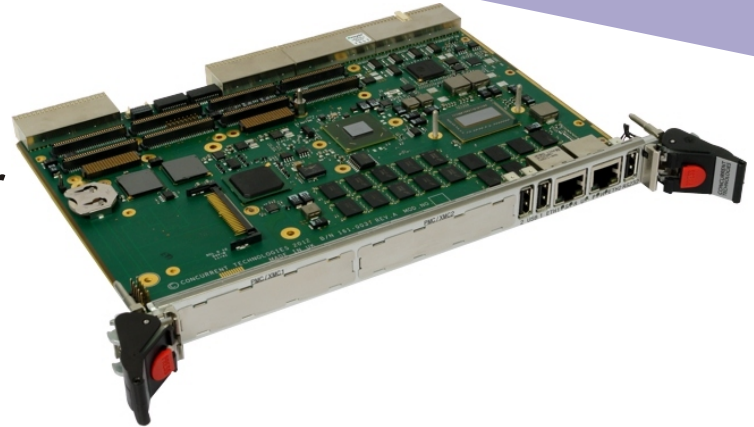


## 3<sup>rd</sup> Generation Intel® Core™ Processor Single/Dual PMC/XMC Carrier



### APPLICATIONS

The PP 93x/x1x is a PC-compatible, high functionality, 6U CompactPCI® board supporting the 3<sup>rd</sup> generation Intel® Core™ processor and the future generation Intel® mobile class chipset with up to 16Gbytes of DDR3 ECC SDRAM. This board can support one or two PMC/XMC sites and features a variety of interfaces including four Gigabit Ethernet ports, two SATA channels, up to three serial channels and up to five USB ports.

The PP 93x/x1x is a commercial air-cooled board, suitable for a range of environments within industrial control, transportation, security, telemetry, scientific and medical applications. The board supports I/O plug compatibility with the popular PP 81x/x9x and PP 432/05x families. To simplify the board's integration many industry standard operating systems are supported.

### HIGHLIGHTS

- 3<sup>rd</sup> generation Intel® Core™ processor:
  - 4-core 2.1 GHz Intel Core i7-3612QE processor
- Up to 16 Gbytes DDR3-1600 SDRAM with ECC
- Single or dual PMC/XMC site with front and rear I/O:
  - 32/64 bit, up to 66MHz/100MHz PCI/PCI-X operation
  - supporting x4/x8 PCI Express® XMC
- High-performance mass storage interfaces:
  - 2 x SATA300 ports via J5
  - 1 x SATA600 port for optional on-board 2.5-inch mass storage drive
  - onboard CompactFlash® socket
- Dual Gigabit Ethernet front panel interfaces
- Dual Gigabit Packet Switching Backplane (PICMG 2.16)
- Up to 3 x serial interfaces
- Up to 5 x USB 2.0 ports
- Watchdog timer and Long Duration Timer
- CompactPCI Controller:
  - Operates in system or peripheral slot
  - 32/64-bit at 33/66MHz Compact PCI interface
  - Option to disable CompactPCI bus (Satellite Mode)
- IPMI (Intelligent Platform Management Interface):
  - PICMG 2.9 (System Management Specification)
- Optional high-resolution DVI-I graphics interface via the front panel
- Support for Linux®, Windows® 7, Windows® Embedded Standard 7, Windows® XP, Windows® XP Embedded, Windows® Server 2008 and VxWorks®
- Rear I/O compatible with the popular PP 81x/x9x and PP 432/05x families
- Single slot

## Central Processor

- 4-core 2.1 GHz Intel® Core™ i7-3612QE processor:
  - Intel 64 technology (64-bit computing)
- 6 Mbytes of shared Last-Level on-die cache
- utilizes future generation Intel® mobile class Platform Controller Hub (PCH)

## SDRAM

- supports up to 16 Gbytes soldered DDR3-1600 ECC SDRAM:
  - peak bandwidth of 25 Gbytes/s
  - dual channel architecture
- accessible from processor or CompactPCI® bus

## Mass Storage Interfaces

- 2 x SATA300 ports via J5
- optional on-board 2.5-inch SATA600 hard-disk drive (HDD) or solid-state drive (SSD):
  - uses PMC/XMC site 1
- support for on-board CompactFlash™ socket

## Ethernet Interfaces

- 2 x Gigabit Ethernet interfaces via front panel RJ45 connectors
- 2 x Gigabit Ethernet interfaces via J5 build option configured to support either:
  - dual Gigabit Packet Switching Backplane (PICMG 2.16)
  - or dual Ethernet via Rear Transition Module

## PMC/XMC Interfaces

- build option for 1 or 2 PMC/XMC sites:
  - front panel I/O
  - Pn4 rear I/O via J3 or via J3 and J5
- PMC interface(s) support:
  - 32/64-bit, 33/66MHz PCI bus
  - 64-bit PCI-X bus up to 100MHz
  - 5V and 3.3V signaling
- XMC interface(s) support:
  - x4 and x8 PCI Express® (Gen 1 or Gen 2)
  - XMC sites powered from 5V supply

