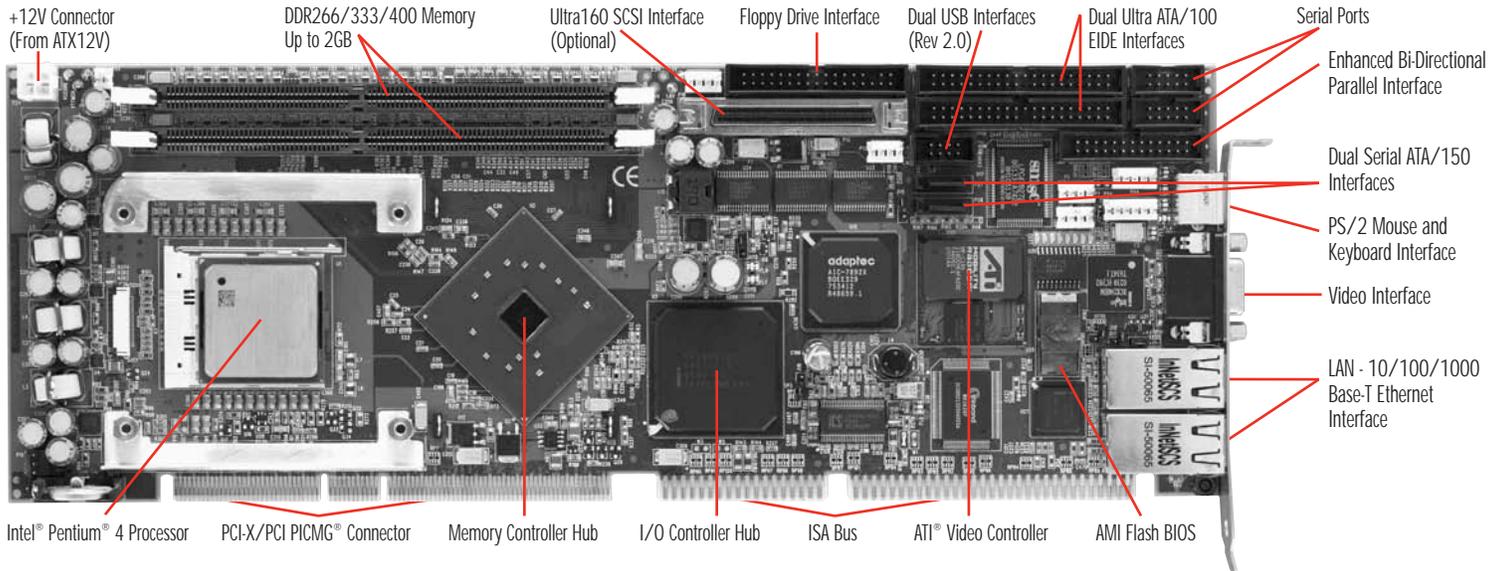


MX8 SINGLE BOARD COMPUTER



Chassis Plans' MX8 represents a quantum leap in processor, network communications and I/O functionality. The SBC offers new Intel® Pentium® 4 processor options that provide faster processing and system bus speeds, along with a larger cache memory. The SBC's chipset supports a 533/800MHz system bus, Gigabit Ethernet, PCI-X, Serial ATA and DDR266/333/400 memory. Combining new technology with legacy system architecture support enables the MX8 for a wide variety of applications.

PROCESSOR:

Intel® Pentium® 4 processor at speeds of 2.4GHz to 3.4GHz* Processor Package: mPGA 478

The latest version of the Intel® Pentium® 4 processor uses Intel's new 90 nanometer process technology to enhance processing efficiency while increasing performance and providing additional processor features.

Processor options are available to support either a 533MHz or 800MHz system bus. All processors utilize the Enhanced Intel® NetBurst™ micro-architecture. These processor features combine to provide optimum system performance and fast program execution in single board computer applications. Additional processor features include:

- Hyper-Pipelined technology
- Streaming SIMD Extensions 2 (SSE2)
- Advanced Dynamic Execution
- Hyper-Threading technology
- Enhanced Intel SpeedStep® Technology

**Higher speeds as available*

CACHE MEMORY (L2 & L1):

The processor's level two (L2) cache memory is an integrated on-die Advanced Transfer Cache memory that is 8-way set associative and runs at the full processor core frequency. Processor options are available that provide either a 512K or 1M L2 cache memory. The level one (L1) cache memory is a 12K Execution Trace Cache and an 8K data cache.

CHIPSET:

The 875P chipset features Intel® Performance Acceleration Technology (Intel® PAT). Intel® PAT provides a faster path between the processor cache memory and DDR system memory that increases overall system performance while taking full advantage of the processor's 800MHz Front Side Bus (FSB). The MX8 features a dual channel DDR266/333/400 memory interface, 533MHz or 800MHz FSB support, an AGP 3.0 video interface with 4x data transfers and dual Serial ATA/150. Additional chipset capabilities include USB 2.0, PCI-X/PCI, ATA/100, Intel® Communications Streaming Architecture (CSA) support for direct-connect Gigabit Ethernet and a 266MB/s Hub Interface to the Intel® E6300ESB I/O Controller Hub.

