# RCM3600 RabbitCore™

MODELS | RCM3600 | RCM3610 |

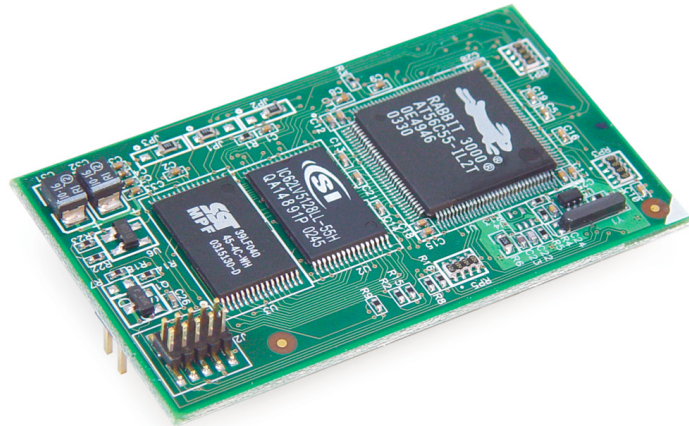*Microprocessor Core Module*

## Key Features

- Powerful Rabbit® 3000 microprocessor at 22.1 MHz

- Compact footprint: 2.11" x 1.23" x 0.62" (54 x 31 x 16mm)

- Up to 512K Flash / 512K SRAM

- 33 parallel digital I/O with configurable options

- 4 serial ports (IrDA, HDLC, asynch, SPI)

- 5 V DC input, 3.3 V DC interface

## Design Advantages:

- Low-cost embedded microprocessor module

- Ready-made platform for fast time-to-market, up to 3 months design integration time savings.

- Compact size

- Dynamic C® development environment for real-time development and debugging

- Exceptionally fast performance for math, logic, I/O

## Applications

- Device intelligence
- Embedded control
- Sensor reading
- Serial device coordinator
- Handheld and remote devices
- GPS/AVL applications

## RCM3600 – Compact yet powerful embedded intelligence

The RCM3600 RabbitCore is a low-cost Rabbit 3000 microprocessor based core module designed for a wide variety of applications. The RCM3600 features 512K Flash / 512K SRAM or 256K Flash / 256K SRAM, 4 serial ports, and an extremely small footprint (2.11" × 1.23" / 54 × 31 mm). Extensive demo programs and software application templates make it easy to get the RCM3600 up and running in no time.

The RCM3600 RabbitCore mounts directly on a user-designed motherboard with a single 0.1" (2.54 mm) 2x20 dual-row IDC header and can interface with all types of CMOS-compatible digital devices. 33 digital I/O (shared with serial ports), power, and other signals are routed directly to the motherboard. Built-in low-EMI features, including a clock spectrum spreader, practically eliminate EMI problems, helping OEMs pass European CE and other regulatory RF emissions tests.

The RCM3600 is equipped with +5 V DC tolerant I/O, quadrature encoder inputs, PWM outputs, and pulse capture and measurement capabilities. The RCM3600 also features a battery-backable real-time clock, glueless memory and I/O interfacing, and low-power "sleepy" modes. An alternate I/O bus can be configured for 8 data lines and 5 address lines (shared with parallel I/O).

**RABBIT** Semiconductor®

Programmed with Rabbit Semiconductor's Dynamic C®, the RCM3600 executes math, logic, and I/O quickly. The Rabbit 3000 micro-processor, RCM3600, and Dynamic C were designed in a complementary fashion for maximum performance and ease of use in embedded systems. Rabbit Semiconductor's industry-proven Dynamic C development system is a C-language environment that includes an editor, compiler, and in-circuit debugger. User programs can be compiled executed and debugged using Dynamic C and a programming cable—no in-circuit emulator is required. An extensive library of drivers and sample programs is provided.

## Dynamic C Add-on Modules

Dynamic C Add-on software modules provide added functionality and customization to your embedded applications. Software is available via download or CD-ROM.

**Advanced Encryption Standard**
128-bit encryption for transfer of sensitive data

**Point-to-Point Protocol**
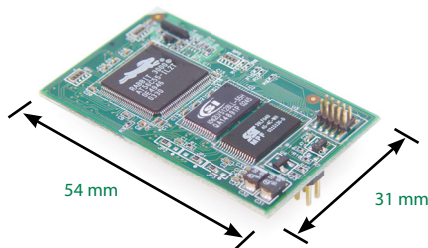TCP/IP functionality for serial and PPPoE connections

**Library Encryption Executable**
Program to encrypt Dynamic C library source files

## μC/OS-II Real-Time Kernel

Real-time preemptive, prioritized operating system

## Rabbit Field Utility (RFU)

Source code for the Rabbit Field Utility

54 mm    31 mm

| RCM3600 RabbitCore Specifications | | |
|---|---|---|
| Features | RCM3600 | RCM3610 |
| Microprocessor | Low-EMI Rabbit® 3000 at 22.1 MHz | |
| Flash Memory | 512K | 256K |
| SRAM | 512K | 128K |
| Backup Battery | Connection for user-supplied backup battery (to support RTC and SRAM) | |
| General-Purpose I/O | 33 parallel digital I/O lines:<br>• 31 configurable I/O<br>• 2 fixed outputs | |
| Additional I/O | Reset | |
| Auxiliary I/O Bus | Can be configured for 8 data lines and 5 address lines<br>(shared with parallel I/O lines), plus I/O read/write | |
| Serial Ports | Four 3.3 V CMOS-compatible ports configurable as:<br>• 4 asynchronous serial ports (with IrDA) or<br>• 3 clocked serial ports (SPI) plus 1 HDLC (with IrDA) or<br>• 1 clocked serial port (SPI) plus 2 HDLC serial ports (with IrDA) | |
| Serial Rate | Maximum asynchronous baud rate = CLK/8 | |
| Slave Interface | A slave port allows the RCM3600 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 | 4 PWM output channels with 10-bit free-running counter and priority interrupts | |
| Input Capture/Quadrature Decoder | 2-channel input capture can be used to time input signals from various port pins<br>• 1 quadrature decoder unit accepts inputs from external incremental encoder modules or<br>• 1 quadrature decoder unit shared with 2 PWM channels | |
| Power | 5 V ±0.25 V DC 60 mA @ 22.1 MHz, 5 V; 38 mA @ 11.06 MHz, 5 V | |
| Operating Temperature | −40°C to +85°C | |
| Humidity | 5% to 95%, non-condensing | |
| Connectors | One 2 x 20, 0.1″ pitch | |
| Board Size | 1.23″ × 2.11″ × 0.62″ (31 mm × 54 mm × 16 mm) | |
| Pricing | | |
| Pricing (qty 1/100)<br>Part Number | $49 / 39<br>20-101-0672 | $45 / 37<br>20-101-0673 |
| Development Kit<br>Part Number | $239<br>U.S 101-0678    Int'l 101-0679 | |

## RCM3600 Development Kit comes complete with:

• RCM3600 RabbitCore (512K Flash/512K SRAM)
• Development board with prototyping area
• AC adapter (U.S./Canada only)
• Dynamic C development system (not a trial version) and complete documentation
• Serial cable for programming and debugging
• Getting Started manual

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