PERFORMANCE TECHNOLOGIES

IPnexus™

ZT 5091e

4U PICMG® 2.16 Platform

Highlights

- >> Part of our Advanced Managed Platform Offering
- >> 4U, 19-inch Rack-Mount Enclosure
- >> Eight 6U Hot-Swappable Slots (Seven Node Slots, One Dedicated Switched Fabric Slot)
- >> One Hot-Swappable Intelligent Shelf Manager Slot
- >> PICMG® 2.16-Compliant Backplane
- >> Support for Seven Single Board Computers or Access Cards
- >> One PCI Bus Segment Supporting 64-bit/33MHz and H.110 Computer Telephony Bus
- >> Eight Rear Transition Module Slots
- >> Comprehensive IPMI-Based Management
- >> N+1 Redundant, Load-Sharing, Hot-Swappable, 250W AC or DC Power Supplies
- >> Designed to Scale up to 650W of Redundant Output Power
- >> Efficient Side-to-Rear Cooling
- >> Interoperable with PICMG 2.16 Components from Multiple Manufacturers

The IPnexus™ ZT 5091e 4U General Purpose Packet-Switched Platform, part of the Advanced Managed Platform offering, provides OEM equipment designers with standards-based solutions built on the PICMG® 2.16 specification. This high-density CompactPCI® platform features seven node slots (e.g. for compute blades or line cards) and one PICMG 2.16 fabric slot, transversely mounted in a 4U enclosure, making it ideal for carrier-grade telecom and Internet applications. The ZT 5091e is modular, scalable and ready for immediate development. It is part of our IPnexus family of embedded packet products and is also designed to interoperate with any third-party PICMG 2.16-compatible boards.

Hot-swappable system components simplify replacement and minimize service time. An intelligent shelf manager (ISM) enables customers to manage all IPMI-based components and conduct chassis diagnostics remotely for enhanced system reliability. A 6U slot is reserved for an integrated Layer2/Layer3 Ethernet switch. The ZT 5091e platform routes signals across the backplane without the use of cables, saving time in setup, maintenance and repair and eliminating the thermal challenges of traditional cabling methods.

The PICMG 2.16 specification blends the benefits of CompactPCI with the broad acceptance of Ethernet to provide an economical, scalable path to the next-generation Internet and voice communications network.

Key Design Elements

With one integrated chassis management module slot, one Ethernet switch slot and seven node slots transversely mounted in a 4U chassis, the ZT 5091e provides both high-density computing and integrated 10/100/1000 Mbps Ethernet support on the backplane. The backplane features one CompactPCI segment as well as support for the H.110 computer telephony bus across all seven node slots. An innovative side-to-rear cooling system supplies ample volume and velocity for cooling the high-density computing environment. The platform is designed to be rugged, with less than five minutes Mean Time to Replacement for all components.

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PICMG 2.16 Specification

The PICMG 2.16 specification blends the benefits of CompactPCI with the broad acceptance of Ethernet to provide an economical, scalable path to the next-generation Internet and voice communications network. Backplane interconnect speeds are user-definable, scalable from 10 Mbps to 2000 Mbps per node slot, allowing customers to start with a lower-cost, lower-speed set of components and upgrade as needed. Ideal applications include Web servers, e-mail servers, cache servers, VPN switches, media gateways, 2.5G and 3G wireless, server clusters, IP DSLAM and voice/video/data servers.

Standard Features

Modular Building Blocks

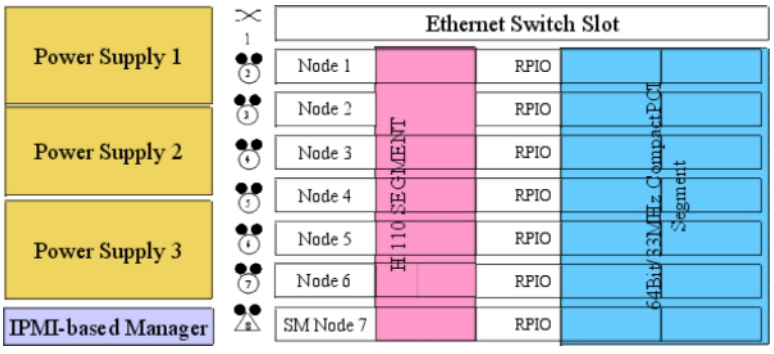
The ZT 5091e is a basic platform building block, designed to support PICMG 2.16-compliant processor boards, switches and peripherals. The platform consists of:

