

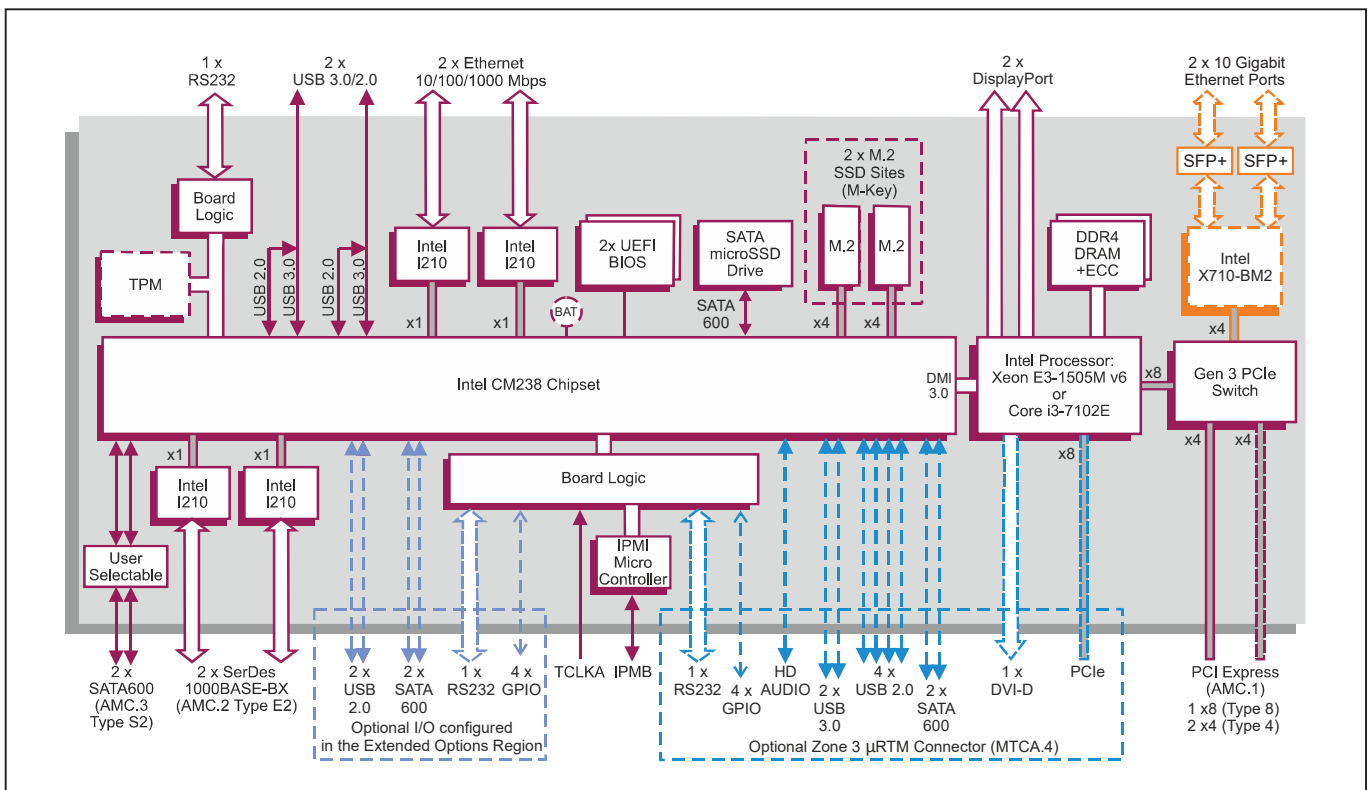
AdvancedMC® Double Module with MicroTCA.4 capability

Key Features

AM G6x/msd is an AdvancedMC® Double Module designed for long life-cycle, high performance applications. It supports backwards compatible rear I/O options including the optional µRTM for MicroTCA.4 deployments and long distance networking connectivity.



- 4-core Intel® Xeon® Processor E3-1505M v6 for intensive computation applications
- 2-core Intel® Core™ i3-7102E Processor for low power applications
- Wide range of front panel connections including option for dual 10 Gigabit SFP+ modules for remote connectivity
- Direct attached storage including:
 - built in SATA microSSD™
 - two M.2 sites for high speed storage
- Support for Serial over LAN and IPMI over LAN



AdvancedMC Computer Board

- AdvancedMC (AMC) Module utilizing Intel processors formerly known as Kaby Lake
- AMC form factor is a Double Module supporting:
 - Mid-size front panel
 - Full-size front panel
 - MTCA.4 RTM connector (build option)
- AMC Fabric Interface supports:
 - PCI Express (PCIe)

Central Processor

- 4-core Intel Xeon Processor E3-1505M v6:
 - 8 Mbytes Cache, 3.00 GHz
 - Intel HD Graphics P630
- 2-core Intel Core™ i3-7102E Processor:
 - 3 Mbytes Cache, 2.10 GHz
 - Intel HD Graphics 630
- utilizes the Intel CM238 Chipset

