AMC Module

AM 100/20x

N - Series

Dual-Core Intel® Xeon® Processor AdvancedMC® Module

RoHS 2002/95/EC

APPLICATIONS

The AM 100/20x is a high performance double-width full height AdvancedMC® processor module. The module supports the 2.0 GHz Dual-Core Intel® Xeon® processor LV and the 1.66 GHz Dual-Core Intel® Xeon® processor ULV, with an Intel® 3100 server chipset and up to 16 Gbytes soldered DDR2-400 ECC memory. The AM 100/20x is designed in compliance to AMC.0, AMC.1 Type 8 (x8 PCI Express™), AMC.2 Type E2 (2x Gigabit Ethernet) and AMC.3 Type S2 (2x SATA ports). The module also features SXGA graphics interface (digital & analog), four USB 2.0 ports, two RS232 ports and two additional SATA ports. Supporting full hot swap and IPMI capabilities with a range of industry standard operating systems, the AM 100/20x is designed for use in AdvancedTCA® or MicroTCA™ applications in the telecommunications, scientific, and defense markets. Application examples include media-servers or blade-servers.

HIGHLIGHTS

- Double-width, full height AdvancedMC processor module:
  - compliant to AMC.0
- 2.0 GHz Dual-Core Intel Xeon processor LV or 1.66 GHz Dual-Core Intel Xeon processor ULV:
  - Sossaman Dual-Core
  - 667 MHz front Side Bus
  - 2 Mbytes L2 cache
  - CPU fan not required
- Up to 16 Gbytes of soldered DDR2-400 SDRAM (with ECC)
- Intel 3100 server chipset:
  - up to 3.2 Gbytes/sec peak memory bandwidth
  - integrated memory controller and IO Hub
- 2 Gigabit Ethernet (Serdes type) interfaces:
  - AMC.2 Type E2
- x8 PCI Express fabric port:
  - AMC.1 Type 8
- 4 x USB ports:
  - 2 front and 2 rear
- Four Serial ATA interfaces on rear I/O:
  - AMC.3 Type S2
  - two additional interfaces in connector extended options region
- SXGA DVI-I graphics interface:
  - analog and digital
- 2 x RS232 serial channel interfaces:
  - 1 front and 1 rear
- 1 Mbyte of BIOS Flash EPROM
- Hot swap compliant:
  - compliant to AMC.0
- IPMI (Intelligent Platform Management Interface):
  - IPMI Version 1.5 according to AMC.0
- Watchdog timer and Long Duration Timer
- Support for Linux®, Windows® 2000, Windows® Server 2003, Windows® XP, Windows® XP Embedded and QNX®

CONCURRENT TECHNOLOGIES

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Specification

Central Processor

- 2.0 GHz GHz Dual-Core Intel® Xeon® LV processor or 1.66 GHz Dual-Core Intel® Xeon® ULV processor:-
  - → uses µFC-PGA 478 (micro Flip-Chip Pin Grid Array) package
  - → 667 MHz Front Side Bus (FSB)
  - → 2 Mbytes of shared secondary (L2) on-die cache
  - → no CPU fan
- utilizes 64-bit Intel® 3100 server chipset:-
  - → single chip chipset with integrated memory and I/O controllers
- provision for XDP debug port

DRAM

- supporting up to 16 Gbytes DDR2-400 ECC SDRAM:-
  - → up to 16 Gbytes soldered on-board
  - → single-bit error correction
  - → gives a peak bandwidth of 3.2 Gbytes/s
- accessible from processor and AMC connector

PICMG® AdvancedMC® Interfaces

- hot swap compliant to AMC.0
- x8 PCI Express™ fabric connection:-
  - → AMC.1 Type 8
  - → transfer rate up to 4 Gbytes/s
  - → supported by Enhanced DMA (E-DMA) in the Intel server chipset MCH
  - → can be used as two x4 interfaces in dual redundant fabric systems
- rear I/O compliant to AMC.1 specification

Hard Disk Interfaces

- Serial ATA150:-
  - → AMC.3 Type S2
  - → four channel support via AMC connector
  - → transfer rate up to 150 Mbytes/s
- implemented by Intel server chipset

