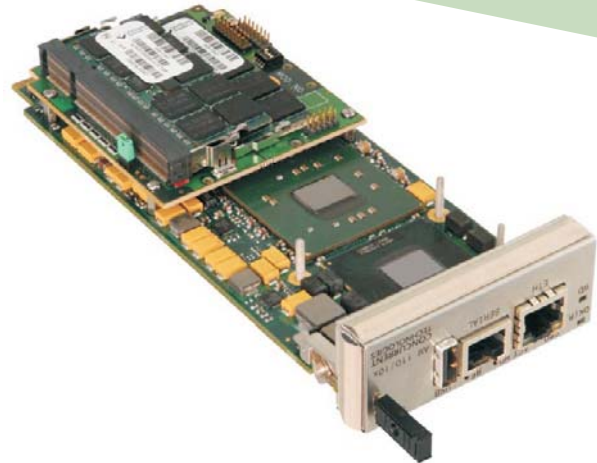


## Intel® Core™ 2 Duo Processor AdvancedMC™ Module



### APPLICATIONS

The AM 110/10x is a high performance single-width full height AdvancedMC™ processor module. The module supports the 2.16 GHz Intel® Core™ 2 Duo processor T7400 or the 1.5 GHz Intel® Core™ 2 Duo processor L7400, with an Intel® 3100 server chipset and up to 8 Gbytes DDR2-400 ECC memory. The AM 110/10x 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 three USB 2.0 ports, two RS232 ports, two additional SATA ports and one additional Gigabit Ethernet interface. Supporting full hot swap and IPMI capabilities with a range of industry standard operating systems, the AM 110/10x 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

- Single-width, full height AdvancedMC processor module:
  - compliant to AMC.0
- 2.16 GHz or 1.5 GHz Intel Core 2 Duo processor:
  - 64 Kbytes L1 cache
  - 4 Mbytes L2 cache
  - Intel® 64 (or Intel® EM64T) 64-bit computing support
  - low power processor; no CPU fan needed
- Up to 8 Gbytes of DDR2-400 SDRAM (with ECC)
- Intel 3100 server chipset:
  - up to 3.2 Gbytes/sec peak memory bandwidth
  - integrated memory controller and IO Hub
- 3 x Gigabit Ethernet interfaces:
  - AMC.2 Type E2 (2 interfaces, Serdes type)
  - 1 additional interface via front panel RJ45 connector
- x8 PCI Express fabric port:
  - AMC.1 Type 8
- 3 x external USB ports:
  - 1 front and 2 rear
- Support for USB Flash Disk Module
- 4 x Serial ATA interfaces on rear I/O:
  - AMC.3 Type S2
  - two additional interfaces in connector extended options region
- 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® Server 2003, Windows® XP, Windows® XP Embedded, Windows® 2000 and QNX®

## Central Processor

- 2.16 GHz Intel® Core™ 2 Duo processor T7400 or 1.5 GHz Intel® Core™ 2 Duo processor L7400:-
  - using a  $\mu$ FC-BGA 478 (micro Flip-Chip Ball Grid Array) package
  - 64 Kbytes of primary (L1) on-die cache
  - 4 Mbytes of shared secondary (L2) on-die cache
  - 667 MHz Front Side Bus (FSB)
  - Intel® 64 (or Intel® EM64T) 64-bit computing support
  - no CPU fan; low power processor
- 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 8 Gbytes DDR2-400 ECC SDRAM:-
  - up to 8 Gbytes via two registered SODIMM sockets
  - 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
  - external or on-board fabric clock support
- rear I/O compliant to AMC.1 specification

## Storage Interfaces

- Serial ATA150:-
  - AMC.3 Type S2
  - four channel support via AMC connector
  - transfer rate up to 150 Mbytes/s
- support for USB 2.0 Flash Disk Module

