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### Understanding [Embedded - Microcontroller, Microprocessor, FPGA Modules](#)

Embedded - Microcontroller, Microprocessor, and FPGA Modules are fundamental components in modern electronic systems, offering a wide range of functionalities and capabilities. Microcontrollers are compact integrated circuits designed to execute specific control tasks within an embedded system. They typically include a processor, memory, and input/output peripherals on a single chip. Microprocessors, on the other hand, are more powerful processing units used in complex computing tasks, often requiring external memory and peripherals. FPGAs (Field Programmable Gate Arrays) are highly flexible devices that can be configured by the user to perform specific logic functions, making them invaluable in applications requiring customization and adaptability.

### Applications of [Embedded - Microcontroller,](#)

#### Details

Product Status	Not For New Designs
Module/Board Type	MPU Core
Core Processor	Rabbit 6000
Co-Processor	-
Speed	162.5MHz
Flash Size	4MB
RAM Size	1.032MB (Internal), 1MB (External)
Connector Type	Edge Connector - 52
Size / Dimension	1.2" x 2" (30mm x 51mm)
Operating Temperature	-40°C ~ 85°C
Purchase URL	<a href="https://www.e-xfl.com/product-detail/digi-international/20-101-1321">https://www.e-xfl.com/product-detail/digi-international/20-101-1321</a>



HIGH PERFORMANCE  
EMBEDDED DEVICE  
SERVERS



# MINICORE<sup>®</sup> RCM6700 SERIES

An easily scalable cloud-computing infrastructure, extending remote device control and management with tremendous savings in development cost

The ultra-compact MiniCore RCM6700 is ideal for today's smart energy initiatives as well as other applications that require a cost effective web-enabled device server. The RCM6700 series provides up to 6 serial ports, configurable I/O and control features such as PWM. Furthermore, the RCM 6700 series offers a much greater feature set than comparable device servers, while at a lower cost.

The RCM6700 series is fully programmable, taking advantage of processor peripherals. The programming environment, Dynamic C, is an ANSI C compatible development environment that provides a royalty free TCP/IP stack and Wi-Fi support.

Various protocol support such as ZigBee, Modbus and BACnet are also available to help reduce development costs and time-to-market.

In addition to processor and protocol support, Dynamic C supports the Digi Device Cloud<sup>SM</sup> platform. Device Cloud simplifies device deployment by allowing devices to easily pass through firewalls, eliminating server maintenance and costly on-site visits. The Device Cloud platform also supports remote firmware updates and data storage for greater device control and monitoring.

## BENEFITS

- Rabbit<sup>®</sup> 6000 running up to 200 MHz
- 10/100 Ethernet and pin-compatible with MiniCore 802.11b/g wireless modules
- 1 MB of internal RAM for program storage
- Up to 4 MB of serial Flash for data logging or web page storage
- Digi Device Cloud platform provides cost-effective cloud computing for remote device management
- Seamless migration to chip level design
- 5X greater throughput performance

