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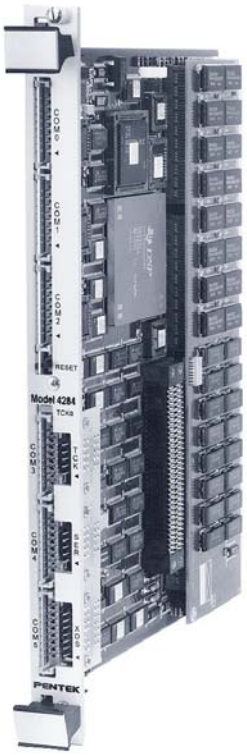
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Find the *Pentek 4283* at our website: ***Click HERE***

Model 4284

Single TMS320C40 Processor MIX Baseboard



General Information

Model 4284, is a powerful platform on which to configure a custom VMEbus MIX subsystem. It incorporates TI's TMS320C40 which acts as a controller and performs high-speed signal processing. Although the Model 4284 has enough power to operate standalone in many applications, its speed and flexibility are enhanced by adding MIX modules.

Model 4284 provides a direct upgrade path from the C30 to the C40 processor for present users of the Model 4283 Processor MIX Baseboard. The C40 of the 4284 serves as a 50 MFLOPS DSP, as well as a complete DMA controller running concurrently with the CPU.

Powerful MIX Bus Support

The MIX interface supports high-speed control and data transfers to any of Pentek's MIX modules. Mapped directly into the C40 local bus, this 32-bit channel includes full interrupt handling and generation support to ensure optimum real-time performance.

C40 Comm Port Interface

The six high-speed comm ports of the C40 are brought out to convenient front panel connectors. Any MIX module stacked on the 4284 becomes comm port compatible. The 4284 can thus act as a comm port based I/O controller for other C40 systems.

These ports are compatible with Pentek's family of processor products and Pentek's extensive range of C40 comm port compatible products.

Flexible VMEbus Control

Model 4284 has both master and slave VMEbus capabilities. As a bus master it can read from and write to the entire 32-bit address space of the VMEbus, thus accessing any external slave device. As a host controller it can also act as a bus arbiter for multiple bus masters.

Local and Global SRAM Memory

Two 1 Mbyte SRAMs are provided for the C40, one on the local bus and one on the global bus. These resources maximize the use of the C40s dual bus architecture and its ability to conduct data and program cycles in parallel on the two buses.

Both local and global SRAMs operate with zero-wait state performance and can be optionally expanded to 2 MB.

Dual-Access RAM

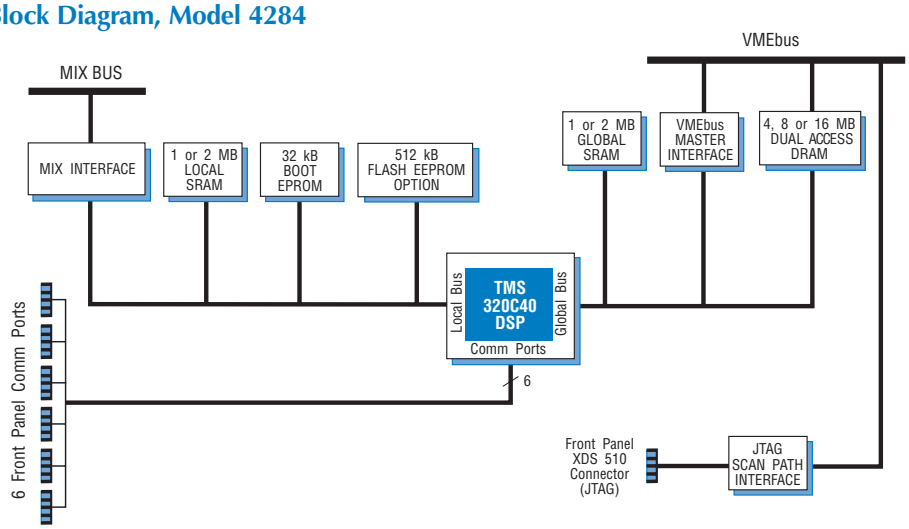
A 4, 8 or 16 MB dual-access DRAM provides an extremely powerful structure for passing data and programs between the C40 and the VMEbus.

