



NAMC-MPX



Overview

The **NAMC-MPX** is a full-size AMC (Advanced Mezzanine Card) carrier board for MPX modules (MicroSys PPC EXTendable modules). It is dedicated to embedded markets such as industrial controls, automation, (tele-)communication, defense&aerospace and medical area.

The **NAMC-MPX** offers two Ethernet, one USB and one RS232 interface at the front panel. At the common options region of the AMC connector (port 0/1) are two GbE interfaces as well as optionally FAT Pipe interfaces as PCIe, SRIO or XAUI at port 4-7.

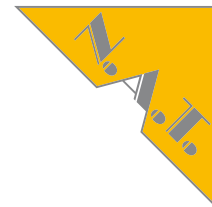
The distinctive feature of the **NAMC-MPX** is the combination of N.A.T.'s base AMC board with an exclusive choice of powerful miriac™ MPX modules by MicroSys (MicroSys PPC EXTendable Modules). The bandwidth of these scalable CPU modules covers on-board processors from low-end PowerQUICC II Pro MPC8349 (**NAMC-MPX-PQIIP-8349**), to mid-scale PowerQUICC III MPC8548 (**NAMC-MPX-PQIII-8548**) or high-end QorIQ™ P1011 (NAMCMPX-QorIQ-P1011) or QorIQ™ P2020 (NAMCMPX-QorIQ-P2020) by Freescale as well as Intel® Atom™ Processors E6xx (**NAMC-MPX-Atom-E600**). These MPX modules offer versatile IOs as DUART, Ethernet, I(2)C and PCI.

Applications requiring scalable processor performance from low-end to high-performance, sustainable base board attributes and customized IO extensions benefit from the price sensitive, flexible **NAMC-MPX** by N.A.T. and MicroSys.



Technical Data

NAMC-MPX



Overview

The **NAMC-MPX** base board is available as a full-size Advanced Mezzanine Card (AMC) which can be equipped with versatile MicroSys PPC EXTendable Modules (MPX). The **NAMC-MPX** is targeting applications for industrial controls, automation, (tele-)communication, defense&aerospace and medical area with extensive need for scalability, flexibility and extendibility.

CPU and Memory

The **NAMC-MPX** can be equipped with the low-end PowerQUICC II Pro MPC8349, the mid-scale PowerQUICC III MPC8548 or the high-end QorIQ™ P2020 by Freescale as well as Intel® Atom™ Processors Z530 / Z520PT.

Fabric Support

Base Fabric

The **NAMC-MPX** provides two GbE interfaces at port 0 and port 1 of the common options region of the AMC backplane connector and two SATA interfaces at port 3 and port 4.

Fat Pipe

The **NAMC-MPX** offers four bidirectional serial lines that can be operated either as PCIe, SRIO,

or a combination of both. The **NAMC-MPX** can be configured to implement either an x1 (port 4 or 8) or an x4 PCIe interface (ports 4-7 or ports 8-11). A further option is either two x1 (port 4 and 8) or one x4 SRIO interface(s) (port 4-7 or port 8-11). The speed is configurable for 1.25Gb/s, 2.5Gb/s or 3.125Gb/s. For systems using PCIe and SRIO the board can be set up to offer one x1 PCIe interface (port 4) and one SRIO interface (port 8). In this case the speed of the SRIO interface is fixed at 2.5Gb/s.

MPX Modules

Currently, there are five different types of MPX modules available:

PQIIP-8349 featuring

- MPC8349 Module with e300 Power

PC Core @667MHz

- integrated DDR Memory Controller
- up to 256MB DDR SDRAM
- up to 32MB Flash
- 1MB SRAM (option)
- RTC, Watchdog, Reset Generator

PQIII-8548 featuring

- MPC8548 Module with e500 Power PC Core @1333MHz

- 512kB L2Cache
- Double-precision floating point APU
- integrated DDR Memory Controller
- up to 1GB DDR II SDRAM (with ECC)
- up to 32MB Flash
- 1MB SRAM (option)
- RTC, Watchdog, Reset Generator

QorIQ-P1011 featuring

- QorIQ™P1011 single e500v2 Core CPU @533-800MHz
- up to 1 GB soldered DDR2 memory
- up to 512 MB NAND Flash
- RTC, Watchdog, Reset Generator

QorIQ-P2020 featuring

- QorIQ™P2020 dual e500v2 Core CPU @1.2GHz
- up to 2 GB soldered DDR2 memory
- up to 512 MB NAND Flash
- RTC, Watchdog, Reset Generator

Atom-E600 featuring

- Intel®Atom™ E6xx CPU up to 1,6 GHz
- Platform Controller Hub EG20T
- up to 2GB DDR2 memory

Key Features

Base Board NAMC-MPX

Backplane Connectivity

Fat Pipe Interface Options

- PCIe x4 on ports 4-7 or ports 8-11
- PCIe x1 on port 4 or port 8
- SRIO x4 on ports 4-7 or ports 8- 11; speed 1.25Gb/s or 2.5Gb/s or 3.125 Gb/s per lane
- SRIO x1 on ports 4 and port 8; speed 1.25Gb/s or 2.5Gb/s or 3.125 Gb/s
- PCIe x1 on port 4 and SRIO x1 on port 8; speed 2.5Gb/s (options depend on MPX module)

Networking

- 2 x 1 GbE at AMC port 0 and port 1

Face Plate Connectors & Indicator LEDs

- 4 bicolour LEDs integrated in the RJ45 at front panel
- all LEDs controllable via FPGA and assignable with any functionality
- 2 standard AMC LEDs as fault indicator and general purpose status signal
- USB and RS232 connectors

Power Consumption

- 12 V, 2-4A

Environmental Conditions

- operating temperature: 0°C to +55°C with forced cooling
- storage temperature: -40°C to +85°C
- relative humidity: 10% to 90% rh noncondensing

Standard Compliance

- PICMG AMC.0 Rev. 2.0
- PICMG AMC.1 Rev. 1.0
- PICMG AMC.2 Rev. 1.0 (Type E2)
- PCI Express Base Specification Rev. 1.1
- PICMG SFP.0 Rev. 1.0 (System Fabric Plane Format)
- PICMG SFP.1 Rev. 1.0 (Internal CC)
- IPMI Specification v2.0 Rev. 1.0
- PICMG MTCA.0 Rev. 1.0
- ITU-T G.823 (Jitter Attenuation)