

# RabbitSys™ Protected Operating System

| RCM3365 RabbitSys |

Development Kit

## Key Features

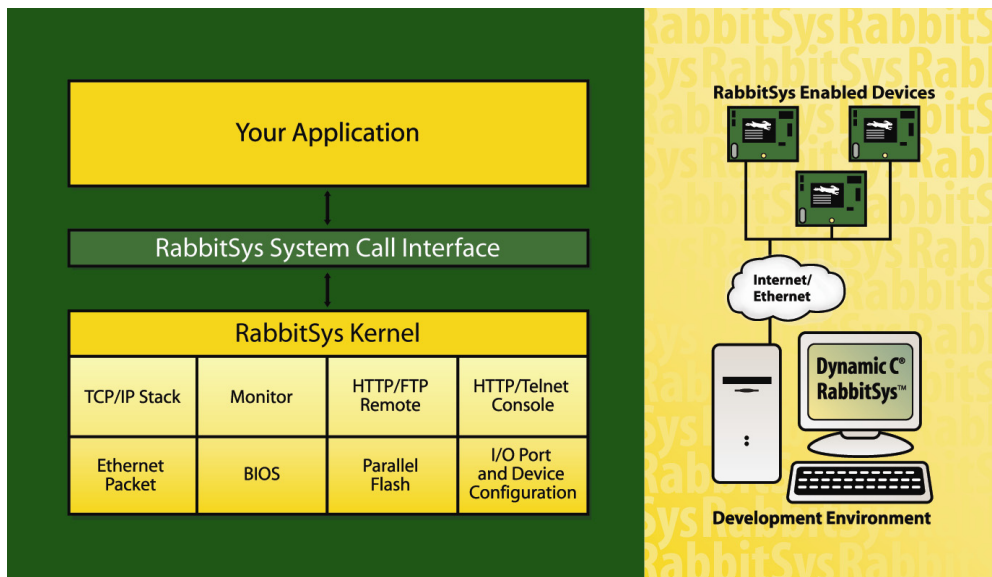
- Remote Firmware and Application Update Mechanism
- Remote Debugging and Monitoring Systems
- Software-Crash Recovery System
- Enhanced Memory Protection Features
- Event Handler and Corrective Action Operations
- Console and Preloaded Device Drivers

## Design Advantages

- Monitors and identifies misbehaving programs that can cause system faults.
- Detects and recovers from software failures. Provides a reliable operating environment.
- Safeguards access to internal resources such as I/O, system memory, BIOS, etc.
- Easily scalable for LAN-based application deployment.
- Provides robust operations for Rabbit-based embedded systems.

## Applications

- Ideal for LAN-enabled embedded systems in:
  - Security and access control
  - Remote monitoring and data logging
  - Industrial controls
- Building Automation
- Field Applications



## RabbitSys – Conquering Embedded System Reliability Problems

Embedded engineers know that code and software inherently have bugs. On the other hand, you need to provide the most reliable system deployment to prevent costly field servicing. RabbitSys reduces the possibility of field failure, and provides for easy access to your devices for remote management.

The RabbitSys kernel as loaded onto the RCM3365 RabbitSys core module (included in Kit) provides embedded systems designers the ability to update, monitor, configure, detect, diagnose, and even debug embedded systems from remote locations.

RabbitSys increases reliability by providing extensive feedback during development and debugging cycles. Features such as the program monitor, an event handler, and safe system shutdown cradle your application and make it resistant to external transient errors. RabbitSys safeguards access to embedded system resources, like I/O and system memory, assuring software integrity.

RabbitSys' assurance of reliability extends beyond the confines of the development environment. The remote capabilities of RabbitSys enable embedded programmers to raise e-mail alerts when a software failure occurs. During such failures, RabbitSys enables your application to take the necessary steps to return attached equipment to its default state. RabbitSys removes the burden and expense of sending out a technician. Instead, a simple network connection and software update to the malfunctioning device repairs the problem.

RabbitSys also can easily scale with the deployment of new devices, allowing you to manage many devices concurrently.



# RabbitSys



### RabbitSys Development Kit Includes:

- RCM3365 RabbitSys Core Module
- Prototyping Board
- xD-Picture Card
- Dynamic C 9.3x to support RabbitSys
- RabbitSys CD
- FAT File v. 2.11
- Cables and Accessories
- Getting Started Manual
- Power Supply (US Kits Only)

