

# PIP31

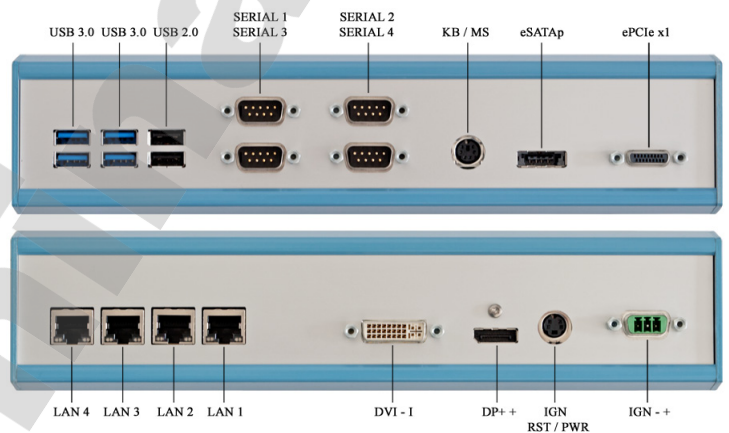
## Rugged PC Solution with Intel® Celeron® Processor

### General Description

The PIP31 is a low power, highly integrated rugged industrial PC with a specially designed aluminum housing. This allows to operate the PIP in a moderate or also in a harsh environment without fan or ventilation holes. The design integrates standard connectors for easy connection. Therefore the PIP can be used for any PC application where a complete solution is needed. It is 100% PC/AT compatible, and can easily be mounted on a 35 mm DIN rail or at a wall with flanges.



PIP31 dimensions: 270 x 162 x 62mm (W x D x H)



### PIP31 Highlights

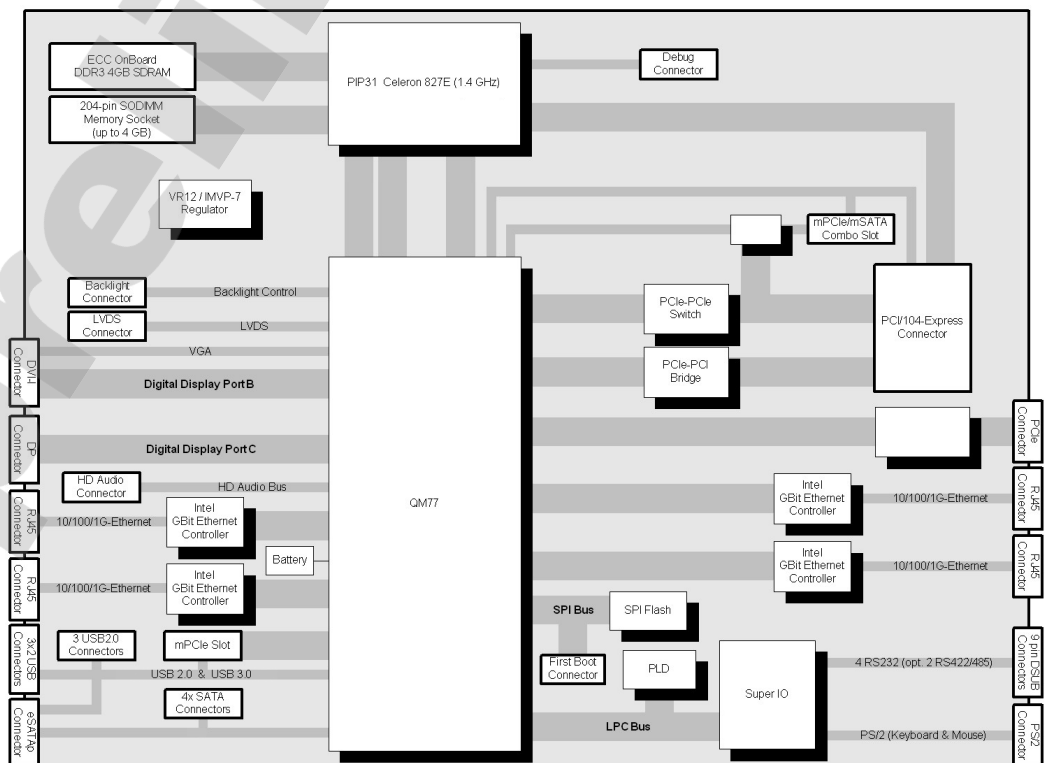
The PIP housing offers space for up to two 2.5 inch HDD/SSD. With the integrated PCI/104-Express interface and the two PCI-Express Mini Card Slots there are flexible expansion possibilities available. Fully bootable FLASH disks are supported for projects where hard disks cannot be used. Particular precautions have been taken that the entire system EMC is within the CE and FCC limits:

