



NATIVE-R2

2U MicroTCA (MTCA.4.1) Chassis



The **NATIVE-R2** is a 2U MicroTCA (MTCA.4.1, μ TCA.4.1) chassis that is particularly suited to telecommunications, industrial and particle physics research applications. Supporting a single MCH and power unit, the NATIVE-R2 can accommodate six horizontally-mounted AdvancedMC[®] (AMCs) modules (five mid-size and one full-size), up to five MicroRTMs and a JTAG switch module (JSM). This enables you to build a compact, multi-purpose computing system for a variety of applications by integrating cost-effective AMCs. The compact design and support for PCIe Gen3 x8 makes the NATIVE-R2 ideal for applications with high connectivity requirements, such as high energy physics and telecom edge, access and aggregation equipment.

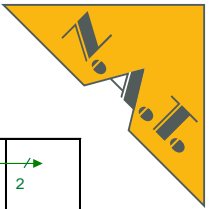
Key features

- 2U MicroTCA.4.1 chassis
- 5 mid-size AMCs, 1 full-size, 5 MicroRTMs
- 1 double full-size MCH offering 80 PCI Express lane switch configurable PCI Express port width of 1, 4, 8 or 16 lanes
 - With 16 lane PCI Express connection to rear MCH-RTM
 - With one 16 lane optical PCI Express connection to the front panel
 - or two 8 lane optical PCI Express connection to the front panel
- 1 double-wide full-size MCH-RTM
- 1 power & 1 cooling unit