- Rugged, designed-for-NEBS GR-63-CORE 4U chassis
- Eight-slot PICMG 2.16-compliant backplane (one switch and seven node slots)
- One PCI bus segment with H.110 telephony bus routed to all node slots*
- 3U IPMI-compliant shelf management slot (see Intelligent Shelf Manager below)
- Three N+1 redundant, load-sharing 250W AC or DC 47-pin connector modular power supplies
- Hot-swappable blower tray with two blowers

* Alpha units do not support H.110 to the System Master slot.

Backplane Configuration

The ZT 5091e backplane features eight CompactPCI slots. Slot one is dedicated for a PICMG 2.16-compliant switched fabric board. Slots two through eight are available for PICMG 2.16-compliant single board computers or access cards. Slot eight is a system master slot. Eight slots of rear panel I/O, directly behind the backplane, accept IEEE® 1101.11-style, 80 mm-deep transition cards. Additionally, a 3U slot under the power supplies is dedicated for the chassis management module. The backplane may be configured for 3.3V or 5V VI/O operation. Additionally, a 3U slot under the power supplies is dedicated for the chassis management module. The ZT 5091e provides support for either -36 to -60VDC input or 100-220 VAC input.



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Intelligent Shelf Manager

The IPMI 1.0-compliant, CPC7301 Intelligent Shelf Manager (ISM) monitors system status including presence, power-on, temperatures, voltages, fan speeds and health of components. It communicates with the system using an IPMB bus in a star topology to achieve comprehensive management. An out-of-band 10/100 Mbps Ethernet port permits a network dedicated exclusively for management, thus avoiding impact to traffic on the primary network.

Ethernet Switch Board

The ZT 5091*e* platform supports a PICMG 2.16-compliant switched fabric board such as our complete line of IPnexus switches. These high-performance managed Layer2/Layer3 switches with various 10/100 Mbps Ethernet ports and up to 24-1000 Mbps Ethernet ports, enable fast connection speeds and flexibility in a 6U CompactPCI board. The in-chassis switch minimizes external wiring and needs no extra rack height, thus improving density and reliability. The console is accessed through an RS-232 serial cable to configure the following management functionalities: SNMP, Telnet CLI and RMON. The IPnexus switches also feature easy-to-use browser/Web-based management consoles, managed via the IPMI standards-based CPC7301 Intelligent Shelf Manager. The switches route and switch at full wire speed with non-blocking architecture and feature sophisticated multicast protocols to limit unnecessary traffic.

Warranty

One year

Product Interoperability (Please see individual datasheets for details)

The ZT 5091*e* includes: enclosure, three power supplies, chassis management module, backplane, fan tray assembly, full suite of rear filter panels (one six-slot filter panel and two single-slot filter panels) and one 6U single slot Air Management Blade. ZT 5091*e*-AC, ZT 5091*e*-DC

The ZT 5091*e* processor board is designed to interoperate with the following building blocks (see individual product briefs for details):

Processor Board Configurations

- ZT 5504e: 1GHz Intel® Pentium® III processor-Low Power, 512MB or 1GB ECC SDRAM, EIDE hard drive and SVGA, ZT 5524e: Single or dual 933MHz Intel Pentium III processor, 1GB ECC SDRAM, EIDE hard drive and SVGA

Ethernet Switches

- IPnexus switches: 10/100/1000 MBps PICMG 2.16 standard switches.

