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CT8

6U CompactPCI® Single Board Computer

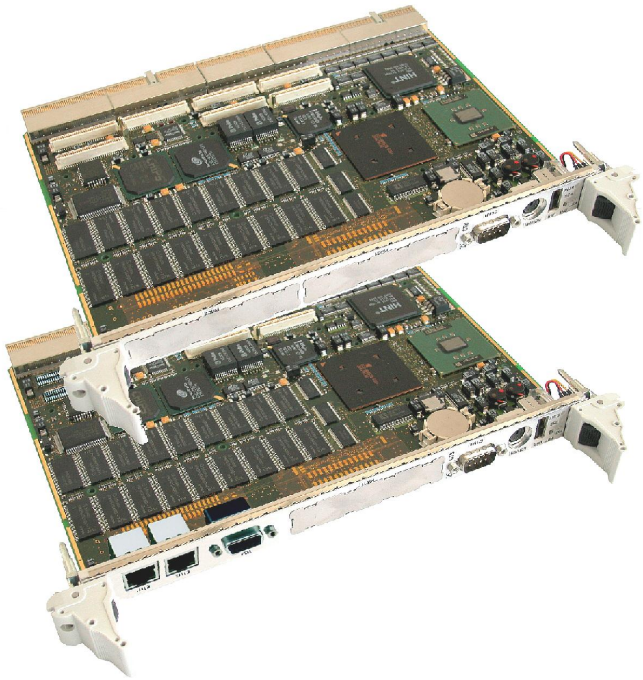
Single Board Computers

Features

- Low voltage Intel® Pentium III Processor-512k, 800MHz and higher
- Optimized for Telcom applications
- Ultra compact, 1 slot only
- Redundant System Slot PICMG 2.13 compliant
- Hot Swap (Full), PICMG 2.1 compliant
- System / Non-System Slot
- 64-bit/66MHz cPCI bus
- Extensive software support
- Up to 2GB SDRAM with ECC
- Flash Drive or local 2.5” hard disk
- VGA/LCD up to 1600 x 1200 4MB SDRAM
- Two Gigabit Ethernet ports 10/100/1000 BaseT PICMG 2.16 compliant
- Two PMC extension slots, 64-bit/66MHz and 32-bit/33MHz
- IPMI PICMG 2.9
- Ultra ATA/100
- Two Serial I/O with FIFOs
- IEEE 1284 parallel port
- Four USB ports
- Watchdog, NMI ticker, temperature sensor
- Optional -40°/+55° C
- Custom specific, low cost assembly versions

Dual PMC

Single PMC



CT8 is a high-performance 6U CompactPCT® CPU board with integrated low power processor speed and dual Gigabit Ethernet channels. The CT8 supports full hot swap, redundant system slot and is capable of being used in a system or non-system slot. Adhering to the PICMG 2.16 dual Ethernet specification, the CT8 supports the 64-bit/66MHz CompactPCI bus and is designed for use in a broad range of applications such as wireless, voice over packet, enterprise devices, medical imaging, command and control and high performance test and measurement systems.

Based on the low voltage Intel® Pentium® III processor 512k, the CT8 platform is designed to support processors starting with 800MHz and higher. It offers low power consumption and eliminates the need for on-board ventilation. The CT8 provides a unique feature set, including up to 2GB of 133MHz SDRAM with ECC, two independent on-board PCI buses, support for the 64-bit/66MHz CompactPCI backplane, and two PMC interfaces (64-bit/66MHz and 32-bit/33MHz). A high level of functional integration (VGA/TFT, serial or parallel interfaces, IPMI controller, etc.) within a single slot gives users the freedom to use the two PMC interfaces as extensions for their applications. The CT8 is also optionally available for the extended temperature range of -40°/+55° C.

The CT8 includes a Baseboard Management Controller (BMC) supporting the Intelligent Platform Management Interface (IPMI) architecture. It allows independent platform management between IPMI enabled boards, power supplies, fans and other accessories in a system. This feature can be used for autonomous monitoring, logging and recovery control functions. This is a key component in providing enterprise class management for high-availability systems.

A wide selection of operating systems is supported: Windows® XP, Windows® NT, Windows® 2000, QNX™ and Linux.