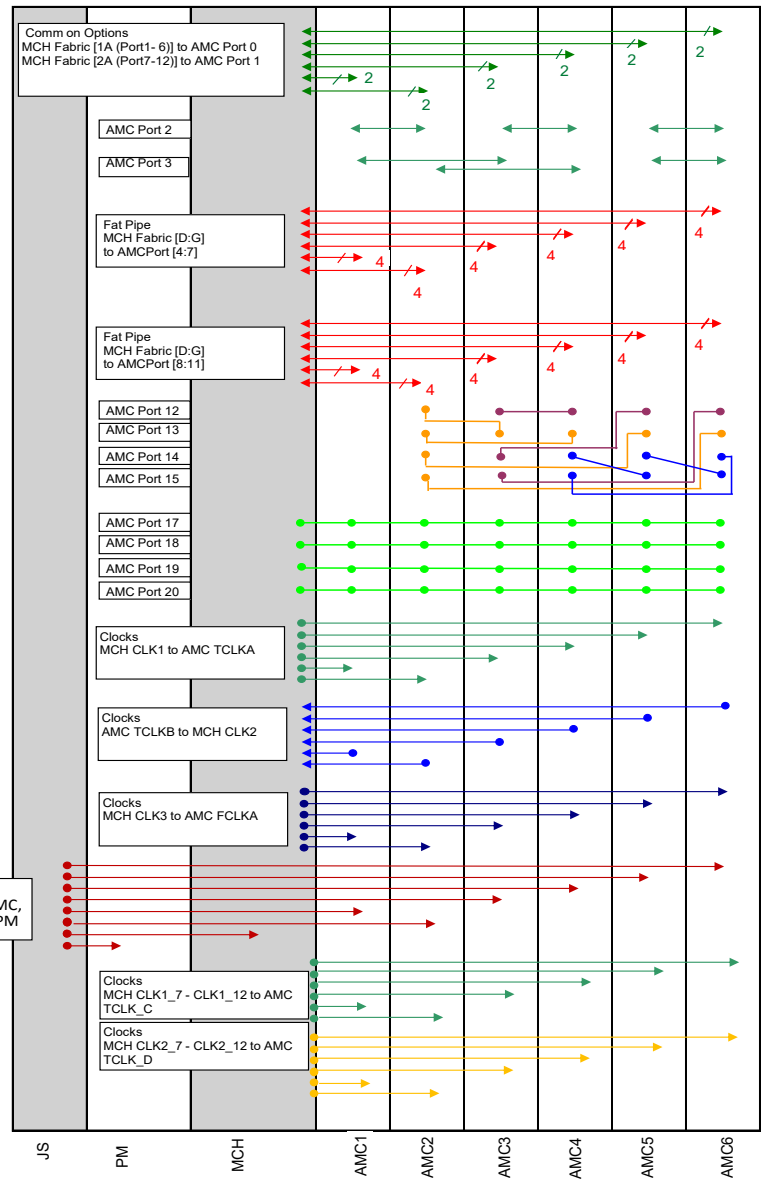


Technical Data

NATIVE-R2



NATIVE-R2 Backplane Topology



Family of MicroTCA chassis

The NATIVE-R2 is a member of the NATIVE family of MicroTCA chassis which consists of:

- [NATIVE-mini](#)
- [NATIVE-SX](#)
- [NATIVE-C1](#)
- [NATIVE-C2](#)
- [NATIVE-R5](#)
- [NATIVE-R9](#)

Overview

The NATIVE-R2 is a 2U MicroTCA (MTCA.4, μ TCA.4) chassis supporting a single MCH with RTM and power unit, and a cooling subsystem. It can accommodate six horizontally-mounted AdvancedMC® (AMCs) modules (five mid-size and one full-size), up to five MicroRTMs (mid-size) and a JTAG switch module (JSM).

The compact design and support for PCIe Gen3 x8 makes the NATIVE-R2 ideal for applications with high connectivity requirements, such as high energy physics and telecom edge, access and aggregation equipment.

Optional support for White Rabbit, an Ethernet extension protocol, provides sub-nanosecond accuracy synchronization, particularly useful for the high energy physics community.

Key Features

Chassis Dimensions

- Width 440.00mm (19 inches)
- Depth 378.00mm
- Height 88.25mm (2U)

NAT-MCH-PHYS80

- Double-wide, full-size MicroTCA Carrier Hub for MicroTCA.4 systems, integrated with the NAT-MCH-CLK-PHYS, our special low latency and low jitter clock distribution module, to create the most powerful single-slot solution for management and switching that is available for MTCA.4.
- GbE switching (Fabric A)
- PCI Express (Gen3) switching (Fabrics D-G or D-K)
- Front panel uplinks
 - 2x 1 GbE (load sharing supported)
 - 2x PCIe x8 or 1x PCIe x16 optical uplinks
 - 2x SMA for external CLK support (bi-directional)
 - Serial (RS232) and USB console

MCH-RTM

- 1 Fieldbus (e.g. Ethercat) port
- 4 USB 3.0 ports
- 2 HDMI display ports capable of 4K resolution

Backplane

- MicroTCA.4 compliant
- x16 PCIe to COM Express module Type 6 (MCH-RTM)
- PCIe x8 or 2x PCIe x4 on port 4 to 11
- GbE on port 0 and 1 to every slot
- SATA/SAS on port 2 and 3
- Local high speed connections on ports 12 to 15
- Optional White Rabbit on ports 17 to 20 driven by optional White Rabbit Clock Module on the NAT-MCH-PHYS80
- JSM (JTAG to AMC) connections to each slot
- All CLKs supported

Compliance

- MicroTCA.4 and MicroTCA.4.1

Power Modules

You can select from these available power modules:

- 1000/600 W AC:
 - [NAT-PM-AC1000/NAT-PM-AC600D](#)
- 420/840 W DC:
 - [NAT-PM-DC420/NAT-PM-DC840](#)
- 600 W DC low-voltage: [NAT-PM-DC600LV](#)

Cooling Unit

- Four push-pull fans with each fan rated at 72 CFM
- Capable of cooling up to 1000 W depending on AMCs used and assembly positions
- Individual-controlled fan speed
- Inserted from the front, air inlet on left, outlet on right
- Fully managed via cooling management module
- Monitored fan power for early failure detection
- Air filter removed detection