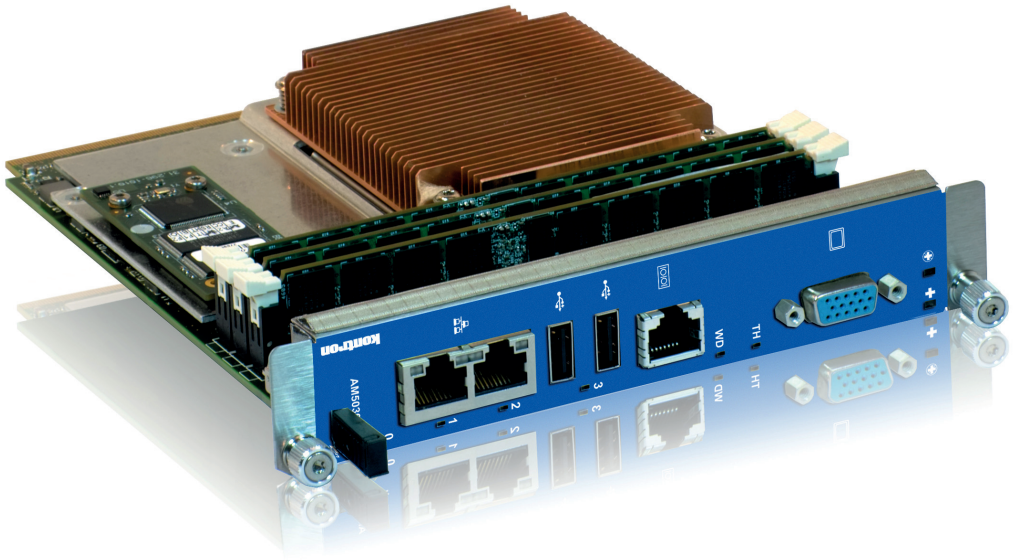
» AM5030 «



High-End Quad Core Processor AMC based on Intel® XEON LC5518

Server-Class Performance

» Intel® XEON Quad Core LC5518 1.73 GHz

Massive Data Throughput

» Up to 24 GB ECC Memory DDR3 1066 MHz via 3-channel access

Comprehensive Connectivity

» 2x 10 GbE (XAUI) 4x GbE, 4x SATA, 1x PCIe x4 and more

AM5030

High-End Quad Core Processor AMC based on Intel® XEON LC5518

Server-Class Performance and Data Throughput

The AM5030 AdvancedMC processor module is equipped with the next generation Intel® Xeon® processor LC5518 which provides outstanding server-class processing power and maximum performance per Watt for MicroTCA system designs. The AM5030 is highly integrated and available in double-width, full-size form factor. The Intel® Xeon™ Quad-Core processor LC5518, in tandem with the Intel® 3420 server-class chipset, takes full advantage of processor performance and the high-speed FSB. The 45nm socket processor LC5518 offers 8MB shared Last Level Cache, Hyper-Threading support and Intel Turbo Mode technology. Supporting a three-channel memory interface for up to 24 GB of ECC memory (DDR3) running at 1066 MHz the AM5030 ensures highest memory bandwidth for maximum data throughput.

