

3rd Generation Intel® Core™ Processor AdvancedMC™ Module



APPLICATIONS

The AM 92x/x1x is a high performance single-width, full or mid-height, AdvancedMC™ processor module supporting the 3rd generation Intel® Core™ i7 processor and Mobile Intel® QM77 Express Chipset with up to 16 Gbytes of DDR3-1600 ECC DRAM. The AM 92x/x1x is designed in compliance to AMC.0, AMC.2 Type E2 (2 x Gigabit Ethernet) and AMC.3 Type S2 (2 x SATA ports). The module also features up to three USB 2.0 ports, two RS232 ports, two additional SATA ports, a x2 PCIe Gen 2

port, one additional Gigabit Ethernet interface and a DisplayPort interface. Supporting full hot swap and IPMI capabilities with a range of industry standard operating systems, the AM 92x/x1x 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 or mid-height, AdvancedMC™ processor module:
 - compliant to AMC.0
- Can be configured for compliance with the requirements of the SCOPE Alliance
- 3rd generation Intel® Core™ i7 processor options:
 - 4-core 2.1 GHz Intel Core i7-3612QE processor
 - 2-core 2.5 GHz Intel Core i7-3555LE processor
- Up to 16 Gbytes of DDR3-1600 DRAM with ECC
- 3 x Gigabit Ethernet interfaces:
 - AMC.2 Type E2 (2 interfaces, SerDes type)
 - 1 additional interface via front panel RJ45 connector
- Up to 3 x external USB 2.0 ports:
 - 1 front and optionally 2 rear
- Support for onboard SATA Flash Disk Module
- Up to 4 x Serial ATA interfaces on rear I/O:
 - AMC.3 Type S2
 - optionally two additional interfaces
- 2 x RS232 serial channel interfaces:
 - 1 front and optionally 1 rear
- DisplayPort interface on front panel
- 8 Mbytes 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 2008, Windows® 7, Windows® Embedded Standard 7, Windows® XP, Windows® XP Embedded and VxWorks®

Central Processor

- 3rd generation Intel® Core™ i7 processors:
 - 4-core 2.1 GHz Intel Core i7-3612QE processor
 - 2-core 2.5 GHz Intel Core i7-3555LE processor
 - up to 6 Mbytes of shared Last-Level on-die cache
- utilizes Mobile Intel® QM77 Express Chipset

DRAM

- up to 16 Gbytes DDR3-1600 ECC DRAM:
 - soldered
 - single bit error correction
 - peak bandwidth of 25 Gbytes/s
 - dual channel architecture
- accessible from processor and AMC connector

PICMG AdvancedMC™ Interfaces

- hot swap compliant to AMC.0
- can be configured for compliance with the requirements of the SCOPE Alliance

Storage Interfaces

- up to 5 x Serial ATA interfaces:
 - AMC.3 Type S2
 - optionally two additional interfaces in AMC connector extended options region
 - supports an optional SATA Flash Disk Module with a minimum capacity of 8 Gbytes

Ethernet Interfaces

- dual SerDes interfaces via AMC connector:
 - AMC.2 Type E2
 - supporting 1000Base-BX
 - implemented by Intel® 82580DB LAN Controller via x4 PCI Express port
- 1 x front panel 10/100/1000 Mbps interface accessed via RJ45 connector:
 - implemented by an Intel® 82579LM Gigabit Ethernet PHY

