SINGLE-BOARD COMPUTER

RABBIT SBC BL4S200 SERIES

Rabbit's BL4S200 series of single-board computers deliver the features and wireless connectivity to support networking for industrial control applications

The Rabbit BL4S200 single-board computers (SBCs) offer a full-featured control and communications solution for industrial applications. The BL4S200 series is designed to provide the microprocessor control and I/O used for reading instruments, timing events precisely, controlling motors, relays and solenoids.

Why SBCs Are Important

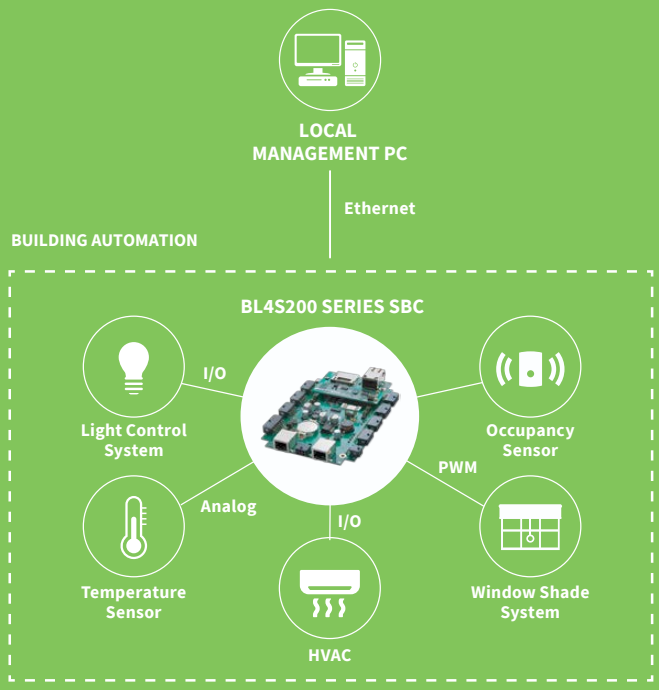
Rabbit combines its legendary ease of use with cost-competitive hardware and software to make designing embedded applications straightforward. Rabbit's flexible platform gives customers the ability to choose the right product for their application, while reducing effort and cost.

Many customers take advantage of Rabbit SBCs to get their product to market quickly and reliably. Further value is added by allowing migration paths to either RabbitCore® modules or the chip level solution, while keeping the same Dynamic C® software development environment.

BENEFITS

- Uses Rabbit® 4000 and Rabbit 5000 microprocessors
- Choice of Wi-Fi, ZigBee or Ethernet connectivity
- 40 digital I/O and up to 5 serial ports
- 8 input and 2 output analog channels
- Advanced I/O subsystem is software configurable reducing the load on the processor
- I/O features include event/capture counting, quadrature decoders, PWMs and PPMs

APPLICATION EXAMPLE



RELATED PRODUCTS

ConnectCore® 6 SBC

Rabbit® SBC BL4S100 Series

Rabbit® SBC BL2100 Series

RabbitNet® Series

Dynamic C®

DEVELOPMENT AND EVALUATION TOOLS

The BL4S200 Tool Kit contains the essential hardware to develop an embedded application on a SBC BL4S200 and debug right on the target hardware.

The BL4S200 Starter Kit includes your choice of the BL4S200 series and the BL4S200 Tool Kit. The BL4S200 Starter Kit contains the essential hardware and software tools to develop and debug an embedded application.

TOOL KIT CONTENTS:

- Dynamic C® with complete documentation
- Printed getting started manual and Rabbit 4000/5000 posters
- Demonstration board with pushbutton switches and LEDs to demonstrate the I/O capabilities of the BL4S200
- USB programming cable to connect the BLS4200 to your PC's USB port
- Universal AC adapter, 12 V DC, 1 A (includes Canada/Japan/U.S., Australia/N.Z., U.K., and European style plugs

RABBIT SBC BL4S200 SERIES

BL4S200

Mass storage support with the hot-swappable, industry-standard miniSDTM memory cards, plus memory to support algorithmic-intensive applications such as graphics and encryption.

