AM E4x/msd

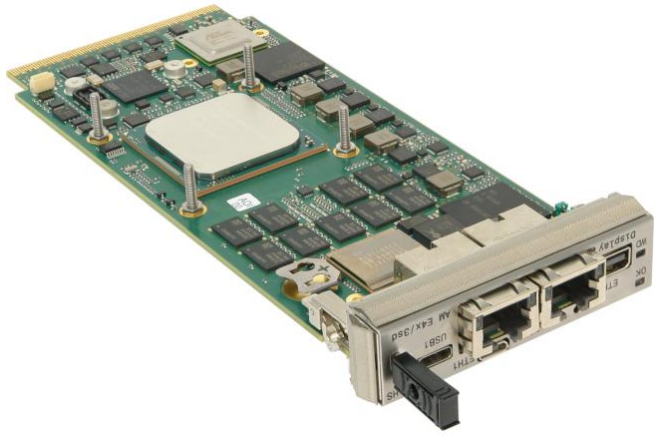
N, E - Series

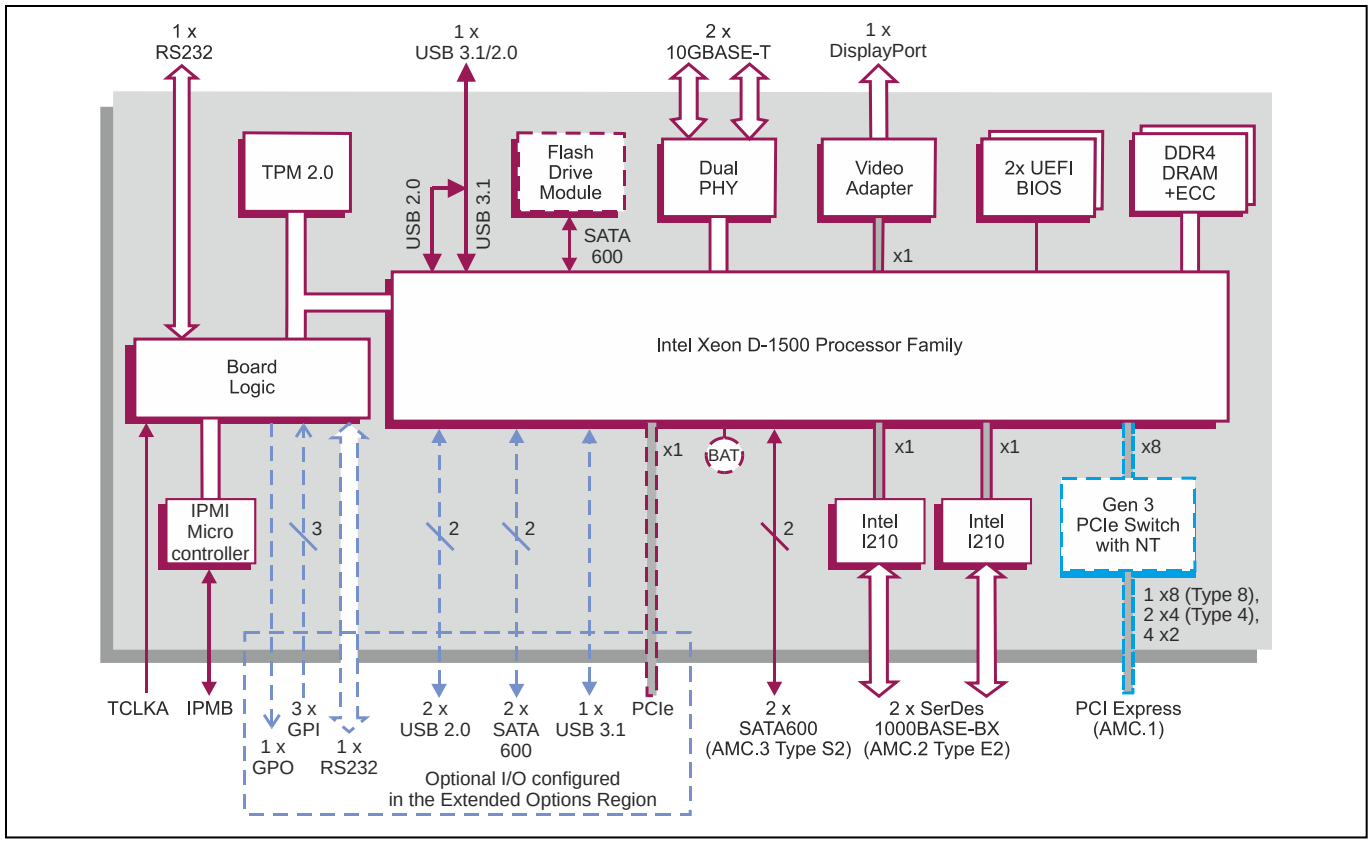
AdvancedMC® Module based on Intel® Xeon® Processor D-1500 Product Family

Key Features

AM E4x/msd is an AdvancedMC® Single Module (Mid-size or Full-size), based on a long life-cycle, high performance processor with up to 12-cores, large memory capacity, local storage and support for virtualization.

