



Ethernet-based 386EX Computer with TTL I/O, A/D, D/A SBC0386EX



Features

- ✓ Ready to run 386EX computer
- ✓ To 1MB RAM, 512K flash, 512K BRAM
- ✓ COM1, COM2 RS232/RS485 ports
- ✓ 48 TTL-compatible I/O lines
- ✓ Watchdog, RTC, PC/104 expansion
- ✓ A/D, D/A, Ethernet options
- ✓ Download .EXE file to run on card
- ✓ Turbo Debugger™ support

The SBC0386EX is a PC/104 expandable embeddable PC. It offers a range of features making it ideal for embedded control applications, and offers quick development cycles. The standard configuration includes Intel's powerful 386EX processor, RAM and flash EPROM installed, and the time-saving RUN.EXE firmware. This firmware allows an .EXE file to be downloaded into on-board flash EPROM through a serial port using XMODEM protocol, and then run when power is applied. Borland/Microsoft C/C++, QuickBASIC, and Turbo Debugger are supported.

With two PC-compatible RS232/RS485 COM ports, 48 digital I/O lines, three counter/timers, and a watchdog timer, the SBC0386EX provides a full set of hardware for many applications. On-board options include 12-bit analog inputs, 12-bit analog outputs, and Ethernet network capabilities. PC/104 expansion cards can be stacked onto the SBC0386EX for additional functions.

Because the SBC0386EX is completely functional as shipped, it is ready to accept a program to run upon receipt.

Software Support

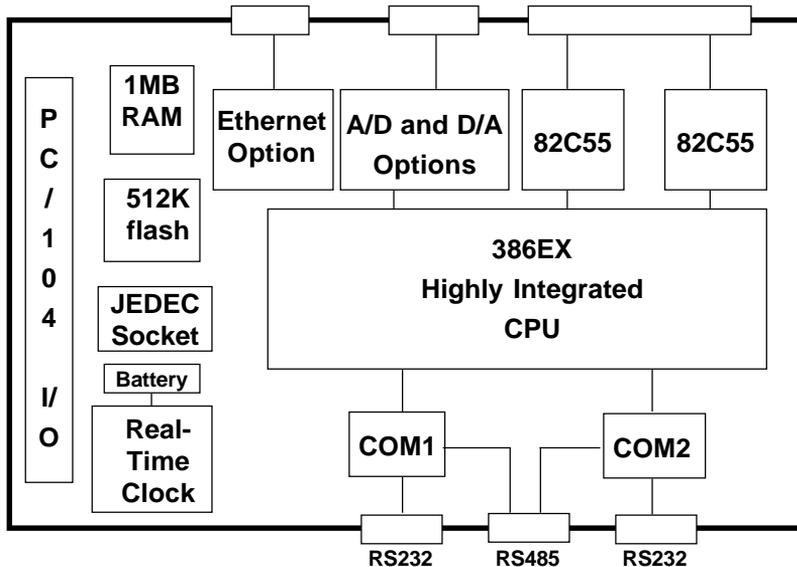
*DOS emulation, RUN.EXE™,
MSDOS 5.0
Turbo Debugger™
Comm library, CommBLOK™
PID loop library, PidBLOK™,
C, BASIC, compilers*
[Items above in Section 6]

Compatible Hardware

*PC/104 expansion cards
[Items above in Section 4]
RS232/RS485 devices
Custom*

Mounting/Packaging

*Standoffs, STDOFF01
[Items above in Section 5]
Custom*



Specifications:

Mechanical:

- 5.00" x 5.00" x .6"
- Four mounting holes in corners

Power Requirements:

- +5V \pm 5% at 850mA
- \pm 12V \pm 5% at 40mA

Environmental:

- 0° - +70°C operating
- 40° - +85°C storage
- 5%-95% relative humidity, non-condensing

Processor Core Section:

- 386EX CPU
- 25 MHz clock rate
- Includes three 16-bit timers
- Dual 8259A interrupt controllers included
- Selectable DMA support - DRQ2

On-board Memory:

- 1MB DRAM based at 0
- 512K of flash at top of memory map with BIOS installed, 384K available for user
- Installed firmware for .EXE file download, debug, and execution
- Socket for 512K RAM or 1MB EPROM

