

» OM5080 «



MicroTCA - OM5080 2U Carrier Grade AMC Platform

- » 2U 19" off the shelf platform for up to 8 AMCs
- » Fault resilient design: no single point of failure
- » Chassis includes power, fans, power distribution and switches with MCH function (1GbE or 10GbE)
- » Ready for deployment: Kontron system management IPMI v1.5 compliant, SNMP and CLI for configuration included
- » Customizable Design

OM5080

MicroTCA - OM5080 Carrier Grade AMC Platform

The OM5080 is driven by simplicity. Keeping it simple eliminates cost drivers and provides a cost efficient and most compact design. Implementing system management in software on the carrier boards allows eliminating extra components for shelf management, MCH and Power Modules. The use of Uplink Modules provides high uplink capacities comparable only with bigger ATCA solutions, without the need for ATCA hubs or complex MCHs. Efficient cooling is achieved by a push-pull arrangement of dual fans, which are controlled by system management. In combination with the 2U form factor it allows the use of a powerful cooling at performance levels beyond the scope of front cooled 1U or 2U servers.

All modules are field replaceable. The use of AMC Carrier boards simplifies the design, but in combination with the OM5080 software package also allows providing a fully

featured and field proven MicroTCA system. The OM5080 is targeted at carrier grade communication systems, as well as highly available servers for data centre and enterprise IT.

The OM5080 is available as pre-configured system ready for customization and deployment. All management functions are configured and running. The basic configuration also contains two processor AMCs with Linux installed which may be used as application level system controllers. Thus, the OM5080 provides an entry level solution for professional AdvancedMC technology. It facilitates software developments and developments of AMCs. In addition to the basic OM5080 system Kontron also provides a choice of qualified AMCs, and validation of customer selected AMCs in its labs.

Areas of Application

Carrier Grade 2U Server for Communications, Data Centre and Enterprise IT

Media Processing, Packet Processing, Tetra/P25 Switches, Media & Signaling Gateways, RNC (Radio Network Controller), Enterprise Server incl. IP-PBX

Infotainment, Communication Systems, Videoconferences, Video Surveillance, Enterprise Applications

System Configuration

Basic Configuration:

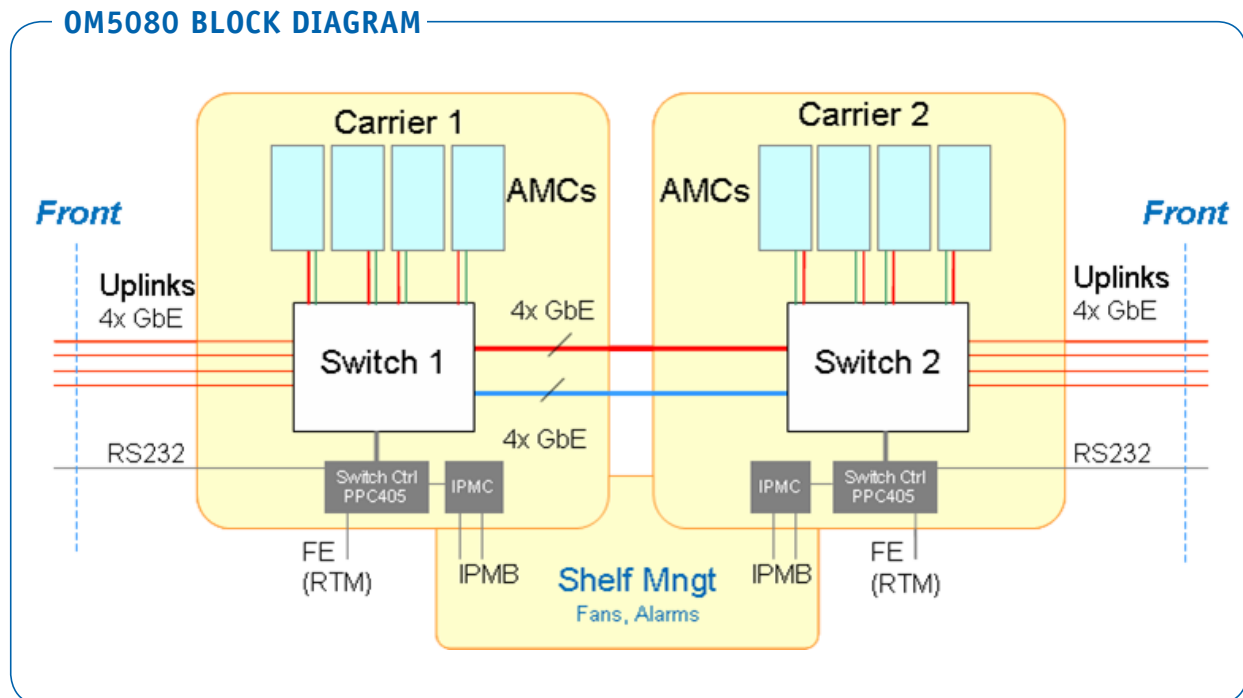
Chassis with dual DC power & fans, Alarm and Management Module, dual Uplink Modules (4x GbE each), dual managed switches with 1Gb Fabric & shelf management, dual Processor AMCs (AM4010) with Linux installed