- Uses RabbitCore® RCM4310 module
- 10/100Base-T Ethernet connectivity
- Socket for up to 1 GB miniSD memory card

BL4S210

Targeted for embedded control applications needing 10Base-T Ethernet connectivity for remote monitoring.

- Uses RabbitCore RCM4010 module
- 10Base-T Ethernet connectivity

SOFTWARE

Develop and debug programs using the industry-proven Dynamic C® integrated development environment (version 10.42 or later). Dynamic C includes the popular µC/OS-II real-time operating system, point-to-point protocol (PPP), FAT file system, RabbitWeb™, and other select libraries. Connect the BL4S200 board to the PC using a USB cable and then debug using break points, watch expressions and other features oriented toward real-time embedded systems programming. An extensive library of drivers and sample programs is provided, including a royalty-free TCP/IP stack for network and Internet communications. Full source code is provided for most library routines.

Available for purchase is the Rabbit Embedded Security Pack featuring the Secure Sockets Layer (SSL) and the Advanced Encryption Standard (AES) library. In addition to the Web-based technical support included at no extra charge, a one-year telephone-based technical support subscription is also available for purchase.

RABBITNET™ COMPATIBLE

RabbitNet expansion ports enable a modular and expandable embedded control system whose configuration of expansion cards can be tailored to a large variety of demanding real-time control, display and data-acquisition applications. A typical RabbitNet system consists of a master SBC and one or more peripheral cards.

Available RabbitNet Expansion Cards:

- RN1100 - Digital I/O expansion
- RN1200 - A/D expansion
- RN1300 - D/A expansion
- RN1400 - Relay expansion
- RN1600 - Keypad/Display expansion

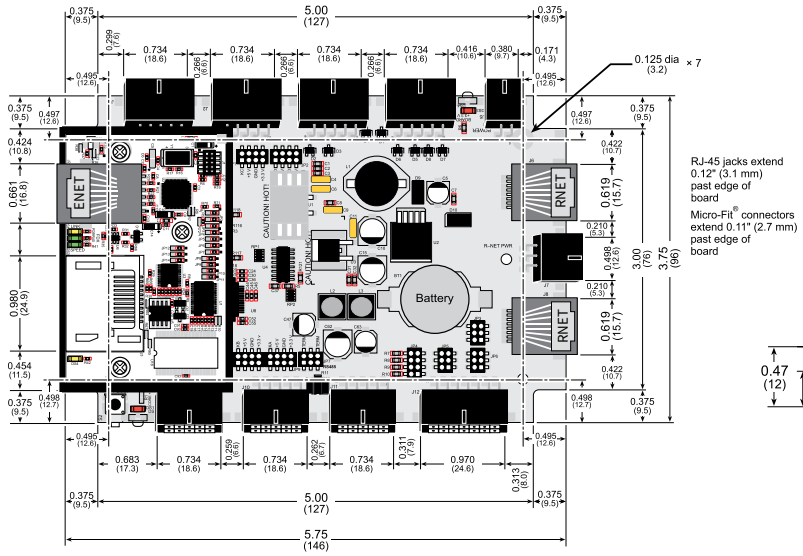
THE RABBIT RIO® ADVANTAGE

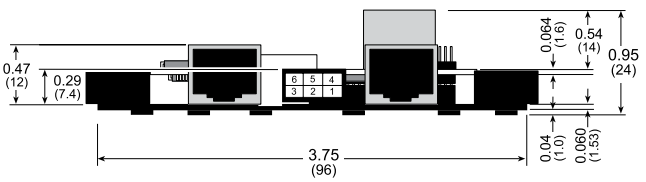
The BL4S200 series uses our Rabbit RIO chip to add a powerful I/O subsystem. The on-board Rabbit RIO devices add software configurable counter/timer blocks that can perform a variety of usefull/O capability, including event capture/counting, quadrature decoding, PWM and PPM generation, and edge or level based interrupts. This subsystem capability delivered by the Rabbit RIO device frees the microprocessor for control, data processing and communications tasks. Each BL4S200 board has 24 counter/ timer blocks available in the I/O subsystem.

