RackPak/M5-1
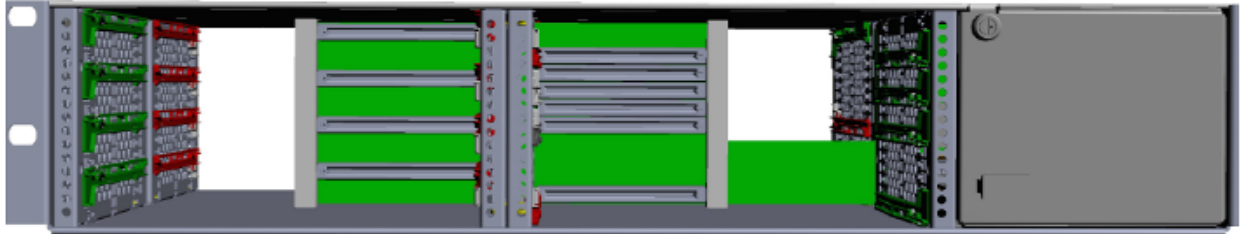
2U 19" 6 Slot MicroTCA.4 compliant chassis

The RackPak/M5-1 MicroTCA® chassis is a 2U 19" rack offering up to 6 AdvancedMC™ slots, 5 of them are MTCA.4 compliant slots with up to 5 µRTMs. The RackPak/M5-1 system is the perfect base for small and low cost computer platforms in medical, industrial automation, transportation, military, and telecommunication. It supports high-end computing applications with up to 6 CPU modules as well as I/O intensive configurations. Based on the MicroTCA® and AdvancedMC™ PICMG® standards it is the best solution for long life cycle applications.

The RackPak/M5-1 includes an exchangeable cooling unit, with left-to-right cooling. Other cooling units are available upon request, as the user has to carefully evaluate the overall thermal design of his application. The cooling units are field replaceable, depending on the environmental needs.

The system can be equipped with any double full-size MTCA.0 AC power supply or a high precision 1.000W PSU. Cooling system and PSU are designed for a maximum of 80W power dissipation per slot. The dust filter and the fan cartridge are hot-swappable. An optional DC input power supply is also available.

Features

- 19" rack-mount chassis, 2U height
- 5 AdvancedMC double mid-size slots, up to 5 double mid-size RTM slots, one Double full-size Slot (MTCA.0), one JSM slot
- 1 MCH slot double full-size with double full-size RTM slot
- 1 PM slot (rear) double full-size
- MTCA.4 R1.0, AMC.0, AMC.1, AMC.2, AMC.3 compliant
- Full hot-swap support
- Size: 440,0 x 378,0 x 88,9 (mm)
- Rear-I/O for slot 1 to 5 (MTCA.4 compliant)
- Single 600W or 1.000W AC power supply from rear (DC optional)
- Left-to-right air flow, others upon request
- Low cost platform

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Mechanics

The chassis is made from steel and is self contained, the inner rails are made from V2a steel. The outer chassis is RAL9005 (black) painted, other colours are available upon request (might need NRE or MOQ). The chassis offers a field replaceable cooling unit.

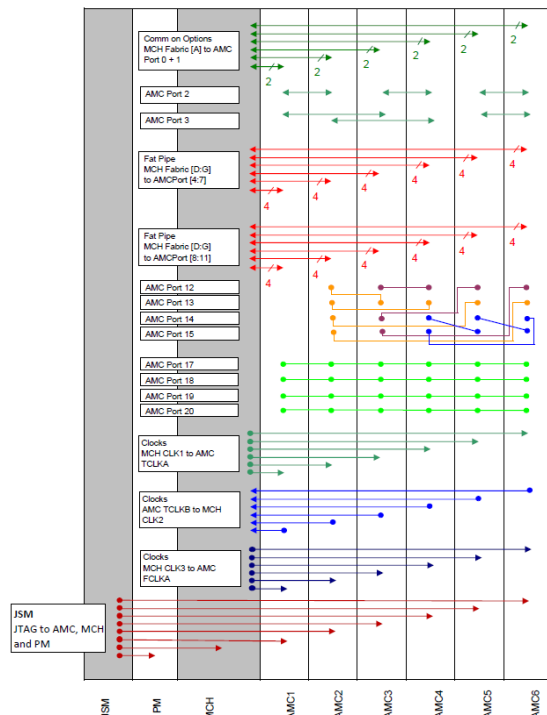**RackPak/M5-1F**: Air-In front side, Air-Out left side

