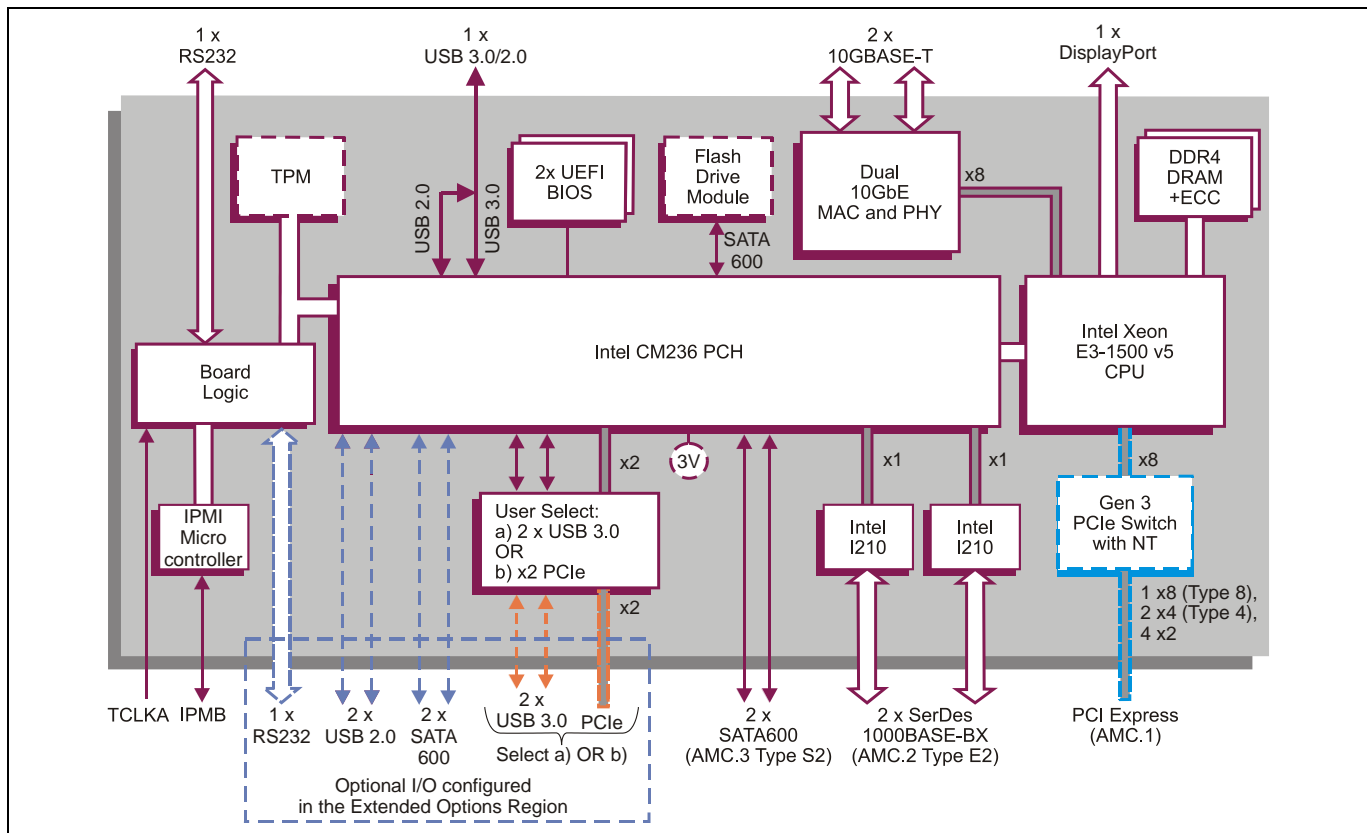
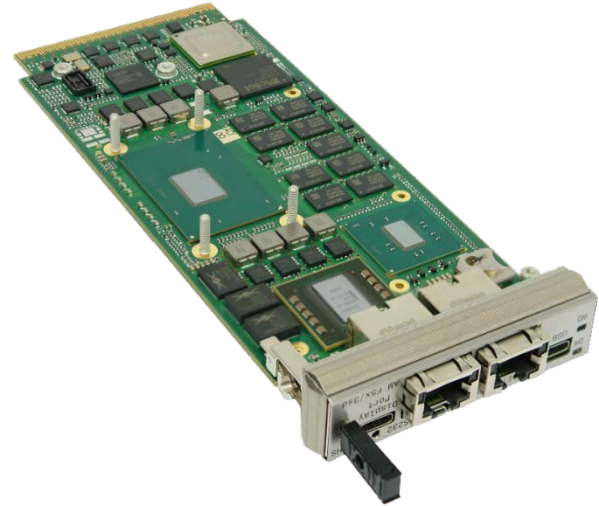


AdvancedMC™ Module based on Intel® Xeon® Processor E3-1500 v5

Key Features

AM F5x/msd is an AdvancedMC™ Single Module (Mid-size or Full-size) based on an Intel® Skylake microarchitecture processor for long life-cycle, high performance applications. Compatible with legacy AMC modules.

