PM8311 TEMUX 168

High Density T1/E1 Framer, VT/TU Mapper & M13 Mux with Integrated SONET/SDH Framers

PMC - SIERRA

Product Overview

The PM8311 TEMUX 168 is a single device integrating 2xOC-3/STM-1 SONET/SDH framers for working and protect links, 168/126 T1/E1 framers, 6 DS3/E3 framers, 6 M13/G.747 multi-plexers and 6 VT/TU mappers.

Designed for lower-density applications than its PM8310 TEMUX 336 counterpart, the TEMUX 168 device also interfaces seamlessly with a broad range of PMC-Sierra solutions. The TEMUX 168 includes the Extended Serial SONET/SDH interface (ESSI), enabling:

- A low pin-count interconnect to additional TEMUX 168 devices
- SONET/SDH cross-connects in transport applications
- Ethernet over SONET/SDH mappers such as the PMC-Sierra PM4390 ARROW M8xFE

The device also includes the SBI bus, which enables simple inter-connects with PMC-Sierra Layer 2 solutions and third-party network processors. The TEMUX 168 is fully hardware and software compatible with the TEMUX 336.
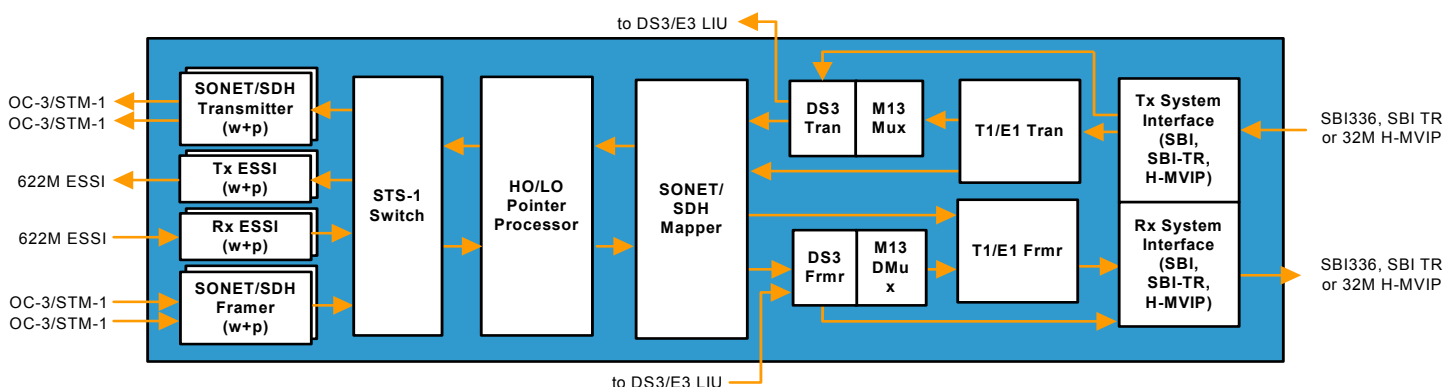
Benefits

- Meets ATCA/AMC space and power constraints with its complete SONET/SDH front end with T1/E1, DS3/E3 framers/mappers/multiplexers on a single-chip

- Simplifies interconnection to layer 2 processors with an integrated SBI336 bus
- Meets timing requirements for wireless backhaul, critical for CES-based PWE3 applications, by enabling independent timing for all 168/128 T1/E1s across the SBI336 using the V4 byte
- Enables equipment protection in ACTA/AMC systems with its extended Serial SONET/SDH Interface (ESSI) that can aggregate up to 2xOC-3/STM-1 on a single 4-wire interface
- Supports linear 1+1 protection on the same device or to a companion TEMUX 168
- Enables a scalable architecture from T1/E1 up to OC-12/STM4
- Supports T1/E1 mapping directly into SONET/SDH using V1.5/TU-11 or VT2/TU-12 or multiplexed DS3s using M13 or G.747
- Supports advanced test features including programmable pattern generation and detection for up to 64 byte sequences
- Ensures reliability with a fully integrated, monolithic IC

Product Highlights

- 4 OC-3/STM-1 SONET/SDH framers (working and protection)
- 168 T1/126 E1 framers
- 6 M13 multiplexers, including support for G.747 multiplexing
- 6 DS3/E3 framers
- High order path processor for a SONET STS-3 or an SDH STM-1
- Tributary path processor for 168 VT1.5/TU-11s or 126 VT2/TU-12s

Block Diagram

- Byte synchronous and bit asynchronous mapper for 168 VT1.5/TU-11s or 126 VT2/TU-12s
- Tributary path processor for 6 TU-3s
- Mapper for 6 DS3s or 6 E3s (TU-3 and AU-3)

