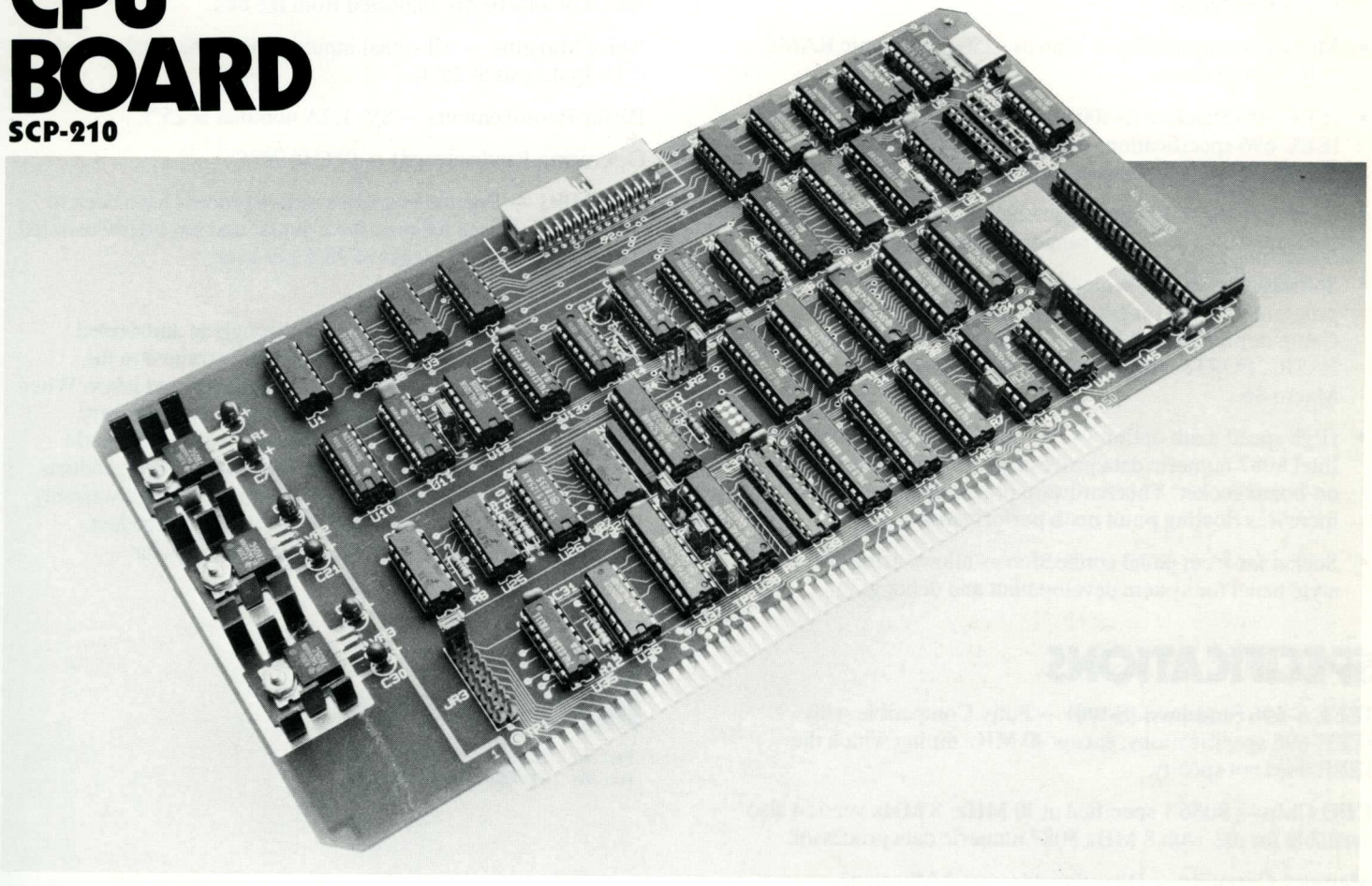
8086 CPU BOARD

SCP-210



The advanced design of the Seattle Computer 8086 CPU board delivers true 16-bit performance to the S-100 bus. Because of its 16-bit architecture and faster clock rate, it has many times the throughput capabilities of the IBM PC and other 8088 based systems.

