

PIP15

Headless rugged Pentium-M Solution

General Description

The PIP15 is a powerful, highly integrated, robust, and fanless Packaged Industrial PC based on an embedded Intel System on Chip Pentium-M® 1.2GHz processor. Integrated on the board are features like 3x Gigabit Ethernet, 2x USB2.0, 4x serial ports, and support for up to 4GB ECC protected DDR2 memory.

The PIP15 represents a unique solution for today's industrial needs with no graphic output requirement. It is available with various options and features. The PIP15 is designed to work without the need of fans and without derating or throttling. The special engineering results in an unique solution that is compact, maintenance free, noiseless and reliable. All MPL PIP solutions can be assembled according to your needs.



PIP15 in rugged aluminum housing

The PIP15 Capabilities

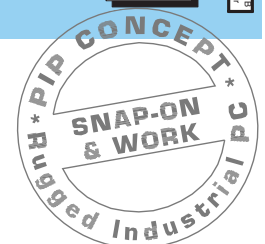
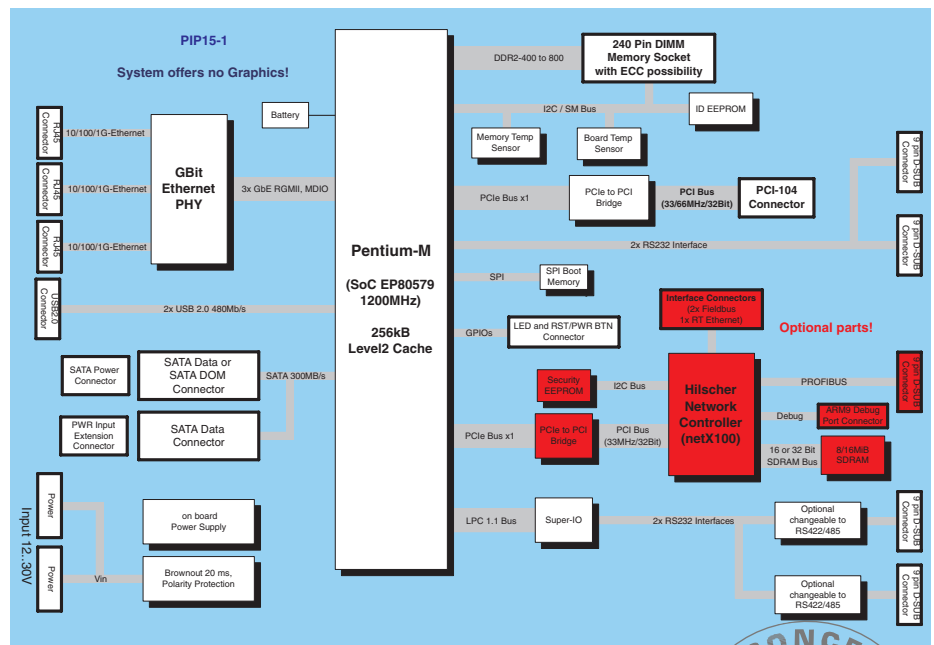
Outstanding are the 20ms brownout bypass, the redundant power input, the ECC memory support as well as the optional onboard Hilscher fieldbus controller for various Fieldbus Interfaces. Further the unit offers 3x Gigabit Ethernet, 2x USB 2.0 and 4 serial ports (RS232/RS485) as well as PCI-104 expansion possibilities.

Unique features are:

- ECC memory support
- Three Gigabit Ethernet
- Fanless operation
- Various case solutions
- Long term availability

These features make

the PIP15 to the ideal solution for any headless application where a high performance PC with a low power consumption is required. Furthermore high quality, very rugged, small size, expandable Industrial PC solution is welcome. The PIP15 is used in control, measurement, transportation, gateway, and industrial applications.



Technical Features PIP15

Board Key Data

Processor	Low Power Embedded SoC Pentium-M 1,2 GHz 32kB L1 Cache, 256KB L2 Cache	Intel SpeedStep, 64-Bit Data Bus CPU in Intel's long-term supply program
Chip Set	Intel SoC EP80579	high integrated System On Chip
BIOS	2MB Flash EEPROM, easy BIOS update	MPL engineered BIOS (Phoenix)
Memory	Up to 4Gb memory ECC protected memory possible	Dual channel DDR2-800 memory 240-pin DIMM socket for one module
Watchdog Timer	2 stage watchdog timer with hardware reset	configurable granularity from 1µs to 10 min
Indicators	11 two color LEDs, 9 activity + 2 user definable	Power, Reset, HDD, 6 x LAN, 2x USER

Interfaces

3 x Ethernet	10BaseT /100BaseTX / 1000 BaseTX	3 x RJ45 connector, ESD protected, auto negotiation
2 x USB 2.0	2 ports external	2 x Type A connectors, ESD protected, bootable
4 x Serial Ports	default 4 ports fixed to RS232 optional 2 ports changeable to RS422/485	4 x 9-pin DSUB, ESD protected Transfer rates up to 230.4 kBaud
2 x SATA-II Ports	Data transfer rates up to 300Mbyte/s	1 x standard SATA connector, 1 x SATA-DOM
Power Reset Button	On chassis (protected) and a remote reset button	ATX functionality, ESD protected
PCI-104 Interface	32-bit PCI interface, 33 or 66 MHz	for up to 4 PCI-104 modules

Optional PIP15 Features

Hilscher Fieldbus	netX100 controller assembled on board	up to 3 fieldbus or 1 RTE and PROFIBUS (talk to MPL)
Serial RS422/485 port	External available on DB-9, ESD protected	up to 2 modules possible
UPS Extension	Internal UPS module	For safe shut down or autonomous operation

Physical / Power

Chassis	Rugged chromated aluminum with EMI protection Optional MIL housing	DIN-rail or flange mounting, no ventilation holes
Size & Weight	270 x 162 mm	Height depending on needs 62/83/120 mm / 2.2kg
Power	12-30VDC supply power, redundant power input 20 ms brownout bypass at 24VDC	Consumption typically 14 to 23 W Reverse input polarity protection
Temperature Range	-20°C up to +60°C	No fan, no openings, values at full CPU load
Humidity	5% - 95% non condensing	Optional coating available

Standard Compliance

The PIP15 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

PIP15 versions

- PIP15-1 fully equipped without Hilscher fieldbus option
- extended temperature versions
- coated versions
- PIP15-Cx depopulated customer specific version

Internal PIP Expansions, Options and Operating Systems

- Over the PCI-104
 - Digital & Analog I/O's
 - Or any other Module
- Hard Disks, Flash Disks,
- DVD-RW
- PMC expansions
- Hilscher Fieldbus I/F
- Heavy duty (MIL IP67) housings
- Operating systems:
 - The PIP15 has no graphics therefore we recommend Linux or Windows XP Embedded.