EXCEPTIONAL SUPPORT

Our Technical Support staff helps Rabbit users accelerate development schedules. We offer development kits and tool kits to help our customers learn new technologies, get ideas about how to integrate into embedded systems, and arrive at solutions.

PRODUCT DIMENSIONS





SPECIFICATIONS	BL4S200	BL4S210
FEATURE		
MICROPROCESSOR	Rabbit® 4000 at 58.98 MHz	
NETWORK INTERFACE	10/100Base-T, 3 LEDs	10Base-T, 2 LEDs
FLASH MEMORY (PROGRAM)	1 MB (Serial Flash)	512 KB (Parallel Flash)
FLASH MEMORY (DATA STORAGE)	miniSD™ Card 128 MB to 1 GB	N/A
PROGRAM EXECUTION SRAM	512 KB	N/A
DATA SRAM	512 KB	
BATTERY BACKUP	Renata CR2032 or equivalent 3V lithium coin type, 235 mA·h standard, socket-mounted	
CONFIGURABLE I/O	32 individually software-configurable I/O channels may be configured as digital inputs 0–36 VDC, switching threshold 1.4V/1.9V typical, or as sinking digital outputs up to 40V, 200 mA each	
HIGH-CURRENT DIGITAL OUTPUTS	8 outputs individually software-configurable as sinking or sourcing, +40 VDC, 2 A max. per channel	
ANALOG INPUTS	Eight 11-bit res. channels, software-selectable ranges unipolar: 1, 2, 2.5, 5, 10, 20VDC; bipolar ± 1, ±2, ±5, ±10VDC: 4 channels can be hardware-configured for 4–20 mA; 1 MΩ input impedance, up to 4,100 samples/s	
ANALOG OUTPUTS	Two 12-bit res. channels, buffered, 0–10 VDC, ±10 VDC, and 4–20 mA, update rate 12 kHz	
SERIAL PORTS	5 serial ports: • 1 RS-485 • 2 RS-232 or 1 RS-232 (with CTS/RTS)	4 serial ports: • 1 RS-485 • 1 RS-232 (no CTS/RTS)
	1 clocked serial port multiplexed to 2 RS-422 SPI master ports 1 serial port dedicated for programming/debug	
SERIAL RATE	Max. asynchronous rate = 120 Kbps	
HARDWARE CONNECTORS	2 RabbitNet™ RJ-45 connectors • 7 polarized 2x5 Micro-Fit connectors, 3mm pitch • 1 polarized 2x7 Micro-Fit connector, 3mm pitch • 1 polarized 2x2 Micro-Fit connector, 3mm pitch • 1 polarized 2x3 Micro-Fit connector, 3mm pitch • Programming port: 2 × 5 IDC, 1.27 mm pitch	
NETWORK CONNECTORS	1 RJ-45 Ethernet	
REAL TIME CLOCK	Yes	
TIMERS	Ten 8-bit timers (6 cascadable, 3 reserved for internal peripherals), one 10-bit timer with 2 match registers	
WATCHDOG/SUPERVISOR	Yes	
POWER	9-36 VDC, 4.5 W max	
OPERATING TEMPERATURE	-20° C to +85° C (-40° C to +85° C without the miniSD Card)	
HUMIDITY	5% - 95%, non-condensing	
BOARD SIZE	3.75” × 5.75” × 0.95” (96 mm × 146 mm × 24 mm)	

PART NUMBERS	DESCRIPTION
20-101-1220	BL4S200 (RCM4310-based)
20-101-1259	BL4S210 (RCM4010-based)

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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