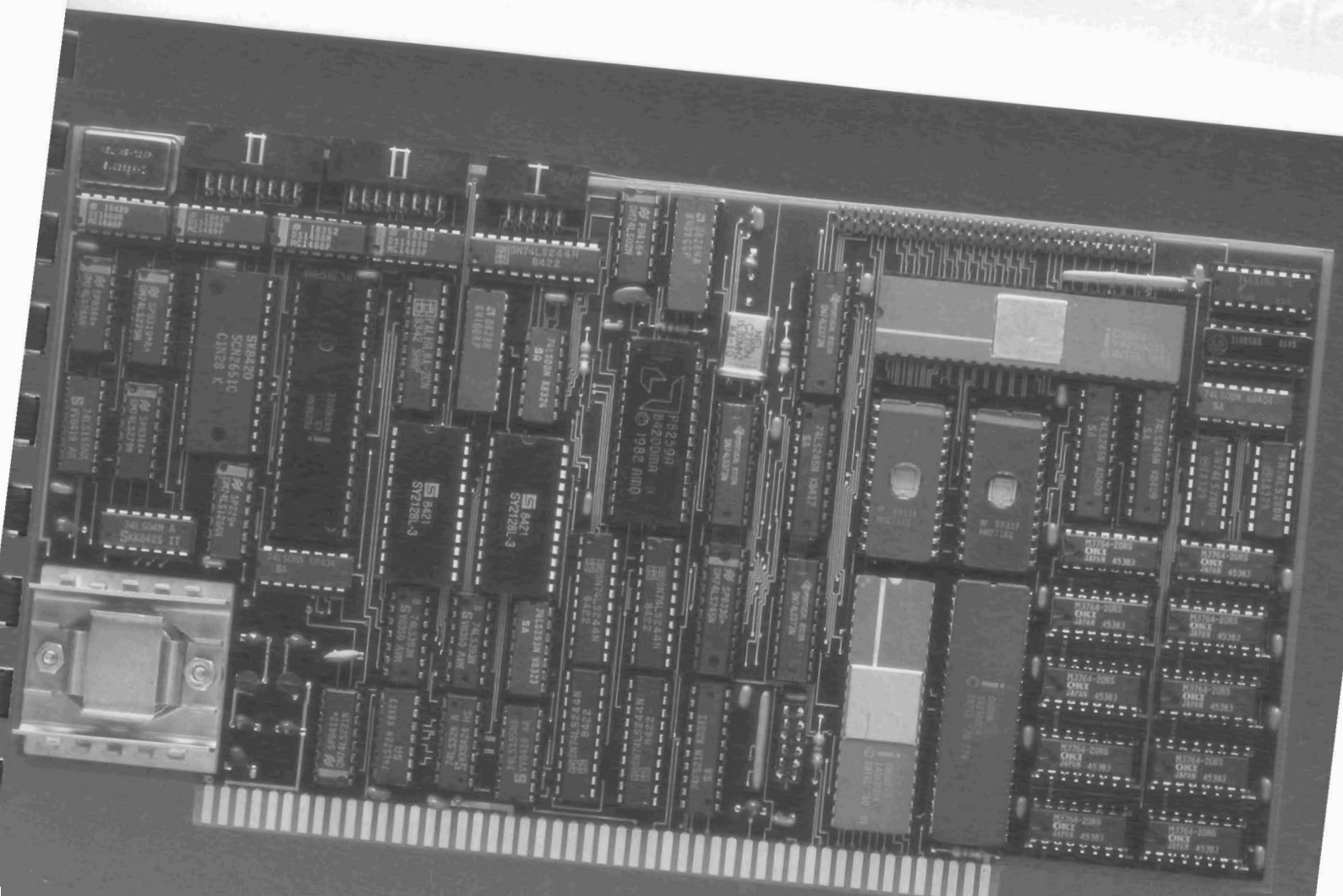


SBC 86/87



TELETRK

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SBC 86/87 Specifications

Design Philosophy

The philosophy behind the design of the Teletek SBC 86/87 was to offer a product to the OEM/system integrator, or end user, a degree of feature flexibility not previously available on board level products. This flexibility allows Teletek the freedom to custom configure a board, prior to shipment, that will most closely meet the specific needs of the system being designed. This approach to board design offers the most cost effective means of system integration. Only those features that are required will be provided on the board, reducing the number of unneeded options, thus lowering cost.