Interfaces

- Up to 4 SONET/SDH network interfaces (working and protection)
- SONET/SDH Transport and Path overhead interface
- Two 622-Mbit/s Extended Serial SONET/SDH Interfaces (ESSIs)
- Line-side serial interface for up to 6 DS3s or E3s
- System-side 77.76 Scalable Bandwidth Interconnect (SBI336) bus for high-density interconnection of up to 168 T1 streams, 126 E1 streams, 6 DS3 streams, 6 E3 streams, or 6 arbitrary rate streams
- System-side serial interface for up to 6 DS3s or E3s
- Flexible bandwidth interface for up to 6 arbitrary rate ports
- 32 Mbit/s Synchronous TDM Interface (based on H-MVIP)
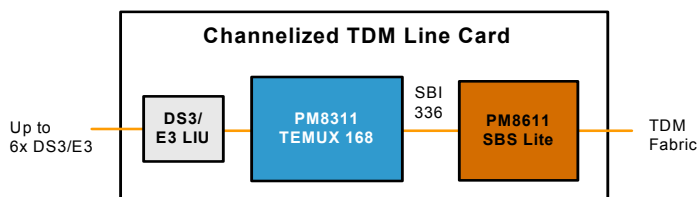- Microprocessor- and IEEE 1149.1-compliant JTAG interface

Package

- 896-pin FCBGA (31 x 31 mm)
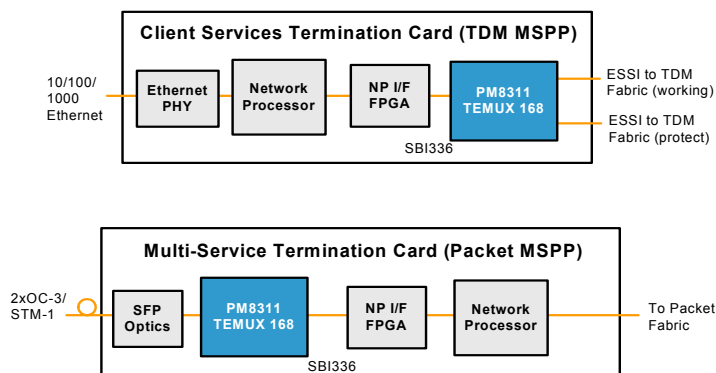- Supports industrial temperature range (-40 °C to 85 °C)

Applications

- ATCA/AMC-based line cards
- Voice and media gateways
- Wireless base station controllers (BSC) and radio network controllers (RNC)
- Routers and multi-service switches
- Edge aggregation switches
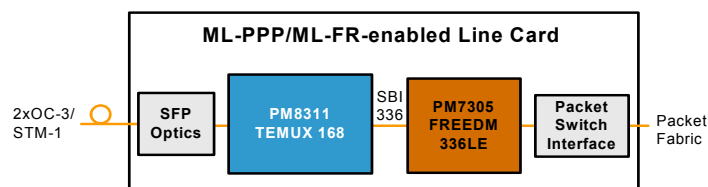- Multi-service provisioning platforms (MSPP) / Optical Transport Platforms (OTP)
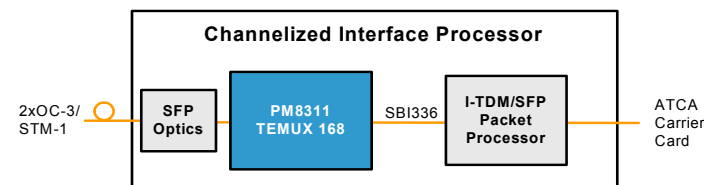
Next Generation Voice

Channelized TDM Line Card

Up to 6x DS3/E3 → | DS3/ E3 LIU | PM8311 TEMUX 168 | SBI 336 | PM8611 SBS Lite | → TDM Fabric

MSPP and Packets OTPs

Client Services Termination Card (TDM MSPP)

10/100/ 1000 Ethernet → | Ethernet PHY | Network Processor | NP I/F FPGA | PM8311 TEMUX 168 |
SBI336
→ ESSI to TDM Fabric (working)
→ ESSI to TDM Fabric (protect)

Multi-Service Termination Card (Packet MSPP)

2xOC-3/ STM-1 → | SFP Optics | PM8311 TEMUX 168 | NP I/F FPGA | Network Processor | → To Packet Fabric
SBI336

Router/Multi-Service Switch

ML-PPP/ML-FR-enabled Line Card

2xOC-3/ STM-1 → | SFP Optics | PM8311 TEMUX 168 | SBI 336 | PM7305 FREEDM 336LE | Packet Switch Interface | → Packet Fabric

ATCA 3G RNC and Gateway

Channelized Interface Processor

2xOC-3/ STM-1 → | SFP Optics | PM8311 TEMUX 168 | SBI336 | I-TDM/SFP Packet Processor | → ATCA Carrier Card

Further Resources

Wireline Equipement Solutions

www.pmc-sierra.com/ethernet-sonet-sdh-mac-framer-controller-chips

Technical Documentation

www.pmc-sierra.com/products/DocFind.html

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