Highlights

>> **1GHz Intel® Pentium® III Processor - Low Power**

>> **1GB ECC SDRAM**

>> **Intel 440 GX AGPset**

>> **64-bit, 33MHz CompactPCI® Interface**

>> **Onboard Flash Memory to Support Embedded Applications**

>> **EIDE Hard Drive and PMC Site**

>> **Onboard Fast Ethernet**

>> **Universal Serial Bus (USB)**

>> **Optional CompactFlash® Support**

>> **CompactPCI Packet Switching Backplane Specification, PICMG® 2.16**

>> **CompactPCI System Management, PICMG 2.9 R1.0**

>> **IPMI 1.0-Compliant for Standards-Based Management**

>> **Support for Windows® 2000, Linux® and VxWorks®**

This PICMG® 2.16-compliant single board computer offers excellent value with an optimized feature set to support a broad range of telecom and Internet applications. Modular and standards-based, the IPnexus™ ZT 5504e supports efficient time-to-market 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.

The ZT 5504e Single Board Computer is IPMI-based for increased management capabilities and reliability. Performance comes from the 1GHz Intel® Pentium® III processor - Low Power (BGA2). An optional CD-ROM drive mezzanine facilitates simplified installation of software for enhanced application support. The ZT 5504e can also operate in drone mode in a peripheral slot, whereby it functions as a stand-alone computer and does not communicate on the Compact-PCI® bus.

The PICMG 2.16 specification blends the benefits of CompactPCI with the broad acceptance of Ethernet. Performance Technologies' high-performance building blocks simplify development and provide an economical, scalable path to the next-generation Internet and voice communications network.

Key Design Elements

Intel® Pentium® III Processor
The 1GHz Intel Pentium III processor provides excellent computing power for the embedded system designer, incorporating a 100MHz processor side bus and 256KB of L2 cache.

Interoperability
The ZT 5504e is validated to operate in a PICMG 2.16-compliant system such as the IPnexus ZT 5091e 4U Packet-Switched Platform, a high-density computing platform for carrier-grade telecom and Internet applications. It is also designed to interoperate with third-party PSB products. The ZT 5504e features an integrated IPMI-based Baseboard Management Controller (BMC), compliant with the PICMG 2.9 system management specification. When used in a system with the CPC7301 Intelligent Shelf Manager (ISM), it supports a comprehensive, protected lights-out management scheme.

Multiprocessing Support and CompactPCI Interface
The ZT 5504e functions as a system master processor board in a 6U CompactPCI multiprocessing system. It interfaces to the backplane through a transparent, PCI-to-PCI (P2P) bridge, allowing it to communicate directly with all peripheral CPU boards in the system via the CompactPCI bus.

Drone Mode

Optionally, the ZT 5504e can operate in a peripheral slot in drone mode, where it receives power but does not communicate on the CompactPCI bus. Onboard logic qualifies the location of the board when inserted into a peripheral slot, thereby isolating it from the bus.

Standard Features

Memory

All RAM options are Error-Correcting Code (ECC) SDRAM for improved reliability and data integrity. The Intel Pentium III processor contains integrated L1 and L2 cache memory, and the board supports memory options of 1GB.

Flash Memory and CompactFlash

The ZT 5504e includes 4MB onboard flash memory, which supports the field-upgradeable system BIOS and may store a bootable operating system image. Additional flash memory capacity can be added with an optional CompactFlash carrier mezzanine card, available in lieu of a hard drive. This rugged, solid-state storage solution provides complete software compatibility with operating systems and applications supporting standard IDE devices.

Ethernet

Two Ethernet ports, provided via onboard 10/100 Mbps Ethernet LAN interfaces, deliver high networking performance and may be routed to the front or rear panel through the BIOS setup configuration. Both 10 or 100Mb Ethernet protocols are provided through auto-configuring RJ-45 front panel connectors. Link and activity status LEDs indicate Ethernet operation.

Hard Drive and PMC Site

A EIDE hard drive is mounted on the ZT 5504e as part of the standard product configuration. Space remains on the baseboard and connectors are provided for a single PMC card.

Watchdog Timer

An onboard, two-stage watchdog timer enhances system reliability. Once enabled, failure to strobe the watchdog timer within a programmable time period (1s, 8s, 64s, 256s) generates a non-maskable interrupt (NMI or processor "INIT"), followed by a hardware reset.

Video

An onboard SVGA-compatible graphics controller, CHPS 69000, is included with video connectors provided on the front plate.

Software and Support

The ZT 5504e comes standard with an embedded BIOS loaded in onboard Flash. The BIOS is user-configurable to boot an operating system residing in local Flash memory, from a fixed or floppy drive, or over a network. The ZT 5504e is PC-compatible and will run operating systems developed for the PC. Enhanced support is also provided for Windows 2000, Linux and VxWorks, including additional drivers for select peripherals and flash drives.

Warranty

One year

Contact Information

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Ordering Information

>> **Processor Configurations**

- ZT 5504eB-1B: 1GHz Intel Pentium III processor - Low Power, 1GB ECC SDRAM, EIDE hard drive and SVGA

>> **Accessories**

- ZT 4807e: Rear panel transition board
- RTM4808A: Rear panel transition board
- ZT 96080: CompactFlash Carrier

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Specifications

The ZT 5504e is compliant with the following specifications:

- CompactPCI Core Specification, PICMG 2.0, R3.0
- CompactPCI Hot-Swap Specification, PICMG 2.1, R2.0
- CompactPCI System Management, PICMG 2.9, R1.0
- CompactPCI Packet Switching Backplane Specification, PICMG 2.16, R1.0

The PICMG 2.16 CompactPCI packet-switched backplane specification is designed to accelerate the convergence of telecom and Internet IP-based applications including Web servers, mail servers, cache servers, VPN switches, media gateways, 2.5G and 3G wireless, server clusters, IP DSLAM and voice/video/data servers. The modular design simplifies development with standards-based modules. Backplane interconnect speeds are user-definable and scalable from 10 Mbps to 2000 Mps per node slot.

Power Req. (Typical)

- Supply Voltage, Vcc (+5VDC +5%, -3%)
- Supply Current, Vcc=5.0VDC (4A)
- Supply Voltage, V3.3V (+3.3VDC +5%, -3%)
- Supply Current, V3.3V=3.3VDC (6A)
- Supply Voltage, V12.0V (+12VDC +/-10%)
- Supply Current, V12V=12.0B (20mA)

Mechanical

- Measures: 9.2" x 6.3 (233.35mm x 160mm)
- Width: 0.8" (1 slot - 4HP)
- Connector: IEC-1076-4-101 (J1-J5)

Environmental

- Operating Temperature (requires 200 LFM airflow): 0° to 50° C
- Storage Temperature: (with hard disk) -40° to $+65^o$ C (without hard disk) -40° to $+85^o$ C
- Non-Condensing Relative Humidity: less than 95% at 40° C

Peripherals and I/O Interfaces

I/O Interface	Front Panel	Rear Panel	Compat.
COM 1	RJ-45	J5	16552
COM 2	N/A	J5	16550
LPT 1	N/A	N/A	IEEE*1284
VGA	15-pin D-shell	N/A	with AGP
Keyboard	N/A	J5	PS/2-style
Mouse	N/A	J5	PS/2-style
Floppy	N/A	J5	PC/AT
EIDE	2.5"	J5	ultra DMA/33
Ethernet	RJ-45	J3	Intel 82559
USB 0	4-pin USB	J5	USB Type A
USB 1	4-pin USB	J5	USB Type A

* Custom configuration only

Note: To provide proper cooling to the ZT 5504e, 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 the list 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).

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