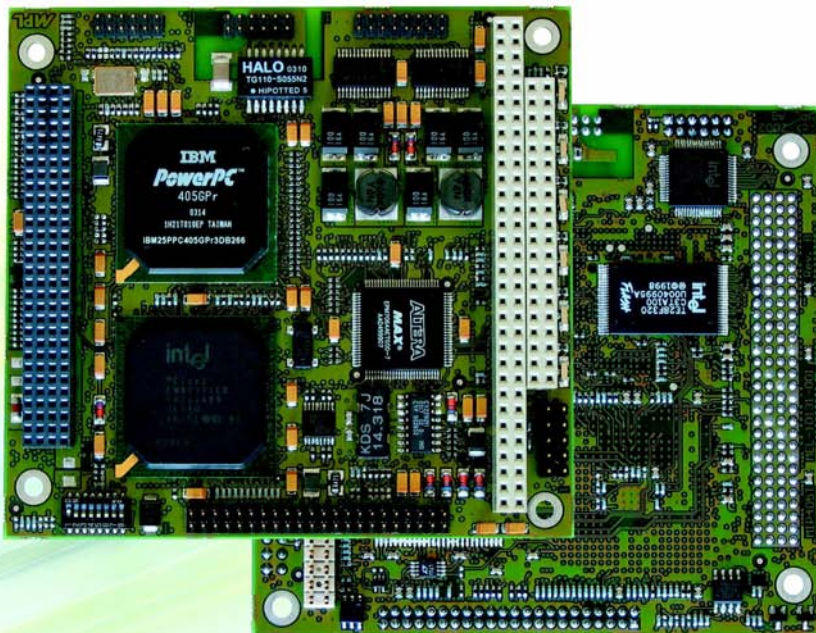


# MIP405T

## PC/104-Plus SBC for $-40^{\circ}\text{C}$ to $+85^{\circ}\text{C}$ with a 400 MHz PowerPC

### General Description

The MIP405T is a highly integrated industrial PC/104-Plus CPU module. Based around the IBM PPC405GPr PowerPC™ Processor it features Ethernet, E-IDE, two Serial ports and a Real Time Clock. Additionally the 16-bit PC/104 (ISA) and the PC/104-Plus (PCI) interface offer easy and flexible expansion capabilities. The MIP405T is a further development of the MIP405, even more focused on special requirements like small size, wide temperature range and ruggedness. Optionally the MIP405T is available even completely coated. As all MPL products it can be operated without the necessity of a fan. The product is designed, produced and tested by MPL AG in Switzerland especially for harsh environments.



