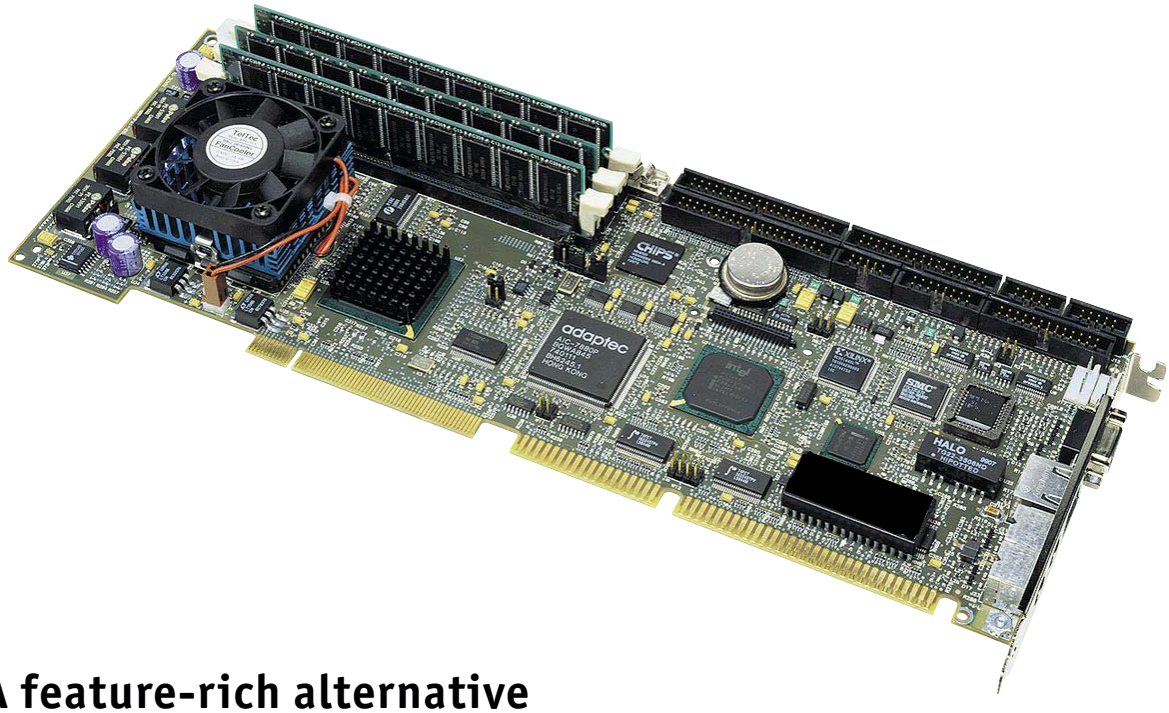
PCI-946

Cost effective power

The PCI-946, an entry-level SBC with a rugged , socketed Intel® Celeron® processor, is a feature-rich alternative to Pentium®-based PICMG compliant CPU boards.



A feature-rich alternative entry-level SBC

The PCI-946 PCI/ISA SBC features a 64-bit Intel Celeron processor with on-die 128k L2 pipelined burst cache and up to 768MB memory.

It also provides high performance PCI Ultra DMA/33 IDE, CompactFlash™.

Other features include a 64-bit AGP SVGA CRT controller with 2 or 4MB of SDRAM memory, Universal Serial Bus (USB) ports, serial/parallel ports and a floppy interface.

Ultra Fast/Wide SCSI-3 and 10Base-T/ 100Base-TX Ethernet controllers are optional.

- **Intel Celeron processor up to 433MHz in PPGA370 package with on-die 128k L2 cache**
- **Intel 440BX AGPset with 66/ 100MHz FSB**
- **Up to 768MB SDRAM/RSDRAM**
- **USB, serial and parallel ports**
- **Ultra DMA/33 IDE (dual), Ultra Fast/Wide SCSI-3, CompactFlash disk**
- **10/100Base-TX Ethernet**
- **64-bit AGP video with 2/4MB SDRAM**

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PCI-946 - Technical Specifications

CPU
- Intel® Celeron® processor in PPGA370 package 300A, 366, 433MHz and higher as technology becomes available
- Intel 440BX AGPset

Bus Interface
- Front Side Bus (66/100MHz)
- AGP bus
- PCI bus (33MHz)
- ISA bus (8.33MHz)
- High drive ISA buffers to support up to 20-slot backplane

Cache
- 16/16k instruction/data Level 1
- 128k internal 64-bit wide SPB non-blocking ECC Level 2 running at full CPU core speed

Memory
- Three 168-pin latching DIMM sockets, 64/72-bit
- Up to 768MB with 2, 4, 8, 16 or 32 M x 64/72, 66/100MHz synchronous DRAM/ Registered SDRAM non-ECC/ECC mode (single bit error correction, double bit detection via Intel 440BX AGPset); all 768MB cacheable

Data Path
- 64-bit on CPU and video memory bus; 32-bit on PCI bus; 16-bit on ISA bus

Interrupts
- Eleven edge sensitive and configurable
- Four PCI level sensitive, configurable to any interrupt vector for Plug-n-Play compatibility
- All ISA onboard interrupts are Plug-n-Play compliant

DMA Channels (ISA)
- Four 8-bit, three 16-bit
- Supports scatter/gather, Fast Type-F DMA