DDR266/333/400 MEMORY:

The two available DIMM sockets on the MX8 support a total memory capacity of 2GB. The 875P has an Intelligent Memory Manager feature that automatically detects the speed and placement of the DDR DIMMs and applies the appropriate memory frequency and speed to the DDR266/333/400 interface. The interface can operate as either a single-channel or dual-channel DDR interface. With one DIMM installed, the interface operates as a single-channel interface supporting a PC2100, PC2700 or PC3200 unbuffered 184-pin ECC or non-ECC DDR DIMM. Installing one DIMM produces an interface bandwidth of either 2.1GB/s, 2.7GB/s or 3.2GB/s. Dual-channel DDR interface operation occurs by installing two identical DIMMs, which doubles the interface bandwidth to 4.2GB/s, 5.4GB/s or 6.4GB/s.

SERIAL ATA/150 PORTS (DUAL):

The primary and secondary Serial ATA (SATA) ports on the MX8 comply with the SATA 1.0 specification and support two independent SATA storage devices such as hard disks and CD-RW devices. SATA technology provides lower pin counts, reduced signaling voltages, simplified cabling, CRC error detection and hot-plug support. SATA produces higher performance interfacing by providing data transfer rates up to 150MB per second on each port.

ULTRA XGA VIDEO INTERFACE:

The ATI® M6-C16H video controller enables 2D/3D video acceleration and provides 16MB of integrated video DDR memory. The video controller supports pixel resolutions up to 1600 x 1200 (UXGA). Software drivers are available for most popular operating systems.

10/100/1000BASE-T ETHERNET INTERFACE (DUAL):

The MX8's Gigabit Ethernet Controller (Intel® 82547GI) uses the new Communication Streaming Architecture (CSA) feature on the Intel® 875P MCH to provide a high-speed 10/100/1000Base-T Ethernet interface. Connecting directly to the MCH via CSA approximately doubles the peak available bandwidth and provides a low-latency path to memory that increases network performance. The second 10/100/1000Base-T Ethernet interface is provided by the Intel® 82540 PCI-based controller. RJ-45 connectors, located on the I/O bracket, provide the physical interface to the Ethernet network.

BUS SPEEDS:

ISA *	- 16-bit/8MHz
PCI	- 32-bit/33MHz, 32-bit/66MHz 64-bit/33MHz, 64-bit/66MHz
PCI-X	- 64-bit/33MHz, 64-bit/66MHz
System or FSB	- 533MHz or 800MHz

**Contact Chassis Plans for details on the MX8's ISA implementation.*

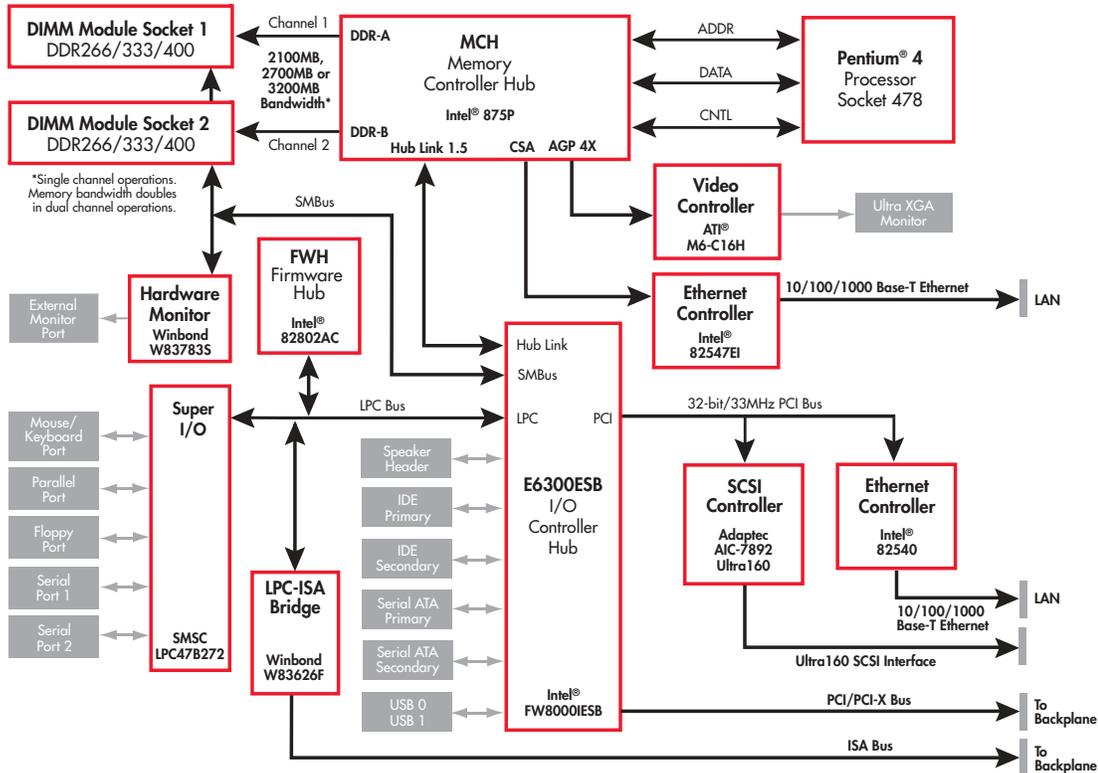
BIOS (FLASH):