Watchdog Timer:

- Program must refresh watchdog timer periodically, or system will be reset
- Enabled through software

Async Serial Ports:

- Two async serial ports, PC-compatible
- RTS and CTS modem controls
- RS232 and RS485 both channels
- Baud rates to 780K, DMA support

COM1 and COM2 Serial Port Connectors/Cable		
Pin	Signal	DB9 Pin
1	--	1
2	--	6
3	RX Data In	2
4	RTS Out	7
5	TX Data Out	3
6	CTS In	8
7	--	4
8	--	9
9	GND	5
10	--	--

COM1/COM2 RS485 Serial Port Connector	
Pin	Signal
1	GND
2	COM1 TX+
3	COM1 TX-
4	COM1 RX+
5	COM1 RX-
6	COM2 TX+
7	COM2 TX-
8	--
9	COM2 RX+
10	COM2 RX-

CMOS I/O Lines:

- 48 programmable lines
- 8-bit programmable input or output
- TTL compatible levels, 2.5mA drive
- 82C55 mode 1,2 interrupts supported

Real Time Clock:

- RTC with on-board battery
- Driver software in BIOS

PC/104 Interface:

- 8-bit and 16-bit PC/104 module support
- IRQ5-7,9-11,14 and IOCHCHK (NMI)
- DMA support for DRQ2 or DRQ6

Ethernet Option:

- 10BASE-T Ethernet
- RJ45 for direct connect to standard twisted-pair cabling
- Driver software included

Analog Input Option:

- Eight 12-bit inputs
- $\pm 1/2$ LSB linearity
- Software-based sample rate, approx. 1K per second in C language
- 0 to +5V input range

Analog Output Option:

- Four 12-bit outputs
- 0 to +5V output range, all channels
- $\pm 1/2$ LSB linearity
- 3usec DAC settling time

DK0386 Development Kit:

- Free with first SBC0386EX purchase
- BIOS and DOS compatible O/S
- "Implied AUTOEXEC.BAT" on reset
- Directly executes programs written in C/ C++, Pascal, BASIC
- No modified libraries or locator utilities
- Executes .EXE file from flash
- Includes Turbo Debugger remote support
- Download program to flash EPROM with XMODEM (using PROCOMM, etc.)
- Includes all cables and documentation

External Connections:

- 10-pin header for each async COM port RS232
- 10-pin header for both COM ports RS485
- 2-26 pin headers for TTL I/O
- 16-pin header for analog inputs/outputs
- 10-pin header for timer/miscellaneous signals

Ordering Information:

Single Board Computer:

SBC0386EX	386EX CPU, 25 MHz, 1MB RAM, 512K system flash
DK0386	No charge development kit, available with first order only
NETSOCK/310	SBC0386EX with Ethernet and UDP/IP

(refer to separate data sheet)

0386OPT1	A/D Converter, 8-Channel
0386OPT2	D/A Converter, 4-Channel
0386OPT3	10BASE-T Ethernet
0386OPT25	MSDOS 5.0 in Bootable Flash ROMdisk A:
0386OPT30-8	8MB Flash Disk C:
0386OPT30-24	24MB Flash Disk C:
0386OPT30-48	48MB Flash Disk C:
0386OPT30-64	64MB Flash Disk C:

Accessories:

MPC201	LCD and keypad interface with beeper
MPC204	VGA, Touchscreen interface, 16-bit
MPC204-1	VGA, Touchscreen, KBD interface, 16-bit
MPC420	PCMCIA Controller, 2 Slot
MPCxxx	Other Micro/sys PC/104 I/O
CA4020	COM Port DB9 breakout cable
TB1485-X	RS485 terminator/terminal board with cable

Cables nominally 15", other lengths available

RUN.EXE trademark Micro/sys, Inc.
CommBLOK, PidBLOK, OptoBLOK trademark Drumlin
IBM, PC trademark IBM Corp.
MSDOS, QuickBASIC, Microsoft trademark Microsoft Corp.
Turbo Pascal, Turbo Debugger trademark Borland
International