Specifications

CompactPCI - HiNT HB6 PCI-to-PCI Bridge
- PICMG 2.0 R3.0 compliant cPCI local bus standard
- 64-bit PCI-to-PCI bridge for up to 8 slots (33MHz) or 5 slots (66MHz)
- Supports system and peripheral mode
- J1+2, 2mm pin and socket connectors (IEC-1076-4-101)

Redundant System Slot - compliant to PICMG 2.13 Draft
- RSS Universal CPU operates as 'Active Host CPU', 'Peripheral CPU', or 'Isolated CPU'.
- Hot Swap Insertion/Extraction
- Supports Hand-Over Command and Take-Over Command with the following control mechanism:
  - Host Control Transfer
  - IPMI Initiated Transfer (planned)
  - Hot Swap Controlled

Processor - µFCBGA, Low Power Design
- Scalable processing power with flexible processor design
- Low voltage Intel® Pentium® III Processor 512k, 800MHz and higher
- High efficiency on-board switching regulator (DC/DC)
- Fanless cooling with heat sink
- See pricelist for latest CPU versions

Chipset - ServerWorks ServerSet™ III LE
- 133MHz system bus
- PCI burst mode transfers up to 512MB/s (64-bit /66MHz)
- One 64-bit PCI bus with 66MHz
- One 32-bit PCI bus with 33MHz

Cache	Level 1	Level 2
Pentium® III	32 kB	512kB full speed

Memory - PC133
- High-speed registered SDRAM
- 64 to 2048MB, 72-bit with error correction (ECC)
- Rugged design with soldered chips

Dual Gigabit Ethernet - Intel® 82546EB
- Highly integrated dual channel Ethernet controller with 64-bit/66MHz PCI local bus DMA
- 64kB transmit and receive FIFO
- 10/100/1000BaseT auto-negotiation
- Versions with Front I/O (10/1000BaseT) available
- Rear I/O pinning compliant with PICMG 2.16

Hard Disk or Flash Drive
- Internal 2.5" IDE Hard Disk or 2.5" Flash drive (for extended temperature range and higher shock/vibration immunity). (Not available when both PMC slots are occupied) (Onboard CompactFlash™ slot on request)

PMC Extension Slots - IEEE P1386/1386.1, PICMG 2.3
- One high bandwidth 64-bit/66MHz PMC interface directly connect-ed to the internal PCI bus and one 32-bit/33MHz PMC interface
- Each PMC slot supports front panel I/O and rear I/O (opt. PIM)
- Rear I/O pinning in compliance with PICMG 2.3 (32-bit/33MHz PMC slot not available with additional front I/O, hard disk, or Flash Drive)

NOTE: 33MHz PMC plugged into 66MHz PMC slot will slow down Gigabit Ethernet and cPCI Bridge to 33MHz

VGA and LCD - CT 69030
- 64-bit Windows accelerator and LCD flat panel interface
- On-chip 4 MB synchronous DRAM (83MHz)
- DVI-D interface (PanelLink®) for TFT displays up to 1024 x 768 x 16
- Versions with front or Rear I/O available

Note: No video output is available if connector J4 is not populated and if a PMC module is installed on PMC2

CRT Resolution	Color Depth @ Refresh Rate
1024 x 768	16M @ 100Hz
1280 x 1024	16M @ 75Hz
1600 x 1200	64k @ 60Hz

EIDE
- Ultra ATA/100 sync. DMA mode up to 100 MB/Sec
- PIO mode 4 and bus master IDE up to 16MB/Sec
- Four devices supported via local EIDE connector and rear I/O

Serial I/O - RS-232 and RS232/422/485
- Two assync. 16550 compatible full duplex serial channels at rear I/O
- High-speed transfer up to 115.2 kBaud with 16 Byte FIFOs
- One user selectable RS232/422/485 interface (COM1)
- COM1 optionally available at front

Parallel Port
- Bi-directional, IEEE 1284-compatible enhanced parallel port (including EPP and ECP) for printer or general purpose I/O

IPMI - Zircon
- Baseboard Management Controller with integrated ARM7 supporting the Intelligent Platform Management Interface (IPMI) architecture in compliance with PICMG 2.9
- Peripheral mode and BMC mode are supported

Floppy
- One channel 3.5" floppy drive controller
- 720kB and 1.44MB

USB 1.0
- Four 12Mb/s universal serial bus channels

Keyboard
- PS/2 compatible

Mouse
- PS/2 compatible

Real-Time Clock
- RTC 146818 compatible, on-board Li-battery

CMOS RAM
- 114 Bytes non-volatile CMOS RAM

EEPROM
- 4 kbit serial EEPROM for non-volatile user data

Watchdog
- Activates reset under software control (1 sec - 100 sec)

Timer
- Activates IRQ under software control (200 µsec - 20 msec)

Temp Sensor
- Local (lower card edge) and remote temperature (CPU die) software readable from -65°C to +127° C, 1.0°C increments

LEDs
- Two front panel LEDs, hot swap (blue) and power OK/user (green/red)
- RSS operation mode indicated by status LED (amber)

Hot Swap - compliant to PICMG 2.1
- Peripheral mode: Board can be inserted or removed in a powered system
- System controller mode: Other, non-system boards can be removed or added with power on.