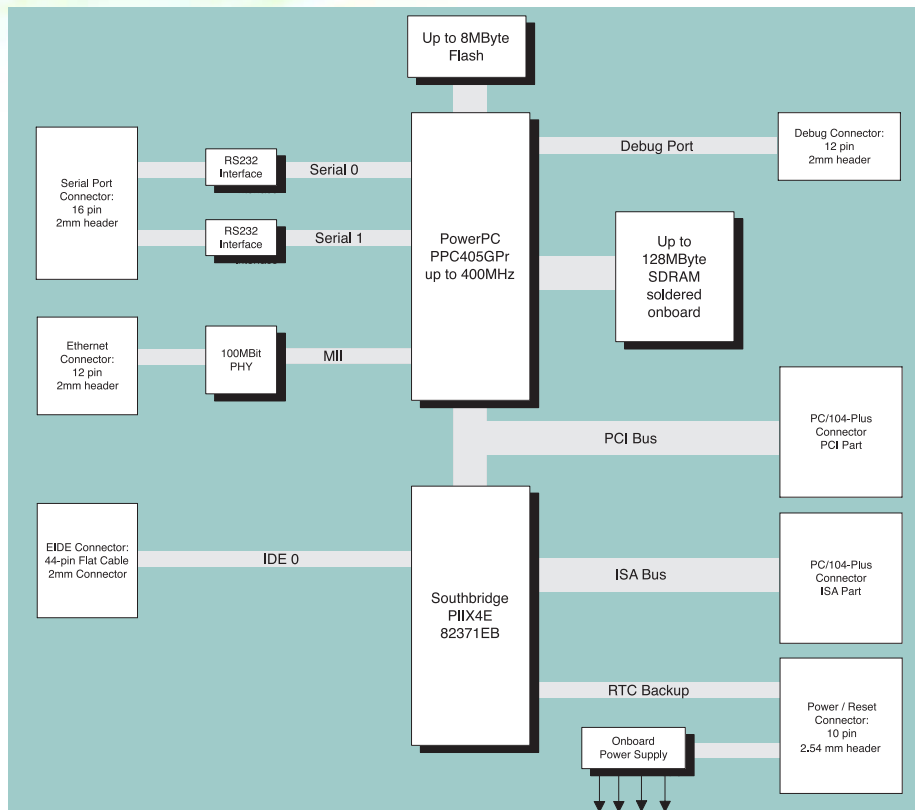
### The MIP405T Specialties

are the special design for rugged environments, the particular precaution to the EMC so that an entire system can fulfill the CE and FCC requirements and as a result of this the high reliability of the product. Unique features are:

- Extended temperature design  $-40^{\circ}\text{C}$  up to  $+85^{\circ}\text{C}$
- Board is intended for coating
- Low power, high performance PC/104-Plus SBC
- Up to 8 MB Flash soldered
- Up to 128 MB SDRAM soldered
- 10/100 Mbit Ethernet
- Two serial ports
- Various boot sources

### Those features make

the MIP405T ideal for any embedded control application requiring small size, high performance and low power. The products are being used in airborne and transportation systems, industrial applications or any other rugged/secure application like medicine.



# Technical Features MIP405T

## Board Key Data

Processor	PowerPC PPC405GPr	Embedded processor from IBM
CPU Speed	608 DMIPS @ 400 MHz	375 DMIPS @ 266 MHz
BIOS	Up to 8MB Flash EEPROM	7,5 MB free user space for boot kernel
SDRAM	Soldered on board	Up to 128 MB SDRAM
RTC	Backed with external battery	Environment can be saved in EEPROM
Ethernet	10BaseT /100BaseTX Fast 10/100 Mbit/s	12-pin header support IEEE802.3 auto negotiation
Serial Ports	1 port RS232 with full modem handshake 1 port selectable RS232 or TTL	Available over 1 x 16-pin header
E-IDE Port	PIO mode 4, Bus Master IDE, Ultra DMA/33	44-pin header, usable for Flash Module/Disk
Expansions	Full 16-bit PC/104 and 32-bit PC/104- <i>Plus</i> interface PCI & ISA	
Watchdog	Selectable timeouts	Built in PPC405GPr processor
Debug Port	JTAG and IBM RISC Watch	12-pin header
Indicator	5 activity LED's + 1 user definable	Power, Reset, Error, HDD, LAN, User
Reset button	Remote button	Connection over power connector

## Physical / Power

Size (L x W x H)	90.2 x 95.9 x 11 mm 3.550 x 3.775 x 0.435 inch	PC/104- <i>Plus</i> compliant stack through module
Weight	90g / 0.2 lbs	Fully equipped MIP405T
Power	+5VDC $\pm$ 5%	Over power connector or PC/104 connector
Power consumption	Typically <3W @ 400 MHz	Complete MIP405T
Temperature Range	-40°C up to +85°C	Standard without heat sink
Humidity	5% to 95% non condensing	Optional coating available

## Standard Compliance

The MIP405T 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

## MIP405T versions

- Complete version
- Coated versions
- Depopulated versions

## Expansions & Options

- Over the PC/104 & PC/104-*Plus*
  - Graphic Module
  - PC Card Module
  - Any Digital or Analog I/O Board
- PowerPC 405 starter kit

## Operation systems

- Various LINUX distributions
- Real Time LINUX
- Open source boot loader for other OS

The MIP405T is fully developed, designed and produced by MPL AG in Switzerland.

For other requirements contact MPL.

## Other MPL Products

PC/104 Peripherals	PC/104 and PC/104- <i>Plus</i> peripheral solutions (4/8 x serial lines, single & dual LAN, PC card, ...) IDE based memory storage solutions (CF, PCMCIA).
Industrial PCs	Fanless, rugged Packed Industrial PCs with Intel CPUs in various housings and with many accessories. Products for extended temperature (-40° up to +75°C) and with long-term availability.
Panel PCs	Fanless, IP65/NEMA4 protected Panel PCs (all around). Solutions with 6" - 19" LCDs and Touch in special aluminum or stainless steel case.
Engineering & Support	Professional engineering, support and consulting through MPL engineers on Hardware and Software.

MPL AG is an ISO9001 certified company



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