From the VMEbus, it appears as a relocatable slave memory in A24/A32 address space. From the C40, it is mapped directly onto the global bus. ➤

Features

- Accepts up to 3 MIX expansion modules
- Adapts MIX modules to C40 comm ports
- 50 MFLOPS peak processing power
- Functions as a VMEbus host controller, bus master, bus arbiter, interrupt handler, or interrupt generator
- 4, 8 or 16 MB dual-access memory
- 2 MB SRAM expandable to 4 MB
- 32 kB EPROM for system firmware
- Occupies one VMEbus slot

Block Diagram, Model 4284



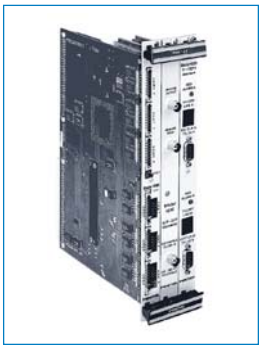
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Model 4284

Single TMS320C40 Processor MIX Baseboard

I/O Control and Signal Analysis System



The 4284 MIX Baseboard can serve as a comm port based I/O controller for other C40 systems. It is shown here connected to a Model 4242 A/D and D/A Converter and a Model 4259 T1/E1 Transceiver. In this system the 4284 acts as an I/O pre- and post-processor for a 4270 Quad C40 Processor, or a 4285 Octal C40 Processor.

SwiftNet

Third Party Network Member DSP TEXAS INSTRUMENTS

Ordering Information

Model	Description
4284	Processor with 4 MB DRAM, 1 MB local and 1 MB global SRAM, 40 MHz clock

Options:

-003	512 kB flash memory
-005	2 MB local SRAM
-006	2 MB global SRAM
-007	8 MB DRAM
-009	16 MB DRAM
-012	VSB interface
-015	50 MHz clock

➤ Flash EEPROM Memory

In order to support storage of program or data, the C40 may be equipped with up to 512 kB nonvolatile, Main Flash EEPROM on its local bus. Ideal for embedded systems which self-boot from power up, this memory can also be used for system firmware.

Data or application programs can be permanently stored in the flash EEPROM, thereby providing true standalone embedded processor operation.

Support Software

Pentek **SwiftNet** supports a network of distributed VMEbus systems and allows the developer to run development tools on the host, while maintaining remote access to the VMEbus target systems.

Among others, third party software products include the Texas Instruments **Code Composer** integrated development environment.

Applications

Applications include FFT analysis, radar and sonar signal processing, image processing, digital filtering and robotic control.

With the VMEbus MIX expansion modules currently available for the Model 4284, there are hundreds of system configurations to choose from. Additional modules are being developed by Pentek.

All three MIX modules can be of the same type, maximizing certain operating characteristics, such as processing speed or number of input channels. Alternately, they can be of different types chosen to match a specific requirement.

Specifications

Processor
TMS320C40, 40 or 50 MHz clock

Dual-Access RAM
Size: 4 MB (1M x 32), optionally 8 MB (2M x 32), or 16 MB (4M x 32)
Arbitration: hardware, fully transparent
C40 access: memory-mapped global bus, three wait states
VME access: slave, relocatable on 1 MB boundaries; 170 ns DTACK delay

Local SRAM
Size: 256k x 32 (1 MB), optionally 512k x 32 (2 MB)
Access: C40 local bus only
Access time: zero wait state

Global SRAM
Size: 256k x 32 (1 MB), optionally 512k x 32 (2 MB)
Access: C40
Access time: zero wait state

BOOT PROM
Size: 32k x 8 (32 kB), factory-programmed
Access: C40 local bus only
Access time: one wait state

Optional Flash EEPROM
Size: 512k x 8 (512 kB)

VMEbus Compliance
Master: D32 A32 I(1-7) IH(1-7), slot-1 controller
Slave: D32 A32

VSB interface option: bus master, MD32, MA32; PLX chip set

Front Panel
Comm ports: six 16-pin connectors, active bidirectional buffers for C40 comm ports, up to 20 MB/sec
Indicators: LED driven by registered bit
Reset: momentary push-button
Emulator: 14-pin JTAG connector, for TI XDS-510
Serial I/O: 10-pin connector, RS-232 Tx and Rx lines for C40 TCLK0 and TCLK1
TCLK I/O: 10-pin connector, TTL I/O for C40 TCLK0 and TCLK1

Power: 3 A at +5 V dc

Size: standard 6U VMEbus board, single slot; board 160 mm (6.3 in.) x 233.5 mm (9.2 in.), panel 0.8 in. wide

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