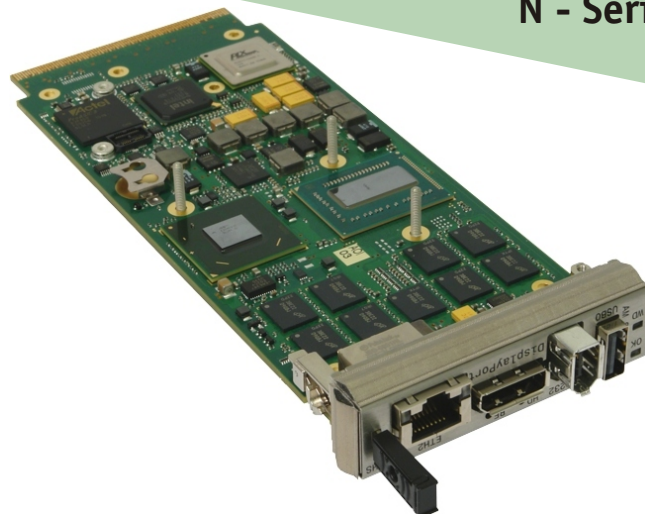


3rd Generation Intel® Core™ Processor AdvancedMC™ Module



APPLICATIONS

The AM 91x/x1x is a high performance single-width, full or mid-height, AdvancedMC™ processor module supporting 3rd generation Intel® Core™ processors and the Mobile Intel® QM77 Express Chipset with up to 16 Gbytes of DDR3-1600 ECC DRAM. The AM 91x/x1x is designed in compliance to AMC.0, AMC.1 Type 8 (x8 PCI Express®, Gen 1, Gen 2 or Gen 3), 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 ports, two RS232 ports, two additional SATA ports, one additional Gigabit Ethernet interface and an optional DisplayPort interface. Supporting full hot swap and IPMI capabilities with a range of industry standard operating systems, the AM 91x/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™ processor:
 - 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
- x8 PCI Express® (Gen 1, Gen 2 and Gen 3) fabric port:
 - AMC.1 Type 8
- Up to 3 x external USB ports:
 - 1 front and optionally 2 rear
- Up to 4 x Serial ATA interfaces on rear I/O:
 - AMC.3 Type S2
 - optionally two additional interfaces
- Support for onboard SATA Flash Disk Module
- 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
- Optional support for:
 - software tool for the PCIe fabric interface
 - Trusted Platform Module (TPM)
- IPMI (Intelligent Platform Management Interface):
 - IPMI according to AMC.0
- Watchdog timer and Long Duration Timer
- Support for Linux®, Windows®, QNX® and VxWorks®

Central Processor

- 3rd generation Intel® Core™ 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 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
- single x8 or dual x4 PCI Express® fabric connection:
 - AMC.1 Type 8
 - support for Gen 1, Gen 2 and Gen 3
 - transfer rate up to 8 Gbytes/s
 - supported by a DMA engine in the PCI Express switch
 - can be used as two x4 interfaces in dual redundant fabric systems
 - external or on-board fabric clock support
- supported by Fabric Interconnect Networking software (FIN-S), see SW FNS/nnn datasheet
- rear I/O compliant to AMC.1 specification
- 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 SATA600 interfaces
 - optionally two additional interfaces in AMC connector extended options region
 - optional SATA Flash Drive Module supports at least 8 Gbytes

Ethernet Interfaces

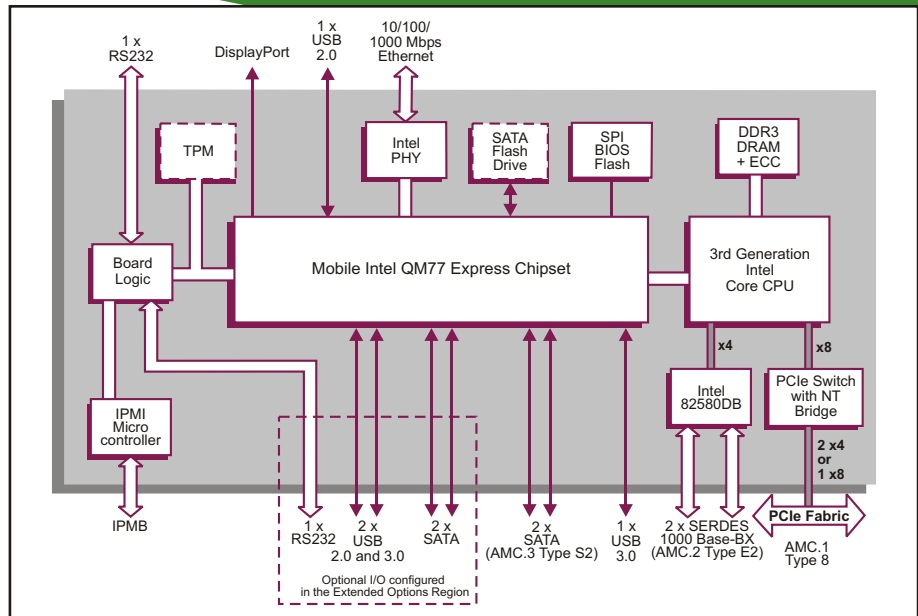
- dual SerDes interfaces via AMC connector:
 - AMC.2 Type E2
 - supporting 1000Base-BX
 - implemented by Intel® 82580DB LAN Controller via x4 PCI Express port
- 1 x front panel 10/100/1000 Mbps interface accessed via RJ45 connector:
 - implemented by an Intel® 82579LM Gigabit Ethernet PHY

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

- optional DisplayPort connector on front panel
- maximum display resolutions up to 2560x1600, 32-bit, 60Hz
- support for Microsoft® DirectX 10
- support for OpenGL 2.0, Windows and Linux



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 ports:
 - 1 x USB 2.0 port via front panel
 - optionally 2 x USB 3.0/2.0 ports in AMC connector extended options region

Trusted Platform Module

- optional Trusted Platform Module (TPM)

Software Support

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

IPMI

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

Electrical Specification

- +12V @ 3.6A (typical current figure with 2.1 GHz Intel Core i7-3612QE processor, 8 Gbytes DRAM), voltage ±2V
- +3.3V @ less than 0.1A, 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 and mid-height AMCs)
- 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 91x/11x-yz	3rd Generation Intel Core processor, full-height AMC
AM 91x/31x-yz	3rd Generation Intel Core Processor, mid-height AMC

For accessories please contact your local sales office.

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

Where y = rear I/O configurations
y - rear I/O options

Where z = DRAM size
z - up to 16 Gbytes