DRAM

- 16 or 32 Gbytes soldered DDR4 ECC DRAM:
 - single bit error correction
 - dual channel architecture
- accessible from processor and AMC connector

PICMG AdvancedMC Interfaces

- PCIe fabric connection (with build option):
 - AMC.1 Type 8 or Type 4 (1 x8 or 2 x4 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
- PCI Express clock is user selectable from:
 - on-board fabric clock
 - external fabric clock, sourced via FCLKA pin
 - on-board fabric clock, driven out via FCLKA pin
- single x8 PCIe Gen 3 port via optional RTM
- hot swap compliant to AMC.0
- rear I/O compliant to AMC specification

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 Gigabit Ethernet interfaces via RJ45 connectors:
 - supporting 10/100/1000 Mbps
 - implemented using two Intel Ethernet Controller I210-IT devices
- 2 x front panel 10 Gigabit Ethernet interfaces via SFP+ connectors (build option):
 - implemented using an Intel Ethernet Controller X710-BM2 device

Serial Interfaces

- 1 x RS232 interface via front panel Micro USB connector:
 - supports Tx/D and Rx/D
- 1 x RS232 interface in AMC connector extended options region (build option):
 - TxD, Rx/D, RTS and CTS
- 1 x RS232 interface via optional RTM:
 - TxD, Rx/D, RTS, CTS, DTR, DSR, DCD
- 16550 compatible UARTs

Storage Interfaces

- up to 6 x SATA600 interfaces via AMC connector:
 - AMC.3 Type S2 (2 x SATA), each user selectable (on/off) to allow for different backplanes
 - 2 x SATA via optional RTM
 - 2 x SATA in AMC connector extended options region (build option)
 - SATA controller can be configured for AHCI or Intel RST Premium mode
- 2 x M.2 SSD sites on-board supporting:
 - Type 2242, 2260 and 2280 devices
 - x4 PCIe interface (M-key)
 - NVM Express (NVMe™) logical device interface
- on-board SATA microSSD™ drive (64 Gbytes) for local operating system boot and data storage

Display Interfaces

- three independent display interfaces
- 2 x DisplayPort v1.2 interfaces via front panel DisplayPort connectors:
 - up to 3840 x 2160 @ 60Hz
 - resolution is dependent on the device driver
- 1 x DVI-D interface via optional RTM:
 - up to 1920 x 1200 @ 60Hz
- support for Microsoft DirectX 12
- support for OpenGL 4.x Windows and Linux
- support for OpenCL 2.1

Stereo Audio Interface

- DisplayPort interfaces support stereo audio
- Intel High Definition digital audio interface via optional RTM:
 - RTM provides CoDec to give analog audio (headphone, line-in, line-out and microphone)

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 8 x GPIO signals:
 - 4 x GPIO signals via optional RTM
 - 4 x GPIO signals in AMC connector extended options region (build option):
- up to 10 x USB ports:
 - 2 x USB 3.0/2.0 ports via front panel USB Type C connectors
 - 2 x USB 2.0 ports in AMC connector extended options region (build option)
 - 2 x USB 3.0, 4 x USB 2.0 via optional RTM

Telecom Clock

- TCLKA clock input to board logic:
 - increments 32-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

Board Security Features

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

Firmware Support

- UEFI 2.6 boot firmware (BIOS):
 - includes Compatibility Support Module
 - implements Secure Boot
- optional Fast Boot solution based on the Intel Firmware Support Package (Intel FSP)
- LAN boot firmware included

Non-Volatile Memory

- 16 Mbytes of BIOS Flash EEPROM, dual devices for redundancy

IPMI

- IPMI compatible with version 2.0
- IPMI support for AMC.0
- on-board BMC (Baseboard Management Controller)
- support for IPMI Over LAN
- support for Serial Over LAN
- RMCP+ encrypted LAN communication

Electrical Specification

- typical current consumption for 4-core processor with 16 Gbytes DRAM:
 - +12V @ 2.2A, voltage 2V
 - +3.3V @ less than 0.15A, 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, 2.10 GHz CPU, Mid-size or Full-size panel)
 - 25 C to +70 C (E-Series, 3.00 GHz CPU, Full-size panel only)
- non-operating temperature: -40 C to +85 C
- 5% to 95% Relative Humidity, non-condensing

Mechanical Specification

- AMC.0 Double Module form-factor 181mm x 149mm:
 - Full-size panel: 29mm
 - Mid-size panel: 19mm
- option for MTCA.4 I/O connector (build option):
 - optional RTM available

Compatible with Legacy Modules

- factory build options enable compatibility with legacy AMC processor modules, e.g.:
 - AM 90x/21x and AM 90x/41x