The MX8 uses AMIBIOS®. The flash BIOS resides in the Intel® 82802AC Firmware Hub (FWH). AMIBIOS® contains features such as:

- Support for flash devices for BIOS upgrading via floppy interface
- Integrated support for USB mass storage devices such as USB CD-ROM, CD-RW, etc.
- Boot from network, USB mass storage devices, IDE or ATAPI
- Serial port console redirection to support headless operation
- SATA/ATA/ATAPI support includes 48-bit LBA addressing to support SATA/ATA/IDE hard drive capacities over 137GB



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ULTRA160 SCSI INTERFACE (OPTIONAL):

The Ultra160 SCSI interface uses an Adaptec AIC-7892 SCSI controller chip and supports SCSI device data transfer operations up to 160MB/s. The interface supports up to 15 SCSI devices, complies with the SPI-3 standard and is compatible with both single-ended and Low Voltage Differential (LVD) SCSI I/O. Software drivers are available for most popular operating systems.

ADDITIONAL MX8 FEATURES:

System Hardware Monitor:

- The Winbond W83783S chip supports hardware monitoring. The functions monitored are:
 - Voltage: +2.5V, +3.3V, +/-12V, +5V and VCore
 - Fan Speed
 - Temperature

- The MX8 hardware monitor driver allows the user to program the monitor limits to provide a trigger point for the application software. The user's application program can monitor these trigger points in order to send system alert messages or perform corrective actions.

Watchdog Timer:

- The programmable watchdog timer is supported directly by the I/O Controller Hub. Two operating modes, free-running and one-shot, are available with this two-stage watchdog timer. Stage one can generate IRQ, SMI or SCI, and stage two generates a programmable watchdog timer reset with a total range of 1ms to 10 minutes.

I/O Features:

- Two high-speed serial ports
- Enhanced Bi-Directional parallel interface
- Dual Universal Serial Bus (USB, Rev. 2.0)
- PS/2 mouse/keyboard interface
- Floppy drive interface

STANDARDS:

- PCI Local Bus Specification 2.1
- PICMG 1.0 Specification

MX8 APPLICATION CONSIDERATIONS:

Power Requirements:

Typical Values			
PROCESSOR	+5V*	+12V**	+3.3V*
3.0GHz	6.40A	8.80A	2.50A
2.8GHz	4.95A	5.15A	2.50A
2.4GHz	4.95A	4.63A	2.50A
-12V @ <100mA			

*From backplane via PICMG connector

**From ATX12V power supply or equivalent via P24 connector

The processor's power requirements created the need for an additional on-board 4-pin power connector. This connector requires +12V from an external power supply that conforms to the ATX12V power specification. This external power supply should have a wattage rating of at least 250W. The MX8 also requires that the power supply provide +3.3V to the backplane's processor slot.

Temperature/Environment:

Standard Operating Temperature:	0° to 45° C
Standard Operating Temperature:	0° to 45° C with 250 LFM airflow (for processors with 800 MHz FSB/1M cache and 3.06GHz processors with 533MHz FSB/512K cache)
Extended Operating Temperature:	0° to 55° C
Storage Temperature:	-40° to 70° C
Humidity:	5% to 90% non-condensing

The high-performance Intel® Pentium® 4 processor used on the MX8 may consume over 100Watts of power. The MX8's cooling system uses a high-reliability fan mounted to the SBC.

Mechanical:

An active cooling system is used on the MX8 to insure reliable processor operation at elevated temperatures. Overall dimensions for the MX8, including the active cooling system, are 13.3" L (338mm) x 4.8" H (121.9mm) x 2.35" W (59.7mm). Extended temperature operations are validated for processor speeds 2.8GHz and below using a 2.35" (59.7mm) tall active cooling system. Consult Chassis Plans for details.

AGENCY APPROVALS:

UL60950, CAN/CSA C22.2 No. 60950-00, EN55022:1998 Class B, EN61000-4-2:1995, EN61000-4-3:1997, EN61000-4-4:1995, EN61000-4-5:1995, EN61000-4-6:1996, EN61000-4-11:1994

ORDERING INFORMATION:

Model Name: MX8			
Model #	CPU Speed	L2 Cache	SCSI Option
Pentium® 4/800MHz FSB			
S6240-410	3.4GHz	1M	Yes
S6240-408	3.0GHz	1M	Yes
S6240-430	3.4GHz	1M	No
S6240-428	3.0GHz	1M	No
Pentium® 4/533MHz FSB			
S6240-107	2.8GHz	512K	Yes
S6240-104	2.4GHz	512K	Yes
S6240-127	2.8GHz	512K	No
S6240-124	2.4GHz	512K	No

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