H.110 Friendly
- Version with non-populated J4 (see Front and Rear I/O table) does not interfere with H.110 bus on P4

BIOS Features
- New AMI BIOS Core 8, in-system programmable Flash ROM
- CPU, memory and IDE auto-detection/selection
- Integrated VGA, and Ethernet BIOS ROM
- USB Mass Storage support
- Password protection, BIOS post, system and video BIOS shadowing
- Extensive setup with remappable serial/parallel ports
- Operation without disk, keyboard and video
- Remote BIOS through serial port (planned)

Software
- The following software is supported to the extent listed below.

OS	Available
Win NT4	√
Win 2000	√
Win XP	√
QNX 4+6	√
VxWorks	√
Linux	√

Front and Rear I/O (with Transition Module CTM12)
- The pin out of the transition module connectors (rear I/O) correspond to standard PC connectors (press-fit cables)

Function	Front	Rear (J3/J5)	Rear (J4)
VGA	D-15*4	-	10-pin
ETH 1	RJ45*4	RJ45	-
ETH 2	RJ45*4	RJ45	-
KBD+Mouse	Mini-DIN	-	*1
Reset	Button	-	*1
Multiple I/O*1	-	-	26-pin
Floppy	-	-	26-pin, 125mm
LEDs	3x	-	-
USB 0–3	USB 0	-	*1,*2
EIDE Pri.*3	-	40-pin	-
COM 1	D-09	10-pin	-
COM 2	-	D-09/10-pin	-
LPT	-	-	26-pin
LCD	-	-	DVI-D
PMC 1	Yes	PIM / 64-pin	-
PMC 2	Yes	PIM / 64-pin	-

*1 Multi-I/O connector w/ Keyboard, Mouse, 2x USB, Reset, Watchdog and speaker
*2 Additional 10-pin connector for 4x USB
*3 Second I/F for 2.5” hard disk or Flash drive onboard
*4 32-bit/33 MHz PMC slot not available with additional Front I/O

Power Requirements
- +5V, +12V, +3.3V Required
- -12V Only if required by mounted PMC module

Power Consumption
- 256 MB memory, w/o keyboard, hard disk, modules, etc.

Pentium® III	5V	3.3V	Total Power
800MHz	2.6A	2.4A	21W
933MHz	3.8A	2.4A	27W

- Operating values measured at DOS prompt, no power saving
- +12V: 30mA for Hot Swap functionality

Power Allowances - PMC Slot
- +5V, +3.3V: Total Power Max. 7.5W
- ±12V: 50mA each

Mechanical - PICMG 2.0
- 6U, 1 slot wide
- 233 x 160 x 20.32 mm (including Flash drive or hard disk)

Temperature
- Note: For detailed information about the operating temperature behavior of the board of any style it is absolutely necessary to consult the manual. The processor type and speed, the use or not use of Ethernet and video, and the type of cooling influences the board temperature range.
- All values under typical conditions without PMC module

	Operating*1	Storage*1,*4
Standard *2	0° to +55°C	-40° to +85°C
Extended *3	-40° to +55°C	-40° to +85°C

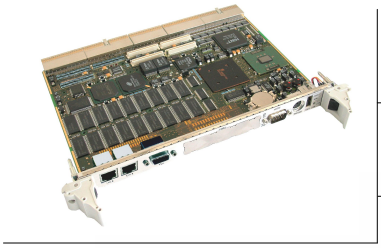
*1 The complete board may be limited to a smaller temperature range by mounted PMC module
*2 0° C to +50° C with rotating mass storage
*3 Extended not available with rotating mass storage
*4 -40° C to +65° C with rotating mass storage

Humidity
- Operating 5 - 95% @ 40°C
- Storage: 5 - 95% @ 40°C

Altitude
- Operating: 15,000 ft (4.5 km)
- Storage: 40,000 ft (12 km)

