



Intel® NetStructure™ ZT 5515 Compute Processor Board

Product Overview

This PICMG* 2.16-compliant, compute-centric processor board combines low price and performance with an optimized feature set to support a broad range of telecom and Internet applications. Modular and standards-based, the Intel® NetStructure™ ZT 5515 Compute Processor Board supports efficient time-to-market development. It is validated with the Intel NetStructure family of Packet Switched Backplane (PSB) products, and is designed to be interoperable with third-party PICMG 2.16-compliant components.

The single-slot ZT 5515 processor board is Intelligent Peripheral Management Interface (IPMI)-based to increase management capabilities and reliability. Performance comes from the Mobile Intel® Pentium® 4 Processor – M and Gigabit Ethernet channels.

The PICMG 2.16 specification builds on existing standards, providing an economical, scalable path to the next-generation Internet and voice communications network. It 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, and backplane interconnect speeds are user-definable and scalable from 10 Mbps to 4 GB per node slot.



Product Highlights

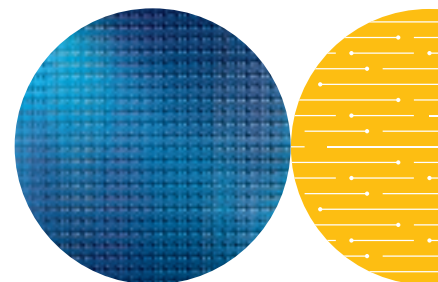
Computing Core

- Mobile Intel Pentium 4 Processor – M
- 400 MHz processor side bus and 512 KB L2 cache
- Supports 256 MB, 512 MB, 1 GB and 2 GB** ECC DDR SDRAM memory configurations
- Intel® 845E chipset

**2 GB only achievable with 512 MB addressing

Peripherals and I/O

- 16 MB on-board flash memory to support embedded applications
- Optional EIDE hard drive (up to 40 GB) or 32/33 PMC site
- Dual GB Ethernet
- Front USB, serial, and Ethernet ports
- Optional CompactFlash* support
- Onboard video
- RAM options are Error-Correcting Code (ECC) DDR SDRAM (non-registered)
- Optional Rear-Panel Transition board for additional I/O



Key Design Elements

Interoperability

The ZT 5515 processor board is designed to operate in a PICMG 2.16-compliant system such as the Intel® NetStructure™ ZT 5090 4U General Purpose Packet Switched Platform or ZT 5088 12U General Purpose Packet Switched Platform, both high-density computing platforms for carrier-grade telecom and Internet applications. It is also designed to interoperate with third-party Packet Switched Backplane (PSB) products. The ZT 5515 processor board 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 Intel® NetStructure™ ZT 7102 Chassis Management Module (CMM), a comprehensive, protected lights-out management scheme can be achieved.

Flash Memory and CompactFlash

The ZT 5515 processor board includes 16 Mbytes on-board Intel StrataFlash® memory, which supports the field-upgradeable system BIOS, and may store a bootable operating system image. Additional CompactFlash 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 software compatibility with operating systems and applications supporting standard IDE devices.

Ethernet

Two GB Ethernet channels, provided via on-board 10/100/1000 Mbps Ethernet LAN interfaces, deliver high-speed networking performance and can be routed to the backplane through the BIOS setup configuration. Link and activity status LEDs indicate Ethernet operation. One of the two Ethernet channels is also available on the front panel.

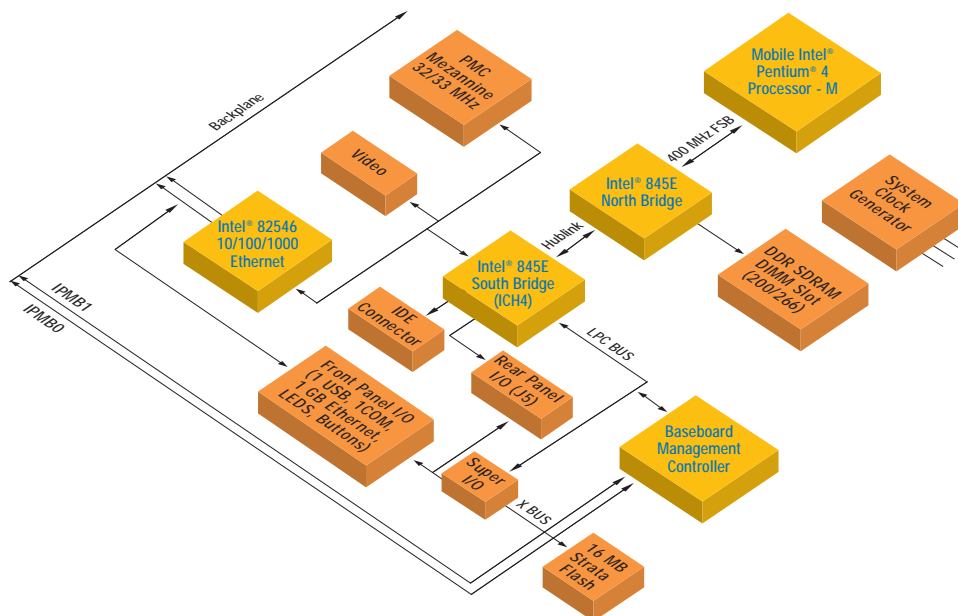
Watchdog Timer

An on-board, 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.

