PIP22

Embedded PC with Intel® Core™2 Duo

General Description

The PIP22 is a powerful, highly integrated, robust and fanless Packaged Industrial PC based on the Intel Core™2 Duo Mobile Technology out of the Embedded Roadmap for long-time availability. In the board integrated are features like 2 x Gigabit Ethernet, 4 serial ports and onboard soldered 1 GB memory. The PIP22 represents a unique solution for today's demanding industrial needs and is available with basically unlimited options. PIP22 is designed to operate under extreme and normal conditions without the need of fans without derating or throttling. The special board design results in a solution that is compact, maintenance-free, noiseless and rugged enough to be used in any application. The MPL PIPs are assembled according your needs even with your logo.

PIP22 versions

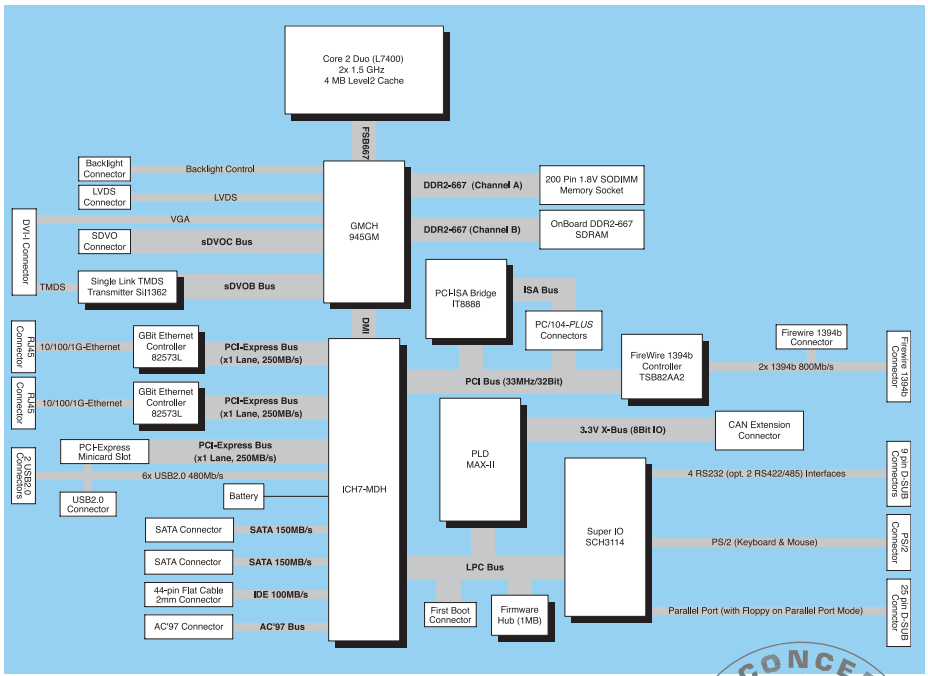
The PIP22 Capabilities

Outstanding is the extreme low power consumption and high flexibility due to various expansions and housing concepts. The unit has a complete set of standard PC features as well as industrial features like 8-28 VDC input power, 4 serial ports (RS232/485). Additional GPS, WLAN, CAN, Sound and UPS modules are available. Further the PIP22 can be expanded with PC/104-Plus, PCI and PMC boards. Other unique features are:

- Soldered 1GB SDRAM
- Two Gigabit Ethernet
- Fanless operation
- Extended temperature
- Long term availability

These qualities make

the PIP22 to the ideal solution for any application where a powerful embedded PC with a low power consumption is required. Furthermore where Swiss Quality, ruggedness, long-term availability and flexibility are welcome too. The PIP22 is used in vision, medicine, transportation systems, telecom and in industrial applications.