### RabbitSys Components

<b>System Call Interface SysCall</b>	Your program accesses RabbitSys through the system call interface. When a system call request occurs, RabbitSys verifies the type of the system call, associated parameters, and device handles before servicing the call.
<b>Event-Driven Kernel</b>	A powerful event handler drives the RabbitSys kernel. Events such as Timed events, shutdown events and alert events can be triggered depending on the error that it encounters. RabbitSys predefines system events but also gives you the ability to add your own user-defined events.
<b>Remote Program Update</b>	Provide yourself full access to your Ethernet-connected Rabbit device from anywhere in the world with the capability of uploading and updating programs remotely. Whether you are adding features or maybe fixing a bug in critical code. Updates can be done via system mode HTTP server, FTP server or via the remote upload API.
<b>Monitor</b>	RabbitSys maintains an audit trail to support detection and diagnosis of system reliability problems. The RabbitSys API for the Monitor provides the ability to query program status, logs and handle run-time errors, and responds to critical system errors.
<b>Console</b>	The console provides a machine friendly, command-line interface enabled during system boot up that is active in RabbitSys at all times. The console connects over serial or through TCP/IP using Telnet, HTTP, or FTP. The console provides the interface through which you can configure and view network settings, configure logins, access the monitor, update your program, add watches, reset the program, or even reset RabbitSys itself.
<b>DHCP Support for Network Configuration</b>	By default, RabbitSys enabled devices are configured with DHCP for automatic network configuration. RabbitSys allows you to detect RabbitSys enabled devices on a local area network via UDP. You just need to connect your RabbitSys enabled device in the network and the DHCP function will discover the device, to immediately begin communicating with it.
<b>Hardware Compatibilities</b>	The RCM3365 with RabbitSys features a Rabbit 3000 @ 44 MHz clock, 10/100Base-T Ethernet connectivity, 512K Flash, 512K program execution SRAM, 512K data SRAM and up to 50 digital I/O shared with up to 6 serial ports. This combination will provide an ideal solution to suit your embedded remote applications.

### RabbitSys Development Kit Specifications

Features	RCM3365 RabbitSys
<b>Microprocessor</b>	Rabbit 3000 @ 44.2 MHz
<b>RabbitSys Footprint</b>	192K program flash (includes TCP/IP stack, etc.); 192K fast RAM; less than 64K from battery backed RAM
<b>Ethernet Port</b>	10/100Base-T, RJ-45, 3 LEDs
<b>Flash</b>	512K
<b>SRAM</b>	512K program + 512K data
<b>Extended Memory</b>	16 MB (fixed) xD-picture card socket support up to 128 MB (NAND Flash)
<b>Backup Battery</b>	Connection for user-supplied battery (to support RTC and SRAM)
<b>LED Indicators</b>	5: ACT (activity), LINK (link), SPEED (10/100 Base-T), FM (flash memory), USR (user-programmable)
<b>General-Purpose I/O</b>	52 parallel digital I/O: 44 configurable / 4 fixed inputs / 4 fixed outputs
<b>Additional Inputs</b>	2 Startup Mode, Reset In
<b>Additional Outputs</b>	Status, Reset Out
<b>Auxiliary I/O Bus</b>	8 data and 5 address (shared with I/O), plus I/O read-write
<b>Serial Ports</b>	Six 3.3 V CMOS-compatible: <ul style="list-style-type: none"> <li>• 6 configurable as asynchronous (with IrDA),</li> <li>• 4 configurable as clocked serial (SPI)</li> <li>• 2 configurable as SDLC/HDLC</li> <li>• 1 asynchronous serial port dedicated for programming</li> </ul>
<b>Serial Rate</b>	Max. asynchronous baud rate = CLK/8
<b>Slave Interface</b>	Slave port permits use as master or intelligent peripheral with master controller
<b>Real-Time Clock</b>	Yes
<b>Timers</b>	Ten 8-bit timers (6 cascaded from the first) and one 10-bit timer with 2 match registers
<b>Watchdog/Supervisor</b>	Yes
<b>Pulse-Width Modulators</b>	4 PWM based on a 10-bit free-running counter and priority interrupts
<b>Priority Interrupts</b>	4 level prioritized interrupt structure consisting of 2 external and 22 internal sources.
<b>Input Capture</b>	2-channel input capture can be used to time input signals from various port pins.
<b>Quadrature Decoder</b>	2-channel quadrature decoder accepts inputs from external incremental encoder modules.
<b>Power</b>	3.15-3.45 V DC, 250 mA @ 44.2 MHz 3.3 V
<b>Operating Temp.</b>	-40°C to +70°C
<b>Humidity</b>	5-95%, noncondensing
<b>Connectors - Headers</b>	Two 2 x 17 (2 mm pitch), one 2 x 5, 1.27 mm programming, one xD-Picture card slot
<b>Board Size</b>	1.850" x 2.725" x 0.86" (47 x 69 x 22 mm)

### RabbitSys Pricing

<b>RabbitSys Development Kit</b>	\$409
Part Number	U.S. 101-1088 Int'l 101-1089
<b>RCM3365 RabbitSys Core Module (qty. 1/100)</b>	\$113 / 96
Part Number	101-1087



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