



# 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