Management

- CPC7301: Intelligent shelf manager (ISM)

Filler Panels and Air Management Blades

- 18299-6U x 4HP Rear Filler Panel, 20434-6U x 24HP 6-Slot Rear Filler Panel, 20456 - 6U x 4HP Air Management Blade, 20455-3U x 8HP Air Management Blade for Power Supply

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Ordering Information

The ZT 5091e may be ordered with the following options:

>> **Base Enclosure**
E1: 4U PICMG® 2.16 enclosure

>> **Power Input Panel**
C1: AC input panel
C2: DC input panel

>> **Power Supplies**
P3: Two ZT 6303 250WAC power supplies
P4: Three ZT 6303 250WAC power supplies
P5: Two ZT 6313 250WDC power supplies
P6: Three ZT 6313 250WDC power supplies

>> **Intelligent Shelf Manager**
I0: No CPC 7301A-1A Intelligent Shelf Manager
I1: CPC 7301A-1A Intelligent Shelf Manager

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Specifications

The ZT 5091e is compliant with the following specifications:

- CompactPCI Core Specification, PICMG 2.0, R2.1
- CompactPCI Hot-Swap Specification, PICMG 2.1, R2.0
- CompactPCI Computer Telephony Spec., PICMG 2.5, R1.0
- CompactPCI System Management, PICMG 2.9
- CompactPCI Power Interface, PICMG 2.11
- CompactPCI Packet Switching Backplane Spec., PICMG 2.16
- IPMI 1.0 Specification

Power

- Input: 110 or 220 VAC (50 to 60 Hz)

Output*:	80A	@	+3.3VDC
	80A	@	+5VDC
	11A	@	+12VDC
	1A	@	-12VDC

- Input: -36 to -60 VDC

Output*:	80A	@	+3.3VDC
	80A	@	+5VDC
	11A	@	+12VDC
	1A	@	-12VD

* The power specs assume that 3 power supplies are installed in a N+1 redundant configuration.

Environmental

- Temperature (non-operating): -40 C to +70 C
- Voltage: +/-5% with 50mV max ripple
- Operating Temperature: +5 C to +40 C
  Radiated and conducted emissions shall not cause the system to fail any tests
- Humidity: 95% @ 40 C non-condensing

Physical

- Height: 7.0" (178 mm)
- Width: 17.2" (436 mm) without rack-mount flanges. Rack-mount flanges allow mounting in 19-inch racks.
- Depth: 12.25" (311 mm)
- Weight: 30.5 lb. in standard configuration

Note: To provide proper cooling to the ZT 5091e, 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. Orderable components:

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

Regulatory Compliance (Compliance is pending)

Designed for NEBS/ETSI

CE Certification

The ZT 5091e meets the intent of Directive 89/336/EEC for Electro-Magnetic Compatibility & Low-Voltage Directive 73/23/EEC for Product Safety. Compliance was demonstrated to the following specs as listed in the Official Journal of the European Communities:

Safety

- UL/cUL 60950 Safety for Information Technology Equipment E179737
  - UL File Number E179737
- EN/IEC 60950 Safety for Information Technology Equipment
- CB Certificate and Report Scheme
- CE Certificate

Emissions Tests Regulations

- FCC Part 15
- EN 55022/CISPR 22 Class A Radiated and Conducted Emissions Tests
- EN 55025/CISPER 24
- EN-61000-3-2 Power Line Harmonic Emissions
- EN-61000-3-3 Power Line Fluctuation & Flicker
- 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, Variation & Short Interruptions

Network Equipment-Building System

- GR-1089-CORE
  - Sect. 2 Electrical Discharge
  - Sect. 3.2.2 Radiated RF Emissions
  - Sect. 3.2.3 AC Line Conducted Emissions-Voltage
  - Sect. 3.2.4 AC & DC Line Conducted Emissions-Current
  - Sect. 3.3.1 RF Radiated Fields
  - Sect. 3.3.3 RF Common Mode
- GR-63-CORE
  - Sect. 5.3.1 Handling Drop Tests-Packaged Equipment
  - Sect. 5.3.2 Unpackaged Equipment Drop Tests
  - Sect. 5.4.2 Office Vibration Test Procedure
  - Sect. 5.4.3 Transportation Vibration-Packaged Equipment

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