

NAMC-8569-xE1/T1



The **NAMC-8569-xE1/T1** is an Advanced Mezzanine Card (AMC) with a powerful Freescale Power QUICC III MPC8569 processor providing access to multiple E1/T1 interfaces in next generation systems based on MTCA and ATCA standards. The TDM-to I-TDM converter connects the on-board E1/T1 interfaces with a Gigabit Ethernet port for system interconnect (I-TDM).

The **NAMC-8569-xE1/T1** is dedicated for (tele-)communication applications with extensive need for a high aggregation of multiple E1/T1 interfaces combined with access to switched networks based on high bandwidth Ethernet.

The **NAMC-8569-8E1/T1** base board offers 8-E1/T1 interfaces at the front panel and two 1GbE interfaces at the common options region of the AMC connector (ports 0/1).

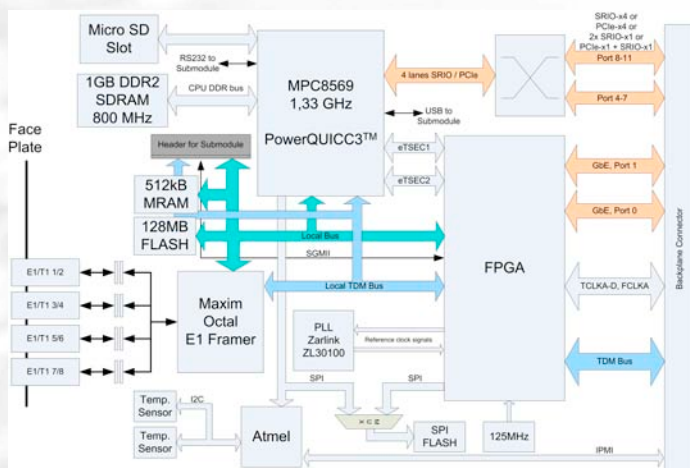
The optional mezzanine provides additional 8E1/T1 interfaces and expands the board to 16E1/T1, the **NAMC-8569-16E1/T1**.

The **NAMC-8569-xE1/T1** is optimized to process standard telecom signaling protocols as well as special payload handling algorithms in next generation's systems based on the MTCA or ATCA standards.

Extensive software support makes the **NAMC-8569-xE1/T1** an ideal choice for any voice/data application in ISDN, SS7, ATM, VoIP or 3G environments.

Technical Data

NAMC-8569-xE1/T1



Overview and Purpose

The NAMC-8569-xE1/T1 is available as a single compact-, mid- or full-size AMC providing access to multiple E1/T1 interfaces. The full-size version can be equipped with an additional mezzanine board to count up the line interface to 16 E1/T1. The NAMC-8569-xE1/T1 is dedicated for (tele-)communication applications with extensive need for a high aggregation of multiple E1/T1 interfaces combined with access to switched networks based on high bandwidth Ethernet. The module has been optimized to process standard telecom signaling protocols like ISDN and SS7 as well as special payload handling algorithms.

System Processor and Memory

The NAMC-8569-xE1/T1 is equipped with the very powerful Freescale Power QUICC III MPC8569, which offers the double performance as its predecessor. It offers an e500 PowerPC core combined with dedicated interface hardware and four RISC cores. This network processor operates at core frequencies of 800, 1000 or 1333 MHz. The NAMC-8569-xE1/T1 provides 128-1024 MB DDR2 SDRAM and 128 MB FLASH memory.

E1/T1 Access

The onboard DS 26518 framer provides access to 8/16-E1/T1 lines at the front panel by four/eight RJ45 connectors. Besides the standard framing formats the NAMC-8569-xE1/T1 supports framing standards as:

- T1 Super Frame (SF)
- T1 Extended Super Frame (ESF),
- T1 Digital Multiplexer (DM)
- T1 Switch Line Carrier -96 (SLC-96)
- E1 G.704 and G.706 (CRC-4 multiframe)

The extremely sensitive input amplifier circuits support signal attenuation of up to -36db making the board an optimal choice for all kind of monitoring applications.

TDM and I-TDM Interface

The E1/T1 framer interfaces to the on-board timeslot interchanger (TSI) chipset. The TSI

as well as the TDM-to-ITDM bridge are incorporated in an ECP3 FPGA from Lattice. The TSI allows flexible routing as well as multicasting of 64kbps timeslots between the various E1/T1 streams. The TDM-to-ITDM bridge converts the TDM oriented bit stream into Ethernet packets and vice versa.

In addition to the I-TDM interface, the TSI offers an optional 32MHz clocked H.110-alike TDM backplane interface on AMC connector (extended area).

Fabric Support Fat Pipe

The NAMC-8569-xE1/T1 offers four bidirectional serial lanes that can be operated either as PCIe, SRIO or a combination of both.

The interfaces at NAMC-8569-xE1 can be configured to implement either

- PCIe: one x1 (port 4 or 8) or one x4 (ports 4-7 or 8-11) or
- SRIO: two x1 (port 4 and 8) or one x4 (port 4-7 or 8-11).

The speed is configurable for 1.25Gb/s, 2.5Gb/s or 3.125Gb/s.

PCIe and SRIO: one x1 PCIe (port 4) and one SRIO (port 8).

In this case the speed of the SRIO interface is fixed at 2.5Gb/s

Base Fabric

The NAMC-8569-xE1/T1 provides two 1000BaseX interfaces at port 0 and port 1 of the common options region of the AMC backplane connector.

Extender Mezzanines

Currently, there are two different types of extender mezzanines available. For applications requiring more TDM interfaces, N.A.T. offers the NAMC-8569-16E1/T1 with an extender mezzanine supplying 8 additional E1/T1 lines at the front panel. The NAMC-8569-DS3/E provides four DS3/E3 interfaces accessible via four RJ45 interfaces at the front panel.

Technical Data

System Processor and Memory

- up to 1,33 GHz Freescale Power QUICC III MPC8569
- 128-1024 MB DDR2 SDRAM
- 16-128 MB FLASH PROM
- optional Micro-SD-Card slot

Front Panel Interface

- 8-/16-E1/T1, clock distribution via clock region at AMC connector
- 4 DS3/E3 available via four RJ45

Backplane Connectivity

Fat Pipe Interface Options

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

I-TDM Interface

- 1024 bidirectional 64kbit/s channels
- 125 μ s-mode and 1ms-mode support

TDM (optional)

- H.110 alike 32MHz clocked TDM interface connects to ports 12, 13 (data) and port 14 (sync) of the common options region of the AMC connector

Networking

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

Indicator LEDs

- 8/16 (extension module) bicolour LEDs integrated in the RJ45 for E1 link status
- 2 standard LEDs as fault indicator and for general purpose status

Operating System Support

- OK-1, LINUX (on request)

Power Consumption

- 12 V, 2A (1,33GHz CPU)

Environmental Conditions

- operating temp.: 0°C to +55°C with forced cooling
- storage temp.: -40°C to +85°C
- humidity: 10% to 90% rh non-condensing

Standard Compliance

- PICMG AMC.0 Rev. 2.0/AMC.1 Rev. 1.0/AMC.2 Rev. 1.0 (Type E2)
- PCIe Base Spec. Rev. 1.1
- PICMG SFP.0 Rev. 1.0/SFP.1 Rev. 1.0 (Internal CC)
- IPMI Spec. v2.0 Rev. 1.0
- PICMG MTCA.0 Rev. 1.0
- ITU-T G.823 (Jitter Attenuation)