Software support is another advantage of the 8086 CPU board. MS-DOS is currently available from Seattle Computer and the XENIX operating system is scheduled for release in early 1984. Other operating systems are available from other sources.

Unlike some 8086-based systems in which the architecture imposes a 1 Megabyte memory address limit, the Seattle Computer 8086 CPU board has a unique design which expands the board's memory address range to 16 Megabytes. This is accomplished with a programmable latch which sets address bits A20-A23.

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This CPU board, with its versatile design, can be used as a stand-alone CPU; together with the SCP-301 CPU Support board; or as part of a three-card CPU/CPU Support/MMU (memory management unit) set. This three card set is used with Seattle Computer's XENIX system.

In a non-memory managed system, higher order addresses are delivered directly to the bus by the CPU. When coupled with the MMU, the CPU board routes these addresses through a connector on the top of the card to the MMU where they are manipulated before being put on the bus.

FEATURES

- State-of-the-art design — Intel 8086 true 16-bit CPU. Two versions are available: 10 MHz and 8 MHz. The 8 MHz version is offered for compatibility with the 8 MHz 8087 numeric data processor.
- 8/16 Capability — Can operate with either 8-bit or 16-bit peripherals. Older 8-bit memory, disk controllers, video units can be used, although with somewhat lower overall system performance.

- Large address space — Directly addresses up to 1 Megabyte of memory, to 16 Megabytes through on-card programmable latch.
- Memory compatibility — Can use 150 ns dynamic RAMs without wait states.
- IEEE-696 Standard (S-100) — Fully compatible with the IEEE-696 specifications except 10 MHz timing for which the IEEE does not provide specifications.
- Configurable — Jumper selectable options for configurability to a wide range of system designs.
- Software support — Wide range of operating systems and programming languages are available from Seattle Computer including: MS-DOS, XENIX (early 1984), BASIC, FORTRAN, Pascal, COBOL, and Macro 86.
- High speed math option — For floating point calculations Intel 8087 numeric data processor can be installed in the on-board socket. This hardware processor significantly increases floating point math performance.
- Socket for front panel connection — allows using IMSAI style panel for system development and debugging.

SPECIFICATIONS

IEEE S-696 Standard (S-100) — Fully Compatible with IEEE-696 specifications, except 10 MHz timing which the IEEE does not specify.

CPU Chip — 8086-1 specified at 10 MHz. 8 MHz version also available for use with 8 MHz 8087 numeric data processor.

Memory Capacity — Directly addresses 1 Megabyte (A0-A19). Address lines A20 through A23 are programmable.

Memory Requirements — Static memory recommended unless specifically designed for this CPU. Minimum memory access time for 10 MHz operation without wait states — 210 ns bus to bus.

Switchable Options

Clock Speed: For the factory provided 10 or 8 MHz CPUs, switch selections provide for alternate half-speed operation, 5 or 4 MHz respectively.

Wait States: Four conditions: 1. One wait on all cycles;
2. One wait on memory cycles; 3. One wait on I/O;
4. No waits (Allows externally generated wait states).

8087 Interrupt: None, VI0-VI7, or NMI.

MWRITE: ON or OFF (when OFF, allows generation elsewhere).

SXTRQ: ON or OFF (when OFF, 8-bit only data transfer).

Memory Management Capabilities — Address lines A12-A19 available at top edge connector. Address lines A12-A19 may be disconnected from the bus.

Noise Margins — All signal inputs to board have minimum of 0.4V hysteresis at 25°C.

Power Requirements — 8V, 1.2A nominal at 25°C.

Operating Environment — 0°C to 70°C.

Reliability — Previous versions of this product have been in production and use for over three years, and have demonstrated typical reliability in excess of 98% per year.

Limited Warranty Summary
When sold by Seattle Computer or through an authorized Seattle Computer dealer, this product is warranted to the end-user for a period of 90-days for both parts and labor. When sold to the end-user by an OEM, the warranty terms vary. Consult your OEM for specific warranty coverage. Seattle Computer offers repair service for its manufactured products beyond warranty coverage. This is a summary of the warranty. A complete warranty statement is printed in the product manual and is also available from Seattle Computer upon request.

ORDERING INFORMATION

Part No.: 021001 8086 10 MHz CPU
Part No.: 021002 8086 8 MHz CPU

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