Jackrabbit
BL1800

- *40+ multifunctional I/O pins include digital I/O, RS-232/RS-485 serial ports, A/D & D/A converters and high-voltage outputs*

- *Fast clock to 29.5 MHz*

- *6 onboard timers*

- *Watchdog/supervisor*

The BL1800 is a high-performance, C-programmable single-board computer with a compact form-factor. Fast number crunching is provided by a Rabbit 2000 microprocessor operating at 29.5 MHz.

Measuring just 2.50" x 3.50", (actual size shown above), the BL1800 provides 24 CMOS-compatible I/O, 3 analog channels, and 4 high-power outputs. Three of the high-power outputs are capable of sinking up to 1 amp and are protected for direct driving of inductive loads.

Two RS-232 ports support serial communication up to 115,200 bps and along with a RS-485 port are rated at 15 kV for noisy environments. An additional 5 V, CMOS-compatible serial port communicates at up to 3.75 MHz, and acts as a programming port for added design flexibility.

Five 8-bit timers and one 10-bit timer with 2 match registers are on board. Four of the 8-bit timers can be cascaded. A real-time clock (RTC) provides time/date data, and a watchdog supervisor is standard.

A switching regulator provides a wide range of input voltages from 8–40 V DC, reducing power consumption while minimizing heat. A linear regulator is used on the BL1810 and BL1820 versions.
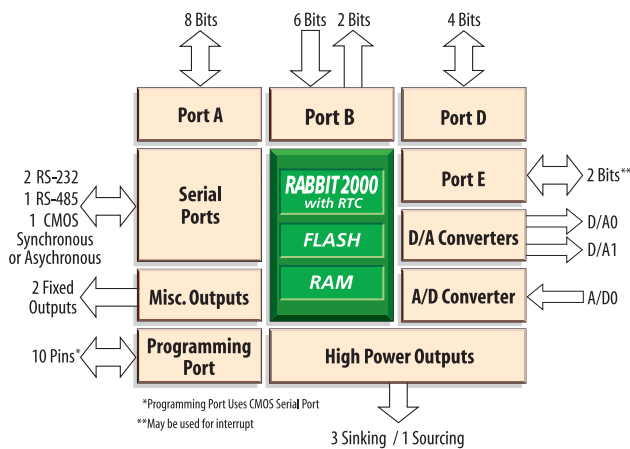
Programming the BL1800
Programs are developed for the BL1800 using the Dynamic C® SE software development system included in the development kit shown on left. See page 6 for complete description.

COMPLETE KIT INCLUDES
SINGLE-BOARD COMPUTER
AND
SOFTWARE
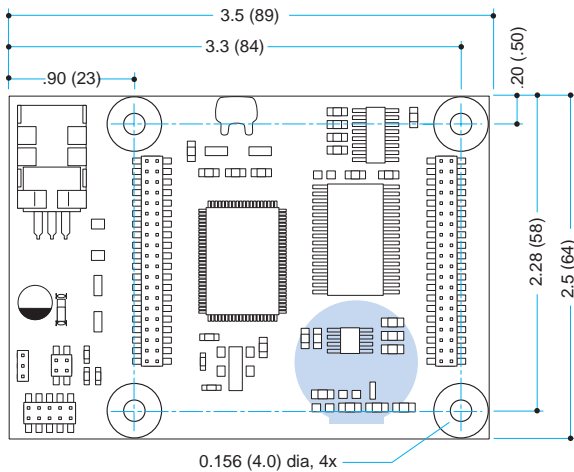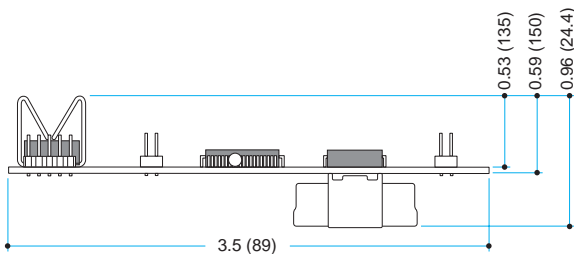
Jackrabbit Development Kit

