



The BL2500 Coyote gives OEM designers an extremely low-cost embedded control solution. Two standard models—one with Ethernet, one without—feature the Rabbit 3000® microprocessor at 29.4 MHz, with 256K Flash and 128K SRAM (standard).

The Coyote’s compact board size is easily mountable in standard 100 mm DIN rail trays. External connections via polarized industry-

standard friction-lock connectors enable rapid assembly and I/O connectivity with wire harnesses. A new line of expansion boards (including A/D, D/A, digital I/O, and keypad/display) will interface via the two serial expansion ports.

Customized BL2500 models (OEM2500 versions) can be manufactured to user-selected configurations in volumes ≥ 500. Customization

helps OEMs realize an extremely low cost, yet maintain a reliable and rugged industrial solution. Our pin-compatible RabbitCore modules provide multiple configurations on the Coyote, including Ethernet, or non-Ethernet versions, and memory upgrades. The optional Ethernet interface (10 Mbps or 10/100 Mbps) allows easy connection to local networks or the Internet. Powerful software allows TCP/IP communication including sending e-mail and serving web pages.

Six serial ports support external communications. Two ports are connected to standard full-duplex RS-232 circuitry. One port allows connection to industry standard multi-drop RS-485 networks. One port, designed to allow serial expansion, is multiplexed through two very high-speed (>1Mbit/ps capability) SPI ports with each line going through RS-422 differential pair signaling. The SPI ports connect to RJ-45 connectors (accepting standard category 5 cabling) for ease of connectivity. One serial port is a 3.3 V CMOS-level port that can either be asynchronous or clocked. The last port is for programming.

(In CE test at press time)

FEATURE	BL2500	BL2510	OEM2500	OEM2510
<b>Microprocessor</b>	Rabbit 3000 @ 29.4 MHz			
<b>Ethernet Port</b>	10Base-T, RJ-45 (standard)	None	10Base-T, RJ-45 (standard)	None
<b>Flash Memory</b>	256K (standard)			
<b>SRAM</b>	128K (standard)			
<b>Backup Battery</b>	3 V lithium coin-type, 1000 mA·h, supports RTC & SRAM		Optional	
<b>LEDs</b>	4, user-programmable			
<b>Digital Inputs</b>	16: 15 protected to ±36 V DC, 1 protected to +5/-36V; threshold is 1.5 V nominal.		8 protected to ±36 V DC, threshold is 1.5 V nominal.	
<b>Digital Outputs</b>	8, sink up to 200 mA each, 36 V DC max. standoff voltage			
<b>Analog Inputs</b>	One 10-bit resolution, 8-bit accuracy, input range 0.1–3.1 V, 10 samples/s			
<b>Analog Outputs</b>	Two 9-bit PWM, 0.1–3.1 V DC, 17ms settling time			
<b>Serial Ports</b>	6 serial ports: • 1 RS-485 • 2 RS-232 or one RS-232 (with RTS/CTS) • 1 CMOS level asynchronous or clocked SPI • 1 port multiplexed to 2 RS-422 clocked SPI ports • 1 CMOS compatible serial port (programming)		5 serial ports: • 1 RS-485 • 2 RS-232 or one RS-232 (with RTS/CTS) • 1 CMOS level asynchronous or clocked SPI • 1 CMOS compatible serial port (programming)	
<b>Expansion Ports</b>	Yes, 2 I/O Expansion Ports		Optional	
<b>Connectors</b>	5 polarized 9-pin 0.1" pitch friction lock, two 4-pin 0.156" pitch friction lock, two 0.156" pitch 2-pin friction lock, one 0.1" pitch 2x5 IDC, one 2 mm pitch 2x5 IDC		4 polarized 9-pin 0.1" pitch friction lock, two 0.156" pitch 2-pin friction lock, one .1" pitch 2x5 IDC, one 2 mm pitch 2x5 IDC (programming)	
<b>Power</b>	8 – 40 V DC, 1 W typical w/ no load	8 – 40 V DC, 0.8 W typical w/ no load	8 – 40 V DC, 1 W typical w/ no load	8 – 40 V DC, 0.8 W typical w/ no load
<b>Board Size</b>	3.95" × 3.95" × 1.16" (100 × 100 × 29 mm)	3.95" × 3.95" × 0.80" (100 × 100 × 20 mm)	3.95" × 3.95" × 1.16" (100 × 100 × 29 mm)	3.95" × 3.95" × 0.80" (100 × 100 × 20 mm)
<b>Part Number</b>	101-0575	101-0576	101-0605	101-0606
<b>User-Selected Options</b>	N/A		Contact Local Distributor	
<b>Development Kit Part Number</b>	U.S. 101-0577 • Int'l 101-0578			

# 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 I<sup>2</sup>C.

## Programming Z•World Products

Each SBC is designed for programming with Dynamic C<sup>®</sup>, 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 <sup>®</sup>
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	