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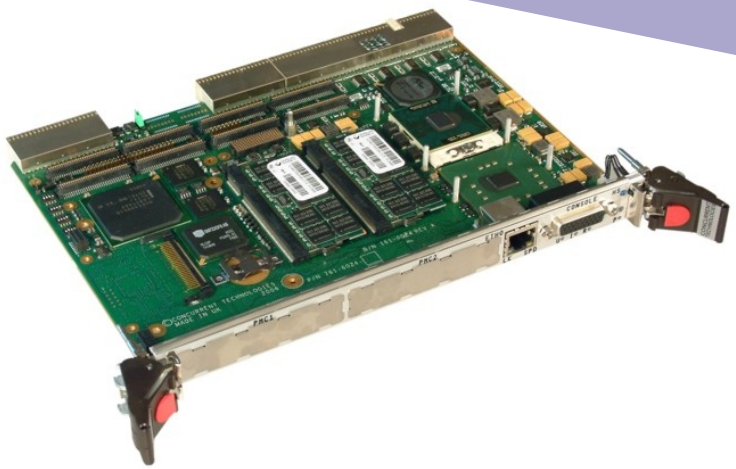
Find the *Concurrent Technologies PP 410/03x* at our website: *Click HERE*

CompactPCI

PP 412/03x

N, E - Series

Intel® Core™ 2 Duo Processor Dual PMC Carrier



RoHS 2002/95/EC

END OF LIFE

APPLICATIONS

The PP 412/03x is a PC-compatible high performance, high functionality, dual PMC, single XMC CompactPCI® board supporting the Intel® Core™ 2 Duo processor and the Intel® E7520 server class chipset. The processor contains two CPU cores and shared L2 cache. The PP 412/03x will operate in a system slot, a peripheral slot or independently from the CompactPCI bus. High-performance networking is provided by three Gigabit Ethernet links, and the board is compliant to the PICMG® 2.16 specification. Full system monitoring is provided by the PICMG 2.9 compliant IPMI interface. Many suitable industry standard operating systems are supported. The PP 412/03x is suitable as an upgrade for most applications using the popular PP 410/03x, PP 312/01x, PP 310/01x and PP 110/01x boards. The PP 412/03x is suitable for a range of high-performance applications within the industrial control, telecomms, telemetry, scientific and aerospace markets.

HIGHLIGHTS

- 2.16 GHz or 1.5 GHz Intel® Core 2 Duo processor:
  - dual-core processor
  - 667 MHz Front Side Bus
  - 64 Kbytes L1 cache per core
  - 4 Mbytes L2 cache shared between cores
  - Intel® 64 Technology (64-bit computing)
  - no CPU fan needed; low power processor
- Up to 4 Gbytes of dual channel DDR2-400 ECC SDRAM
- 2 x PMC module interfaces, with front and rear user I/O:
  - 64-bit; 33/66MHz PCI and 33/66/100MHz PCI/PCI-X
  - 1 x XMC module interface (x8 PCI Express™)
- High performance SATA and EIDE disk interfaces with on-board CompactFlash™ or Hitachi GST MicroDrive™ and optional on-board disk drive
- 3 x 10/100/1000Mbps Ethernet interfaces:
  - Dual Gigabit Packet Switching Backplane (PICMG 2.16)
- 4 x Universal Serial Bus (USB 2.0) interfaces:
  - 1 via front panel
  - up to 3 via optional Rear Transition Modules
- Graphics, keyboard and mouse interfaces on front panel
- Up to 3 x RS232 serial channel interfaces:
  - 1 via front panel
  - up to 2 via optional Rear Transition Modules
- CompactPCI controller:
  - operates in system slot or peripheral slot
  - 32/64-bit at 33/66 MHz CompactPCI interface
- Option to bypass CompactPCI bus (Satellite Mode)
- IPMI (Intelligent Platform Management Interface):
  - PICMG 2.9 (System Management Specification)
- Watchdog timer and Long Duration Timer
- Support for Linux®, Windows® 2000, Windows® XP, Windows® XP Embedded, Windows® Server 2003, QNX®, VxWorks®, Solaris™ and LynxOS®
- Single slot (for all option combinations)
- Extended temperature version available:
  - -25°C to +70°C (E-Series)
  - supporting 1.5 GHz processor
- Optional Rear Transition Modules available with PMC, Ethernet and IPMB rear panel I/O, and with either:
  - RS232, SATA, USB and stereo audio interfaces or
  - RS232, SATA, USB, stereo audio and PIM interfaces or
  - RS232, USB, printer and floppy disk interfaces