Options:

10GbE Fabric and Uplink Modules (4x GbE + 2x 10 GbE), dual AC Power, DSPs on AMC, Network Service Processor on AMC, Processor AMCs x86 and Power PC, Line Cards, I/O Cards, RTMs for I/O extensions (e.g. external SAS)

Block Diagram

The OM5080 is based on AMC Carrier Boards. The 1G Version uses two Kontron AT8402 Carrier blades, however with a special software version which provides the system management functions. The AMC Carriers blades implement the MCH function including power management for the AMCs (AMC Carrier = MCH + PM). The system architecture is shown in the block diagram below.



The AMC Carrier boards interlink over a capacity of 8 GbE, which allows a fully redundant configuration. Each AMC Carrier connects to one Uplink Module with 4x GbE uplinks for each Carrier. In total, this allows an uplink capacity of 1GbE per AMC. Each AMC connects over 2x GbE links. The AMC Carrier contains a managed switch incl. VLAN, QoS and traffic management and thus provides a fully featured and field proven carrier grade solution. For example, the system may be configured with one uplink per AMC in transparent mode. The basic functions and capabilities of the AMC Carrier correspond to the data sheets and manuals of the AT8402, including RTMs.

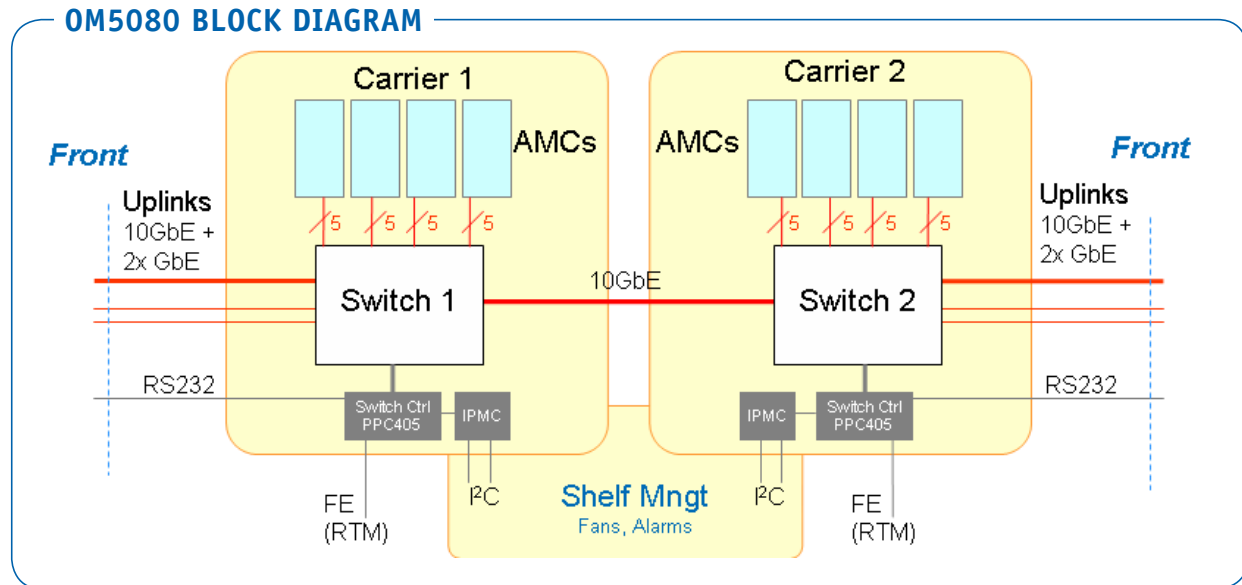
Within the OM5080, the switch controller also hosts the system management functions. For management, the IPMC on the AMC carrier connects to the Management Module over I2C. The Management Module contains redundant circuits for fan control and also provides the Telco alarms on the front panel. For switch configuration, systems configuration, and management over SNMP, each switch controller provides a serial port (RS232) on the front, inband access over Ethernet on the Uplink Modules (incl. IPMI over LAN), or a Fast Ethernet link on the RTM (option).

