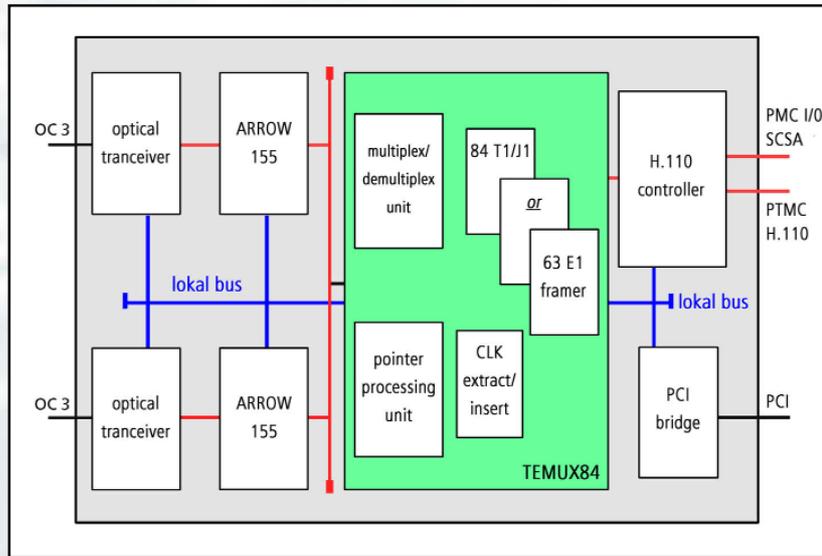# Telecommunication PMC Interface Board

NPMC-STM1

The NPMC-STM1 is a telecommunications interface board in PMC (PCI Mezzanine Card) form factor. The NPMC-STM1 is 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 and SONET environments.

Being equipped with an add/drop multiplexer/demultiplexer chipset the NPMC-STM1 is an ideal single board platform to interface between the frame oriented STM-1/SDH networks and classic TDM (Time Division Multiplex) standards as E1/T1/J1. Possible applications are i.e. add/drop multiplexer or terminal mulitplexer.

TÜV CERT
DIN EN ISO 9001
Zertifikat: 01 100 000333

Technical Data

Overview

The NPMC-STM1 is a telecommunications interface board in PMC form-factor. Being equipped with an add/drop multiplexer/demultiplexer chipset and an H.110 controller the NPMC-STM1 is targeted at telecom applications dealing with SDH, such as SS7, ISDN or 3G/3.5G mobile applications in optical OC-3/STM-1 and SONET environments.

PCI-Interface

The NPMC-STM1 is a P1386.1/ Draft 2.0 compatible PMC module that can be plugged onto any VME, cPCI or other carrier board offering a PMC extension slot. The PCI-to-local-bus bridge directly interconnects the PCI bus to the local bus and the onboard devices. The NPMC-STM1 is PCI Rev. 2.2 compatible (32bit).

Optical Interface

The two optical 155Mbps OC-3/STM-1 line interfaces are available on two standard OC-3 SDH/STM-1 connectors at the front panel. The transceivers are available for single or multi-mode fibre access. Each of the transceivers is connected to a PMC-Sierra ARROW 155 framer, both framers being connected to each other supporting the Automatic Protection Switching (APS).

VT/TU Access

The two ARROW155 framers are connected to the TEMUX84 of PMC-Sierra, an add/drop multiplexer/ demultiplexer chip. Since the chip does the complete SDH pointer processing it is capable of accessing STS-1 SPEs (Synchronous Payload Envelopes), TUG3 tributary unit groups within in VC4 container as well as in VC3 virtual containers and thus to extract/insert any of the 84 T1/J1 or 63 E1 streams including the respective clocking information contained in a single STM-1 SDH frame. Supported mappings are VT1.5/VT-2 to STS-1 SPE, TU-11/TU-12 to STM-1/VC3 or toTUG3 to STM-1/VC4. The chip supports the M13 and G.747 multiplexing.

T1/J1/E1 Access

The multiplexer/demultiplexer function block of the TEMUX84 interfaces to internal 84 T1/J1 framers or 63 E1 timesliced framers, each having 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.

H.110 Interface

The T1/J1/E1 framers interface to the onboard H.110 contoller, the Zarlink MT90866. The H.110 controller allows flexible 64kbps timeslot routing between the various T1/J1/E1 streams as well as the selection of one of the T1/J1/E1 clocks as the master clock for the TDM backplane bus. Thus it is possible to distribute all 84 T1/J1 or 63 E1 streams jitter-free and synchronised via the backplane.

Backplane TDM Access

The onboard H.110 bus controller offers access to the backplane TDM bus supporting full the H.110 bus (PTMC) or the SC Bus subset on the PMC multi-purpose I/O connectors.

PCI Interface and Compliance
PCI Rev. 2.2, 33MHz/32bit

H.110 Bus (and subsets thereof)
H.110 (PTMC) and SCSA subset

Networking
Two OC3 SDH/STM1 optical fibre on standard connector at front panel (SC duplex single or multi mode transceiver)

Indicator LEDs
4 software programmable LEDs at the front panel

Operating System Support
OK-1, VxWorks, LINUX

Power Consumption
3.3V 2.2A (max.), to be determined

Environmental
Temperature (operating): 0°C to +60°C with forced air cooling

Temperature (storage): -40°C to +85°C

Relative Humidity: 10% to 90% at +55°C (non-condensing)

Standard Compliance
P1386 and P1386.1/Draft 2.0

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