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Specification

Central Processor

- 2.16 GHz Intel® Core™ 2 Duo processor T7400:-
  - ➔ uses FC-PGA 478 (micro Flip-Chip Pin Grid Array) package
- 1.5 GHz Intel® Core™ 2 Duo processor L7400:-
  - ➔ uses FC-BGA 478 (micro Flip-Chip Ball Grid Array) package
- common dual-core processor features are:-
  - ➔ 667 MHz Front Side Bus
  - ➔ 64 Kbytes of Level 1 on-die cache
  - ➔ 4 Mbytes of shared Level 2 on-die cache
  - ➔ Intel® 64 Technology (64-bit computing)
- no CPU fan; low power processor
- utilizes Intel® E7520 server class chipset:-
  - ➔ uses Intel® 6300ESB I/O Controller Hub
- provision for XDP debug port

DRAM

- supports up to 4Gbytes DDR2-400 ECC SDRAM:-
  - ➔ up to 4 Gbytes via two SODIMM sockets
  - ➔ up to four bit error correction
  - ➔ peak bandwidth of 6.4 Gbytes/s
  - ➔ dual channel architecture
- accessible from processor and CompactPCI bus

Hard Disk Interfaces

- 2 x SATA-150 interfaces via J5
- on-board EIDE interfaces:-
  - ➔ supports up to Ultra-DMA 100
  - ➔ secondary channel used for on-board CompactFlash™ site under PMC site
  - ➔ options for dual CompactFlash carrier or 2.5 inch disk drive assemblies on primary channel (uses PMC site)

Ethernet Interfaces

- 2 x rear interfaces implemented by Intel® 82573L controllers via x1 PCI Express™ links:-
  - ➔ support for PICMG 2.16 R1.0 - Packet Switching Backplane (PSB)
  - ➔ optional support for rear panel RJ45's via J3
- front panel interface implemented by Intel 82573L, accessed via front panel RJ45
- supports 10 Base-T, 100 Base-TX, 1000 Base-T

Analog Graphics Interface

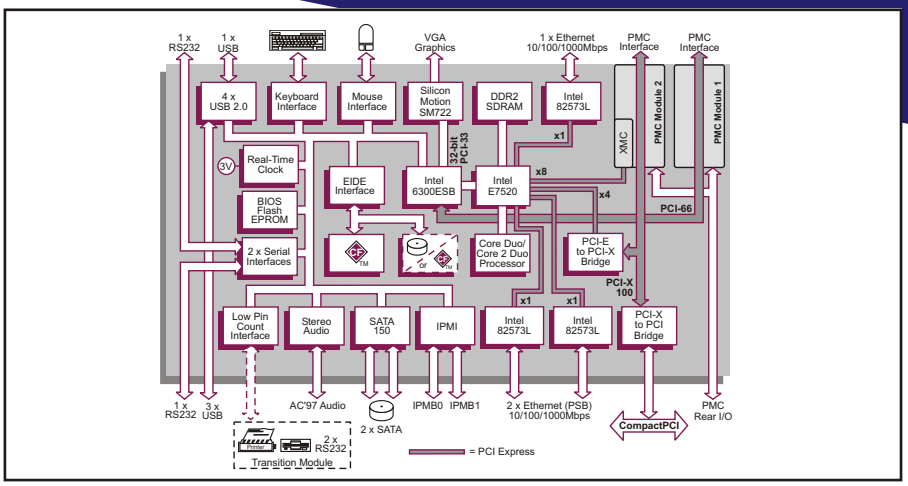
- implemented by a Silicon Motion SM722:-
  - ➔ 8 Mbytes video memory
  - ➔ resolutions up to 1280 x 1024 @ 16M colors
- accessed via 26-way high-density connector

PMC Interfaces

- 2 x PMC sites; for PMC site 1:-
  - ➔ 32/64-bit, 33/66 MHz PCI operation
  - ➔ 3.3V or 5V PCI signaling levels
- for PMC site 2:-
  - ➔ 32/64-bit, 33/66/100 MHz PCI/PCI-X
  - ➔ 3.3V PCI signaling level
  - ➔ XMC (Switched Mezzanine Card) interface supported via x8 PCI Express Link
- common features for both PMC sites:-
  - ➔ I/O via front panel and via J3/J5
  - ➔ Rear Transition Modules support rear I/O

Stereo Audio

- AC '97 interface via J5:-
  - ➔ codec on AD PP5/002 and AD PP5/003 RTM



Serial Interfaces

- up to 3 x RS232 serial channels:-
  - ➔ 1 x Tx/Rx channel accessed via a 26-way high-density connector on front panel
  - ➔ 1 or 2 Tx/Rx channels via Transition Module
- 16550 compatible UARTs
- front panel supports CTS and RTS, and rear panel supports RI, CTS, RTS, DSR, DTR and DCD