## Ethernet Interfaces

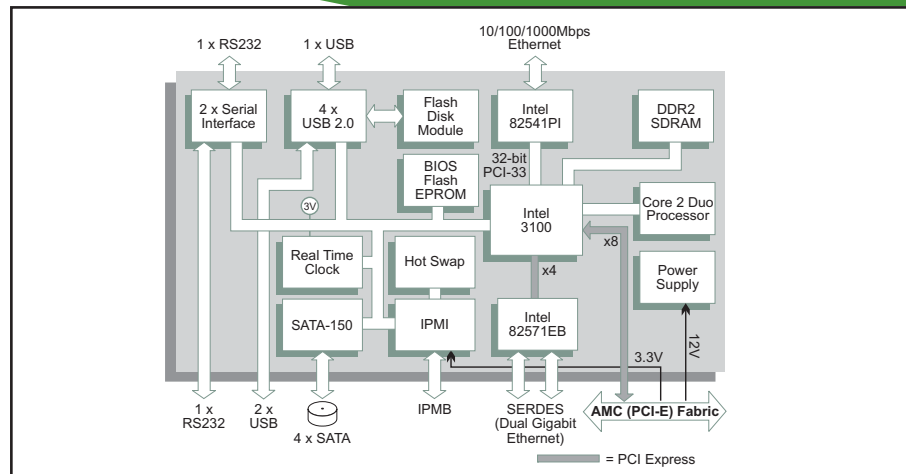
- dual Gigabit Ethernet interfaces via AMC connector:-
  - AMC.2 Type E2
  - supporting Serdes type 1000BX
  - implemented by Intel® 82571EB LAN Controller via x4 PCI Express port
- 1 x front panel 10/100/1000 Mbps interface accessed via RJ45 connector:-
  - implemented by an Intel® 82541PI LAN controller via 32-bit PCI Bus

## Serial Interfaces

- 2 x RS232 serial channels:-
  - 1 channel via RJ45 front panel connector
  - 1 channel via AMC connector
- 16550 compatible UART
- modem control signals supported:-
  - front channel supports CTS, RTS, DSR, DTR and DCD
  - rear channel supports CTS and RTS only

## 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® Server 2003, Windows® XP, Windows® XP Embedded, Windows® 2000 and QNX®

## Other Peripheral Interfaces

- PC-compatible Real Time Clock (Year 2000 compliant)
- watchdog timer
- 1 x 35-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:-
  - 1 channel via front panel
  - 2 channels via AMC connector
  - 1 channel supports USB Flash Disk Module

## IPMI

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

## Electrical Specification

- +3.3V@TBD A;  $\pm 5\%$
- +12V@TBD A;  $\pm 2\%$

## Safety

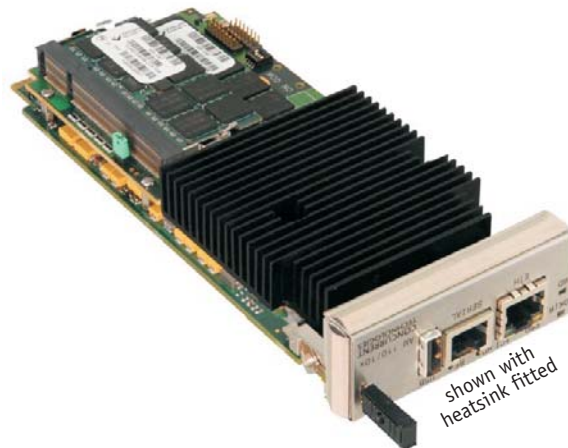
- PCB (PWB) manufactured with flammability rating of 94V-0

## Environmental Specification

- operating temperature:-
  - 0°C to +55°C
- 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 single-width full-height form-factor: 180.6mm x 73.5mm (7.1 inches x 2.9 inches)



## ORDERING INFORMATION

### Order Number Product Description (Hardware)

AM 110/101-xy 1.5 GHz Core 2 Duo processor L7400, single-width AMC  
 AM 110/102-xy 2.16 GHz Core 2 Duo processor T7400, single-width AMC

Replace the order number suffix (xy) with selections from the following:  
 where x = USB Flash Disk Module options where y = memory size

0 - no USB Flash Disk Module fitted  
 contact sales for other Flash Disk Module options

1 - 1 Gbyte  
 2 - 2 Gbytes  
 4 - 4 Gbytes  
 6 - 8 Gbytes