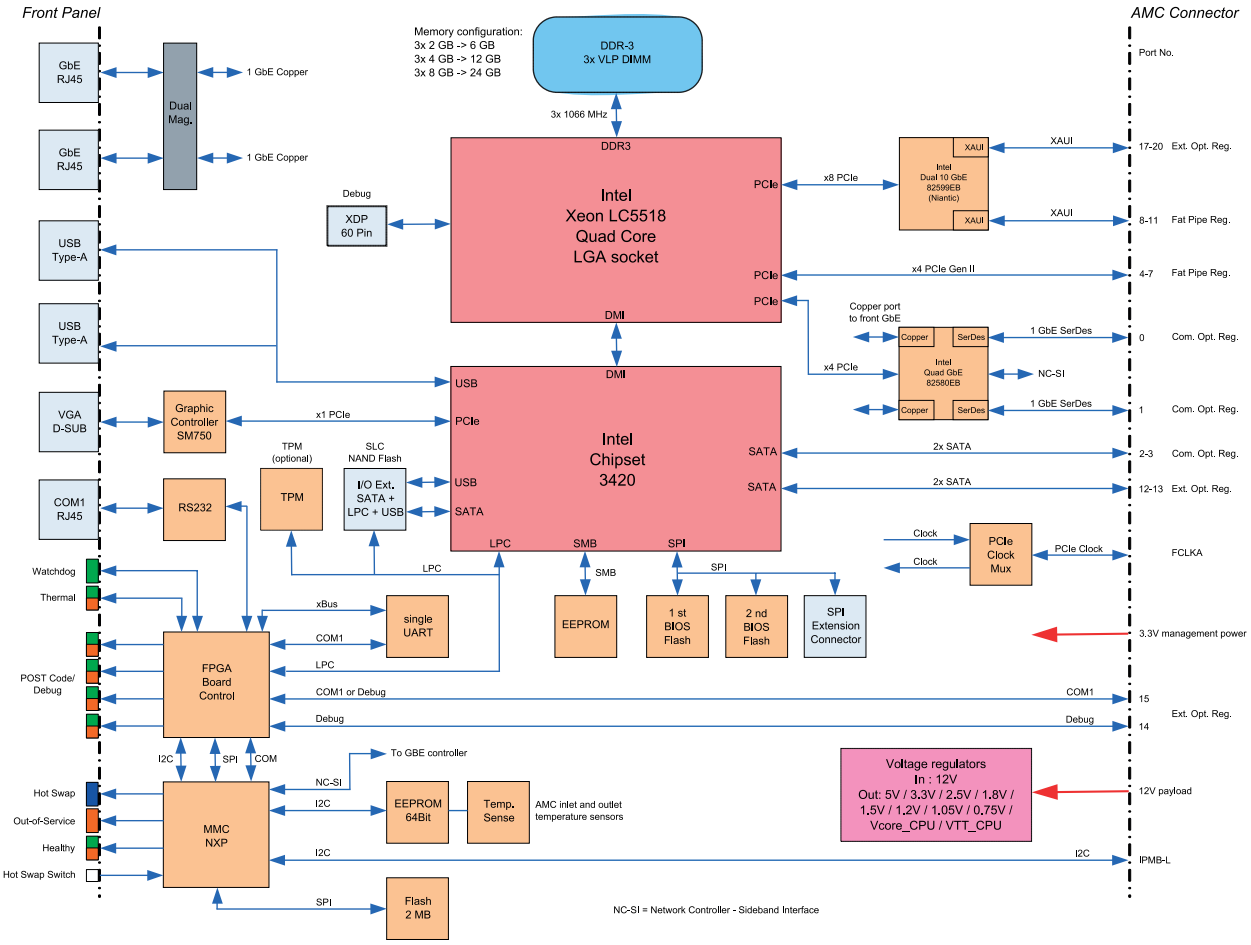
Connectivity

Two 10GbE (XAUI) interfaces in accordance with AMC.2 – provide comprehensive networking capabilities. In combination with a 10GbE MicroTCA Carrier Hub, like the Kontron AM4910, high performance multi-core MicroTCA platforms with massive data throughput are possible. Four GbE interfaces – two available on the front panel, two in accordance with AMC.2 – provide additional networking capabilities.

Furthermore, the Kontron AM5030 offers connectivity in accordance with AMC.1 (PCIe x4) and AMC.3 (2x SATA). Two USB 2.0 ports, one VGA (D-SUB) and one COM (RJ45) port accessible on the front panel round the extensive feature set out. The AM5030 can be equipped optionally with an up to 32 GB SATA NAND Flash memory module which can be screwed to the board.

Applications

Designed for compute-intensive applications the versatile AM5030 may be used as a main controller, data server, traffic processor or media processor in any doublewidth MicroTCA platform deployed for applications in the 3GSM, triple play, military, police, defense, medical, transportation and avionics market segments. Carriergrade telecommunications, as well as image and video processing applications in the medical, industrial quality management and simulation markets also benefit from the processing power and communication capabilities of the AM5030 processor module.