RackPak/M5-1R: Air-In right side, Air-Out left side

RackPak/M5-1RS: Air-In right side, Air-Out left side; strong fans

Backplane Diagram

The backplane is fully compliant to MTCA.0 standard. The backplane utilizes PCIe x8 connections to each AMC slot, to double the bandwidth. Also the AMC port 0 and 1 connections are routed to every AMC slot. On AMC port 12 to 15, there are local slot-to-slot interconnects, to enable fast direct board to board communication. AMC port 17 to 20 are prepared for White Rabbit (**optional**).
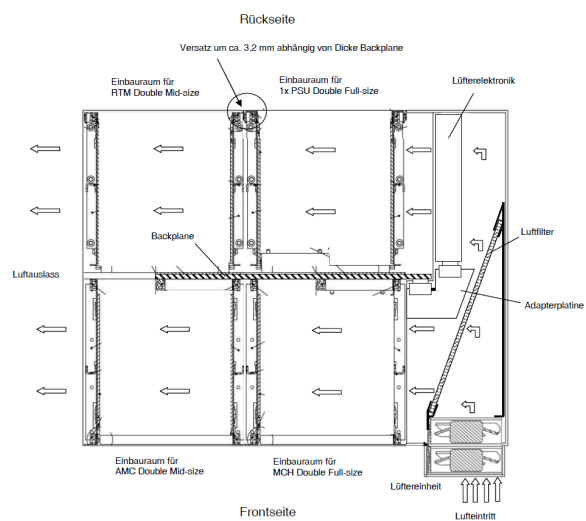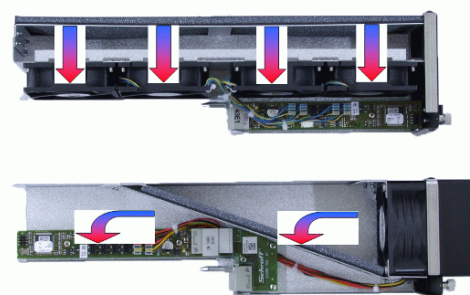
RackPak/M5-1 backplane interconnect

The clock signals of each AMC slot connect to the MCH slot: The backplane do support TCLKA, TCLKB and FCLKA. For FPGA programming and debugging a JSM port is available (will use the RTM slot of one MTCA.4 module). The JSM can be accessed via the NAT MCH remotely.

Cooling concept and Air-flow

Different cooling units enable deployment in different cooling scenarios. The chassis can be used in a front-to-right cooling configuration, while it can be easily converted to left-to-right cooling. Please refer to the ordering information.
Cooling units can also be ordered separately.
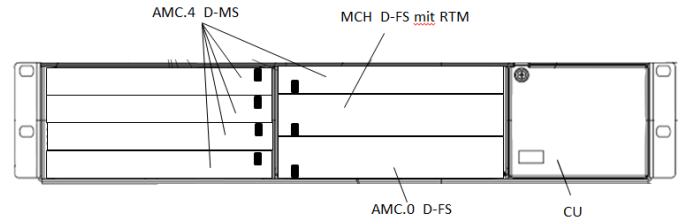
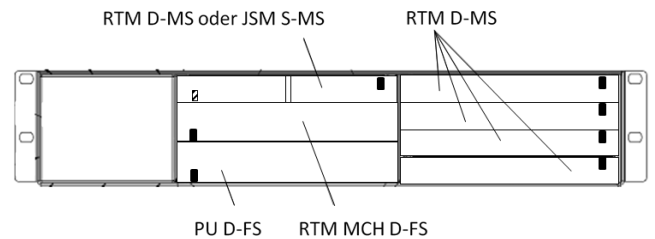RackPak/M5-1 front to right air flow.

Cooling units

Specifications

Construction	19" rack-mount, 2U height, self-contained top and bottom cover, RAL 9005 painted
Shelf Manager	MTCA compliant MCH module, double full size
Cooling System	1 hot-swap fan cartridge with 2 fans total (front to right) or 4 fans total (right-to-left) air flow, supports up to 80W power dissipation in each slot (50W+30W), dust filter compliant to UL 94HF-1
Backplane	20 layer backplane with integrated power and fan tray connectors, thickness 3,2mm
Power Supply	MTCA compliant power module slot, Power module, AC or DC input, double full-size, 16x 12VDC PP, 16x 3,3VDC MP
Weight	8.0 kg without filler panels
Operating Temp.	-5°C … +50°C
Storage Temp.	-25°C … +85°C
Humidity	up to 95% RH non-condensing
Electromagnetic Compability	System configurations conforming to EN55022 class B
Dimensions	19" x 2U x 378 mm (WxHxD) 440,0 x 88,9 x 378,0 (mm)
Compliance	MicroTCA PIGMG MTCA.0 R1.0, MTCA.4 R1.0, AdvancedMC PIGMG AMC.0 R2.0, AdvancedMC PIGMG AMC.1 R1.0

System Views

Front View

Rear View

Ordering Information

RackPak/M5-1F 2U 19" MTCA.4 chassis, 6 AMC, 5 µRTM Slots, JSM Slot, cooling from front to left

RackPak/M5-1R 2U 19" MTCA.4 chassis, 6 AMC, 5 µRTM Slots, JSM Slot, cooling from right to left

RackPak/M5-1RS 2U 19" MTCA.4 chassis, 6 AMC, 5 µRTM Slots, JSM Slot, cooling from right to left, strong fans

Starter Kits

Different system configurations are available as a starterkit configuration. This includes different type of CPU choices, SSD sizes and MCH configurations. Ask for configuration.

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