- Intel® Xeon® Processor D-1500 Family
- Gen 3 PCI Express® fabric interface options for flexible connection to other payloads
- Front panel connections including:
  - 2 x 10GBASE-T Ethernet for networking
  - DisplayPort™, USB and RS232 interfaces for configuration
- Optional Flash Drive Module for local boot and data storage
- Optional I/O in extended options region





Concurrent Technologies Plc 4 Gilberd Court, Colchester, Essex, CO4 9WN, UK
Tel: +44 (0)1206 752626

Concurrent Technologies Inc. 400 West Cummings Park, Suite 1300, Woburn, MA 01801, USA
Tel: (781) 933 5900

email:info@gocct.com **www.gocct.com**

Specification

AdvancedMC Computer Board

- AdvancedMC® (AMC) Module utilizing the Intel® Xeon® processor D-1500 family
- AMC form factor is a Single Module supporting:
  - → Mid-size front panel
  - → Full-size front panel
- AMC Fabric Interface supports:
  - → PCI Express® (PCIe®)

Central Processor

- 8-core Intel® Xeon® processor D-1539:
  - → 12 Mbytes Cache, 1.60 GHz
- 12-core Intel® Xeon® processor D-1559:
  - → 18 Mbytes Cache, 1.50 GHz
- Intel® Advanced Vector Extensions 2
- Intel® AES New Instructions
- server class processing cores in a System-on-a-Chip package

DRAM

- up to 32 Gbytes soldered DDR4 ECC DRAM:
  - → single bit error correction and dual bit error detection
  - → peak bandwidth of up to 34.1 Gbytes/s
  - → dual channel architecture
- accessible from processor and AMC connector

PICMG AdvancedMC Interfaces

- PCIe fabric connection (build option):
  - → AMC.1 Type 8 or Type 4 (1 x8 or 2 x4 PCIe port)
  - → plus user configurable to 4 x2 PCIe port
  - → support for Gen 1, Gen 2 and Gen 3
  - → transfer rate up to 8 Gbps
  - → supported by a DMA engine in the PCIe switch
  - → external or on-board fabric clock support
- hot swap compliant to AMC.0
- rear I/O compliant to AMC specification

Storage Interfaces

- up to 4 x SATA interfaces:
  - → AMC.3 Type S2 (2 x SATA600)
  - → 2 x SATA in AMC connector extended options region (build option)
- optional SATA600 Flash Drive Module

Ethernet Interfaces

- dual SerDes interfaces via AMC connector:
  - → AMC.2 Type E2 (2 x 1000BASE-BX)
  - → implemented using two Intel® Ethernet Controller I210-IS devices
- 2 x front panel 10 Gigabit Ethernet interfaces via RJ45 connectors:
  - → 10GBASE-T
  - → 1000BASE-T

Serial Interfaces

- 1 x RS232 interface via front panel Micro USB connector:
  - → supports TxD and RxD
- 1 x RS232 interface in AMC connector extended options region (build option):
  - → TxD, RxD, RTS and CTS
- 16550 compatible UARTs

Display Interface

- 1 x DisplayPort™ v1.1 interface via front panel Mini DisplayPort connector:
  - → up to 1920 x 1080 @ 60 Hz
  - → resolution is dependent on the device driver

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
- 1 x GPO and 3 x GPI in AMC connector extended options region (build option)
- up to 5 x USB ports:
  - → 1 x USB 3.1 (Gen 1) / USB 2.0 via front panel (USB Type C connector)
  - → 1 x USB 3.1 (Gen 1) and 2 x USB 2.0 in AMC connector extended options region (build option)
- x1 PCIe port in AMC connector extended options region (build option):
  - → support for Gen 1, Gen 2 and Gen 3

Telecom Clock

- TCLKA clock input to board logic:
  - → increments 32-bit counter in board logic

Software Support

- supports Linux® and Windows®
- for other operating systems contact Concurrent Technologies for further information, e.g. VxWorks®
- options available for enhanced PCIe drivers

Board Security Features

- Trusted Platform Module (TPM 2.0)
- option for Sanitization Utility Software Package
- option for proprietary board-level security features

Firmware Support

- UEFI boot firmware (BIOS):
  - → UEFI 2.4 support
  - → includes Compatibility Support Module
  - → implements Secure Boot
- LAN boot firmware included

Non-Volatile Memory

- 16 Mbytes of SPI BIOS Flash EEPROM, dual redundant devices

IPMI

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

Electrical Specification

- typical current consumption for 12-core processor (1.50 GHz) with 32 Gbytes DRAM:
  - → +12V @ 4.2A, voltage ±2V
- +3.3V @ less than 0.13A, voltage ±5%

Safety

- PCB (PWB) manufactured with flammability rating of UL94V-0

Environmental Specification

- operating temperature:
  - → 0°C to +55°C (N-Series)
  - → -25°C to +70°C (E-Series, Full-size only)
  - → all processors for Full-size AMC
  - → selected processor for Mid-size AMC
- non-operating temperature: -40°C to +85°C
- 5% to 95% Relative Humidity, non-condensing

Mechanical Specification

- AMC.0 Single Module form-factor 180.6mm x 73.5mm (7.1 inches x 2.9 inches):
  - → Full-size panel: 29mm (1.1 inches)
  - → Mid-size panel: 19mm (0.75 inches)

Related Products

- Development systems are available. Contact Concurrent Technologies for more details

Compatible with Legacy Module

- range of rear I/O compatible with AM F5x/msd processor module

Please contact your local Concurrent Technologies sales office for further details on board build options and accessories.

Datasheet Code 1824/0620