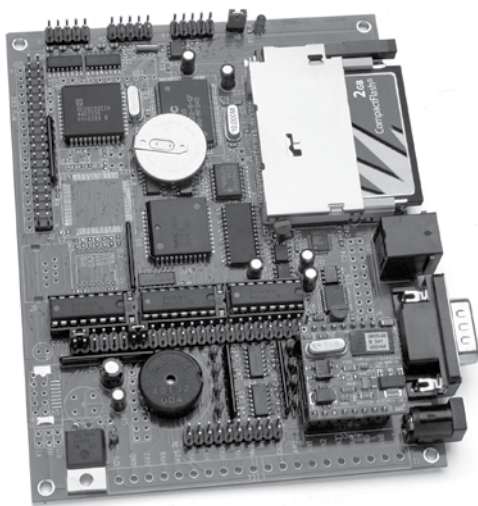


RM™**Industrial Controller with On-board MODEM and Ethernet 80MHz CPU, high-voltage drivers, RS232/485, ADC/DAC, and CompactFlash storage.****Features:**

- 4.5 x 5.2"
- 50 μ A standby, 200/20 mA normal/power-save
- 80 MHz 16-bit x86 CPU, C/C++ programmable
- Ethernet, 3 serial ports, MODEM with DAA, RJ11
- 16 ADC analog inputs, 8 DAC analog outputs
- CompactFlash with FAT16 File system support
- 256KW 16-bit Flash, 256KW 16-bit SRAM
- 40+ TTL I/Os, Real-time clock, 512 bytes EE
- Solenoid drivers, protected high voltage inputs.

Introduction

The **RM™** is a variant of TERN's **R-Drive™(RD)** controller, customized with additional features to support an industrial OEM customer's specific needs. Measuring 4.5x5.2 inches, the **RM** supports an on-board modem, Ethernet, serial ports, CompactFlash, ADCs, DACs, solenoid drivers, DB9, RJ11, and screw terminals. It can be used for precision data acquisition, industrial process control, remote communication logger, or portable test instrument.

The **RM** is based on a high performance 80 MHz 186 CPU with a 16-bit external bus supporting fast execution times through 16-bit Flash and SRAM.

Advanced Communication and Storage

A V.92, 56Kbps or a 2400bps modem module with DAA and RJ11 phone jack can be installed, ready to connect to a telephone line. This modem is designed to be used on U.S. and select international telephone systems; it supports caller ID, DTMF tone detection, voice play back, remote recording, ring detection and supports basic AT commands.

A 50-pin CompactFlash interface can be installed to allow access to mass storage CompactFlash cards (up to 2GB). An Ethernet LAN controller (CS8900) with RJ45 connector can be installed to provide 10 Base-T Ethernet network connectivity.

A set of **TERNDirect™** network stack libraries allow easy programmatic access to data traffic on an Ethernet link, extending on the protocol stack as low as Ethernet frames or as high as TCP/IP.

TERNDirect™ file system libraries support FAT12/16 access to an attached CompactFlash card, meaning that PC-readable data files can be easily created within the user's C/C++ application.

Data Acquisition and Industrial Control

One high-speed 12-bit parallel ADC (AD7852) provides 8 channels of analog input (0-5V), at up to 300K samples per second. A 16-bit ADC (ADS8344, TI) provides 8 single-ended or 4 differential analog inputs (0-5V, or 0-REF) with 65536 counts of resolution at up to 10KHz sample rate. Analog signal conditioning circuits can be installed to support ± 10 V analog inputs for the 16-bit ADC. A parallel DAC (DA7625, 5 MS, 4 ch, 12-bit, 0-2.5V) and 2 serial DACs (DAC7612, 2 ch, 12-bit, 0-4.095V) can be installed for a total of up to 8 analog outputs.

Three 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. 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 and to reduce interrupt overhead. One UART can be buffered by RS232 (as default), RS485, or RS422. As many as 40+ TTL I/O lines are free for application use, including 24 bi-directional I/Os from the PPI (82C55), 32 multifunctional CPU internal PIOs, and TTL I/Os from the Dual UARTs (SC26C92).

Three DIP sockets with high voltage sinking drivers (ULN2003A) are installed as default. Each driver is capable of sinking 350 mA at 50V per line. They can directly drive solenoids, relays, or lights. Optional high efficient Switching Regulator (LM2575) supports 8-30V DC power input without generating excessive heat.

Ordering Information**RM \$199**

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

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), 300 KHz | \$20 |
| 7) 8 ch. 16-bit ADC (ADS8344)..... | \$30 |
| 8) Analog signal conditioning for 16-bit ADC..... | \$30 |
| 9) Switching regulator (SR) | \$20 |
| 10) RS485/422 | \$10/20 |
| 11) Ethernet Interface (CS8900) | \$30 |
| 12) 2400 bps or 56Kbps MODEM..... | \$50 |



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