Flash Memory
- 4Mb (512k) Boot Block for BIOS field upgrade
- 4k serial EEPROM for user configuration; silicon serial ID TAG for unique board identification accessible via software

I/O
I/O: SMC FDC37C672 Super I/O
USB Ports: Two
Serial Ports: Two RS-232 (16C550) with 16-byte FIFO as COM1-4 with BIOS selectable IRQs and addressing, serial port 2 BIOS configurable RS-422/485
Parallel Port: One bi-directional with all IEEE 1284 protocols supported and BIOS selectable IRQs and addressing
Floppy Disk: Support for two drives (360k to 2.88MB)
EIDE: PCI EIDE Ultra DMA/33 support for two IDE drives (master/slave configuration); PIO Mode 4, Bus Master IDE or synchronous DMA mode transfers up to 33MBps
CompactFlash™ Module: Optional bootable CompactFlash disk interfaces to secondary IDE channel, user upgradeable, : optional
Ethernet: PCI 10Base-T/100Base-TX Ethernet (Intel 82559 controller)
SCSI: PCI Ultra Fast/Wide SCSI-3 with operation up to 40MBps and data bursts to the host at full PCI speeds; also Fast and Ultra SCSI-2 (Adaptec® AIC 7880)

Video
- Integrated Frame Accelerated Graphics Port (AGP) 64-bit CRT controller with 2/4MB 83MHz SDRAM memory (C&T 69000)
- Supports CRT panels with resolution up to 800 x 600, 16.8million colors, 1024 x 768, 64k colors or 1280 x 1024, 256 colors, 1600 x 1200 64k, non-interlaced
- Compatible with CGA, EGA, Hercules, MDA, VGA, SVGA, XGA and SXGA

Clock/Calendar
- Real-time clock with 256-byte battery backup, CMOS RAM

Connectors
Rear I/O Bracket
- CRT (female DB-15 slim); Ethernet (RJ-45 with link/activity indicators); PS/2 mouse and keyboard (two 6-pin mini-DIN)

Headers
- USB (10-pin shrouded); serial ports (two 10-pin shrouded); parallel port (26-pin shrouded); floppy (34-pin shrouded); EIDE (two 40-pin shrouded); SCSI-3 (68-pin subminiature D-receptacle); SCSI-2 (50-pin shrouded); PS/2 mouse (4-pin locking); CompactFlash Module header; keyboard, speaker and EIDE disk LED (16-pin shrouded); power-down connector (2-pin locking)

BIOS Features
- Award Elite BIOS in Boot Block Flash with recovery code; save CMOS in FLASH option and boot from LAN capability
- Auto configuration, extended setup
- CC000-E0000 address blocking; Plug-n-Play tables
- Setup console redirection to serial port (VT100 mode) with CMOS setup access
- Software enable/disable of onboard Ethernet and SCSI; hardware enable/ disable of onboard video
- Diskless, keyboardless and videoless operation extensions
- System, video, LAN and SCSI BIOS shadowing
- Programmable bus & I/O speeds and memory wait states
- Advanced security feature for floppy and HDD; DMI & HDD S.M.A.R.T. support
- Advanced Configuration and Power Interface (ACPI 1.0), Advanced Power Management (APM 1.2), advanced thermal management (resume, overheat alarm and auto slow down) and Green support

Supervisory
- Two-stage software programmable watchdog timer drives NMI on 1st stage and system reset on 2nd stage
- Time out from 16ms to 4.25min
- CPU temperature monitor/alarm; board temperature sensor; power failure/low battery detector and two end-user defined open-drain general purpose I/Os; SMBus, I 2 C Bus

OS Support
- DOS, Windows®3.x/95/98/CE/NT 4.0 & 5.0, OS/2®, Warp, SCO UNIX®, QNX™, NOVELL® and UnixWare®

Dimensions (W x H x D)
(compliant to IEEE 1101.10; compliant to PICMG 2.0 Rev 3.0)
- 13.32 x 4.8 x 1.4-inch (388 x 122 x 36mm) at CPU/fan
- Conforms to IEEE P996 PC/AT bus, PCI Rev. 2.1 & PICMG, Rev. 2.0 standards

Power Requirements

Supply Voltage:	Vcc = +5V +5% / +12V +5%		
Celeron:	**300A**	**366**	**433**
ICC typ.* +5V	3.62A	3.96A	4.28A
ICC susp. +5V	1.72A	1.74A	1.76A
+12V	180mA	180mA	180mA
Power Dissipation:	40W (max.)		

* Measured with 128MB SDRAM, keyboard, floppy and hard disk.

Operating Environment
Temperature: 0 ° to 55 °C (32 ° to 131 °F) with airflow
Humidity (RNC): 5 to 95% @ 40 °C (104 °F) non-condensing
Altitude: 15,000-feet (4,572-meter)
Shock: 5g, each axis
Vibration: 1.5g, each axis

Non-Operating Environment
Temperature: -40 ° to 70 °C (-40 ° to 158 °F)
Humidity: 5 to 95% @ 40 °C (104 °F) non-condensing
Altitude: 50,000-feet (15,240-meter)

Reliability
- MTBF: TBD
- SCSI termination, USB and mouse/keyboard voltage protected by self-resetting fuses
- Unique silicon serial number accessible via software
- Two year limited warranty

Designed to meet or exceed
Safety: UL 1950; CSA C22.2 No 950; EN 60950; IEC950
EMI/EMC: FCC 47 CFR Part 15/CISPR22; CE Mark to EN55022/EN50082

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