## Serial Interfaces

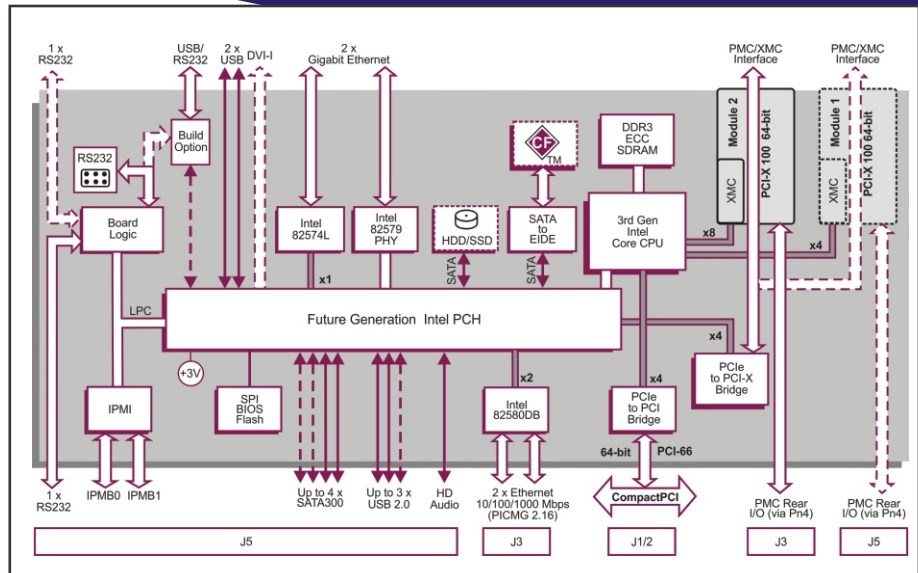
- up to 3 x serial interfaces
- build option for 1 x RS232 interface via front panel USB 2.0 Type A connector:
  - support for Tx/D, Rx/D
  - USB Type A to DB9 cable supplied
  - also available via on-board header supporting Tx/D, Rx/D, CTS, RTS, DTR, DSR, DCD, RI
- build option for 1 x RS232 interface via front panel DB9 connector (uses PMC/XMC site 1):
  - supporting Tx/D, Rx/D, CTS, RTS, DTR, DSR, DCD, RI
- 1 x RS232 interface via J5 :
  - supporting Tx/D, Rx/D, CTS, RTS, DTR, DSR, DCD, RI
- 16550 compatible UARTs

## Graphics Interfaces

- implemented by Intel chipset
- build option for DVI-I via front panel DVI-I connector (uses PMC/XMC site 1):
  - digital, up to 1600 x 1200, 16M colors
  - analog, up to 2048 x 1536, 16M colors
- support for Microsoft® DirectX 10
- support for OpenGL 2.0, Windows and Linux

## Other Peripheral Interfaces

- up to 5 x USB 2.0 ports:
  - 2 x USB ports accessed via J5
  - up to 3 x USB ports accessed via front panel
- PC Real Time Clock
- long duration timer; watchdog timer



## Software Support

- supports Linux®, Windows® 7, Windows® Embedded Standard 7, Windows® XP Embedded, Windows® Server 2008 and VxWorks®

## Firmware Support

- Insyde Software InsydeH20™ BIOS:
  - includes Compatibility Support Module
- based upon Intel® Platform Innovation Framework for EFI
- comprehensive Power-On Self-Test (POST)
- LAN boot firmware included

## SPI Flash EPROM

- 8 Mbytes of BIOS SPI Flash EPROM

## IPMI

- PICMG 2.9 R1.0 (System Management Specification):
  - implements the IPMB0 and IPMB1 interfaces
- on-board Baseboard Management Controller
- monitors CPU temperature and voltages
- supports 8 Kbytes of non-volatile memory

## CompactPCI Interface

- universal signaling support, compliant with PICMG® 2.0 R3.0; 3.3V or 5V signaling levels
- 33/66 MHz; 32-bit interface accessed via J1:
  - includes support for DMA
- operates as a System Slot controller (supporting up to 7 peripheral slots) or operates in a Peripheral Slot
- PICMG 2.1 R2.0 Hot Swap Compliant
- option to disable CompactPCI interface (Satellite Mode):
  - receives power from CompactPCI bus
  - board can be hot swapped

## Safety

- PCB (PWB) manufactured with flammability rating of 94V-0

## Electrical Specification

- typical current figures with Core i7-3612QE CPU, 8 Gbytes DRAM:
  - +5V @ 6.0A
  - +3.3V @ 5.0A
- +5V and +3.3V voltages are tolerant to +5%/-3%
- +12V and -12V not required but routed to PMC/XMC sites

## Environmental Specification

- operating temperatures:
  - 0°C to +55°C (N-Series)
- storage temperature: -40°C to +85°C
- 5% to 95% Relative Humidity, non condensing (operating or storage)

## Mechanical Specification

- 6U form-factor:
  - 9.2 inches x 6.3 inches (233mm x 160mm)
- single slot: 0.8 inches (20.3mm)
- connectors: IEC-1076-4-101 for J1-J5
- operating shock: 20g, 11ms, 1/2 sine
- operating vibration:
  - 5Hz-2000Hz at 2g, 0.38mm peak displacement

## I/O Compatible with the PP 432/05x

- rear I/O compatible with the popular PP 432/05x family (note that the LPC interface to the RTM is not supported)

## ORDERING INFORMATION

Order Number Product Description (Hardware)

For the order number suffix (yz) options please contact your local sales office:  
where y = rear I/O options where z = SDRAM size

PP 935/m11-yz 4-core Core i7-3612QE processor, 6U CompactPCI SBC

y - rear I/O configuration

z - up to 16 Gbytes

where m = 0 for dual PMC/XMC sites, m = 4 for single PMC/XMC site

For accessories and extended temperature options please contact your local sales office.

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Specification subject to change; E and OE. RoHS 2002/95/EC compliant.

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