

» OM6120 «



OM6120 Industrial AMC Platform

- » Image Processing, Motion Control, Dual-Channel Data Acquisition & Processing
- » High-performance computing with high throughput and low latency
- » Multi-Processor systems for industrial automation, medical and research

Product Overview

Key Features

- » Compact System for up to 12 Mid-Size AMCs (Single-Width and Double-Width)
- » Dual Pluggable Power Supplies AC (DC on request)
- » Dual-Star backplane incl. GbE, 10GbE, PCIe and SRIO according to SCOPE mapping
- » Management Options: From Basic MCH to Fully Featured MCH; one or two MCHs
- » 5U System, ½ of 19" wide, 215 mm deep (chassis only)
- » Options: 2x OM6120 units mountable in one 19" rack; 2nd fan unit mountable on top
- » Ready to use: system configured and operating system installed
Customizable Design

Systems Configuration

- » Basic Configuration: chassis with AC power & fans, backplane including power management
- » MCH Options: AM4904 / AM4910; Fully Featured MCH; Fabric Options PCIe, SRIO and 10 GbE; Dual MCHs with Fabric Options
- » AMC Options: Processor AMCs AM4010/AM5010 (Intel Architecture, dual core), AM4100 (Freescale, PowerPC Architecture, dual core) with operating system installed (Windows, Linux, WRLinux, VxWorks, depending on processor type), Network Service Processors AM4204 (MIPS Architecture, 12 Core) with Linux operating system installed; customer specific IO/ FPGA boards on AMC; 2nd MCH

The OM6120 is a compact AMC platform dedicated (but not limited) for industrial automation and medical applications. It supports any standard compliant AMCs and MCH. In comparison to conventional MicroTCA implementations, it achieves significant cost improvements by a simplified design, which does eliminate the need of MicroTCA Power Modules and uses standard PSU instead.

The OM6120 accommodates up to 12 mid-size AMCs and up to 2 MCHs. All AMCs connect to both MCH in a dual-star base interface (GbE) on AMC ports 0 and 1. The fabric ports 4-7 of all AMCs connect to MCH 1, the extended fabric ports 8-11 of all AMCs connect to MCH 2. Thus, the OM6120 supports a wide range of configurations.

Base Interface

- » Single-star (single MCH)
- » Dual-star (dual MCHs) for 12 AMCs.

Fabric Interface

- » Single switched PCIe fabric (ports 4-7) for 12 AMCs (MCH1)
- » Single switched SRIO fabric (ports 8-11) for 12 AMCs (MCH2)
- » Single switched 10GbE fabric (ports 8-11) for 12 AMCs (MCH2)
- » Dual Fabrics PCIe plus SRIO/10GbE with dual MCHs.

In combination with the layout of two rows of AMCs, the fabric options facilitate the implementation of dual-channel processor architectures with arbitration or checkpoints between the channels. By accommodating a high number of multi-core AMCs and allowing a tight coupling of processors over high-speed communication links (over the backplane), the OM6120 is well suited for image processing applications in single-channel or dual-channel architectures.

The implementation of clocks in the OM6120 backplane enables the synchronization of processor AMCs to an internal or external clock for applications such as real-time processing or complex motion control in robotics.

The AMC bays are fully compliant with the AMC standards and the MicroTCA standard, so any standard compliant AMC may be used. The OM6120 supports mid-size AMCs with single-width and double-width form factor. For single-width modules, mechanical adapters for double-width slots are available. The OM6120 backplane has been designed to support a wide range of applications. Customer specific backplanes are available on request.

Technical Information

Environmental & Regulatory	Safety: IEC60950-1 EMC: EN55022 (CISPR22) Vibration/Shock: IEC60068-2-6/EIC60068-2-27 Climatic Humidity: IEC60068-2-78 WEEE: Directive 2002/96/EC RoHS: Directive 2002/95/EC
OM6120-BASE Configuration	Chassis incl. AC Power & Fans with 12 AMC slots + 2 MCH slot
MCH Options	Basic MCH; Fully Featured MCH; Fabric Options PCIe, SRIO and 10 GbE; Dual MCHs with Fabric Options
AMC Options	
Processor AMCs	Comprehensive portfolio of AMCs based on X86 or PowerPC technology as well as packet processor versi
I/O AMCs	High-Speed IO/FPGA boards (over SRIO/10GbE/PCIe), Graphics Board (over PCIe), Network Interface Card (over PCIe), Host Bus Adaptor for external storage (over PCIe), on project request
Physical Dimensions	5U height, ½ of 19" wide, 215mm deep AC Power Supply Units Pluggable 2 Full-Size MCH slots on front 12 Mid-size AMC slots on front Single-width & Double-width Fan tray with axial fans below AMC cage
Standards Compliancy	AMC.0 R2, AMC.1 PCIe, AMC.2 10/1 GbE, AMC.3 Storage MicroTCA compliant AMCs MicroTCA compliant MCH System Management: IPMI 1.5 on MCH No MicroTCA Power Modules and Cooling Units