The SBC 86/87 is a 16-bit slave single board computer intended for use with the Teletek multiprocessing board family. With appropriate software drivers, the SBC 86/87 will run in any Z80 or 8086 based system that conforms with the S-100/IEEE-696 standard. The addition of this slave to any of Teletek's Z80 based master boards will allow the user to run most popular CP/M-86 and MS-DOS application software in a TurboDOS environment.

CPU

The SBC 86/87 uses the popular Intel 8086 16-bit CPU running at 5MHz in the standard configuration. An 8MHz option is available. The 8086 CPU provides a full 16 bit data bus to memory allowing up to twice the performance of similar CPUs with 8-bit data buses, i.e. the 8088. The Intel 8259 programmable interrupt controller provides eight priority levels, thus optimizing peripheral I/O communications. By reducing the CPU's involvement in polling routines, overhead is substantially reduced, freeing the CPU for more complex functions.

NPX

In addition to an already powerful CPU, the SBC 86/87 provides the option of adding the high performance Intel 8087 numeric data

coprocessor. This coprocessor adds arithmetic, trigonometric, exponential, and logarithmic instructions to the standard 8086 instruction set. The 8087 will provide up to 100 times the performance of the CPU alone during numeric intensive operations. In addition, the 8087 coprocessor conforms to the proposed IEEE Floating Point Standard.

Memory

128Kbytes of dynamic RAM with parity is provided standard with the option to expand to 512Kbytes using 256K RAM chips. In addition to RAM, up to 64Kbytes of EPROM can be installed offering increased system flexibility. 4Kbytes of EPROM will be provided standard. The parity checking circuit can be enabled or disabled under software control and will cause a non-maskable interrupt to the CPU if a parity error is ever detected.

I/O

Two RS-232 compatible serial ports and one Centronics compatible parallel printer port are provided on the SBC 86/87. The Intel 8256 MUART and Signetics 2651 USART provide all of the on board peripheral I/O. The MUART contains one asynchronous serial interface with internal baud rate generator, five 8-bit programmable counter/timers (four can be cascaded to two 16-bit counter/timers), two 8-bit programmable parallel ports, and an eight level priority interrupt controller. The two parallel ports are configured to provide a Centronics compatible interface. The USART contains one more serial interface with internal baud rate generator allowing both synchronous and asynchronous communications.

S-100 Interface

Communications between the SBC 86/87 and the S-100 bus master take place through two FIFO buffers, status bits, and interrupt signaling. Dual independent FIFO buffers, one for sending

data and another for receiving data, allow simultaneous transfers into and out of the SBC 86/87 slave. Dual FIFOs also eliminate the problems of synchronizing multiple processors, dramatically reducing protocol overhead for both the slave and the master. The combination of master to slave interrupt signaling and dual FIFO buffers gives the SBC 86/87 the fastest, most efficient slave/master interface available. The SBC 86/87 appears as an I/O mapped slave on the S-100 bus and may be independently addressed via user-selectable jumpers.

Software

Teletek supports the SBC 86/87 with the TurboDOS operating system. TurboDOS provides the SBC 86/87 user with a CP/M-86-compatible operating system environment, allowing any CP/M-86 application program to be run. TurboDOS 1.4 provides a PC-DOS (MS-DOS) emulator that will allow PC-DOS application programs to run in the multi-user TurboDOS environment. Additionally, TurboDOS allows mixing of Teletek's 8-bit slave boards, the SBC-I and SBC-II, with our new 16-bit SBC 86/87 in any combination. This software feature allows new systems to be tailored to a specific processing requirement, or permits the upgrading of existing systems from 8-bit to 16-bit gradually over time.

(Specifications subject to change without notice)

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