Technical Information

Form Factor	Double full-size AMC module
CPU and PCH	
Processor	The AM5030 supports the following microprocessor: Intel XEON LC5518 processor with integrated memory controller supporting ECC Quad Core 1.73 GHz, 48W TDP (thermal design power) with 3-channel memory access available on project request: » Dual Core 1.73 GHz LC3528 35W TDP » Single Core 1.73 GHz LC3518 23W TDP Both versions support a 2-channel memory access » Intel Turbo Mode technology » Up to 8 MB Shared Last Level Cache » Three channel DDR3 controller (800/1066 MHz) with ECC support » 1x16, 2x8, or 4x4 PCI Express port configurations » Direct Media Interface (DMI) to Ibex Peak
Platform Controller Hub	Intel Platform Controller Hub Ibex Peak 3420. Used interfaces on the AM5030: Five SATA ports, three USB 2.0 ports, one PCI-Express® x1 port, LPC interface, SPI interface, SMBus
Memory	
System Memory	Up to three channels DDR3 memory for a maximum of 24 GB (3x 8GB) DDR3 DRAM memory with ECC running at 1066 MHz Supported are Unbuffered ECC or Registered DDR3 VLP DIMM modules
NAND Flash	Up to 32 GB SLC NAND Flash on a dedicated SATA NAND Flash module
Flash (BIOS)	Two redundant 8 MB SPI Flash chips (2 x 8 MB) for uEFI BIOS controlled by the MMC
EEPROM	Serial EEPROM (24LC64) 64 kbit
Onboard Controllers	
10Gb Ethernet	One Intel 82599EB Dual 10 GbE x8 PCI Express® bus controller (Code name Niantic)
Gigabit Ethernet	One Intel 82580EB Quad Gigabit Ethernet PCI Express® bus controller » Two interfaces routed to front I/O connectors » Two interfaces routed to the AMC connector
Graphic	Silicon Motion SM750 via PCI Express x1,maximum resolution of 1920 x 1440 pixels and embedded 16 MB DDR on-chip memory
UART	EXAR XR16L580IL single UART, 16550 compatible
TPM	Infineon SLB9635TT TPM 1.2 controller (on request)
MMC	NXP LPC2368 controller with on-chip 512 kB Flash and 56 kB RAM
Watchdog	FPGA-based, software-configurable, two-stage Watchdog w. programmable timeout ranging from 125 ms to 256 s in 12 steps
System Interconnection	
10Gb Ethernet	One 10Gb XAUI interface on AMC ports 8-11 (Fat Pipes Region) One 10Gb XAUI interface on AMC ports 17-20 (Extended Options Region)
Gigabit Ethernet	Two 1000BASE-BX (SerDes) (Common Options Region ports 0-1)
Serial ATA	Two SATA ports (Common Options Region ports 2-3) Two SATA ports (Extended Options Region ports 12-13)
PCI Express	One x4 PCI Express® interface on AMC ports 4-7 (Fat Pipes Region)
Debug Interface	One Debug port (Extended Options Region port 14)
Serial Port	COM1 (LVTTL) (Extended Options Region port 15)
FCLKA	Bidirectional PCI Express® clock configuration
Front Panel Interfaces	
Gigabit Ethernet	Two 1000BASE-TX on RJ45 connector
VGA	15-pin D-Sub connector
USB	Two USB 2.0 ports on standard type A connectors
Serial Port	One RS232 UART interface on 10-pin mini connector
LEDs	Three Module Management LEDs, Four User-Specific LEDs, Ethernet LEDs
Onboard Interfaces	
Debug Interface	JTAG port for processor emulation probe connection, Serial POST Code (LVTTL) interface on the AMC port 14
I/O Extension	The I/O extension holds the following interfaces: SATA, USB, LPC interface and some power and control signals, battery input
Compliancy	
ATCA	12 V payload power, 3.3 V management power
MicroTCA	PICMG MTCA.0 Micro Telecommunications Comp. Architecture R1.0, PCI Express®: PCI Express® Base Specification Revision 1.0a
AMC	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: Storage Interfaces R1.0
IPMI	IPMI Intelligent Platform Management Interface Spec. V2.0, IPMI - Platform Management FRU Information Definition V1.0
SATA	Serial ATA: Serial ATA 2.5 Specification

Technical Information

CE	EN55022, EN55024, EN61000-6-2/-6-3, EN300386, EN60950-1
Vibration/Shock	tbd
Climatic Humidity	IEC60068-2-78
WEEE	Directive 2002/96/EC
RoHS	Directive 2002/95/EC
General	
Dimensions	Dimensions without retention screws on front panel: Full-size: 181.5 mm x 73.5 mm x 28.95 mm
Board Weight	Full-size: tbd grams (with heat sink)
MTBF	tbd h acc. Bellcore Issue 6, Ground Benign, Controlled, 30° C
Power Supply	12 V payload power, 3.3 V management power
Power Consumption	tbd
Environmental	
Temperature range	-5°C to +55°C (standard, depending on processor version and airflow in the system) -40°C to +70°C (storage) passive module heat sink, forced system airflow
Humidity	Operational: 5%-90% (non-condensing), Non-Operating: 5%-95% (non-condensing)
Software	
BIOS	AMI uEFI BIOS
IPMI	MMC (Module Management Controller) implementation compliant to PICMG, AMC.0, Kontron own IP
Linux	Generic BSP to be used with various Linux derivates; Verified for RedHat 5.3 and SUSE 11.2 (kernel 2.6.2x)
Windows	Windows7, Windows 2008 Server
WindRiver Linux	PNE 3.x

Ordering Information

Article	Description
Processor Modules	
AM5030R-1.73Q-6G	Intel® XEON LC5518 1.73 GHz, Quad Core, 3x 2 GB SODIMM Module DDR3 1066GHz with ECC, Frontpanel with screws
AM5030R-1.73Q-12G	Intel® XEON LC5518 1.73 GHz, Quad Core, 3x 4 GB SODIMM Module DDR3 1066GHz with ECC, Frontpanel with screws
AM5030R-1.73Q-24G	Intel® XEON LC5518 1.73 GHz, Quad Core, 3x 8 GB SODIMM Module DDR3 1066GHz with ECC, Frontpanel with screws (av. Q3/2010)
Accessories	
FLASH-SATA-16GB-AM5030	16 GByte NAND-Flash SATA module
FLASH-SATA-32GB-AM5030	32 GByte NAND-Flash SATA module

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