## RELATED PRODUCTS



Rabbit  
MiniCore<sup>®</sup>  
RCM6600W



RabbitCore<sup>®</sup>  
RCM3000  
Series



RabbitCore<sup>®</sup>  
RCM3700  
Series

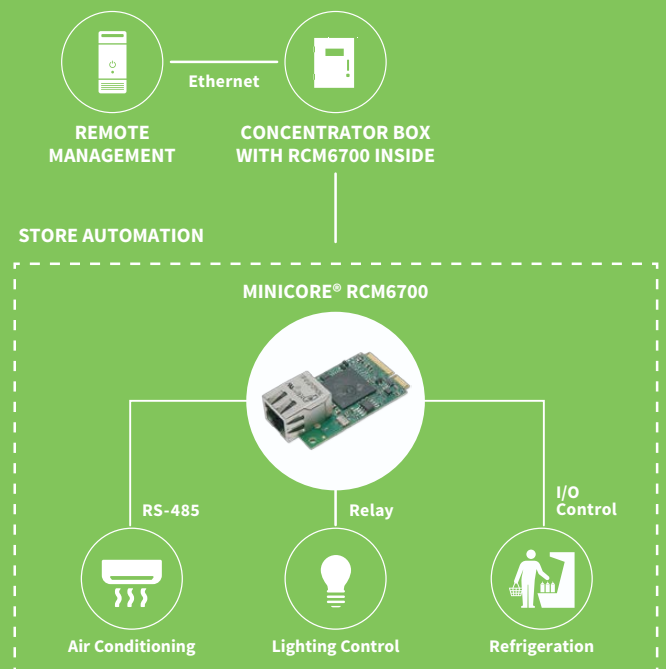


Dynamic C<sup>®</sup>



ConnectCore<sup>®</sup>  
6 SBC

## APPLICATION EXAMPLE



## SOFTWARE






The Dynamic C® integrated development environment reduces the time and effort to write real-time software for embedded systems that use a Rabbit microprocessor, enabling easy development of a wide range of applications.

Rabbit products and Dynamic C integrate editing, compiling, linking, loading and debugging into a single development environment as one function. There are no compatibility issues when moving from one stage to another. Once the design is complete, you can debug it on the target hardware and see how your code works. Because it is a dialect of C, the Dynamic C language has all the statements and

constructions of traditional C, plus extensions that make it easier to write reliable, real-time multi-tasking software. The Dynamic C integrated development environment allows for easy hardware migration, moving from a single-board computer to chip level production.

Dynamic C also includes highly useful software components that can add functionality and value to your applications. This functionality includes web server capability, filing system, remote firmware updates, and wired and wireless security. Compatible software components are listed below.

## SOFTWARE COMPONENTS

COMPONENT	DESCRIPTION
 <b>RABBITWEB</b>	System of HTML tags used to easily create web interfaces to monitor and control embedded applications
 <b>REMOTE PROGRAM UPDATE (RPU)</b>	Allows for remote firmware updates from anywhere in the world using an Internet connection
 <b>FILE ALLOCATION TABLE (FAT)</b>	Popular network-accessible file system for flashed based memories
 <b>SECURE SOCKETS LAYER (SSL) / TRANSPORT LAYER SECURITY (TLS)</b>	The industry standard for web security in embedded applications
 <b>ADVANCED ENCRYPTION STANDARD (AES)</b>	128-bit encryption for transferring sensitive data

## RABBITCORE® RCM6700 DEVELOPMENT KITS



### THE RCM6700 STANDARD DEVELOPMENT KIT CONTENTS:

- RCM6700 module
- Interface board with standoffs/connectors
- Prototyping board with standoffs/connectors
- USB cable to program RCM5700 via interface board
- Dynamic C, including product documentation on disk
- Getting Started instructions
- Registration card

### THE RCM6700 DELUXE DEVELOPMENT KIT CONTENTS:

Includes everything in the Standard Development Kit, plus the following items:

- Universal AC adapter, 5VDC, 2 A (includes Canada/Japan/ U.S., Australia/N.Z., U.K., and European style plugs)  
Development Kits sold in North America may contain an AC adapter with only a North American style plug
- Digital I/O and serial communication accessory boards for use with certain sample programs
- CAT 5/6 Ethernet cable and DB-9 to 10-pin header serial cable
- Rabbit 5000 Processor Easy Reference poster

