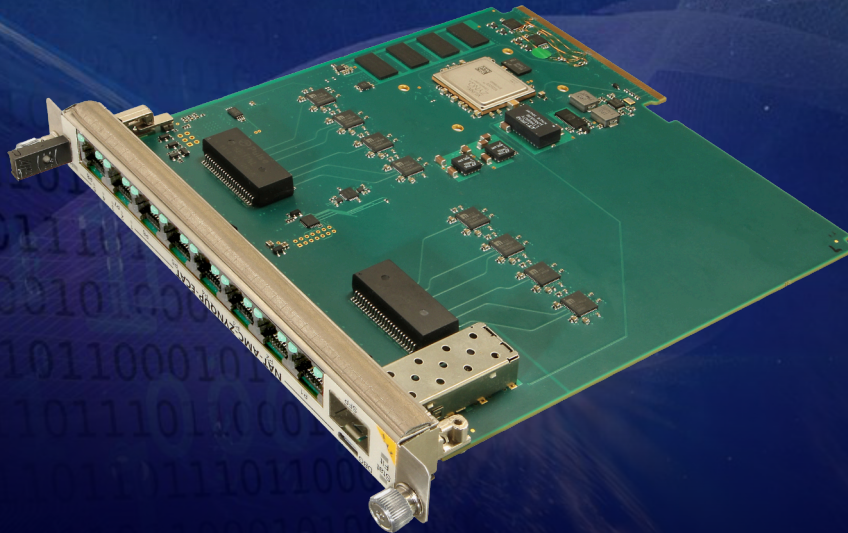




NAT-AMC-ZYNQUP-ECAT

With the **NAT-AMC-ZYNQUP-ECAT**, any embedded system based on the MTCA standard can be integrated as a slave node in an existing high performance, real time field bus system based on EtherCAT.

MTCA systems as slave devices of an EtherCAT network can be used for image and sensor preprocessing, or for complex control applications such as robotics.

In addition, EtherCAT also allows the transfer of standard Ethernet packets. Therefore, all the new features of remote control and management functions of MTCA systems can be used over the same cable.

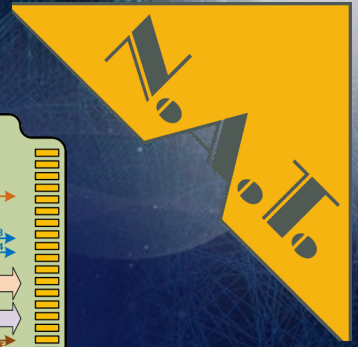
The core of the double-wide, mid-sized AMC is a XILINX Zynq Ultrascale+ MPSoC with 4 GB DDR4 RAM and QSPI FLASH. The SoC is linked to the backplane by two GbE interfaces on Ports 0/1, two PCIe-connections on AMC Ports 4/8, and (M)LVDS connections on Ports 12-15 as well as on Ports 17-20.

Moreover, the **NAT-AMC-ZYNQUP-ECAT** features an SFP-Connector at the front plate as general purpose I/O, a Micro-USB jack as serial- and JTAG-Interface, and 4 pairs of RJ45 connectors (100 Mbit) as interfaces to the EtherCAT network.

To use a MTCA system as the EtherCAT master, only a standard CPU AMC module running the Master EtherCAT software and standard Ethernet are needed.

To use a MTCA system as an EtherCAT slave, a special AMC module is needed, which adds and drops information on the fly in real time into the EtherCAT bit stream.

Due to its 4 pairs of RJ45 connectors, the **NAT-AMC-ZYNQUP-ECAT** can be embedded into four different EtherCAT networks as Slave Node; the assignment is user-defined and handled by the MPSoC.



Processing Resources

- XILINX Zynq MPSoC Ultrascale+
 - 2x A53 ARM CPU
 - 2x R5 CPU
 - ECAT FPGA IP Cores
- Atmel Atxmega128 as MMC

Memory

- 4GB, 64 bit-wide DDR4 RAM
- 1Gbit NOR-QSPI-FLASH
- MicroSD-Card

Miscellaneous

- Double, mid- or full-size AMC form factor
- 8x Microchip KSZ8061MNG Ethernet PHY
- SI5338 Differential Clock Generator PLL
- Compliance to AMC.0 R2.0, AMC.1, AMC.2, IPMI V1.5, HPM.1CE, RoHS, REACH

Front Panel Connectivity

- 8x 100Mbit Ethernet via RJ45
- SFP as GPIO of FPGA (LVDS or single-ended I/O)
- JTAG to USB and UART via Micro-USB
- 5 Status LEDs (red/green)
- Standard AMC LEDs for Status, Fault, Hot-Swap

Backplane Connectivity

- TCLKA-D
- AMC Ports 0/1: GbE
- AMC Ports 4/8: PCIe
- AMC Ports 12-15: LVDS P2P
- AMC Ports 17-20: MLVDS Bus
- IPMI