



Highlights

- >> 10U, 19-inch Enclosure
- >> Dual-Redundant, Hot-Swappable System Master Processor Boards Featuring the Intel® Pentium® III Processor - Low Power Module
- >> 10U Eurocard Format
- >> 16-Slot CompactPCI® Backplane
- >> Dual CD-ROM Drives
- >> Twelve 64-bit Peripheral Slots with H.110 Telephony Bus and Rear Panel I/O
- >> Support for 80 mm-deep IEEE® 1101.11-Style Rear Panel Transition Boards
- >> N+1 Redundancy for AC or DC Power Supplies and Alarms
- >> 19-inch Rack-Mountable Enclosure (Expandable to 23 inch)
- >> Compactnet® Multicomputing Option
- >> Support for Major Operating Systems Including Windows® 2000, VxWorks® and Linux

This high availability (HA) CompactPCI® platform provides a carrier-grade computing system for demanding mission-critical applications. The ZT 5084 supports five-nines (99.999%) availability with built-in redundancy for active system components including system-slot CPU boards, power supplies and alarming. These components are hot-swappable to simplify replacement and minimize service time.

The ZT 5084 platform is ideal for telecom applications requiring high system availability such as enhanced services, media gateway and broadband access servers or any critical computing server platform destined for the central office. The hardware-based failover and simplified HA driver model shorten development time for telecom equipment designers, while redundant system slot architecture enables more efficient use of expensive I/O resources.

Key Design Elements

Fault tolerance for the ZT 5084 is provided through the use of N+1 redundancy in critical component areas. This fully integrated platform features the software required to meet high system availability metrics, including comprehensive BIOS diagnostics and a development utility to simulate fault conditions and verify system operation.

Redundant System Master Boards

The two 6U high-availability processor boards feature the Intel® Pentium® III processor - Low Power module, up to 256MB of ECC SDRAM, 512KB of L2 cache, 4MB of flash, onboard 10/100 BASE-T Ethernet and an AGP video controller module. I/O expansion may be accommodated using up-to-two PMC sites (not available in all configurations). Each ZT 5084 High Availability Processor Board is dual redundant, hot-swappable and fills two slots on the CompactPCI backplane.

Modular System Configuration

Of the 16 available backplane slots, four are dedicated to the redundant System Master processor boards (physical slots 7 through 10). Twelve slots support 32- or 64-bit CompactPCI peripheral boards (slots 1 through 6 and 11 through 16). The telephony backplane provides ECTF H.110 computer telephony bus connections across the P4 connectors of all 12 peripheral I/O slots.

Connectors P3 and P5 on each peripheral slot are configured for rear-panel I/O and designed to accommodate IEEE® 1101.11-style 80 mm-deep transition boards. Dual CD-ROM drives interface to the processor boards. A hot-swappable five-fan module provides system cooling.

Compactnet® Multicomputing

Up to 12 optional Peripheral Master processor boards may be ordered to facilitate a multicomputing environment. Compactnet allows multiple CPU boards, running a variety of operating systems, to coexist on the same backplane. The completely integrated, "network-in-a-box" multicomputing environment increases system performance and consolidates system space by utilizing the CompactPCI bus infrastructure.

ZT 5084

10U High Availability Platform

Redundant Alarm Subsystems

System alarm features, built into the ZT 5551 processor board, monitor power supply Degrade (DEG) and Fail (FAL) signals, processor temperature and onboard operating voltages. Critical, major and minor LED indicators and an Alarm Cut-Off (ACO) switch are provided on the front panel of each board. System operating temperatures are independently monitored at several locations at the top of the backplane.

Two ZT 4804 rear panel transition boards provide critical, major and minor LED indicators, an Alarm Cut-Off switch for the system CPU boards and two optically isolated and debounced user inputs. Three pair of dry contact relay outputs provide audible and visual critical, major and minor alarm activation.

Redundant Power Supplies

Each of the four AC or DC input 150W load-sharing power supplies is diode-protected, hot-swappable and operate together in an N+1 configuration. LEDs indicate over-temperature/current/voltage and input-present. Fault conditions are sensed by the CPU boards, using the backplane DEG and FAL signals. Total redundant power is 450W (in N+1 configuration). Nominally, 350W is available for peripheral board use.

System Management and O/S Support

The ZT 5084 platform features highly integrated software, including a system management driver and development utility, to simplify and speed the development of high-availability solutions. The ability to read, write, query and enable alerts provides for system management data, collected from various locations within the system: SMBIOS table (CPU type, memory size, speed, etc.), redundant CPU events (takeover type, cause, etc.) and SMBus devices (CPU board voltages, temperature, alarm relay status, user inputs, etc.).

The ZT 5551 processor board comes with a user-configurable embedded BIOS to boot an operating system residing in local flash memory, from a fixed or floppy drive, or over a network. It is PC-compatible and supports major operating systems including Windows® 2000, VxWorks® and Linux. Additional drivers may be available for selected peripherals, flash drives and the SMBus.

Configuration Options

The AGP video controller is an optional plug-in mezzanine board. The ZT 5551 processor board is available with support for two PMC locations for mezzanine cards or with one PMC location and one IDE hard drive.