#### Key features are:

- Soldered 4 GB ECC RAM
- Four Gigabit Ethernet ports
- Fanless operation
- Long term availability

#### These features make

the PIP31 the ideal solution for the industry wherever a flexible, rugged, and durable complete Industrial PC is needed.



# Technical Features PIP31

## Board Key Data

Processor	Intel Celeron 827E 1.4 GHz single core 1.5 MByte Cache (Sandy Bridge)	Intel 64 architecture, Enhanced Intel SpeedStep DDR3-1333 memory interface
Chipset	Intel QM77 (Panther Point)	Supports ACPI power states S1, S4, and S5
BIOS	8MB Flash Memory	MPL engineered BIOS (SecureCore Tiano by Phoenix), customizable
Memory	4 GB DDR3 onboard soldered ECC RAM 1x 204-pin dual-channel DDR3 DIMM slot	ECC support supports up to 8 GB modules (total of 12 GB memory)
Watchdog Timer	SCH3114 Super-IO watchdog timer	Configurable granularity 1-255 sec. or 1-255 min.
Indicator LEDs	Power, reset, HDD, LAN, and Wi-Fi LEDs	2 user programmable LEDs

## Interfaces

Graphics Interfaces	Intel HD Graphics 2000, 350 - 8000 MHz DP, DVI-I and, 24-bit LVDS interface up to 1920x1200 (DVI/LVDS) / 2560x1600 (DP)	Dual display capable, Gen2 PCI Express port ESD protected (DVI-I and Display Port)
USB	4 USB 3.0 ports (external) 5 USB 2.0 ports (2 on external, 3 on internal)	ESD protected external connectors supports USB keyboards and mice as legacy devices
SATA	2x SATA 3.0 ports and 2x SATA 2.0 ports	RAID 0/1/5/10 support
eSATAp	eSATAp port with SATA 2.0 and USB 2.0	ESD protected connector
LAN	4 GbE ports (Intel 82574IT)	ESD protected connectors, WOL support
ePCIe	PCI Express Gen2 external cabling	x1 lane port with 500 MB/s, ESD protected connector
PS/2	For keyboard and mouse	1 x 6-pin Mini-DIN connector, ESD protected
Serial Ports	2 full modem RS232 ports on DB9 connectors	ESD protected external connectors
mPCIe / mSATA	1x mPCIe slot with PCI Express Gen2 x1 lane	1x mPCIe / mSATA combo (SATA 2.0 or PCI Express)
PCI/104-Express	4 PCI/104-Express Type 1 ports	32 Bit, 33 or 66 MHz PCI bus
HDAudio	Intel HDAudio signals	Available on a 1 mm internal header
RST/PWR Button	Reset- and Power Button are available on top Ignition Input (ESD protected connectors)	Reset-, Power Button and Ignition Input are also available on a 4 pin Mini-DIN connector

## Physical / Power

Chassis	Rugged chromated aluminum	DIN-rail or flange mounting, no ventilation holes
Size	270 x 162mm, with PCI extension 440 x 162mm	Height depending on needs 62 / 82.5 / 120mm
Weight	Typically 2.2 kg (4.85 lb.)	Standard housing with internal 2.5" HDD
Power	8 VDC - 36 VDC input range ESD and EMC protected power input	Up to 36 VDC reverse polarity protection Up to 150 V load dump protection
Temperature Range	-20 °C up to +60 °C (-4 °F to +140 °F)	Full CPU load and 3D video, mounted on DIN rail
Humidity	5% to 95% non condensing	Optional coating available

## Standard Compliance

The PIP31 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 List	CE, EN 60945, IACS E10