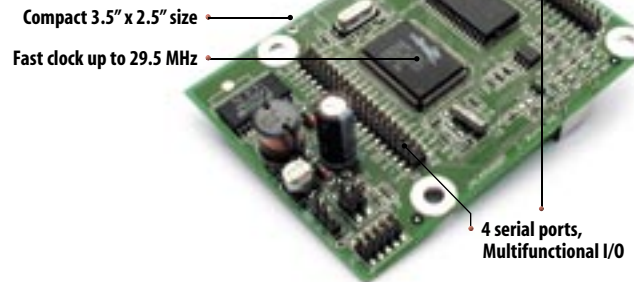


Jackrabbit Models BL1800, BL1810, BL1820



Feature	BL1800	BL1810	BL1820
Microprocessor	Rabbit 2000 @ 29.5 MHz	Rabbit 2000 @ 14.7 MHz	
Flash Memory	256K	128K	
SRAM	128K (standard)		
Backup Battery	3 V lithium coin-type, 1000 mA·h, supports RTC and SRAM	None	
Digital Inputs	6 CMOS-compatible		7 CMOS-compatible
Digital Outputs	8: 4 CMOS, 3 @ 1 amp sink, 1 @ 0.5 amps, 30 V DC max.	8: 4 CMOS, 3 @ 200 mA sink, 1 @ 100 mA, 30 V DC max.	9: 5 CMOS, 3 @ 200 mA sink, 1 @ 100 mA, 30 V DC max.
Configurable I/O	14 total CMOS-compatible: 8 byte-wide and 6 by bit		15 total: 8 byte-wide and 7 by bit
Analog Inputs	One 9-bit, 8-bit accuracy, 0.1–2.8 V, 10 samples/sec.		
Analog Outputs	Two 9-bit PWM, one 0.1–2.8 V DC, one 0.7–3.5 V DC, update rate 50 Hz		
Serial Ports	4: two 3-wire (or one 5-wire) RS-232, one RS-485, and one 5 V CMOS-compatible (programming) 2 configurable as sync.		4: two 3-wire (or one 5-wire) RS-232 and two 5 V CMOS-compatible (programming)
Connectors	2 x 20, 2 mm IDC headers		
Power	8–40 V DC, 1.2 W max.	7.5–25 V DC, 100 mA	
Board Size	3.50" x 2.50" x 0.94" (89 mm x 64 mm x 24 mm)		
Part Number	101-0356	101-0357	101-0358
Development Kit Part Number	U.S. 101-0363 • Int'l 101-0364		

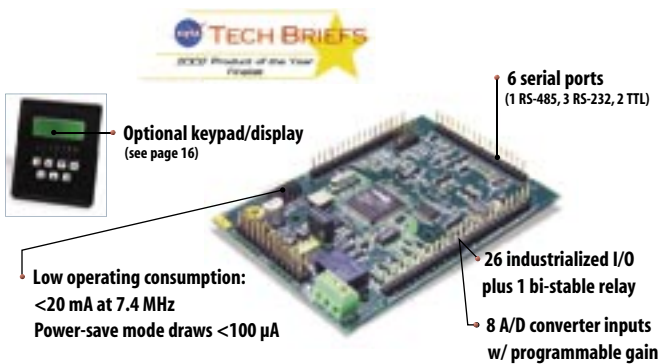
Our lowest cost SBC



The Jackrabbit is Z-World's most compact and lowest cost single-board computer. The Jackrabbit provides 24 CMOS-compatible I/O, 3 analog channels, and 4 high-power outputs. Three of the high-power outputs can sink up to 1 amp each and are protected for direct driving of inductive loads. The BL1800 features a switching regulator that provides a wide range of input voltages (8–40 V DC), reducing power consumption while minimizing heat. A linear regulator is featured on the BL1810 and BL1820 versions.

The BL1800 provides direct access to most of the Rabbit microprocessor I/O pins allowing maximum design flexibility.

Low-Power Fox Models LP3500, LP3510



The LP3500 Fox is a low-power single-board computer designed to operate reliably where power is limited, such as in portable, hand-held, battery-powered, and remote monitoring systems. The board is equipped with 0.1" connectors, for user supplied cables. The LP3500 can be mounted to a panel or plastic mounting base or it can be inverted and directly mounted to mating connectors on a customer-designed motherboard.

