Themis RES-22XEL Server

New Intel Xeon-based 2RU Rackmountable Server/Workstation

Themis Computer's new RES-22XEL Dual-Processor server/workstation delivers the robust design features of Themis' Rugged Enterprise Server (RES) family, in a low- cost, two rack unit (2RU) chassis. The Intel® technology based system is designed for demanding industrial and military applications. The rugged, expandable RES-22XEL reflects Themis Computer's extensive expertise, designing high performance systems for use in demanding environments. Combining Intel Xeon processor and E7505 chipset technologies with Themis' proprietary thermal and mechanical design techniques, the RES-22XEL delivers outstanding performance, flexibility and reliability, for high shock and vibration environments.

The RES-22XEL's single or dual Intel Xeon processors are connected to a 533/400-MHz Front Side bus. This modular system combines an 8X/4X AGP Pro expansion slot with two horizontal PCI-X / PCI slots, two removable SCSI drives and a CD-RW/DVD drive. The RES-22XEL is the only system in its size that features a 8X/4X AGP Pro graphics slot, enabling the system to provide graphics performance beyond the capabilities of similar systems with on-board AGP graphics support. Dual Intel Xeon processors with 533 MHz system bus provide up to 4.3GB/s of available bandwidth.

A Scalable Design for Outstanding Performance

The RES-22XEL's fast Intel Xeon processor and new E7505 chipset provides innovative technologies including Hyper-Threading Technology and next generation AGP 8X graphics. The RES-22XEL offers outstanding platform performance, dependability, and value. Its expansion versatility provides ample headroom for integration with current and future server platforms.

The new Intel E7505 chipset represents the next step in Intel server technology while providing high performance and scalability. The E7505 Memory Controller Hub (MCH) is the central hub for all data passing through the core system elements; such as the dual Xeon processors, and delivers 4.3GB/s of bandwidth across a 533 MHz system bus and up to 4.3GB/s of bandwidth across two high performance DDR SDRAM memory channels. The Intel 82801DB I/O controller Hub (ICH4) connects to the MCH and offers greater bandwidth for I/O-intensive peripherals.
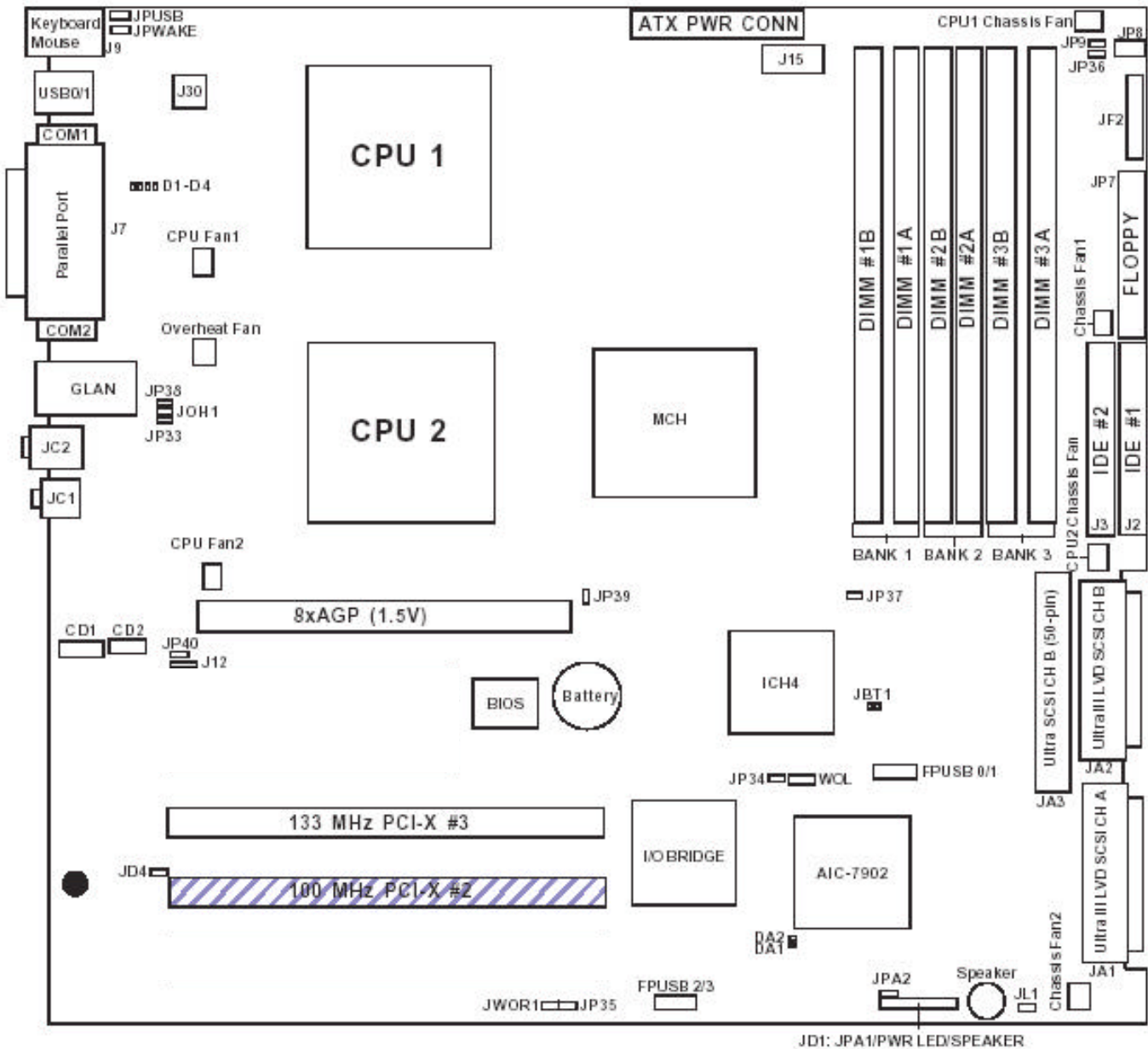
Themis RES-22XEL Features

