

2nd Generation Intel® Core™ Processor Single/Dual PMC/XMC Carrier



APPLICATIONS

The PP 83x/x9x is a PC-compatible, high functionality, 6U CompactPCI® board supporting the 2nd generation Intel® Core™ processor and the Intel® Series 6 mobile class chipset with up to 8 Gbytes of DDR3-1333 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 83x/x9x

is a commercial air-cooled board, suitable for a range of environments within industrial control, transportation, security, telemetry, scientific and medical applications. Options to operate in temperatures ranging from -40°C to +85°C are available. The board supports I/O plug compatibility with the popular PP 432/05x family. To simplify the board's integration many industry standard operating systems are supported.

HIGHLIGHTS

- 2nd generation Intel® Core™ processor:
 - 4-core 2.1 GHz Intel Core i7-2715QE processor
 - 2-core 2.2 GHz Intel Core i7-2655LE processor
 - 2-core 1.5 GHz Intel Core i7-2610UE processor
- Up to 8 Gbytes DDR3-1333 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
- Extended temperature versions (E-Series, K-Series):
 - E: -25°C to +70°C, air-cooled
 - K: -40°C to +85°C, humidity sealant, air-cooled
- 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 432/05x
- Single slot

Central Processor

- 4-core 2.1 GHz Intel® Core™ i7-2715QE processor
- 2-core 2.2 GHz Intel® Core™ i7-2655LE processor or 1.5 GHz Intel® Core™ i7-2610UE processor
- common processor features are:
 - 1333 MHz memory bus
 - Intel 64 technology (64-bit computing)
- shared Last-Level on-die cache:
 - 2.1 GHz Intel Core i7-2715QE - 6 Mbytes
 - 2.2 GHz Intel Core i7-2655LE - 4 Mbytes
 - 1.5 GHz Intel Core i7-2610UE - 4 Mbytes
- utilizes Intel® Series 6 mobile class chipset:
 - Intel® QM67 Platform Controller Hub (PCH)

SDRAM

- supports up to 8 Gbytes soldered DDR3-1333 ECC SDRAM:
 - peak bandwidth of 20 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

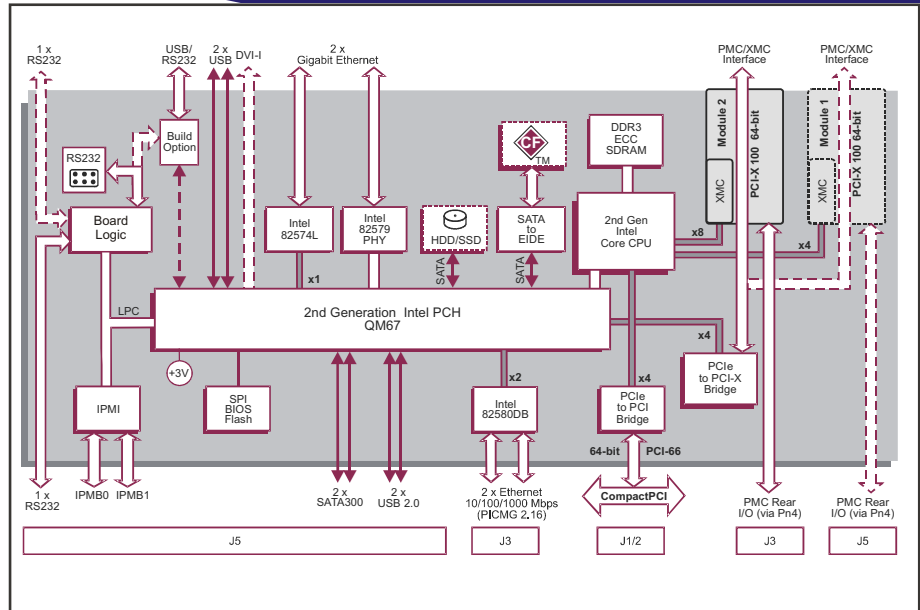
- build option for 1 or 2 PMC/XMC sites:
 - front panel I/O
 - Pn4 rear I/O via J3 or via J3 and J5
- PMC interface(s) support:
 - 32/64-bit, 33/66MHz PCI bus
 - 64-bit PCI-X bus up to 100MHz
 - 5V and 3.3V signaling
- XMC interface(s) support:
 - x4 and x8 PCI Express®(Gen 1 or Gen 2)
 - XMC sites powered 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
 - analogue, 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, 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 2.2 GHz Intel Core i7-2655LE, 4 Gbytes DRAM:
 - +5V @ 4.4A
 - +3.3V @ 4.5A
- +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)
 - 25°C to +70°C (E-Series: 2.2 GHz or 1.5 GHz)
 - 40°C to +70°C (K-Series: 2.2 GHz)
 - 40°C to +85°C (K-Series: 1.5 GHz)
- storage temperature: -40°C to +85°C
- 5% to 95% Relative Humidity, non condensing (operating or storage):
 - K-Series includes humidity sealant

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, ½ 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 835/m9x-yz 4-core Core i7 processor, 6U CompactPCI SBC
PP 833/m9x-yz 2-core Core i7 processor, 6U CompactPCI SBC
where m = 0 for dual PMC/XMC sites, m = 4 for single PMC/XMC site

y - rear I/O configuration

z - up to 8 Gbytes

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

All companies and product names are trademarks of their respective organizations.
Specification subject to change; E and OE. RoHS 2002/95/EC compliant.

Datasheet Code 1665/1211
© Concurrent Technologies 2011