The Jackrabbit BL1800 Development Kit provides everything you need: Jackrabbit model BL1810 SBC, Dynamic C SE software, manual, schematics, AC adapter, Prototyping Board, programming cable, documentation on CD ROM, and additional parts. International orders do not include the AC adapter unless requested.
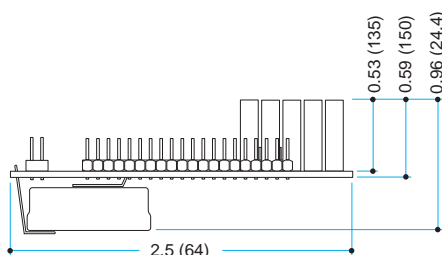
8 Bits   6 Bits   2 Bits   4 Bits

Port A   Port B   Port D

2 RS-232
1 RS-485
1 CMOS
Synchronous
or Asychronous

Serial
Ports

RABBIT 2000 with RTC

Port E   2 Bits**

FLASH   D/A Converters   D/A0   D/A1

RAM   A/D Converter   A/D0

2 Fixed
Outputs   Misc. Outputs

10 Pins*   Programming
Port   High Power Outputs

*Programming Port Uses CMOS Serial Port
**May be used for interrupt

3 Sinking / 1 Sourcing

BL1800 I/O Block Diagram

3.5 (89)
3.3 (84)
.90 (23)
.20 (.50)
2.28 (58)
2.5 (64)
0.156 (4.0) dia, 4x

BL1800 Top View Dimensions and Outline

0.53 (135)
0.59 (150)
0.96 (24.4)
3.5 (89)

BL1800 Side View Dimensions and Outline

0.53 (135)
0.59 (150)
0.96 (24.4)
2.5 (64)

BL1800 Side View Dimensions and Outline

BL1800 Specifications

Board Size	2.50" x 3.50" x 0.94" (64 mm x 89 mm x 24 mm)
Operating Temp.	–40°C to +70°C
Humidity	5–95%, non-condensing
Power Requirements	8–40 V DC, 49 mA typical at 24 V DC, 91 mA typical at 12 V DC, switching regulator
Configurable I/O	14 total — 8 bytewide and 6 by bit
Digital Inputs	6 CMOS-compatible
Digital Outputs	8 total — 4 CMOS-compatible, 3 sink up to 1 amp, and 1 sources up to 0.5 amperes
Analog Inputs	One 9-bit resolution, 8-bit accuracy, 0.1–2.8 V input range, average acquisition time 75 ms
Analog Outputs	D/A 0: res: 9+ bits, 0.1–2.8 V range, 4 mV ripple, uncalibrated D/A 1: res: 9+ bits, 0.7–3.5 V range, 20 mV ripple, uncalibrated
Processor	Rabbit 2000 at 29.5 MHz
SRAM	128K, surface mount
Flash EPROM	256K, surface mount
Timers	Five 8-bit timers, one 10-bit timer with 2 match registers. 5 timers are cascadable
Serial Ports	4 ports — 2 RS-232 (or 1 with CTS/RTS) rated at 15 kV ESD, 1 RS-485 rated at 15 kV ESD, and 1 5 V CMOS-compatible (programming port). 2 serial ports can be clocked
Serial Rate	Selected asynchronous baud rates up to 115,200 bps. 5 V, CMOS-compatible port has an asynchronous rate up to 460,800 bps
Watchdog/Supervisor	Yes
Time/Date Clock	Yes
Backup Battery	3 V lithium coin-type, rated –40ºC to 85ºC
Keypad and LCD	Software support to use digital I/O
Expansion Port	N/A

Versions

BL1800 Full-featured SBC. Specifications stated above

BL1810 Same as BL1800 with following changes: 14.7 MHz clock, 128K flash, linear regulator (7.5–25 V, 100 mA), high-voltage outputs ratings are 200 mA for sinking and 100 mA for sourcing, back-up battery rated at –20°C, CMOS port operates up to 230,400 bps

BL1820 Same as BL1810 without RS-485 (provides 1 additional CMOS port), no back-up battery circuitry. Includes 3 additional I/O: 1 bidirectional, 1 input, and 1 output

Options and Upgrades

Dynamic C Premier. Provides additional functionality, such as the real-time operating system, MicroC/OS-II and PPP Drivers. See page 6 for complete description