Not shown in the block diagram are other functions provided by the AT8402 Carrier boards

PCIe PCIe x4 between AMCs and between Carriers (via update channel)
SAS/SATA between AMCs and between Carriers via RTMs
Telco clocks
2 RTM slots e.g. for E1/T1, STM-1/OC3, SAS to external storage entities and other interfaces

The OM5080 is also available with a 10 GbE Fabric and 10 GbE Uplink Modules. This version is based on the AT8404 AMC Carrier board. The architecture is shown in the block diagram below. The architecture concerning system management, interconnection and uplinks on front remains the same. The basic difference is the traffic capacity: the

10 G version provides 2x GbE plus 10 GbE on each Uplink Module and 5x GbE to each AMC. The backplane is identical with the 1G version, however, the AMC carriers connect over a 10 GbE interlink. The functions and capabilities of the AMC carrier correspond to the data sheets and manuals of the AT8404 including RTMs.



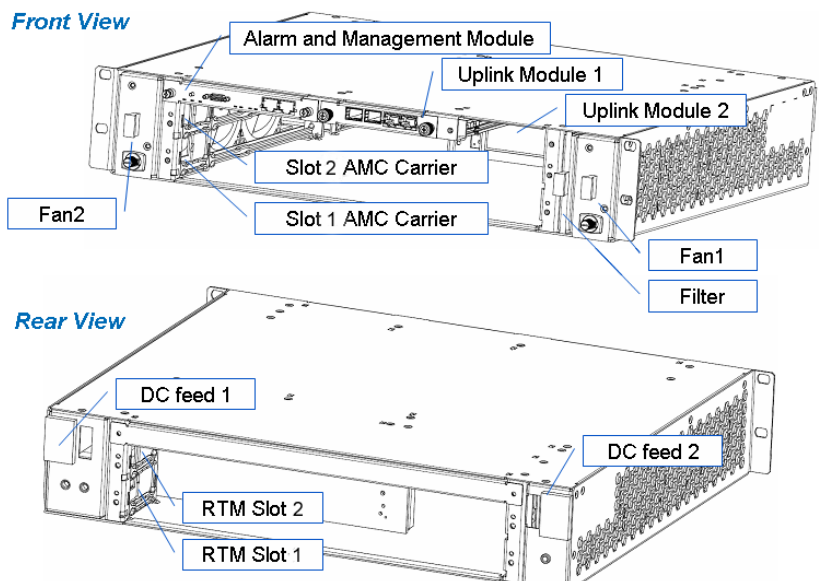
Not shown in the block diagram are other functions provided by the AT8404 Carrier boards

- Fat Pipe interconnect between paired slots (PCIe, SRIO)
- 1x 2.5Gbs APS link per AMCs between the Carriers (via update channel)
- SAS/SATA between AMCs and between Carriers via RTMs
- Telco clocks
- 2 RTM slots e.g. for E1/T1, STM-1/OC3 and other interfaces

Chassis and Dimensions

The OM5080 is contained in a 19" chassis of 2U height and 320 mm depth (DC version). Most modules and connectors are accessible on the front, which facilitates deployment and field operation: Management Module incl. LEDs and connector for Telco Alarms, Uplink Modules and the AMC Carrier boards, both Fan Trays and the Air Filter. The rear contains the dual DC Power Feeds (PEMs) and 2 slots which can be used for RTMs (option) or alternatively for dual AC Power Supplies (option).

Optional RTM modules provide AMC RTM connections on ports 20-17, 15-12, Dual Management FE and RS232 connections on RJ45, 1 SAS connector with 4 ports per RTM (1G version)/2 SAS ports (10G version), 2 additional GbE uplinks per RTM (1G version)/1 additional GbE uplink (10G version).