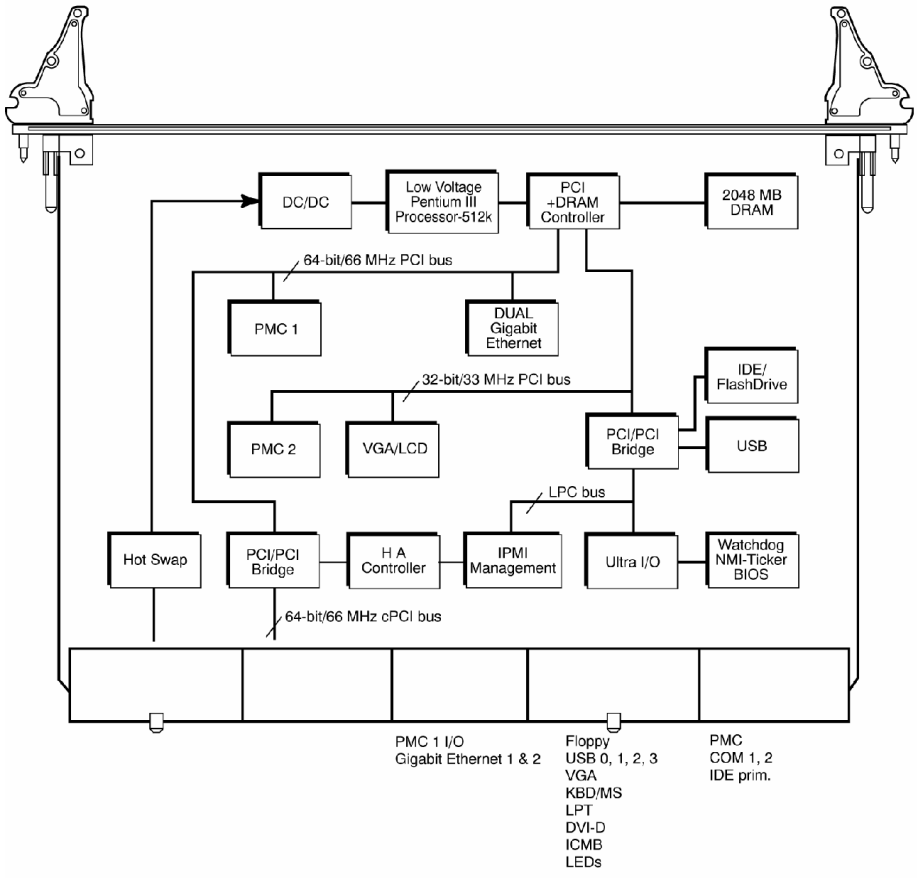
MTBF
- Calculations are available in accordance with MIL-HDBK-217 Please contact factory

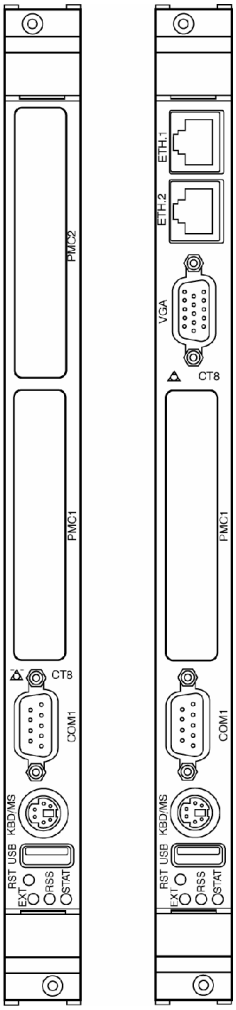
Safety
- Designed to meet standard UL1950, CE class A, FCC-A



CT8

Block Diagram





Ordering Information

Hardware Accessories

CTM12:	I/O transition module for 6U backplane (IEEE 1101.11-1998 compliant) supporting hot swap
SC304F:	Floppy Disk 3.5 in., 19 in. box: 3U/4HP, cable
SC306H10G0:	IDE Hard Disk 3.5 in., 10 GB, 19 in. box: 3U/4HP, cable
ZKAAPS2SPLIT:	Cable for Keyboard and Mouse on front panel

Operating Systems

Extensive operating systems support is available, see page 3 of this document.
Chassis with power supplies, backplanes and drives on request.
For detailed information and further options contact SBS Technologies

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