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BL2000 Single-Board Computer CE

Models BL2000, BL2010, BL2020, BL2030

BL2000 Description

BL2000 Specifications

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Description

The BL2000 gives OEM designers optional Ethernet connectivity in a low-cost, high-performance single-board computer. These compact boards are rich with the digital I/O, A/D, and D/A designers need for embedded control and monitoring applications, and the BL2000's compact board size of 4.15" x 3.43" (105 mm x 87 mm) allows for easy integration. Ethernet models are ideal for remotely monitoring and supervising another programmable system or web-enabling new or existing products.

Features

- 10Base-T Ethernet with RJ-45
- Up to 28 digital I/O
- Up to 11 A/D and 2 D/A
- 4 serial ports
- Optional 512K Flash / 512K SRAM
- Onboard relay

The BL2000 models are available in four configurations-two with Ethernet, two without-and feature up to 28 digital I/O (including 5 or 7 dual-purpose analog or digital inputs), 3 RS-232/485 serial ports (plus one programming port), Rabbit® 2000 microprocessor at 22.1 MHz, 128K SRAM and 256K Flash, onboard SPDT relay, LEDs, 7 timers, and battery-backed real-time clock.

For the most demanding applications, the BL2000 and BL2020 models include 4 channels of 12-bit resolution A/D input, 5 channels of dual-purpose input, and 2 channels of 12-bit D/A output. For applications not requiring

high-resolution analog I/O, the BL2010 and BL2030 offer 4 channels of 10-bit resolution A/D input and 7 channels of dual-purpose input. The dual-purpose inputs are software configurable as analog inputs or programmable-threshold digital inputs.

All BL2000 models can be programmed and debugged over Ethernet/Internet using appropriate accessory hardware. Systems with built-in 10Base-T Ethernet can be directly controlled and monitored across networks or the Internet and can also open sockets to remote devices, serve web pages, or send E-mail.

Programming the BL2000 Single-Board Computer

Programs are developed using Rabbit's industry-proven Dynamic C® software development system. An extensive library of drivers and sample programs is provided, along with royalty-free TCP/IP stack with source. All BL2000 models can be programmed and debugged over Ethernet/Internet using appropriate accessory hardware.

BL2000 Specifications

Features	BL2000	BL2010	BL2020	BL2030
Microprocessor	Rabbit 2000 @ 22.1 MHz			
Ethernet Port	10Base-T, RJ-45, link and activity LEDs		None	
Flash Memory	256K (standard)			
SRAM	128K (standard)			
Backup Battery	Socketed 3 V lithium coin-type, 265 mA·h, supports RTC and SRAM			
Keypad/Display	See our "OP" products for serial display options			
Digital Inputs	11: protected to ±36 V DC			
Digital Outputs	10 outputs sinking or sourcing, +40 V DC, 200 mA maximum per channel (2 of these outputs can sink up to 750 mA each)			
Analog Inputs	Four 12-bit resolution 1 MΩ, ±10 V DC, up to 4,000 samples/sec.	Four 10-bit resolution 1 MΩ, ±10 V DC, up to 4,000 samples/sec.	Four 12-bit resolution 1 MΩ, ±10 V DC, up to 4,000 samples/sec.	Four 10-bit resolution 1 MΩ, ±10 V DC, up to 4,000 samples/sec.
Analog Outputs	Two 12-bit resolution, 0-4 V DC, update rate 12 kHz	None	Two 12-bit resolution, 0-4 V DC, update rate 12 kHz	None
Dual-Purpose Analog or Digital Inputs	5 at 12 kΩ, 12-bit resolution, 0-48 V DC	7 at 12 kΩ, 10-bit resolution, 0-48 V DC	5 at 12 kΩ, 12-bit resolution, 0-48 V DC	7 at 12 kΩ, 10-bit resolution, 0-48 V DC
Relay Output	SPDT, 1 A @ 30 V DC, 0.3 A @ 120 V AC Uses 1 digital output			
Serial Ports	4 total: two 3-wire (or one 5-wire) RS-232, 1 RS-485, and one 5 V CMOS-compatible (programming)			
Serial Rate	Max. burst rate = CLK/32 Max. sustained rate = burst/2			

Connectors	Screw terminals support max. 14 AWG/1.5 mm^2 (standard)			
Real-Time Clock	Yes			
Timers	Five 8-bit timers (four cascadable from the first) and one 10-bit timer with 2 match registers			
Watchdog/Supervisor	Yes			
Power	9-40 V DC or 24 V AC ±10%, 1.5 W max., power jack			
Operating Temp.	-40°C to 70°C			
Humidity	5-95%, non-condensing			
Board Size	3.413" x 4.139" x 0.82" (87 mm x 105 mm x 21 mm)			
Enclosure Size	4.9" x 5.6" x 1.1" (124 mm x 142 mm x 28 mm)			
LEDs	8 total: Power On, Microprocessor Error, Ethernet Link, Ethernet Activity, 4 output status		6 total: Power On, Microprocessor Error, 4 output status	
Part Number	20-101-0430	20-101-0455	20-101-0456	20-101-0457
Starter Package	U.S. 20-101-0430, 101-0472, Int'l 20-101-0430, 101-0476	U.S. 20-101-0455, 101-0472, Int'l 20-101-0455, 101-0476	U.S. 20-101-0456, 101-0472, Int'l 20-101-0456, 101-0476	U.S. 20-101-0457, 101-0472, Int'l 20-101-0457, 101-0476

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