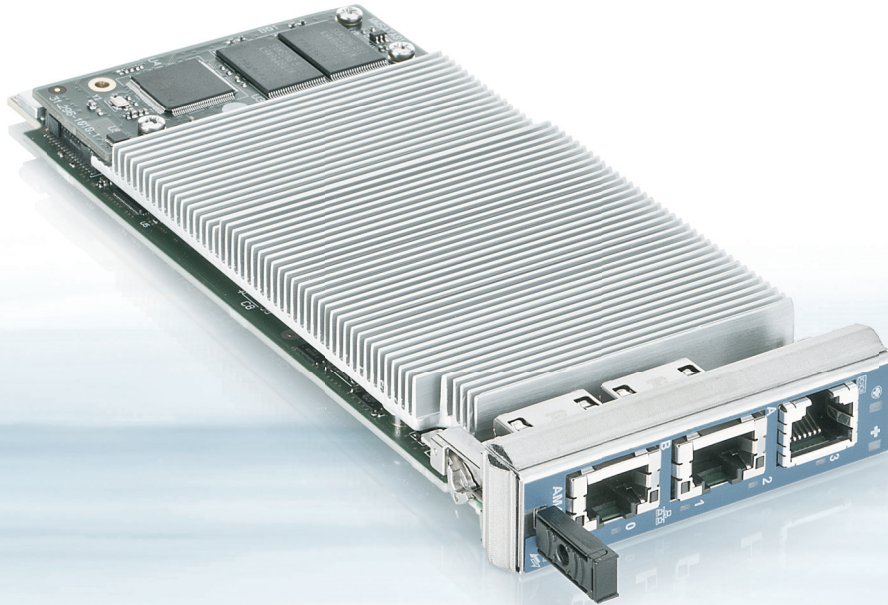


AM4150



HIGH-END PROCESSOR AMC BASED ON Freescale™ QorIQ™ P5 TECHNOLOGY

- ▶ outstanding performance
- ▶ impressive capacity
- ▶ comprehensive connectivity

POSSIBILITIES START HERE



AM4150

CONTROL PLANE 64BIT DUAL CORE QorIQ™ AMC MODULE

High-performance processing

The AM4150 is a control plane CPU board implemented as Single Mid-Size Advanced Mezzanine Card (AMC) for MicroTCA and ATCA applications. The design is based on the Freescale™ QorIQ™ P5020 Dual Core processor, with cores based on the 64bit e5500 Power Architecture®. Due to the P5020 processor, the AM4150 meets highest demands in multi-threaded processing: in combination with high-speed fabrics and frame handlers, the multi-core architecture allows high throughputs, as well as low latencies. To match demands on high-performance, the AM4150 provides a high-speed dual-channel memory with up to 8 GB ECC-RAM. In order to grant reliability of the application, the AM4150 features redundant Boot Flashes.

High-speed fabrics

The Kontron AM4150 provides flexible configuration of high-speed fabrics. On AMC ports 4-7, 4x SERDES lines can be configured either as PCI Express (root complex or end point) or Serial Rapid IO (host or agent), primarily for applications which require close programming to the chip without extensive overhead and with minimum latencies. AMC ports 8-11 may be configured either for Serial Rapid IO or PCI Express or up to 3x GbE. In addition, the Kontron AM4150 supports three Gigabit Ethernet channels. Either 2x GbE on AMC ports 0,1 plus 1x GbE at the front or 2x GbE at the front and port 0 on the backplane. Depending on the application, the AM4150 supports usage in systems with MCH or without MCH in order to reduce costs and speed up system development.

