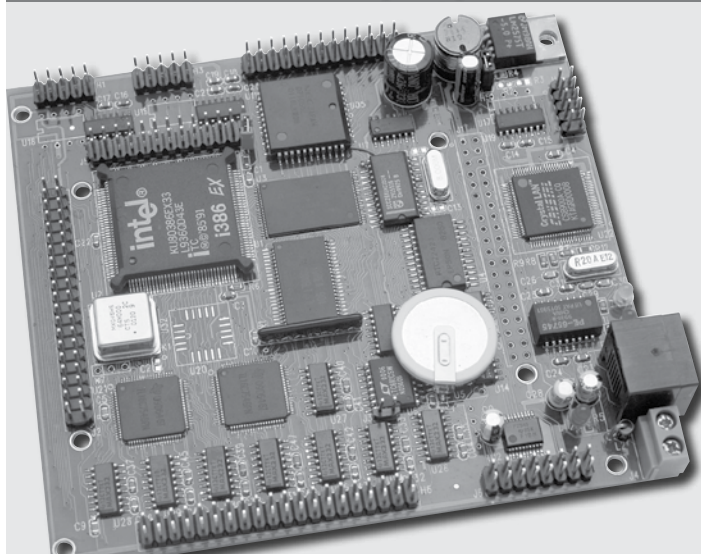


# SerialDrive™ (SD)

Intel386EX, 11 RS-232, 70+ I/O



## Features:

- 6.1 x 4.5 x 0.3"
- Intel386EX, program in C/C++, 32/64 MHz.
- 200/350 mA at 12V full operation at 32/64 MHz clock
- 11 ch. RS232, high speed baud rates (up to 2 Mbps)
- 256 KW SRAM, 256KW Flash, 512 bytes EE.
- 70+ I/Os, 3 timers, interrupts, 1 Sync, 10BaseT Ethernet\*
- 11 ADCs, 2 DACs, real-time clock and battery\*

\*Optional

## Summary

The **SerialDrive™ (SD)** is a board designed for projects requiring mass serial communication capabilities. It is a C/C++ programmable embedded controller based on the Intel 386EX, and integrates up to 11 channels of RS232/485 serial ports, as well as one synchronous serial port, and an Ethernet port.

In order to support high-speed communications, the SD is available with an optional 64 MHz clock, double the default 32 MHz. The serial ports are handled via DMA or deep FIFO (64 bytes), able to handle very high loads without losing any data.

## Serial Communications

Two UARTs from the 386EX, 8 UARTs from 2 QUARTs (TL16C754B), plus one SCC2691 UART provides a total of 11 async. serial ports. All transmit and receive data lines plus handshaking signals (/RTS, and /CTS) are buffered with RS232 drivers. Three of these RS232 ports can be replaced with optional RS485 drivers.

The 386EX processor has two internal UARTs, supporting reliable DMA-driven serial communication at up to 115,200 baud. The processor also has a sync. serial port operating at up to 8 MHz. Three 16-bit timers/counters can be used to count external events or generate pulse outputs.

The two quad UARTs (TL16C754B, TI) provide a total of 8 high speed serial ports, with each port featuring 64-byte transmit and 64-byte receive FIFOs. These deep FIFOs can release processor load

and guarantee reliable performance for multi-serial port high speed (up to 2 Mbps) communication. Programmable FIFO trigger level, software XON/XOFF, hardware flow control are supported.

At a sizeable 6.1x4.5", the high performance 386EX uses faster 16-bit ACTF Flash (256 KW) and battery-backed SRAM (256 KW). Other features popular on TERN controllers are also found on the SD (such as the 512-byte EEPROM, real-time clock, PPI for 24 digital I/Os). Other optional components include 11 channels of 12-bit ADC (TLC2543, 20KHz, 0-REF+), and two channels of 12-bit DACs (DAC7612, 0-4.095V).

Six Modem control signals on each UART can also be used as general programmable TTL I/Os. A combined total of 70+ TTL I/O pins are available for user use from the PPI(82C55), i386EX internal multi-functional I/O, and QUART modem control lines.

An Ethernet LAN controller (CS8900) can be installed to provide network connectivity. A RJ45 8-pin connector is used to connect to a 10-baseT Ethernet network. A software stack library will support network protocols like ARP, DHCP, UDP, ICMP, and of course TCP over the Ethernet network.

An expansion port (J1) supports mass memory expansion with CompactFlash or PCMCIA. An optional switching regulator can be installed to reduce power consumption and heat. The switching regulator also supports power-off mode, allowing  $\mu$ A-level power consumption. The **SD** can be powered by unregulated DC 9V to 30V(with switching regulator).

To meet demanding reliability requirement, all IC chips are surface mounted on a single PCB with additional thickness (0.093").

## Ordering Information

**SerialDrive™ (SD)**      **\$299/\$199/\$149**      **Qty 1/100/1K**

Includes 386EX with 32MHz clock, **256KW ACTF Flash, 256KW SRAM**, 2 RS232, PPI, EE, 3 timers.

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

## Add-on Options:

- 1) UART(SCC2691) with a) RS232, or b) RS485 ..... \$30
- 2) Real-time clock (RTC) and battery ..... \$20
- 3) 11 ch. 12-bit ADC(TLC2543) ..... \$20
- 4) Dual 12-bit DAC (LT1446)..... \$20
- 5) 64MHz clock with 386EX ..... \$30
- 6) Switching regulator ..... \$20
- 7) Ethernet Interface (CS8900) ..... \$30
- 8) Quad UART RS232, x2 ..... \$40 x2

## Typical Order Example:

SerialDrive with a total of 11 RS232

**SD** + 1 + 8 = \$299 + \$30 + \$100 = \$429



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