Normally powered by an external battery or power supply (3–30 V DC), the LP3500 can be awakened from the power-save mode by an internal timer, an RS-232 signal, or via polling of an external input. A socketed coin-type battery facilitates long-term data storage (SRAM) and RTC operation. The LP3500 can be switched from power-save mode to full operation and back again via software control. In addition, various sections of circuitry (e.g., RS-232 ports) can be switched off via

FEATURE	LP3500	LP3510
Microprocessor	Rabbit 3000 @ up to 7.4 MHz	
Flash Memory	512K (2 x 256K)	256K
SRAM	512K	128K
Backup Battery	Socketed 3 V lithium coin-type, 255 mA·h, supports RTC and SRAM	
Digital Inputs	16 protected to ±36 V DC	
Digital Outputs	10 total: 8 sink and 2 source 200 mA each, 36 V DC max.	
Relay	1 SPDT, 1 A, 30 V DC, bi-stable	None
Analog Inputs	8: Configurable in combinations of 11-bit single-ended or four 12-bit differential, 1MΩ input, 200 samples/sec.	None
Analog Outputs	3 unfiltered PWM, 1 kΩ output	
Serial Ports	6 total: • 1 RS-485 • 3 RS-232 (three 3-wire OR one 5-wire and one 3-wire) • 1 logic-level serial interface for optional add-ons • 1 3 V CMOS-compatible (programming)	
Connectors	Two 1 x 17, and one 1 x 25 0.1" pitch headers	
Main Power	3–30 V DC, 20 mA max. @ 7.4 MHz, 100 μA max. @ 2 kHz	
Backup Power	2.7–3.3V @ 100μA max	
Board Size	3.65" x 2.60" x 0.45" (93 x 66 x 11 mm)	
Part Number	101-0525	101-0526
Tool Kit Part Number	U.S. 101-0529 • Int'l. 101-0530	

software control to further conserve power when not in use. Analog inputs allow multiple software-controlled programmable gain voltage ranges from 0–1 V to 0–20 V. Four channels can be set individually for 4–20 mA with plug-in jumpers and 1 channel has a software-selectable power voltage-monitoring option. (In CE test at press time.)

Single-Board Computers

Key Applications

- Building / Home Automation
- Data Acquisition Terminals
- Elevator Control
- Environmental Monitoring
- Fleet Management / GPS Systems
- Ethernet / Internet Interfacing
- Medical Devices
- Wireless Systems
- Food Service Equipment
- Industrial Automation
- Point-of-Sale / Barcode Scanners
- Packaging Equipment
- Consumer Wastewater Systems
- Conveyer Systems
- Military / Transportation Systems
- Remote Monitoring / Control
- Robotics Control
- Test Equipment
- Marine Systems
- Semiconductor Manufacturing Equipment
- Service Processor / Device Monitoring
- Railway Monitoring Systems
- Electric, Gas & Oil Monitoring

Tool Kits and Development Kits

Easy to run out-of-the-box, Z-World SBCs have corresponding tool kits (peripheral hardware and software) or development kits (tool kit plus selected product model) that include demonstration board, Dynamic C development software and documentation on CD-ROM, User's Manual with schematics, serial cable for programming and debugging, and AC adapter (US/Canada only). Kits may also contain products unique for each SBC model.



Z-World single-board computers (SBCs) are the low-cost control and monitoring solution for robust OEM products and systems. Design engineers worldwide use these compact boards that are rich with digital and analog I/O for controlling a broad array of industrial and product applications. Z-World SBCs are easy to use, come in a variety of form factors, and interface easily with other devices. All of our products are capable of multitasking in real-time while providing superior performance.

Ethernet/Internet Control and Monitoring

Systems with built-in 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. Ethernet models are ideal for remotely monitoring and supervising another programmable system, or web-enabling new or existing products. All models can be programmed and debugged over Ethernet/Internet using appropriate accessory hardware and/or application software. The Ethernet interface is fully supported by software to enable network and Internet connectivity.

Z-World SBCs support a broad variety of serial communication ports. All RS-232 and RS-485 are rated at 15 kV for ESD protection. The CMOS-compatible programming port can be used in the user's application after programming is completed. Most SBCs support synchronous serial communications, including SPI, SDLC/HDLC, and I²C.

Programming Z-World Products

Each SBC is designed for programming with Dynamic C[®], the first integrated software development system specifically designed for embedded single-board computers. Z-World's proven integration of hardware and software substantially reduces OEM development time and cost. An extensive library of drivers and sample programs is provided, along with our royalty-free TCP/IP stack with source code.

Z-World SBCs feature Rabbit microprocessors, specifically designed for embedded applications. Z-World SBCs, Rabbit processors, and Dynamic C software were designed in a complementary fashion for maximum performance and ease of use in embedded systems. The following table lists the features of Rabbit-based SBCs.

Shared Features of Z-World SBCs

Feature	Rabbit 2000	Rabbit 3000 [®]
Serial Rate	Max. asynchronous burst rate = CLK/32 Max. sustained rate = burst/2	Max. asynchronous burst rate = CLK/8
Real-Time Clock (battery backable)	Yes	
Watchdog	Yes	
Timers	Five 8-bit timers (5 cascadable) and one 10-bit timer with 2 match registers	Ten 8-bit timers (7 cascadable from the first) and one 10-bit timer with 2 match registers
Operating Temperature	-40° to +70°C	
Humidity	5 - 95%, non-condensing	
Keypad/Display	See our "OP" products for serial display options	