Technical Information

Hardware Features

OM5080-1G Configuration

2U Chassis incl. fan trays, dual feed 48 VDC Management Module incl. system alarms

Slot 1 & 2: AMC carrier for 4 AMCs each incl. MCH function (management, fan control, GbE, PCIe, SAS), Uplink Module, AM4010 processor AMC with Linux installed

Filler panels for RTM and AMC slots

OM5080-10G Configuration

2U Chassis incl. fan trays, dual feed 48 VDC Management Module incl. system alarms

Slot 1 & 2: AMC carrier for 4 AMCs each incl. MCH function (management, fan control, GbE/10GbE), Uplink Module, AM4010 processor AMC with Linux installed

Filler panels for RTM and AMC slots

Physical Dimensions

19" – 2U height – 415 mm depth

8 mid-size AMC slots on front

Fan trays and air filter on front

Uplink Modules on front

Alarm and Management Module on front

DC input on the rear

Dual slots for RTMs or AC Power on the rear

Push-Pull side cooling

Standards Compliance

AMC.0 R2, AMC.1 PCIe, AMC.2 10 GbE/GbE, AMC.3 Storage

MicroTCA compliant, AMC bays to be used with MicroTCA / AMC compliant Modules

System Management: IPMI 1.5, SNMP V1 V2 V3, HPI

No MicroTCA Power Modules and Cooling Units

MCH and Shelf Management functionality present on AMC Carriers

Environmental & Regulatory

Designed to meet NEBS level 3 (GR-63, GR1089, Telcordia SR-3580), ETS 300 019, ETS 300 132, ETS 300 753 (Europe)

Safety

Test report according to IEC 60950-1, complies with EN/CSA/ UL 60950-1

EMC

FCC 47 CFR Part 15, Subpart B (USA), EMC Directive 89/336/EEC (Europe), EN55022 (Europe), EN55024 (Europe), CISPR22, VCCI (Japan), EN 300 386

Vibration/Shock

IEC60068-2-6/EIC60068-2-27

Climatic Humidity

IEC60068-2-78

WEEE

Directive 2002/96/EC

RoHS

Directive 2002/95/EC

Options

Dual AC Power Supplies in the rear section

RTMs (DC version only)

Preconfigured designs with line cards and DSPs on AMC

Alarm and Management Module Features

The Alarms and Management Module provides control over the fan trays, manages the Telco alarm functions and provides I2C raw access to Uplink Modules. It is a 3 HP front module and features:

- Redundant ATCA Power supply circuits
- Redundant Fan Controllers
- ATCA Holdover Circuit
- Shelf Alarm Panel Functions (Alarm connector, Fan OK and failure LEDs, Alarm LEDs (minor, major, critical), I²C based)
- Dual I2C inputs with Master/slave functionality
- Inlet temperature based FAN control and I²C based monitoring
- 2-Wire interconnects to Uplink Module 1 and Uplink Module 2
- Access to sensors and FRU data storages on backplane, sensors on Uplink Modules
- Redundant IPMB through backplane to blades
- Redundant 48V power supply connector
- Software: IPMI version 1.5 for module level management, HPM.1 compatible firmware

Uplink Module Features

Each AMC Carrier board has its own Uplink Module with 2x 10/100/1000Base-T RJ45. In addition, the 1G version has 2x 1GbE SFP cages. Alternatively, the 10 G version has one 10GbE SFP+ cage. In summary, the Uplink Module features:

- 3 HP Front I/O
- 2x BI 10/100/1000Base-T RJ45
- 2x FI 1000Base-X, SFP transceiver (1G Version)
- 1x 10GbBase-X SFP+ transceiver (10 G Version)
- Redundant 48V power supply connector
- 2-Wire interconnect to Management Module
- Present and activity signals to the Management Module
- Hot Swap

Ordering Information

Article	Order-No.
OM5080-1G	37240
OM5080-10G	37241

CORPORATE OFFICES

Europe, Middle East & Africa

Oskar-von-Miller-Str. 1
85386 Eching/Munich
Germany
Tel.: +49 (0)8165/ 77 777
Fax: +49 (0)8165/ 77 279
info@kontron.com

North America

14118 Stowe Drive
Poway, CA 92064-7147
USA
Tel.: +1 888 294 4558
Fax: +1 858 677 0898
info@us.kontron.com

Asia Pacific

17 Building,Block #1,ABP.
188 Southern West 4th Ring Road
Beijing 100070, P.R.China
Tel.: + 86 10 63751188
Fax: + 86 10 83682438
info@kontron.cn