Product Interoperability

High Availability Processor Boards

- ZT 5551: 1GHz Intel® Pentium® III processor, 16MB onboard Flash memory, IPMI, VGA

Rear Panel Transition Boards

- ZT 4802: Rear panel transition board (for I/O expansion board)
- ZT 4804: Rear panel transition board (for I/O expansion board)
- ZT 4806: Rear panel transition board (for I/O expansion board)

Contact Information

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Ordering Information

>> **The ZT 5084 10U High Availability Platform is available in two options:**

- ZT 5084AC: 10U chassis, four ZT 6301 AC power supplies (150W hot-swap), AC input panel with AC power cord
- ZT 5084DC: 10U chassis, four ZT 6311 DC power supplies (150W hot-swap), DC input panel

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Specifications

The ZT 5084 is compliant with the following specifications:

- CompactPCI® core spec., PICMG® 2.0, R3.0
- CompactPCI hot-swap spec., PICMG 2.1, R2.0
- CompactPCI computer telephony spec., PICMG 2.5, R1.0

Power (per power supply)

AC Input

- Input voltage: 100 to 254VAC (47 to 63Hz) auto sensing
- Input current: 2.2A (max. continuous) @ 115VAC (typical configuration)
- Power factor: 0.99
- Efficiency: >69% @ 20% to 80% max. load
- On/Off switch/circuit breaker (7.5A) and dual IEC 320 input receptacles (one per system)

DC Input

- Input voltage: 36 to 72VDC
- Input current: 10A max. surge (typical configuration)
- Efficiency: >69% @ 20% to 80% max. load
- On/Off switch/circuit breaker (30A) and dual input terminal block, diode OR'd (one per system)

Output Current (per power supply)

(Not to exceed 150W, per power supply)

20A	@	3.3VDC*
25A	@	5VDC*
5.5A	@	12VDC
0.5A	@	-12VDC

*max. combined current 25A

Physical and Environmental

- Height: 17.5" (444mm)
- Width: 17.2" (436mm) without rack-mount flanges. (Flanges allow mounting in 19" and 23" racks)
- Depth: 14.0" (356mm)
- Slots: 0.8" (20.32mm/1 hp) centers
- Weight: 46 lbs. (typical)
- Operating Temperature: 0 to 40 C (Available power should be de-rated 2.5% per degree Celsius from 35C to 40C) Individual CompactPCI boards have specific operating temperatures.

* Refer to individual board specifications for details.

System Monitoring and Alarm I/O

- **User Inputs** (jumper-selectable to accommodate either 0-5 or 0-48VDC inputs)
 - 0-5VDC Input Characteristics:
 - "ON" = 2.5 to 5.0VDC @ 0.5 mA max.
 - "OFF" = 0 to 1.8VDC
 - 0-48VDC Input Characteristics:
 - "ON" = 12.0 to 60.0VDC @ 3.25 mA max.
 - "OFF" = 0 to 8.0VDC

Alarm Outputs (dry contact relays)

- Normally open or closed (jumper-selectable)
 - 0.4A @ 60VDC (inductive)
 - 0.8A @ 60VDC (resistive)

Reliability and Serviceability

- MTTR: 5 minutes (Mean Time To Replace/field replaceable units)
- MTBF: (Mean Time Between Failure/calculated using MIL STD217E)

CPU Board (ZT 5551)	54,000 hours
Alarm Subsystem	440,000 hours
Backplane	489,000 hours
Power Supply	460,000 hours
Fan Tray Assembly	14,000 hours
CD-ROM	60,000 hours
- MTBI: (Mean Time Between Interruption/based on a 4-hour response and replacement time)

ZT 5084 System	400,000 hours
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Note: To provide proper cooling to the ZT 5084, each unused slot in the chassis should be populated with an air management blade. All rear slots should be populated with a rear filler panel. See below for orderable components:

- To cover a single rear panel slot, use a filler panel that is 6U x 4HP (horizontal pitch=0.2") (Performance Technologies PN 18299).
- To cover six rear panel slots, use a filler plate that is 6U x 24HP (Performance Technologies PN 20434).
- To fill a front slot, use an air management blade that is 6U x 4HP (Performance Technologies PN 20456).
- To fill a power supply bay, use an air management blade that is 3U X 8HP (Performance Technologies PN 20455).
- To fill an SM slot, use a filler panel that is 3U X 4HP (Performance Technologies PN 18309).

Regulatory Compliance

Designed for NEBS/ETSI

CE Certification

The ZT 5084 meets intent of Directive 89/336/EEC for Electromagnetic Compatibility and Low-Voltage Directive 73/23/EEC for Product Safety. Compliance was demonstrated to the following specifications as listed in the Official Journal of the European Communities:

Safety

- UL/cUL 60950 Safety for Information Technology Equipment
- EN/IEC 60950 Safety for Information Technology Equipment
- CB Report Scheme CB Certificate and Report

Emissions Test Regulations

- FCC Part 15, Subpart B
- EN 55022
- CISPR 22
- Bellcore GR-1089

EN 50081-1 Emissions

- GR-1089-CORE Sections 2 and 3
- EN 55022 Class A Radiated
- EN 55022 Power Line Conducted Emissions
- EN 61000-3-2 Power Line Harmonic Emissions
- EN 61000-3-3 Power line Fluctuation and Flicker

EN 55024 Immunity

- GR-1089-CORE Sections 2 and 3
- EN 61000 4-2 Electro-static Discharge (ESD)
- EN 61000 4-3 Radiated Susceptibility
- EN 61000 4-4 Electrical Fast Transient Burst
- EN 61000 4-5 Power Line Surge
- EN 61000 4-6 Frequency Magnetic Fields
- EN 61000 4-11 Voltage dips, Variations & Short Interruptions