Ethernet Interfaces

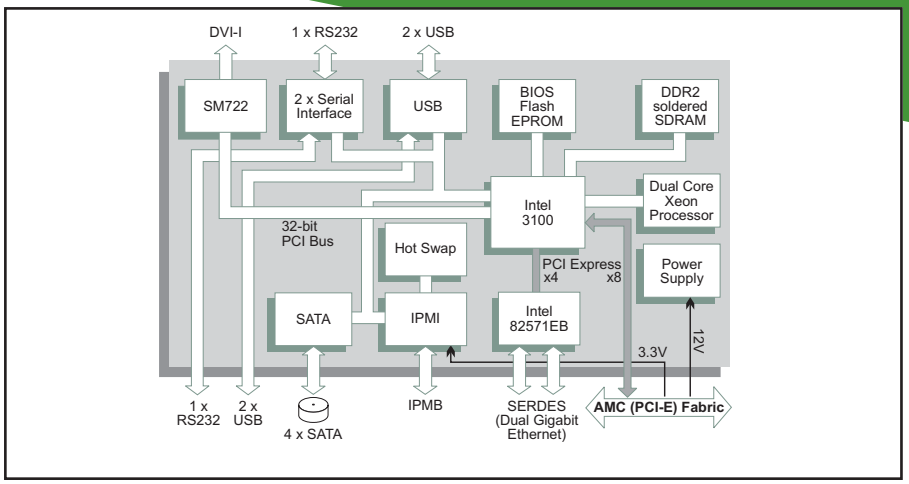
- dual Gigabit Ethernet channels:-
  - → AMC.2 Type E2
  - → supporting Serdes type 1000BX via AMC connector
- implemented by Intel® 82571EB LAN Controller via x4 PCI Express serial bus

Graphics Interface

- implemented by Silicon Motion SM722 & Silicon Image Sil164 providing:-
  - → digital & analog graphics
  - → 8 Mbytes video memory
  - → resolutions up to 1280 x 1024; supporting up to 16M colors
  - → digital & analog SXGA accessed via front panel DVI-I connector

Serial Interfaces

- 2 x RS232 serial channels:-
  - → 1 channel via 9-way D-type front panel connector
  - → 1 channel via AMC connector
- 16550 compatible UART
- modem control signals supported:-
  - → front channel supports RI, CTS, RTS, DSR, DTR and DCD
  - → rear channel supports CTS and RTS only



Other Peripheral Interfaces

- PC-compatible Real Time Clock (Year 2000 compliant)
- watchdog timer
- 1 x 32-bit Long Duration Timer with processor interrupt capability
- CPU temperature monitor; voltages monitor:-
  - → all accessible via IPMI
- 4 x USB 2.0 (Universal Serial Bus) interfaces:-
  - → 2 channels via front panel
  - → 2 channels via AMC connector

IPMI

- IPMI Version 1.5 according to AMC.0
- on-board BMC (Baseboard Management Controller)
- supports 8 Kbytes of non-volatile memory

Flash EPROM

- 1 Mbyte of BIOS Flash EPROM - 8-bits wide

Firmware Support

- Phoenix® TrustedCore™ Server
- comprehensive Power-On Self-Test (POST)
- LAN boot firmware included

Software Support

- support for Linux®, Windows® 2000, Windows® Server 2003, Windows® XP, Windows® XP Embedded and QNX®

Electrical Specification

- +3.3V@TBD A; ±5%
- +12V@TBD A; ±2V

Safety

- PCB (PWB) manufactured with flammability rating of 94V-0

Environmental Specification

- operating temperature:-
  - → 0°C to +55°C (N-Series)
- 10% to 90% Relative Humidity, non-condensing (operating)
- -40°C to +85°C (storage)
- 10% to 90% Relative Humidity, non-condensing (storage)

Mechanical Specification

- AMC.0 double-width full-height form-factor: 180.6mm x 148.5mm (7.1 inches x 5.8 inches)
- shock:
  20g, 11ms, ½ sine (operating);
  30g, 11ms, ½ sine (non-operating)
- vibration:
  5Hz-2000Hz at 2g, 0.38mm peak displacement (operating);
  5Hz-2000Hz at 5g, 0.76mm peak displacement (non-operating)

ORDERING INFORMATION

Order Number	Product Description (Hardware)
AM 100/201-0y	1.66 GHz Dual-Core Xeon™ Processor, dual-width AMC
AM 100/202-0y	2.0 GHz Dual-Core Xeon™ Processor, dual-width AMC

Replace the order number suffix (y) with selections from the following:

where y =
1 - 1 Gbyte
2 - 2 Gbytes
4 - 4 Gbytes
6 - 8 Gbytes
9 - 16 Gbytes

Datasheet Code 1504/1106