SPECIFICATIONS	RCM6700		RCM6710		RCM6750		RCM6760	
<b>FEATURES</b>								
<b>MICROPROCESSOR</b>	Rabbit® 6000 up to 200 MHz							
<b>NETWORK INTERFACE</b>	10/100Base-T (Ethernet signals only)	10/100Base-T RJ-45 connector	10/100Base-T (Ethernet signals only)	10/100Base-T RJ-45 connector	10/100Base-T (Ethernet signals only)	10/100Base-T RJ-45 connector	10/100Base-T (Ethernet signals only)	10/100Base-T RJ-45 connector
<b>FLASH MEMORY (CODE AND FILE SYSTEM)</b>	1 MB serial Flash				4 MB serial Flash			
<b>INTERNAL SRAM (CODE AND DATA)</b>	1 MB							
<b>BATTERY-BACKABLE SRAM</b>	32 KB (Internal)				32 KB (Internal), 1 MB (External)			
<b>FLEXIBLE INTERFACE MODULE(FIM)</b>	400 MHz DRPIC165X CPU 1k program/192 bytes data RAM							
<b>MASS STORAGE</b>	On-board serial Flash							
<b>GENERAL-PURPOSE I/O</b>	Up to 32 parallel digital I/O							
<b>SERIAL PORTS</b>	6 high-speed, CMOS compatible ports, 4 configureable as clocked serial (SPI)							
<b>SERIAL RATE</b>	Maximum asynchronous baud rate = CLK/8							
<b>REAL-TIME CLOCK</b>	Yes							
<b>TIMERS</b>	Ten 8-bit timers (6 cascadable from the first) , one 10-bit timer with 2 match registers							
<b>WATCHDOG/SUPERVISOR</b>	Yes							
<b>PULSE WIDTH MODULATORS</b>	4 channels synchronized PWM with 10-bit counter ; 4 channels variable-phase or synchronized PWM with 16-bit counter							
<b>I<sup>2</sup>C</b>	1 channel, standard (100 Kbits/s) and (400 Kbits/s) clock modes							
<b>QUADRATURE DECODER</b>	2-channel quadrature decoder accepts inputs from external incremental encoder modules							
<b>INPUT CAPTURE</b>	2-channel input capture can be used to time input signals from various port pins							
<b>POWER - WITH ETHERNET</b>	210 mA @ 3.3V	250 mA @ 3.3V	250 mA @ 3.3V	250 mA @ 3.3V	250 mA @ 3.3V	250 mA @ 3.3V	250 mA @ 3.3V	260 mA @ 3.3V
<b>POWER - WITHOUT ETHERNET</b>	120 mA @ 3.3V	130 mA @ 3.3V	130 mA @ 3.3V	130 mA @ 3.3V	130 mA @ 3.3V	130 mA @ 3.3V	130 mA @ 3.3V	140 mA @ 3.3V
<b>OPERATING TEMPERATURE</b>	-40° C to +85° C							
<b>SUPPORTED PROTOCOLS</b>	HTTP, HTTPS, SSLv3, DHCP, UDP, TCP, SNMP, Telnet, FTP, TFTP, SMTP, POP3							
<b>HUMIDITY</b>	5% to 95%, non-condensing							
<b>CONNECTORS - HEADERS</b>	52-pin Mini PCI Express	52-pin Mini PCI Express RJ-45 10/100Base-T connector	52-pin Mini PCI Express	52-pin Mini PCI Express	52-pin Mini PCI Express	52-pin Mini PCI Express	52-pin Mini PCI Express	52-pin Mini PCI Express RJ-45 10/100Base-T connector
<b>BOARD SIZE</b>	1.20" x 2.00" x 0.12" (30 mm x 51 mm x 3 mm)	1.20" x 2.00" x 0.70" (30 mm x 51 mm x 18 mm)	1.20" x 2.00" x 0.27" (30 mm x 51 mm x 7 mm)	1.20" x 2.00" x 0.27" (30 mm x 51 mm x 7 mm)	1.20" x 2.00" x 0.27" (30 mm x 51 mm x 7 mm)	1.20" x 2.00" x 0.27" (30 mm x 51 mm x 7 mm)	1.20" x 2.00" x 0.27" (30 mm x 51 mm x 7 mm)	1.20" x 2.00" x 0.73" (30 mm x 51 mm x 19 mm)

PART NUMBERS	DESCRIPTION
20-101-1318	RCM6700
20-101-1319	RCM6710
20-101-1320	RCM6750
20-101-1321	RCM6760
101-1326	RCM6700 Deluxe Development Kit
101-1327	RCM6700 Standard Development Kit

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