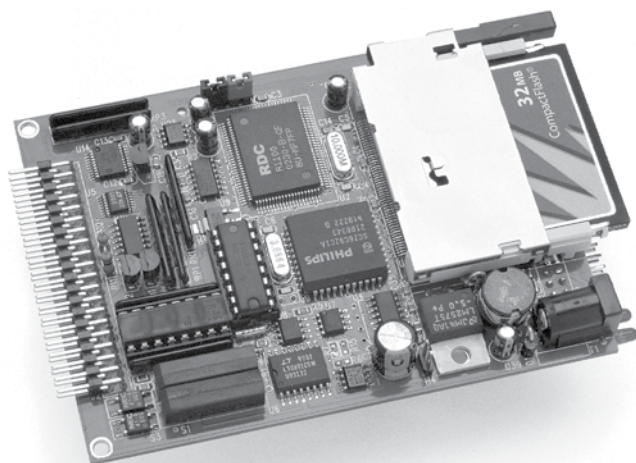


# R-Box™ (RB) *Low cost portable data-logger with 16-bit ADC & DAC!*

80 MHz CPU with CompactFlash, ADC/DAC, 4-20 mA, UARTs, Relays and Optos in a Box



## Features:

- 4.0 x 3.6", 50 µA standby, 160 mA, 9-24V DC power
- Complete C/C++ programmable environment
- 8 16-bit ADC with analog inputs, 0-10V
- 8 16-bit DAC (0-5V), two 4-20 mA outputs
- Up to 2GB CompactFlash with FAT file system support
- 80/40 MHz 186 CPU with 256 KW Flash, 256 KW SRAM
- 20+ TTLS, 7 Solenoid drivers, 4 Relays, 4 Opto-couplers
- 3 RS-232 serial ports, one can be RS232/485/422
- 3 16-bit timer/counters, PWM output, RTC, EE
- Aluminum box with field removable screw terminals

Boxed in an extruded aluminum enclosure of 4.0x3.2 inches, the **R-Box™ (RB)** is designed as a low cost, portable data logger, and an industrial embedded controller. It integrates 16-bit ADCs, 16-bit DACs, 4-20 mA drivers, RS232/485/422, Relays, Opto-couplers, and CompactFlash for mass local data storage.

The **RB** is based on a high performance C/C++ programmable 186 CPU with 16-bit external data bus supporting fast execution times through 16-bit Flash and 16-bit battery-backed SRAM. In order to secure a longer lifetime supply, the CPU chips come from two vendors, either AMD186ER or RDC R1100.

A 16-bit ADC (ADS8344, TI) provides 8 single-ended or 4 differential analog inputs with 65536 count of resolution at up to 10 KHz sample rate. The analog inputs can be hardware configured for variable input voltage range, default 0-10V. A 16-bit DAC(LTC2600) provides 8 analog output voltages (0-5V). Two of the 16-bit DAC outputs can be buffered with 4-20 mA drivers. The 4-20 mA drivers can be powered by local or remote positive voltage, up to 30V.

A 50-pin CompactFlash receptacle can be installed to allow access to mass storage CompactFlash cards (up to 2GB). Users can easily add mass data storage to their embedded application. C/C++ programmable software packages with file system libraries are available.

Three internal timer/counters can count or time external events, or generate PWM outputs. A serial real time clock (DS1337, Dallas) is a clock/calendar with two time-of-day alarms. Three RS232 serial ports are available: A Dual UART (SC26C92) and a single CPU internal UART (default as DEBUG port). One UART can be buffered by RS232

(as default) or RS485. 20+ TTL I/O lines are free to use, including multifunctional CPU's PIO lines, and TTL I/Os from the SC26C92.

Seven high voltage sink drivers are installed, capable of sinking 350 mA at 50V per line, and they can directly drive solenoids, relays, or lights. Four opto-couplers provide opto-isolation with both positive and negative inputs available on the headers. Two solid-state relays (PS7241, NEC), are designed for AC or DC line switching. Two mechanical Reed Relays provide reliable, fast switching contacts with a specification of 200 V, maximum 1 Amp carry current, 0.5 Amp switching, and 100 million times operation. Optional Switching Regulator (LM2575) provides a shutdown feature (VOFF). It can enter µA poweroff mode and can be waked-up by an active-low signal either from on-board RTC or external source. The **RB** can use 8.5V to 12V DC power supply with default linear

regulator, or up to 30V DC with switching regulator without generating excessive heat. The

**RB** is designed to fit in an aluminum extrusion enclosure. All signals on the two 20x2 pin headers are accessible outside of the enclosure. User can use W40(40 field removable screw terminals) to access I/O signals.

Use one W40P on the front end, one W40S on the back end.

Two versions of **RB** are available: the **RB80** is based on 80 MHz R1100, and **RB40** is based on 40 MHz Am186ER.



## Ordering Information

**RB80/RB40**      **\$169/\$149/\$109/\$99**      **Qty 1/50/100/1K+**

Includes: 80/40MHz CPU, I/Os, 3 RS232s, 3 timers, 4 Opto-couplers, 7 solenoid drivers, EE, 256KW Flash, 64KW SRAM.

NOT including add-on options. OEM option discounts available.

## Add-on Options:

|                                                  |           |
|--------------------------------------------------|-----------|
| 1) SRAM 256KW.....                               | \$20      |
| 2) RTC and battery.....                          | \$20      |
| 3) CompactFlash Interface .....                  | \$20      |
| 4) 8 ch. 16-bit DAC (LTC2600).....               | \$40      |
| 5) 8 ch. 16-bit ADC (ADC8344).....               | \$30      |
| 6) 4-20 mA drivers (for LTC2600).....            | \$20      |
| 7) Switching regulator (SR).....                 | \$20      |
| 8) RS485.....                                    | \$10      |
| 9) Aluminum Extrusion Enclosure .....            | \$40      |
| 10) Relays (2 mechanical + 2 solid states) ..... | \$10 each |
| 11) W40S/W40P(Screw Terminals) .....             | \$20 each |

## Typical Order Example:

80 MHz RB, 256KW SRAM

RB80 + 1 = \$169 + \$20 = \$189



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