Other Peripheral Interfaces

- PC Real Time Clock (Year 2000 compliant)
- watchdog timer; 32-bit Long Duration Timer with processor interrupt capability
- system fan monitor; CPU temperature monitor; voltages monitor; all accessible via IPMI
- 4 x USB 2.0 interfaces:-
  - ➔ 1 accessed via a 26-way high-density connector on front panel
  - ➔ 3 interfaces accessed via J5
- independent legacy speaker output via J3
- keyboard and mouse interfaces accessed via a 26-way high-density connector on front panel
- LPC (Low Pin Count) bus via J5 to enable the AD PP5/001 Transition Module support for:-
  - ➔ floppy disk interface
  - ➔ parallel port interface (ECP, EPP, IEEE1284)
  - ➔ 2 x RS232 serial channels

IPMI

- PICMG 2.9 R1.0 (System Management Specification):-
  - ➔ implements the IPMB0 interface
  - ➔ implements an IPMB1 interface
- on-board Baseboard Management Controller
- supports 8 Kbytes of non-volatile memory

Firmware Support

- Phoenix® Server BIOS
- comprehensive Power-On Self-Test (POST)
- LAN boot firmware included

Software Support

- support for Linux®, Windows® 2000, Windows® XP, Windows® XP Embedded, Windows® Server 2003, QNX®, VxWorks®, Solaris™ and LynxOS®

Flash EPROM

- 1 Mbyte of BIOS Flash EPROM - 8-bits wide

CompactPCI Interface

- compliant with PICMG 2.0 R3.0; 3.3V or 5V signaling levels (universal signaling support)
- 33/66 MHz, 32/64-bit interface accessed via J1/J2 connectors
- PCI-X to PCI bridge for off-board accesses
- J4 connector not fitted
- PICMG 2.1 R2.0 Hot Swap compliant
- operates as System Slot controller or in a Peripheral slot
- option to disable CompactPCI interface (Satellite Mode):-
  - ➔ receives power from CompactPCI bus
  - ➔ board can be hot swapped

Electrical Specification

- +5V@6.5A (typical at 2.16 GHz with 1 Gbyte DRAM); +5% / -3%
- +3.3V@3.8A; +5% / -3%
- +12V@0.05A; -12V@0.05A
- +12V and -12V routed to PMC slots

Safety

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

Environmental Specification

- operating temperature:-
  - ➔ 0°C to +55°C (N-Series)
  - ➔ -25°C to +70°C (E-Series: 1.5 GHz)
- 5% to 95% Relative Humidity, non-condensing (operating)
- -40°C to +85°C (storage)
- 5% to 95% Relative Humidity, non-condensing (storage)

Mechanical Specification

- 6U form-factor: 9.2inches x 6.3inches (233mm x 160mm)
- single-slot: 0.8inches (20.3mm)
- connectors: IEC-1076-4-101 for J1-J5
- shock: 20g, 11ms, ½ sine (operating); 30g, 11ms, ½ sine (non-operating)
- vibration: 5Hz-2000Hz at 2g, 0.38mm peak displacement (operating); 5Hz-2000Hz at 5g, 0.76mm peak displacement (non-operating)

ORDERING INFORMATION

Order Number	Product Description (Hardware)
PP 412/031-xy	1.5 GHz Core 2 Duo processor L7400
PP 412/032-xy	2.16 GHz Core 2 Duo processor T7400
AD PP5/001-40U	RTM I/O: dual PMC, Ethernet, floppy, printer, USB, RS232
AD PP5/002-00	RTM I/O: dual PMC, Ethernet, SATA, USB, RS232, stereo audio
AD PP5/003-00	RTM I/O: dual PMC PIM, Ethernet, SATA, USB, RS232, stereo audio
CB 26D/125-00	26-way High Density to VGA, Keyboard, Mouse, USB, RS232 connector cable
AD 200/001-zz	CompactFlash/Microdrive carrier assembly
AD CP1/DR1-z0	2.5 inch Hard Disk Drive assembly

Replace the order number suffix (xy) with selections from the following:

where x =	where y = memory size
1 - Ethernet via rear panel	1 - reserved
2 - Ethernet via PICMG 2.16	2 - 1 Gbyte
	3 - reserved
	4 - 2 Gbytes
	5 - 4 Gbytes

For z options please contact your local sales office. For extended temperature, E-Series, 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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