Serial Interfaces

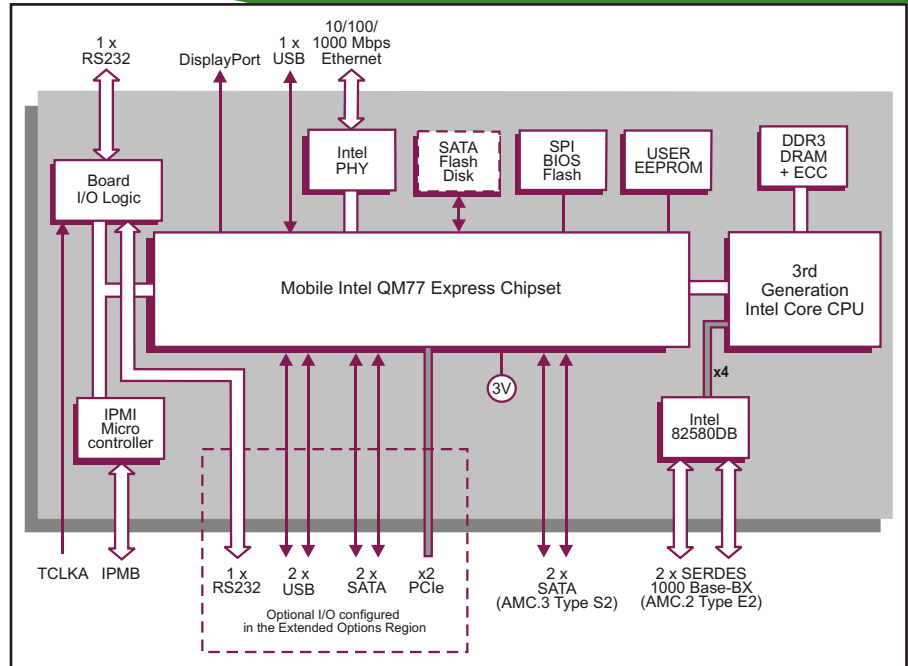
- up to 2 x RS232 serial channels:
 - 1 channel via IEEE1394 front panel connector
 - optionally 1 channel in AMC connector extended options region
- 16550 compatible UART
- modem control signals supported:
 - front channel supports Tx/D, Rx/D, CTS and RTS
 - rear channel supports Tx/D, Rx/D, CTS and RTS

Display Interface

- DisplayPort connector on front panel
- maximum display resolutions up to 2560x1600, 32-bit, 60Hz
- support for Microsoft® DirectX 11
- support for OpenGL 3.1 and OpenCL 1.1

Other Peripheral Interfaces

- PC-compatible Real Time Clock
- watchdog timer
- 1 x 32-bit Long Duration Timer with processor interrupt capability
- CPU temperature monitor; voltages monitor:
 - all accessible via IPMI
- up to 3 x USB 2.0 ports:
 - 1 port via front panel
 - optionally 2 ports in AMC connector extended options region
- PCI Express x2 port option in AMC connector extended options region



Software Support

- support for Linux®, Windows® Server 2008, Windows® 7, Windows® Embedded Standard 7, Windows® XP, Windows® XP Embedded and VxWorks®

Firmware Support

- Insyde Software InsydeH20™ BIOS:
 - includes Compatibility Support Module
- based upon Intel® Platform Innovation Framework for EFI
- comprehensive Power-On Self-Test (POST)
- LAN boot firmware included

Flash EPROM

- 8 Mbytes of BIOS SPI Flash EPROM

User EEPROM

- 256k-bits User EEPROM
- storage of OS boot parameters

Telecoms Clock

- TCLKA clock input to on board logic
- up to 19.44MHz LVDS input
- increments 32-bit counter on board logic

IPMI

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

Electrical Specification

- +12V @ 3.0A (typical current figure with Core i7-3612QE processor, 8 Gbytes DRAM), voltage ±2V
- +3.3V @ less than 0.10A, voltage ±5%

Safety

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

Environmental Specification

- operating temperature:
 - 0°C to +55°C (N-Series, all processors for full-height AMC, contact sales for mid-height AMC)
- storage temperature: -40°C to +85°C
- 5% to 95% Relative Humidity, non condensing (operating or storage)

Mechanical Specification

- AMC.0 single-width form-factor
- 180.6mm x 73.5mm (7.1 inches x 2.9 inches)
- full-height panel: 29mm (1.1 inches):
 - mid-height version available

ORDERING INFORMATION

Order Number Product Description (Hardware)

| | |
|---------------|--------------------------------|
| AM 923/x1x-yz | 2-core Intel® Core™ i7 AMC SBC |
| AM 925/x1x-yz | 4-core Intel® Core™ i7 AMC SBC |

For the order number suffix (yz) options please contact your local sales office:

Where y = Front/Rear I/O options
y - Front/Rear I/O configurations

Where z = DRAM size
z - up to 16 Gbytes