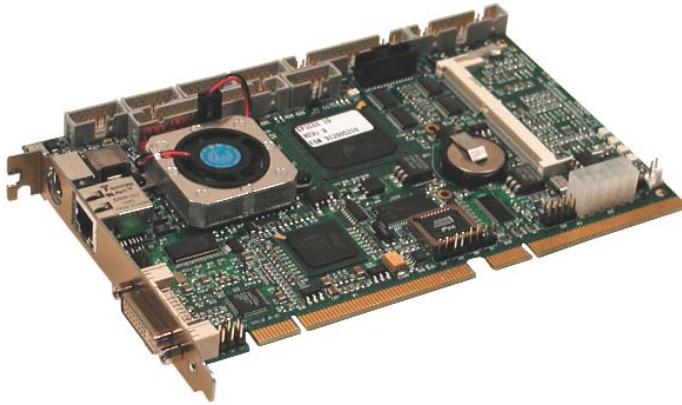# ePCI-X Half-length Single Board Computer   ePX-Sx10

Now Supports 512MB SDRAM

- **Intel® Pentium®III or Celeron™ Low Power Processor**
- **Intel®815E Chipset with 66/100MHz FSB**
- **Up to 512MB SDRAM**
- **Integrated Video with 4MB Display Cache and PanelLink® / DVI-I**
- **10/100 Base-TX Ethernet**
- **Ultra ATA/100 EIDE**
- **AC'97 2.1 Audio**
- **2x USB, 4x Serial, and 1x Parallel Ports**
- **Optional CompactFlash™ Disk and PMC Support**
- **Hardware Monitor, RTC and Three-stage WDT**
- **ePCI-X Passive Backplane or Stand-alone Operation**

Diversified Technology's revolutionary ePX-Sx10 single board computer ushers in the PCI centric industrial computing era. Compliant with the PICMG®1.2 embedded PCI-X open standard, it offers remarkable application configurability, a robust feature set, and long production life in a space sensitive, low power 1/2-length card form factor.

The ePX-Sx10 system host board (SHB), part of DTI's ePIX Generation product family, features either a Pentium III or Celeron low power processor, the Intel 815E chipset, and up to 512MB PC100 SDRAM on a single 144-pin SODIMM socket. The integrated 2D/3D AGP4X video controller is enhanced with a 4MB display cache and PanelLink transmitter for vivid high performance graphics with digital flat panel or CRT output; the integrated AC'97 2.1 controller and CODEC provide excellent audio quality. The 10 Base-T/100 Base-TX Ethernet and Ultra ATA/100 EIDE controllers support fast data/file transfer; two Universal Serial Bus (USB), four serial (two configurable as RS-232/422/485), and one parallel ports, and a floppy interface round out the basic board.

Operating in a stand-alone mode, via onboard power connector, or with a standard ePCI-X passive backplane (e.g. DTI's ePB-S5/04) via PCI edge connectors, the ePX-Sx10 supports an optional CompactFlash solid-state disk and 32-bit/33MHz IEEE P1386.1 PMC card. The Ultra Low Voltage 300MHz Celeron processor enables fanless operation. Durable and reliable, the board is designed to operate in elevated temperatures and meet international medical, measurement, control and laboratory safety and EMC standards.

The ePX-Sx10 Phoenix BIOS, in field upgradeable Flash, supports software Ethernet enable/disable, serial/parallel port remapping/disable, console redirection, and Wake on LAN. Other features include RTOS validation, a serial ID tag (for unique board identification), hardware monitor (input voltages, temperature, and fan speed), programmable three-stage watchdog timer, battery-backed real time clock, power fail circuit, and a 2 year limited warranty.

Highly configurable. Low power. Embedded application robustness. Long production life. Diversified Technology's ePX-Sx10 industrial SBC is the "all PCI - all the time" choice for OEMs addressing medical/laboratory, industrial control and automation (test & measurement, inspection/monitoring), instrumentation, data acquisition, transportation monitoring, gaming/in-flight entertainment, COTS defense/aerospace, and "engine" markets.

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SPECIFICATIONS

CPU / Cache
- Low Power Pentium III processor - 400/500/700MHz with 256KB L2 cache, BGA2
- Low Power Celeron processor - 300/400MHz with 128KB L2 cache, BGA2
- Intel 815E

Bus Interface
- 66/100MHz FSB; 33MHz PCI Busses
- Supports four 32-bit/33MHz slots
- Supports 32-bit/33MHz PMC card (5V)

Memory
- One 144-pin latching right angle SODIMM socket (1" or 1.25" modules)
- Up to 512MB using 64/128 x 72 3.3V single or double-sided PC100 SDRAM

Data Path
- 64-bit/100MHz on CPU and memory bus
- 32-bit/33MHz on off-board PCI bus
  32-bit/33MHz on onboard PCI bus

