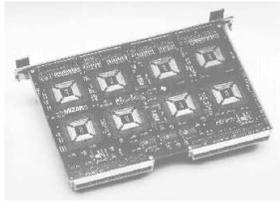# Mizar Product Information

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MZ 7772 Octal TMS320C40 DSP Engine (Quad version available)

The MZ 7772 is an eight-processor 6U DSP board for the VMEbus that requires no daughter cards. Having no daughter cards means no need for interprocessor or intraboard communication through a daughtercard connector, for increased reliability and throughput. By using the state-of-the-art tape automated bonding (TAB) packaging technology, the Mizar MZ 7772 can accomodate eight 'C40 processors on the motherboard. Each 'C40 is capable of processing 60 MFLOPS, giving the board an aggregate performance rating of 480 MFLOPS or 2.6 GOPS.

The board's I/O capabilities have been carefully designed to take full advantage of the processing power of the eight 'C40s. Each 'C40 has six 20-MB/s communication ports and a six-channel DMA coprocessor. Two ports from each 'C40, or a total of 16, are routed to the board's front panel, providing 320 MB/s of data I/O. In addition, each 'C40 on the MZ 7772 has its own 100-MB/s expansion interface, for a total of 800 MB/s of memory or I/O expansion. The MZ 7772 VMEbus interface is a VME64 master/slave implementation that supports 60-MB/s block transfers over the VMEbus.

Each DSP on the MZ 7772 can be directly linked to as much as 8 MB of zero wait-state SRAM. In addition to the 4 MB of SRAM on the board's Global Bus shared data or instructions, the MZ 7772 features 2MB of flash EEPROM and 1 KB of nonvolatile RAM for system configuration data. As an option, the MZ 7772 can include a daughter card with as much as 16 MB of SRAM or 32MB of DRAM, or a custom I/O subsystem. With the addition of optional memory, the MZ 7772 can support a Harvard-style memory architecture. The MZ 7772 also includes an IEEE Std 1149.1 controller for on-board test procedures and two RS-232 ports.

The MZ 7772 is supported by several development tools, including the Sun-based Mizar Multiboard DSP debugger, which allows a design team over a network to develop and debug software running on one or more multichip boards simultaneously in one VME card cage. The Mizar debugger debugs C source code. The Mizar octal 'C40 engine also runs the SPOX operating system from Spectron Microsystems and VxWorks from Wind Rivers Systems.

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