

RCM4100 RabbitCore™

MODELS | RCM4110 |

Microprocessor Core Module

Key Features

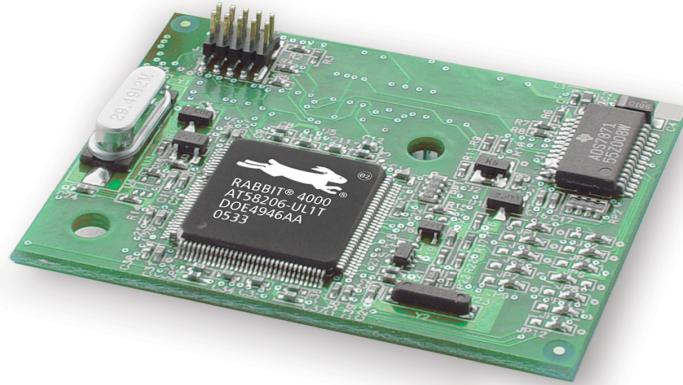
- Rabbit® 4000 Microprocessor
- Up to 40 GPIO with multi-level alternate pin functions
- 6 CMOS-compatible serial ports
- 512K Flash / 256K SRAM standard
- Low power modes and speeds as low as 2 KHz
- Auxiliary I/O feature for reducing processor bus loading
- Small footprint at 36 mm x 48 mm
- Optimized for use with Dynamic C®, a powerful integrated development environment

Design Advantages:

- Ideal for device intelligence and control
- Well suited for easy integration with peripheral technologies such as GPS, cellular modems, RFID readers, sensors, etc.
- Support for hardware DMA, variable phase PWM, and parity
- Security-key feature with “tamper detect” and encryption capabilities adds peace of mind for OEM’s and system integrators
- Complete microprocessor, on-board memory, royalty-free TCP/IP stack, and hundreds of sample programs reduces time-to-market by months

Applications

- Device-level control
- Remote data logging
- Asset management
- Security Access Systems
- Wireless device/data management



RCM4100 - Control and Connectivity in a Small Package

The RCM4100 microprocessor core modules are compact, powerful control devices for embedded applications that require I/O control, data handling, and peripheral connectivity.

The RCM4100 series is the first of the next generation core modules to take advantage of the new Rabbit 4000 microprocessor. The Rabbit 4000 features a clock speed of up to 60MHz, hardware DMA, auxiliary I/O, quadrature decoder, input capture, 40 GPIO lines shared with up to six serial ports, and four levels of alternate pin functions that include variable phase PWM. The 500+ new operational code instructions increase processing efficiency. The RCM4100 series features a small footprint of 1.41" x 1.88" (36mm x 48mm), complete with the Rabbit 4000 microprocessor, 512K flash, and 256K/512K data RAM, with or without an eight channel

12-bit A/D. Two versions are available for varying speeds and memory options. The RCM4100 core modules provide the I/O control and connectivity for a wide range of real-world embedded applications.

RabbitCores mount directly onto a user-designed motherboard, and can interface with CMOS-compatible digital devices via the user's motherboard. Programs are developed with our industry-proven Dynamic C development system, a C language environment that includes an editor, compiler, and in-circuit debugger. Programming is easy with hundreds of samples and libraries that are pre-developed, for a user to be up and

running in no time. No in-circuit emulator is required, no third party tools needed.

Dynamic C ensures optimal support for Rabbit 4000-based solutions. Dynamic C enhanced compiler generates smaller code, support for far pointers and far data for easy access to external memory devices, improvements to AES encryption libraries, and a new I/O configuration utility that helps assign pin functions and guides those selections so that conflicts can be avoided.

Software Add-On Modules

Select from a wide range of add-on library modules for your programming needs. These low-cost modules are sold separately, allowing you to customize the software your application requires, while at an affordable price.



Advanced Encryption Standard

128 bit encryption for transfer of sensitive data



Library Encryption Executable

Program to encrypt Dynamic C library source files



Point-to-Point Protocol

TCP/IP functionality for serial and PPPoE connections



Rabbit Field Utility

Source code for the Rabbit Field Utility

RFU

µC/OS-II Real-Time Kernel

Real-time preemptive, prioritized operating system

| RCM4110 RabbitCore Specifications | |
|-------------------------------------|---|
| Features | RCM4110 |
| Microprocessor | Rabbit 4000 @ 29.49 MHz |
| Flash | 512K |
| SRAM | 256K data |
| General-Purpose I/O | 40 I/O lines (3.3 V) configurable, with up to four layers of alternate functions |
| Analog Inputs | – |
| Additional Inputs | 2 Startup Mode, Reset In |
| Additional Outputs | Status, Reset Out, I/O read/write |
| Auxiliary I/O Bus | 8 data lines and 6 address lines (shared with parallel I/O lines), plus I/O read/write |
| Pulse-Width Modulator | Four channels synchronized PWM with 10-bit counter Four channels variable-phase or synchronized PWM with 16-bit counter |
| Serial Ports | Six shared high-speed, CMOS-compatible ports: <ul style="list-style-type: none"> • All available are configurable as asynchronous (with IrDA) • 4 configurable as clocked serial (SPI) • 2 configurable as SDL/HDLC • 1 asynchronous serial port dedicated for programming • 1 clocked serial port dedicated for A/D converter (RCM4100) • Support for MIR/SIR IrDA transceiver |
| Serial Rate | Max. asynchronous baud rate = CLK/8 |
| Backup-Battery | Connection for user-supplied battery (to support RTC and data SRAM) |
| Slave Interface | Slave port permits use as master or intelligent peripheral with master controller |
| Real-Time Clock | Yes |
| Timers | Ten 8-bit timers (6 cascadable from the first) and one 10-bit timer with 2 match registers, one 16-bit timer with 4 outputs and 8 set/reset registers |
| Watchdog/Supervisor | Yes |
| 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 - 3.6V DC, 110mA @ 3.3V (unloaded pins) |
| Operating Temp. | 0°C to +70°C |
| Humidity | 5–95%, noncondensing |
| Connectors - Headers | One 2 x 25, 1.27 mm pitch IDC signal header One 2 x 5, 1.27 mm pitch IDC programming header |
| Board Size | 1.41" x 1.88" x 0.48" (36mm x 48mm x 12mm) |
| Pricing | |
| Part Number | 20-101-1093 |
| RCM4100 Development Kit Part Number | U.S. 101-1101 Int'l 101-1102 |

RCM4100 Development Kit comes complete with:

- RCM4110 RabbitCore Module
- Prototyping Board
- Serial cable for programming and debugging
- Dynamic C[®] 10 integrated development software
- Getting Started Instructions
- AC adapter (U.S. only)
- Connectors and Accessories

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