Ordering Information

Article

OM6120-300W + AM4904-BASE

OM6120-600W + AM4904-BASE

OM6120-300W + AM4904-PCIE

OM6120-600W + AM4904-PCIE

OM6120-300W + AM4904-SRIO

OM6120-600W + AM4904-SRIO

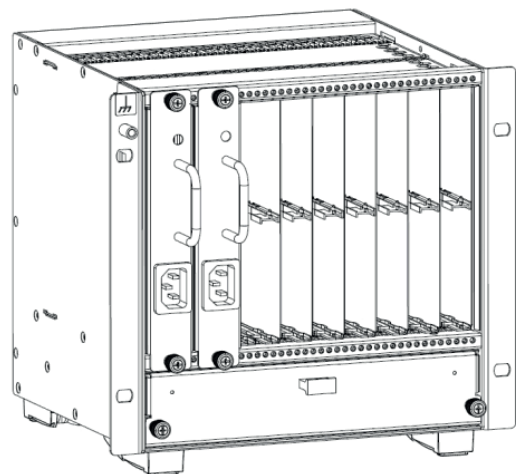
OM6120-300W + AM4910

OM6120-600W + AM4910

2nd MCH in the OM6120 can be ordered separately

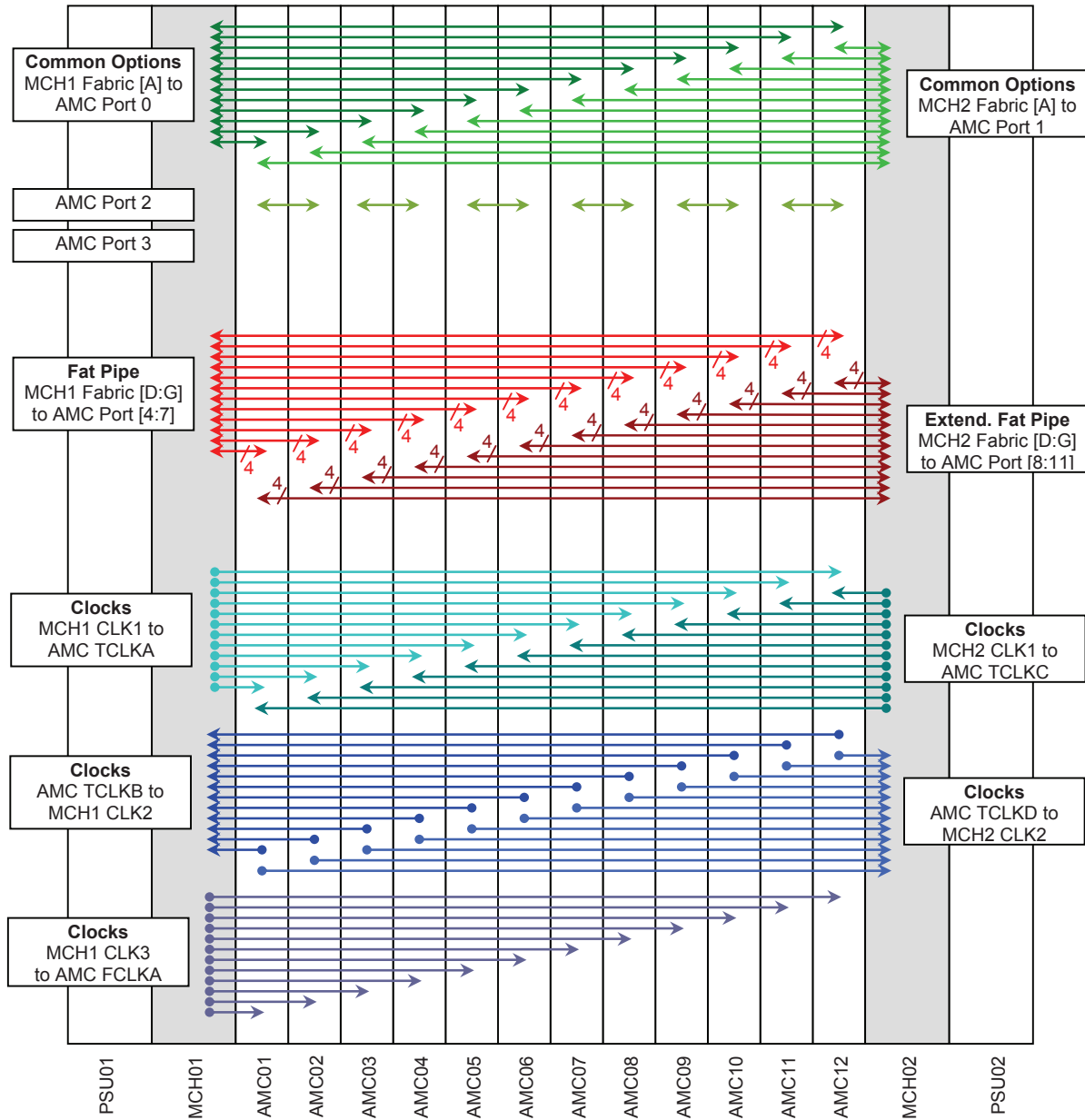
Block Diagram and Chassis

The OM6120 chassis has removable mounting brackets at the sides. Because of the width being below ½ of 19", two OM6120 chassis can be mounted together in a 19" frame, thus providing space for 24 AMCs in a 5U 19" form factor. An extra (redundant) fan tray may be mounted on top. The OM6120 is available with pedestals for table top operation e.g. in the lab.



The cube design provides the most efficient use of space for AMCs while keeping the cooling simple (max. two AMCs in line in the air stream, respectively one double-wide AMC). Cooling in alternative chassis designs with 3 or 4 AMCs in line is much more demanding. In comparison with other MicroTCA systems or rack mounted servers, the OM6120 also achieves an unparalleled density of computing (in terms of AMC space per total chassis volume).

The backplane corresponds to the block diagram on the next page. In addition to the routing of fabrics and clocks shown in the diagram, the backplane supports power switches and fan control, which are controlled by mediation of a Compatibility Module on the backplane.



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