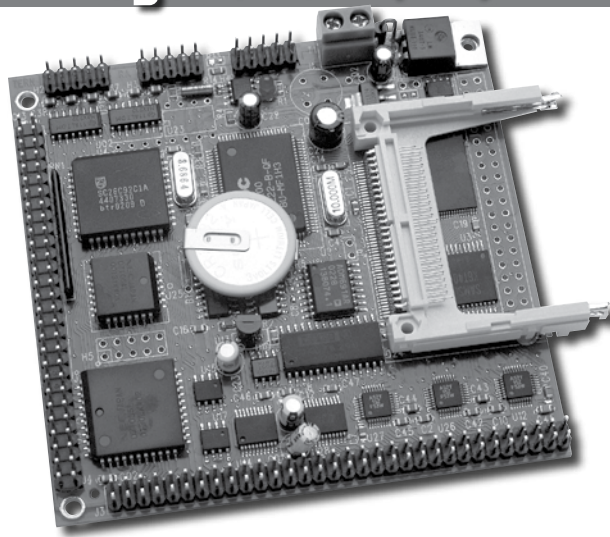


R-Engine-A™ (RA)

RECOMMENDED APPLICATION:
Heavy-duty DATA-ACQUISITION, mass-data storage

**80MHz
CPU!**



Features:

- 3.6 x 3.5"
- 50 μ A standby, 160/20 mA normal/power-save
- Complete C/C++ programmable environment
- 40 high speed, 16/12-bit analog inputs, 0-5V
- 8 high-speed 12-bit analog outputs
- Up to 2GB CompactFlash with File system support
- 80 MHz R1100 or 40 MHz Am186ER
- 256 KW 16-bit Flash, 256 KW 16-bit SRAM
- 40+ TTL I/Os, Real-time clock, 512 bytes EE
- 3 RS-232 serial ports, one can be RS232/485/422
- 6 16-bit timers or counters, PWM output

The **R-Engine-A™ (RA)** is intended for OEM applications requiring high speed, mass data storage, and up to 40 channels of analog data acquisition. It is ideal for precision data acquisition, industrial process control, and battery-powered solutions for applications requiring mass data exchange.

The **R-Engine-A™ (RA)** is a high performance C/C++ programmable controller with a 16-bit external bus. The **RA** design uses parallel ADCs which directly interface to the high performance CPU via a true 16-bit data bus allowing for a single I/O instruction per 12-bit ADC reading. A CompactFlash card, up to 2GB, can be inserted for mass data storage.

A total of up to 40 analog inputs are supported. Up to 3 high-speed 12-bit parallel ADC chips (AD7852) can be installed, each chip providing 8 channels analog inputs, with up to 300K samples per second. The AD7852 includes sample-and-hold, a precision internal reference, and has an input range of 0-5 V. Up to 2 high resolution 16-bit ADC (ADS8344, TI) can be installed. Each provides 8 single-ended or 4 differential analog inputs (0-5V, or 0-REF) with 65536 counts of resolution and a max sample rate up to 10 KHz. The **RA** features fast execution times through 80MHz 186 CPU, 16-bit Flash and 16-bit battery-backed SRAM.

A 50-pin CompactFlash interface can be installed to allow access to mass storage CompactFlash cards. Users can easily add mass data storage to their embedded application. C/C++

programmable software packages with file system libraries are available.

CPU internal timer/counters can be used to count or time external events, or to generate non-repetitive or variable-duty-cycle waveforms as PWM outputs. Additional three 16-bit programmable counters (71054, NEC), each with its own clock input, gate input, and output, can be clocked up to 10 MHz.

A serial real time clock (DS1337, Dallas) is a low power 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). All UARTs have deep FIFOs to minimize the potential of receiver overrun or to reduce interrupt overhead. The UARTs also incorporate 9-bit mode for multi-processor communications. One UART can be buffered by RS232 (as default), RS485, or RS422.

40+ TTL I/O lines are free to use, including 24 bi-directional I/Os from the PPI (82C55), 32 multifunctional CPU internal PIOs, and TTL I/Os from the DUART.

A parallel DAC (DA7625, 5 μ s, 4 ch, 12-bit, 0-2.5V) and 2 serial DACs (DAC7612, 2 ch, 12-bit, 0-4.095V) can be installed to support a total of up to 8 analog outputs.

Optional high efficiency Switching Regulator (LM2575) can be installed to allow power input from 8V to 30V DC without generating heat. It also provides an external control pin to shutdown 5V and enter μ A standby mode and wake-up by active-low signal.

Two versions of the **RA** are available: the **RA80** is based on the 80 MHz R1100, and the **RA40** is based on the similar 40 MHz Am186ER.

Ordering Information

RA80/RA40 **\$169/\$149/\$99/\$89** **Qty 1/50/100/1K+**

Includes: 80/40MHz CPU, I/Os, 3 UARTs, 3 timers, 82C55, 71054, watchdog timer, EE, 256KW Flash, 64KW SRAM.

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

Add-on Options:

- 1) SRAM 256KW.....\$20
- 2) Real-time clock (RTC1337) and battery.....\$20
- 3) CompactFlash Interface.....\$20
- 4) 4 ch. 12-bit DAC, 200 KHz (DA7625).....\$40
- 5) 2 ch. 12-bit DAC (DAC7612) 2 chips.....\$20x2
- 6) 8 ch. 12-bit ADC (ADS7852), 300KHz, 3 chips.....\$20x3
- 7) 8 ch. 16-bit ADC (ADS8344) 2 chips.....\$30x2
- 8) Switching regulator (SR).....\$20
- 9) RS485/422.....\$10/20

Typical Order Example:

80 MHz R-Engine-A™, CompactFlash, AD7852
RA80 + 3 + 6 = \$169 + \$20 + \$20 = \$209



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