Software and Support

The ZT 5515 processor board comes standard with an embedded BIOS loaded in on-board flash. The BIOS is user-configurable to boot an operating system residing in local flash memory, on a local hard drive, or over a network. The ZT 5515 processor board is PC-compatible and will run operating systems developed for the PC. Enhanced support is also provided for Windows* 2000 Server, Windows* .NET Server, MontaVista* Linux*, and VxWorks*, including additional drivers for select peripherals and flash drives.

Intel® NetStructure™ ZT 5515 Compute Processor Board - Block Diagram



Specifications

The most current product specifications and order options are posted on the Web version of this data sheet:
developer.intel.com/design/network/products/cbp/z515.htm

The ZT 5515 Compute Processor Board 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
- IPMI 1.5-compliant for standards-based management
- Designed for NEBS 3

Power Req.

Typical

- | Power Req. | Typical |
|---|------------------|
| ■ Supply Voltage, V _{cc} | +5VDC +5%, -3% |
| ■ Supply Current, V _{cc} =5.0VDC | 22A |
| ■ Supply Voltage, V3.3V | +3.3VDC +5%, -3% |
| ■ Supply Current, V3.3V=3.3VDC | 13A |
| ■ Supply Voltage, V12.0V | +12VDC ±10% |
| ■ Supply Current, V12V=12.0V | 20mA |

Mechanical

- Measures 9.2" x 6.3" (233.35 mm x 160 mm)
- 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° C
 (without hard disk) -40° to +85° C
- Non-Condensing Relative Humidity: less than 95% at 40° C

Peripherals and I/O Interfaces

| I/O Interface | Front Panel | Rear Panel [†] | Compatibility |
|---------------|----------------|-------------------------|---------------|
| ■ COM 1 | RJ-45 | J5 | 16550 |
| ■ COM 2 | N/A | J5 | 16550 |
| ■ LPT 1 | N/A | N/A | IEEE 1284 |
| ■ VGA | 15-pin D-shell | J5 | Standard |
| ■ Keyboard | N/A | J5 | PS/2-style |
| ■ Mouse | N/A | J5 | PS/2-style |
| ■ Floppy | N/A | J5 | PC/AT |
| ■ EIDE | 2.5" | J5 | UltraDMA/100 |
| ■ Ethernet A | RJ-45 | J3 | Intel® 82546 |
| ■ Ethernet B | N/A | J3 | Intel® 82546 |
| ■ USB 0 | 4-pin USB | J5 [*] | USB Type A |
| ■ USB 1 | N/A | J5 [*] | USB Type A |

[†]The ZT 5515 processor board may be configured with a companion rear-panel transition board. The Intel® NetStructure™ ZT 4807 Rear-Panel Transition Board is specifically designed to support the available I/O signals.

^{*}Custom configuration only.

Order Information

The ZT 5515 Compute Processor Board may be ordered with the following options:

Processor Board Configurations

- ZT 5515A-1A: Mobile Intel® Pentium® 4 Processor - M (1.2 GHz) - Low Power, 32/33 PMC site
- ZT 5515A-1B: Mobile Intel® Pentium® 4 Processor - M (1.2 GHz) - Low Power, EIDE HDD site

The ZT 5515 processor board is designed to interoperate with the following Intel® NetStructure™ building blocks (please see individual products briefs for details):

Platforms

Intel® NetStructure™ ZT 5090 4U General Purpose Packet Switched Platform with seven node slots, one fabric slot, one chassis management module, PICMG 2.16-compliant

Intel® NetStructure™ ZT 5088 12U General Purpose Packet Switched Platform with 18 node slots, two fabric slots, PICMG 2.16-compliant midplane, two chassis management modules

Intel® NetStructure™ ZT 5085 12U Redundant Host Packet Switched Platform with 18 node slots, two fabric slots, PICMG 2.16-compliant midplane, two chassis management modules

Ethernet Switch

- Intel® NetStructure™ ZT 8101 Ethernet Switch - 10/100 24-Port Ethernet managed Layer 2/3 Switch with 2 Gbps uplinks
- Intel® NetStructure™ ZT 8102 Switch - 16-port Gigabit Ethernet managed Layer 2/3 switch with transparent switch-to-switch failover

Management

Intel® NetStructure™ ZT 7102 Chassis Management Module – IPMI based

Components

Intel® NetStructure™ ZT 4807 Rear-Panel Transition Board

Accessories

ZT 96080: IDE CompactFlash Carrier

Intel Access

| | |
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| Developer's Site: | developer.intel.com |
| Networking and Communications Design Components: | developer.intel.com/design/network |
| Other Intel Support: | Intel Literature Center developer.intel.com/design/litcentr/ (800) 548-4725 7 a.m. to 7 p.m. CST (U.S. and Canada) International locations please contact your local sales office. |
| General Information Hotline: | (800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST |

For more information, visit the Intel Web site at: developer.intel.com

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