**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.

- Intel® processor (formerly known as Kaby Lake):
  - Intel® Xeon® E3-1505M v6 for intensive computation applications
  - Intel® Core™ i3-7102E for lower power consumption 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
### Specification

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

**Central Processor**
- 4-core Intel® Xeon® Processor E3-1505M v6:
  - 8 Mbytes Cache, 3.0 GHz
  - Intel® HD Graphics P630
- 2-core Intel® Core™ i3-7102E Processor
- 2-core Intel® Core™ i3-7102E Processor:
  - 3 Mbytes Cache, 2.1 GHz
  - Intel® HD Graphics 630
- utilizes the Intel® CM238 Chipset

**PICMG AdvancedMC Interfaces**
- PCIe fabric connection (with build option):
  - AMC.1 Type 8 or Type 4 (1 x 8 or 2 x 4 PCIe port)
  - plus user configurable to 4 x 2 PCIe port
  - support for Gen 1, 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 µRTM
  - 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 Controllers I210-AS devices
- 2 x front panel Gigabit Ethernet interfaces via RJ45 connectors:
  - supporting 10/100/1000 Mbps
  - implemented using two Intel® Ethernet Controllers 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 TxD and RxD
- 1 x RS232 interface in AMC connector extended options region (build option):
  - TxD, RxD, RTS and CTS
- 1 x RS232 interface via optional µRTM:
  - TxD, RxD, 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 µRTM
  - 2 x SATA in AMC connector extended options region (build option)
  - 2 x M.2 SSD sites on-board supporting:
    - 2242, 2260 and 2280 format modules
    - x4 PCIe interface (M-key)
  - NVM Express® (NVMe™) logical device interface
  - RAID 0, 1, 5 and 10 modes
  - on-board SATA microSSD™ drive (64 Gbytes) for local operating system boot and data storage

**Display Interfaces**
- three independent display interfaces
- 2 x DisplayPort® interfaces via front panel DisplayPort connectors:
  - up to 4096 x 2304 @ 60Hz
  - resolution dependent on the device driver
- 1 x DVI-D interface via optional µRTM:
  - up to 1920 x 1200 @ 60Hz
  - support for Microsoft® DirectX 12
  - support for OpenGL 4.x under Windows® and Linux®

**Stereo Audio Interface**
- DisplayPort interfaces support stereo audio
- Intel® High Definition digital audio interface via "µRTM provides CoDec to give analog audio (headphone, line-in, line-out and microphone)

**Other Peripheral Interfaces**
- PC-compatible Real Time Clock
- 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 µRTM
  - 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 µRTM

**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

**Trusted Platform Module**
- optional Trusted Platform Module (TPM):
  - compliant to TCG v1.2

**Firmware Support**
- UEFI boot firmware (BIOS):
  - UEFI 2.4 support
  - EDK II support
  - includes Compatibility Support Module
- 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 (Estimated)**
- typical current consumption for 4-core processor with 16 Gbytes DRAM:
  - +12V @ 3.7A, voltage ±2V
  - +3.3V @ less than 0.13A, voltage ±5%

**Environmental Specification**
- operating temperature:
  - 0°C to +55°C (N-Series)
  - -25°C to +70°C (E-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 Double Module form-factor 181mm x 149mm (7.1 inches x 5.8 inches)
  - Full-size panel: 295mm (11.6 inches)
  - Mid-size (19mm) variants available, contact sales
  - option for MTCA.4 I/O connector (build option):
  - optional µRTM available

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

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