



V Rose Microsystems, Inc.

www.vrosemicrosystems.com

VRM-NAMC-STM1/4

Product Data Sheet

Overview:

The VRM-NAMC-STM1 and VRM-NAMC-STM4 are telecommunications interface boards in **AMC (Advanced Mezzanine Card)** form factor for use with an ATCA or uTCA system. The NAMC-STM1 and NAMC-STM4 are targeted at telecom applications dealing with **SDH (Synchronous Digital Hierarchy)**, such as SS7, ISDN or 3G/3.5G mobile applications in optical OC-3/STM-1 or OC-12/STM-4 and SONET environments.

Being equipped with an add/drop multiplexer/demultiplexer chipset both the NAMC-STM1 and the NAMC-STM4 are ideal single board platforms to interface between the frame oriented STM-1 / 4 SDH based networks and classic **TDM (Time Division Multiplex)** standards i.e. as E1/T1/J1 or E3/T1/J3. Both boards provide I-TDM functionality on either AMC ports 0 or 1.

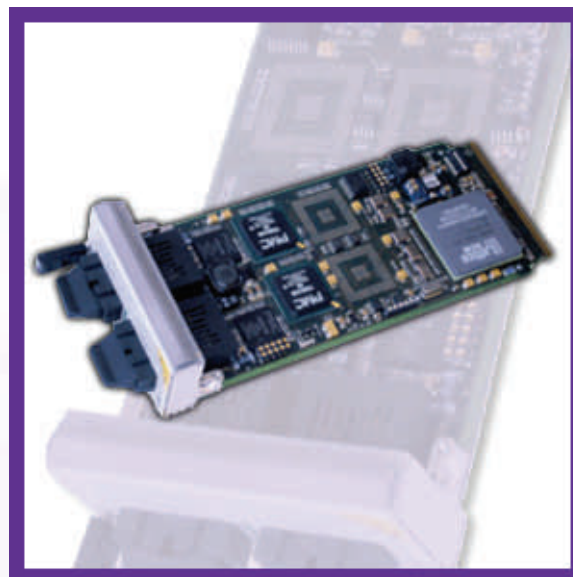
Features:

Overview and Purpose

Both the NAMC-STM1 and the NAMC-STM4 are telecommunications interface boards in AMC (Advanced Mezzanine Card) form factor. The NAMC-STM1 / 4 is targeted at telecom applications dealing with Synchronous Digital Hierarchy (SDH), such as SS7, ISDN or 3G/3.5G mobile applications in optical OC-12/STM-4 and SONET environments. Being equipped with an add/drop multiplexer/demultiplexer chipset the NAMC-STM1 / 4 is an ideal single board platform to interface between the frame oriented STM-4/SDH networks and classic TDM (Time Division Multiplex) standards as E1/T1/J1 or E3/T3/J3. Possible applications are i.e. add/drop or terminal multiplexers.

Optical Interface

The optical 155Mbps OC3/STM1 line interface of the NAMC-STM1 and the 622Mbps OC-12/STM-4 line interface of the NAMCSTM4 are both available on standard OC-3/OC-12 SDH STM-1/STM-4 connectors at front.



VT/TU Access

Both the OC-3/SMT1 and the OC-12/STM-4 ramers are connected to an add/drop multiplex/demultiplex chipset. Since the chipset does the complete SDH pointer processing it is capable of accessing VT/TU tributary unit groups within the VC3, VC4 and VC4-4c virtual containers and thus to extract/insert any of the 84 T1/J1 or 63 E1 streams (NAMC-STM-1) or 4*84 T1/J1 or 4*63 E1 streams (NAMC-STM4) including the respective clocking information contained in a single STM-1 or STM-4 SDH frame.

Ordering Options: -I-N-A

VRM-NAMC-STM1 or VRM-NAMC-STM4

-I: Type of optical interface

- M = multimode interface
- S = Single mode interface

-N: Number of optical interfaces

- 1 = Single optical interface (standard)
- 2 = Dual optical interface (APS or monitoring)

-A: Kind of application

- T = Termination applications (single Temux)
- M = Monitoring applications (dual Temux) not available with VRM-NAMC-STM4



V Rose Microsystems, Inc.

www.vrosemicrosystems.com

VRM-NAMC-STM1/4

Product Data Sheet

T1/J1/E1 Access

The multiplexer/demultiplexer chipset on the NAMC-STM1 includes 84 T1/J1 or 63 framers while the one on the NAMC-STM4 includes 4x84 T1/J1 framers or 4x63 E1 framers. Each framer has its individual Rx/Tx, CLK and SYNC signals. For T1 the framing standards SF, SLC-96 and ESF, for E1 G.704 and G.706 (CRC-4 multiframe), for J1 the TTC JT-G.704 as well CRC-6 calculation are supported. The chip also provides full jitter attenuation.

TDM and I-TDM Interface

The E1/T1/J1 framer interfaces to the onboard timeslot interchanger (TSI) chipset. The TSI as well as the TDM-to-I-TDM bridge are incorporated in an onboard FPGA. The TSI allows flexible routing as well as multicasting of 64kbps timeslots between the various E1/T1/J1 streams. The TDM-to-I-TDM bridge converts the TDM oriented bit stream into Ethernet packets and vice versa. The Ethernet packets are sent and received via either the AMC ports 0 or 1 (selectable) 1000BaseT-BX Ethernet interface (Fabric A). In addition to the I-TDM interface, as a breaking-through feature of the NAMCSTM4, the TSI offers an optional 32Mhz clocked H.110-like TDM backplane interface on the AMC extended con-

IPMI and Compliance

PICMG AMC.0 R1.0

PICMG 2.9 R1.0

I-TDM and Compliance

GigEth (Fabric A)

at common options region

PICMG SFP.1 R1.0

TDM (option)

H.110 like 32MHz clocked TDM interface at extended option region

Networking

One OC-3 SDH/STM-1 (NAMC-STM1) or OC-12 SDH/STM-4 (NAMC-STM4) optical fibre interface on standard connector at front panel (SC duplex single or multi mode transceiver), one GigEth at common options region (port 0 or port 1, selectable)

PCIe Interface and Compliance

X4 PCIe interface (optional)

PICMG AMC.1 R1.0

Indicator LEDs

4 software programmable LEDs at front panel

Operating System Support

OK-1, VxWorks, LINUX

Power Consumption

3.3V, 12V, 20W typ.

Environmental

0°C to +60°C with forced air cooling (storage): -40°C to +85°C

Relative Humidity:

10% to 90% at +55°C (non-condensing)

Applications

- high density multiplexers, multi-service switches, edge routers and digital modems
- Frame Relay switches and access devices
- SONET/SDH add drop and terminal multiplexers
- optical access equipment
- digital access cross-connect systems