- Intel Xeon processor speeds up to 3.2GHz
- Up to 12-GB of DDR-200/266 memory
- Supports U320 Zero-Channel (Adaptec 2010S) RAID
- Compact, rack-optimized design for space constrained

- Designed for reliability in extended operating environments
- HDD/CD-ROM/DVD/FDD storage options
- Suspend to RAM and Wake-on-LAN system management
- Linux and Windows ® 2000 OS support

RES-22XEL Specifications

- Single or Dual Intel Xeon processors - up to 3.2GHz with1MB L2 Cache
- Up to 12GB ECC registered DDR-200/266 memory
- Intel E7505 Chipset
- Rear panel access and I/O:
  - One (1) Gigabit Ethernet port (RJ45)
  - Two (2) RS-232 Serial ports (DB9)
  - One (1) Parallel Port (ECP/EEP)
  - PS/2 Keyboard and Mouse ports
  - Two (2) USB ports
  - Two (2) PCI/PCI-X 64-bit slots
  - Power connector and switch
  - Line In/Out, Microphone In (3.5mm Jacks)
  - One (1) 8X/4X AGP graphics slot (horizontal)

- Front panel incorporates the following:
  - Two (2) Removable SCSI drives
  - CD-RW/DVD drive
  - Status LEDs, reset switch
- Airflow direction: Front to Rear
- Operating Shock: up to 25 G @ 12-40 ms (MIL-901D)
- Operating Vibration: 0.5g from 4 – 50Hz
- Operating Temperature: 0 - 50°C
- Humidity: up to 90% non-condensing
- Dual 2x redundant fans
- Power Supply: Dual redundant, N+1 hot swappable110/220 VAC (460 Watt) autoranging power supplies
- Safety: UL 1950, CSA 950
- RFI/EMI: FCC class A
- Dimensions (HWD): 2U (89 mm) x 16.8" (19") x 20.0" (508.0 mm)

THEMIS
COMPUTER

RES-22XEL Motherboard Block Diagram

Keyboard Mouse J9
JPUSB
JPWAKE
USB0/1
COM1
Parallel Port
J7
D1-D4
J30
CPU Fan1
COM2
Overheat Fan
GLAN
JP38
JOH1
JP33
JC2
JC1
CPU Fan2
CD1 CD2
JP40
J12
8xAGP (1.5V)
JP39
BIOS
Battery
133 MHz PCI-X #3
JD4
100 MHz PCI-X #2
JWOR1 JP35
FPUSB 2/3
CPU 1
CPU 2
MCH
ICH4
JBT1
JP34 WOL
FPUSB 0/1
I/O BRIDGE
AIC-7902
DA2 DA1
JPA2
Speaker
JL1
JD1: JPA1/PWR LED/SPEAKER
ATX PWR CONN
J15
CPU1 Chassis Fan
JP9 JP8
JP36
JF2
JP7
FLOPPY
DIMM #1B
DIMM #1A
DIMM #2B
DIMM #2A
DIMM #3B
DIMM #3A
Chassis Fan1
IDE #2
IDE #1
BANK 1 BANK 2 BANK 3
CPU2 Chassis Fan
J3 J2
JP37
Ultra SCSI CH B (50-pin)
Ultra III LVD SCSI CH B
JA2
JA3
Ultra III LVD SCSI CH A
Chassis Fan2
JA1

Intel Xeon Processor-based Server Features

Processor Speeds to 3.2GHz with 1MB L2 cache

Features
• Dual-processor enabled
• Intel NetBurst microarchitecture
• Hyper-Threading Technology
• Rapid Execution Engine
• Streaming SIMD Extensions 2 (SSE2)

Advanced Dynamic Execution
• Double Precision Floating Point
Cache – Level 1: Execution Trace cache
      Level 2: 1MB or
          512KB Advanced Transfer cache
RAM   Dual-channel DDR
I/O Bandwidth Up to 3.2-GB/sec
System Bus
Frequency   533/400-MHz Front side Bus