PIP CONCEPT * SNAP-ON & WORK * Rugged Industrial PC

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Technical Features PIP22

Board Key Data		
Processor	Low Power Intel® Core™2 Duo CPU, 1,5 GHz 4MB Level 2 Cache	Intel SpeedStep, 64-Bit Data Bus CPU in Intel's long-term supply program
Chip Set	Intel 945GME & ICH7-MDH	667MHz Frontside Bus
BIOS	1MB Flash EEPROM, easy BIOS update	MPL engineered BIOS (General Software)
Memory	Up to 3GB memory 1GB RAM soldered on-board	200-pin SO-DIMM socket for one module Dual channel DDR2-667 memory
Watchdog Timer	2 stages, independent count values for each stage	Configurable granularity
Indicators	13 two color LEDs, 11 activity + 2 user definable	Power, Reset, HDD, IEEE1394b, 4 x LAN, 3 x WLAN
Interfaces		
Graphics	INTEL IGD (Integrated Graphics Device) 250MHz graphics core with 2D and 3D engine Dual panel support (CRT, Parallel, LVDS)	Digital-Video on DVI-I connector max.1920x1200 Analog-Video on DVI-I connector max. 2048x1536 LVDS ports on 1 mm header, 1600x1200 (WUXGA)
6 x USB 2.0	4 ports external, 2 ports internal	4 x Type A connectors, ESD protected, bootable
1 x FireWire	IEEE-1394b port, up to 800Mbit/s Power source for external device possible	Bilingual connector ESD protected
2 x Ethernet	10BaseT /100BaseTX /1000BaseTX	RJ45 connector, ESD protected, auto negotiation
4 x Serial Ports	2 ports fix as RS232 2 ports optionally via RS232 or RS422/485 modules	4 x 9-pin DSUB, ESD protected Transfer rates up to 230.4 kBaud
1 x E-IDE Port	Up to 2 drives, Ultra DMA-100 support	1 x standard 44-pin header
2 x SATA Ports	Data transfer rates up to 150Mbyte/s, RAID 0/1	2 x standard SATA connectors
2 x PS/2	For keyboard and mouse	1 x 6-pin mini DIN connector, ESD protected
Parallel Port	SPP, EPP, ECP (IEEE1284)	25-pin DSUB connector, ESD protected
Power/Reset Button	On chassis (protected) and remote buttons	ATX functionality, ESD protected
PC/104-Plus	8/16 bit memory and I/O ISA-Interface (PC/104)	32-bit PCI-Interface for up to 4 PC/104-Plus cards
PCI-Express Minicard	For WLAN, GPRS, UMTS or similar expansion	With one PCI-Express lane / 1xUSB 2.0
Optional PIP22 Features (not via PC/104-Plus, PCI or PMC)		
AC97 Sound Module	Offering Line IN, Line OUT, Headphone & MIC	All available on 3.5 mm Jacks
CAN Bus Extension	Internal isolated CAN 2.0 module	Externally available on DB-9, ESD protected
WLAN Module	Connected to internal USB port	Supports 802.11b/g
UPS Extension	Internal UPS module	For safe shut down or autonomous operation
Physical / Power		
Chassis	Rugged chromated aluminum with EMI protection	DIN-rail or flange mounting, no ventilation holes
Size & Weight	270 x 162 mm, with PCI extension 440 x 162 mm	Height depending on needs 62/83/120 mm / 2.2kg
Power	8 – 28VDC input range, optionally up to 48VDC	Consumption typically 30W
Temperature Range	-20°C up to +60°C, optional –40°C up to +65°C	No fan, no openings, values at full CPU load
Humidity	5% - 95% non condensing	Optional coating available

Standard Compliance

The PIP22 is designed to meet or exceed the most common standards. Particular references are:

EMC	EN 55022, EN 55024, EN 61000, MIL-STD-461E
Shock & Vibration	EN 60068
Environmental & Safety	EN 50155, MIL-STD-810-F, EN 60601, EN 60950
Approval Lists	CE, EN 60945, IACS E10

PIP22 versions

- PIP22-1 fully equipped with 1GB SDRAM
- extended temperature versions
- coated versions
- PIP22-Cx depopulated customer specific

Internal PIP Expansions, Options and Operating Systems

- Over the PC/104 & PC/104-Plus
  - Digital & Analog I/O's
  - Fieldbus (CAN, PROFIBUS...)
  - Or any other Module
- Hard Disks, Flash Disks, CF
- CD-ROM, RAID, PCCARD
- PCI and PMC expansions
- 6.5" LCD and Touch built in PIP-chassis
- 12" - 19" Panel PCs in special aluminum or stainless steel case (fanless, IP65/NEMA4)
- Operating systems:
  PIP's are 100% PC/AT compatible therefore any PC operating system (Windows, LINUX RTOS …) can be used

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High-Tech • Made in Switzerland

MPL AG, Täfernstrasse 20, CH-5405 Baden-Dättwil
Tel. +41 (0)56 483 34 34, Fax +41 (0)56 493 30 20
Email: info@mpl.ch, Home page: www.mpl.ch

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