Flash Memory
- 1MB Firmware Hub for BIOS field upgrade

I/O
- USB Ports: two (two 5-pin headers)
- Serial Ports: two RS-232 (16C550) and two RS232/422/485 with 16 byte FIFO as COM1-4 with BIOS selectable IRQs and addressing, (four male 10-pin shrouded headers)
- Parallel Port: one bi-directional with all IEEE 1284 protocols supported and BIOS selectable IRQs and addressing, (male 26-pin shrouded header)
- Floppy Disk: support for two drives (360 KB to 2.88 MB), (male 34-pin shrouded header)
- EIDE: PCI Ultra ATA/100, support for two drives (master/slave configuration); PIO Mode 4, Bus Master IDE or DMA mode 5 transfers up to 100 MB/s, (one male 40-pin shrouded header)
- Optional CompactFlash: one type I/II, Secondary Master (50-pin back-side header)
- Ethernet: PCI 10 Base-T/100 Base-TX (Intel 82562ET), (one shielded RJ-45 on face plate w/ link and activity LEDs)
- Optional PMC: one 32-bit/33MHz IEEE P1386.1 compliant backside socket

Video
- Integrated 2D/3D SVGA controller with 4MB PC133 display cache & PanelLink transmitter (female 29-pin DVI-I on face plate, back-light header)
- Supports digital flat panels and CRTs with resolution up to 800 x 600, 16.8M colors; 1024 x 768, 64K colors; or 1280 x 1024, 256 colors, non-interlaced

Audio
- AC'97 2.1 controller and CODEC (8-pin header with line in, line out and mic)

Clock / Calendar
- Replaceable battery powered real-time clock with 256 byte CMOS RAM

Misc.
- PS/2 mouse/keyboard (one 6-pin mini-DIN combo on faceplate, two 4-pin headers)
- Speaker, reset, keylock, HD activity LED (10-pin shrouded)
- Strobed CPU fan supported (3-pin header)
- Power (10-pin)
- Hardware Monitor - CPU and ambient board temperature, fan rotation, input voltages

BIOS
- PCI 2.1 compliant field upgradeable Phoenix BIOS, boot from LAN (PXE 2.0)
- PnP 1.0a compliant
- Setup console redirection to serial port (VT100/ANSI mode) with CMOS setup access
- Software enable/disable onboard Ethernet
- Diskless, keyboardless, and videoless operation extensions; system, video, and third party option card ROM shadowing
- Advanced security features for floppy and HD; SMBIOS V2.3.1 and HD S.M.A.R.T. support
- ACPI Rev 1.0b compliant
- Custom BIOS graphical boot
- Thermal Management

Supervisory
- Three-stage programmable watchdog timer drives Interrupt on 1st stage, NMI on 2nd stage, system reset on 3rd stage
- Hardware system monitor (voltages, CPU, and board temperature, fan speed)

OS Compatibility
- Standard: MS-DOS™; Windows®95/98 2000/XP/ME/NT 4.0/5.0; VxWorks®; QNX®; MontaVista™/Red Hat Linux®
- Optional: UnixWare® 2.1.1/7.1.1; Solaris™

Mechanical
- 7.52 in. x 4.80 in. x 1.55 in. at CPU/fan (191 mm x 122 mm x 40 mm)
- Conforms to IEEE P996 PC/AT bus, PCI Rev. 2.2/ 2.2 PCI-X Addendum, & PICMG Rev. 1.2 standards

Power Requirements

Max Power Dissipation		70W
ICC typ. *	+5V	3A
	+3.3V	1.8A
	+12V	.95A
	-12V	.25A

VRM 8.4 module for processor Vcore.
* TBD

Environmental
Operating
- Temperature: 0° to 65°C / 32° to 149°F
- Humidity (RNC): 5 to 95% @ 40°C / 104°F
- Shock: 30g 18ms

Environmental (cont'd)
- Vibration: 1g @ 5-100Hz
Storage and Transit
- Temperature: -40° to +70°C / -40° to 158°F
- Humidity (RNC): 0 to 95% @ 40°C / 104°F
- Altitude: 15,240m / 50,000ft
- Shock: 29.5" free fall (in approved packaging)
- Vibration: 0.5g @ 5-50Hz, 3g @ 50-500Hz (in approved packaging)

Reliability
- MTBF: >TBD hours @ 50°C / 122°F
- (MIL-HDBK_217F)
- 2 year limited warranty
- Serial ID Tag
- USB and keyboard/mouse voltage protected by self-resetting fuses

Regulatory Compliance
- CE Certification
- Safety: UL/cUL 60950; EN/IEC 60950; CB Report Scheme CB Certificate and Report; IEC601 CISPR11; IEC1010 Part 1
- EMC/EMI: FCC 47 CFR Part 15, Subpart B, Class A; EN55022, EN50081-1/CISPR22; EN55024

Ordering Information

ePX-S210/300
1/2-length ePCI-X SBC with 300MHz Ultra Low Voltage Celeron processor

ePX-S210/P-300
1/2-length ePCI-X SBC with 300MHz Ultra Low Voltage Celeron processor and PMC connector

ePX-S310/700
1/2-length ePCI-X SBC with 700MHz Pentium III processor

ePX-S310/P-700
1/2-length ePCI-X SBC with 700MHz Pentium III processor and PMC connector
Likewise other CPU speeds

Options
CPU Fan
CompactFlash disk carrier & media
PC100 SODIMM
Cables
VxWorks BSP

See also ePB-S5/04 backplane and ePN-705S node chassis

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