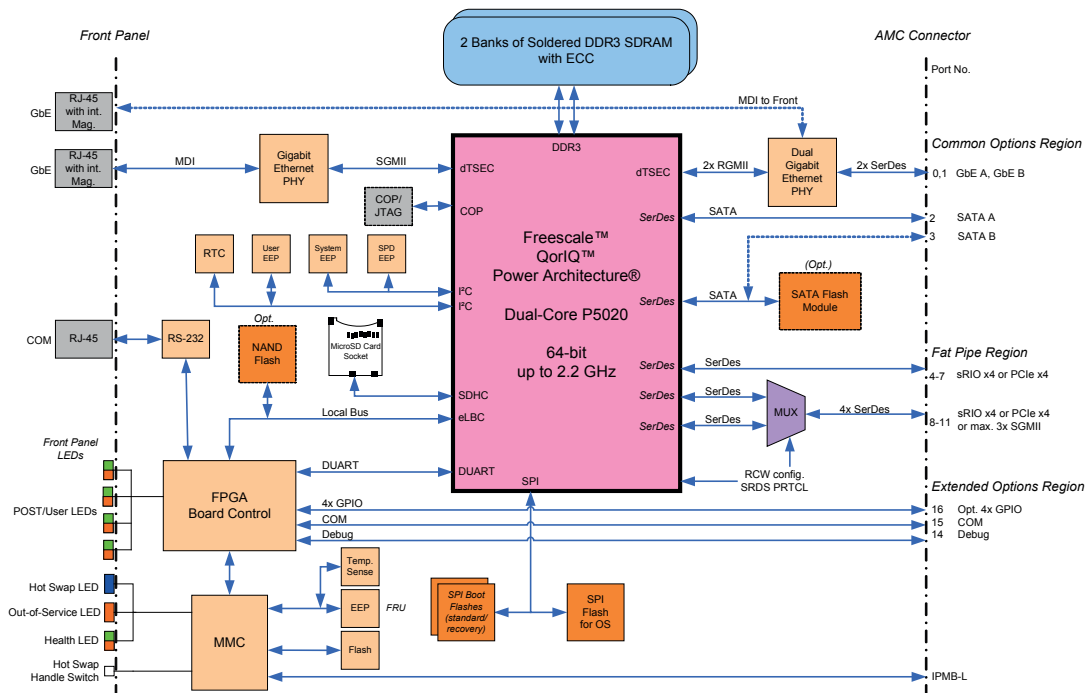
Longevity

The AM4150 meets highest demands regarding longevity due to the careful component selection and a Micro SDHC card socket to be not affected by regular flash discontinuation. With up to 8 GbE DDR-3 ECC memory the AM4150 is well equipped for future demands. This QorIQ™ processor module is therefore suitable for telecommunication, military communications, as well as image processing in industrial and medical environments. The AM4150 supports different options of booting the OS, either from the Micro SDHC card, the NOR or the NAND Flash (for rugged applications). In terms of operating systems, the AM4150 supports VxWorks 6.9, WindRiver Linux.

MicroTCA Platforms

Kontron also offers a choice of AMC systems for the AM4150. For instance the OM6060 can be used as entry level platform for operating the AM4150 with point to point fabrics PCIe and SRIO in combination with the AM4901 basic MCH which provides Ethernet connectivity to all AMC slots. In this system, the AM4150 can be combined with I/O cards, DSP cards and different processor boards. For higher demands, the OM6120 system provides multiple sRIO connections for up to 12 AMCs in combination with the AM4904-SRIO MCH. The system also allows switching PCIe fabrics in combination with the AM4904-PCIe MCH. It can be operated with dual MCHs.

AM4150 SINGLE-WIDTH, MID-SIZE AMC MODULE



TECHNICAL INFORMATION

FORM FACTOR		Single width, mid-size module (full size on project request)
CPU AND PCH		Freescale P5020/64 bit @2.0 GHz (2.2 GHz depending on availability from Freescale)
MEMORY		2x 2 GByte and 2x 4 GByte RAM with ECC standard 2x 2 MByte SPI NOR (for Bootloader, fallback configuration) 1x 8 MByte NOR (for VxWorks) 1 GByte NAND Flash standard or not assembled, up to 2 GByte on project request MicroSD card socket Up to 64 GByte SLC NAND Flash on a dedicated SATA NAND Flash module
SYSTEM INTERCONNECTION		Port 0: 1x GbE Port 1: 1x GbE (routable to front plate, software selectable, default: port 1) Ports 4-7: sRIO x4 or PCIe x4 Ports 8-11: sRIO x4 or PCIe x4 or max. 3x SGMII (1GbE) Port 14: Debug Port15: COM2, 3.3 V TTL FCLKA: bidirectional PCIe clock configuration Power supply: 3.3 V management power, 12 V payload power
FRONT PANEL INTERFACES		1x GbE 1x GbE (routable to Port 1, software selectable, default port 1) COM1, RS232 4x LEDs: control and status, bi-color (red/green LEDs) 3x LEDs: connected to MMC (healthy, hot swap, out of service)
MISCELLANEOUS		Watchdog, timeout 125 ms to 4096 s in 16 steps RTC (not buffered)
SOFTWARE		IPMI VxWorks BSP WindRiver Linux BSP
COMPLIANCY	MICROTCA PCI EXPRESS® SERIAL RAPID IO AMC IPMI	PICMG MTCA.0 Micro Telecommunications Comp. Architecture R1.0 PCI Express® Base Specification Revision 2.0 RapidIO Interconnect Specification, Revision 2.1 PICMG AMC.0: Advanced Mezzanine Card Specification R2.0 PICMG AMC.1: PCI Express® and Advanced Switching R1.0 PICMG AMC.2: Gigabit Ethernet R1.0 PICMG AMC.3: SATA PICMG AMC.4: Serial Rapid IO (1.3 and 2.1) IPMI Intelligent Platform Management Interface Spec. V2.0
ENVIRONMENTAL	OPERATING TEMPERATURE HUMIDITY OPERATING VIBRATION (SINUSOIDAL) SHOCK EMC SAFETY	-5 °C to +55 °C Acc. IEC60068-2-1/2 93 % RH at 40 °C, non condensing Acc. IEC60068-2-78 5 Hz to 150 Hz, 1 g Acc. to IEC 60068-2-6 15 g / 11 ms Acc. to IEC 60068-2-27 Immunity: acc. to EN 55024 and 61000-6-2 Emission: acc. to EN 55022, class B and FCC47, part 15, subpart B IEC 60950-1

ORDERING INFORMATION

ARTICLE	DESCRIPTION
AM4150-SA-2.0D-8-M-N1	P5020 64bit 2.0 GHz Dual Core, 8 GByte RAM with ECC, 1 GByte NAND Flash
AM4150-SA-2.0D-4-M-N1	P5020 64bit 2.0 GHz Dual Core, 4 GByte RAM with ECC, 1 GByte NAND Flash
VXW-BSP-AM4150-6.9.2	WindRiver VxWorks BSP

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