- Intel® 4-core processor variants for CPU or GPU intensive processing loads
- Gen 3 PCI Express® fabric interface options for flexible connection to other payloads
- Front panel connections including:
 - ➔ 2 x 10GBASE-T Ethernet for networking
 - ➔ 1 x DisplayPort®, USB and Serial for configuration
- Optional Flash Drive Module for local boot and data storage
- Optional I/O in extended options region



Central Processor

- Intel Xeon processors supported:
- 4-core Intel® Xeon® Processor E3-1515M v5:
 - 8 Mbytes Cache, 2.80 GHz
 - Intel® Iris™ Pro Graphics P580
- 4-core Intel® Xeon® E3-1505M v5:
 - 8 Mbytes Cache, 2.80 GHz
 - Intel® HD Graphics P530
- 4-core Intel® Xeon® E3-1505L v5:
 - 8 Mbytes Cache, 2.00 GHz
 - Intel HD Graphics P530
- utilizes the Intel® CM236 Platform Controller Hub

DRAM

- 16 Gbytes soldered DDR4 ECC DRAM:
 - single bit error correction
 - dual channel architecture
- accessible from processor and AMC connector

PICMG® AdvancedMC™ Interfaces

- PCI Express® (PCIe®) fabric connection:
 - AMC.1 Type 8 or Type 4 (1 x8 or 2 x4 PCIe)
 - 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 SATA600 interfaces:
 - AMC.3 Type S2 (2 x SATA)
 - factory build option for 2 x SATA in AMC connector extended options region
- 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:
 - 10GBASE-T
 - 1000BASE-T
 - 100BASE-TX full-duplex
 - implemented using an Intel® Ethernet Controller X540-AT2 device

Serial Interfaces

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

Display Interface

- DisplayPort® interface via front panel:
 - resolution is dependent on the device driver
 - USB Type C connector
- support for Microsoft® DirectX 12 and 11.x
- support for OpenGL 4.x and 5.x under Windows® and Linux®
- support for OpenCL 2.1

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 5 x USB ports:
 - 1 x USB 2.0/3.0 via front panel (USB Type C connector)
 - factory build option for 2 x USB 2.0 in AMC connector extended options region
 - user selectable option for 2 x USB 3.0 (replaces x2 PCIe port) in AMC connector extended options region
- user selectable option for x2 PCIe port (replaces 2 x USB 3.0) in AMC connector extended options region:
 - supports 1 x2 or 2 x1 PCIe ports (up to Gen 2)

Telecoms Clock

- TCLKA clock input to board logic:
 - increments 64-bit counter in board logic

Software Support

- supports Linux®, Windows® and VxWorks®
- Fabric Interconnect Networking Software (FIN-S):
 - allows applications on multiple processor boards to efficiently communicate with each other over the fabric
 - optional software, see separate datasheet

Trusted Platform Module

- optional Trusted Platform Module (TPM)

Firmware Support

- UEFI boot firmware (BIOS):
 - UEFI 2.4 support
 - EDK II support
 - includes Compatibility Support Module
- LAN boot firmware included

Non-Volatile Memory

- 16 Mbytes of BIOS Flash EEPROM, dual redundant devices

IPMI

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

Electrical Specification (Estimated)

- typical current consumption for 4-core Intel Xeon E3-1505M v5 processor with 16 Gbytes DRAM:
 - +12V @ 4.2A typical voltage ±2V
- +3.3V @ less than 0.12A, voltage ±5%

Safety

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

Environmental Specification

- operating temperature:
 - 0°C to +55°C (N-Series)
 - 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 variants available, contact sales

Compatible with Legacy Modules

- factory build options enable compatibility with legacy AMC processor modules, e.g.:
 - AM 91x/11x and AM 91x/31x
 - AM 92x/11x and AM 92x/31x
 - AM 95x/11x and AM 95x/31x