 bits (11 bits single-ended)		
- A/D CONVERSION TIME (INCLUDING 120 MS RAW COUNT AND DYNAMIC C)	180 µs		
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	6 high-speed, CMOS-compatible ports: • All 6 configurable as asynchronous (with IrDA), 4 as clocked serial (SPI), and 2 as SDLC/HDLC • 1 asynchronous clocked serial port shared with programming port • 1 clocked serial port shared with A/D converter	6 high-speed, CMOS-compatible ports: • All 6 configurable as asynchronous (with IrDA), 4 as clocked serial (SPI), and 2 as SDLC/HDLC • 1 asynchronous clocked serial port shared with programming port	
SERIAL RATE	Maximum asynchronous baud rate = CLK/8		
SLAVE INTERFACE	Slave port allows the RCM4100 to be used as an intelligent peripheral device slaved to a master processor		
REAL TIME CLOCK	Yes		
TIMERS	Ten 8-bit timers (6 cascadable from the first), one 10-bit timer with 2 match registers, and one 16-bit timer with 4 outputs and 8 set/reset registers		
WATCHDOG/SUPERVISOR	Yes		
PULSE-WIDTH MODULATORS	4 channels synchronized PWM with 10-bit counter; 4 channels variable-phase or synchronized PWM with 16-bit counter		
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 (PINS UNLOADED)	3.0– 3.6 VDC		
	125 mA @ 3.3V	65 mA @ 3.3V	125 mA @ 3.3V
OPERATING TEMPERATURE	-40° C to +85° C	0° C to +70° C	-40° C to +85° C
HUMIDITY	5% to 95%, non-condensing		
CONNECTORS	One 2 × 25, 1.27 mm pitch IDC signal header; One 2 × 5, 1.27 mm pitch IDC programming header		
BOARD SIZE	1.41" × 1.88" × 0.49" (36 mm × 48 mm × 12 mm)		
PRODUCT WARRANTY	1 year		

PART NUMBERS	DESCRIPTION
20-101-1093	RCM4110
20-101-1154	RCM4120

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DIGI INTERNATIONAL WORLDWIDE HQ
877-912-3444 / 952-912-3444 / www.digi.com

DIGI INTERNATIONAL GERMANY
+49-89-540-428-0

DIGI INTERNATIONAL JAPAN
+81-3-5428-0261 / www.digi-intl.co.jp

DIGI INTERNATIONAL SINGAPORE
+65-6213-5380

DIGI INTERNATIONAL CHINA
+86-21-50492199 / www.digi.com.cn