# PM8311 TEMUX 168

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

**Preliminary Product Brief**

## 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 multiplexers 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 interconnects with PMC-Sierra Layer 2 solutions.

The TEMUX 168 is fully hardware and software compatible with the TEMUX 336.

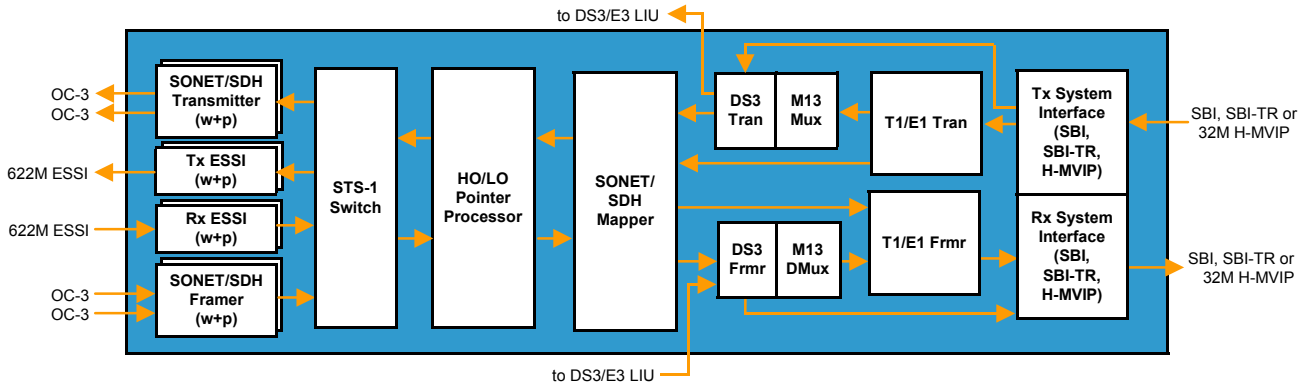
## BENEFITS

- Complete SONET/SDH front end with T1/E1, DS3/E3 framers/mappers/multiplexers on a single-chip that meets ATCA/AMC space and power constraints.
- Integrated SBI bus simplifies interconnection to layer 2 processors
- Meets timing requirements for wireless backhaul, critical for CES-based PWE3 applications, by enabling independent timing for all 168/128 T1/E1s across the SBI using the V4 byte
- Extended Serial SONET/SDH Interface (ESSI) can aggregate up to 2xOC-3/STM-1 on a single 4-wire interface, enabling equipment protection in ACTA/AMC systems.
- 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
- Fully integrated, monolithic IC ensures reliability

## PRODUCT HIGHLIGHTS

- 4 OC-3/STM-1 SONET/SDH framers
- 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
- 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)

## BLOCK DIAGRAM





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## INTERFACES

- Up to 4 SONET/SDH network interfaces
- 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 Scalable Bandwidth Interconnect (SBI) 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

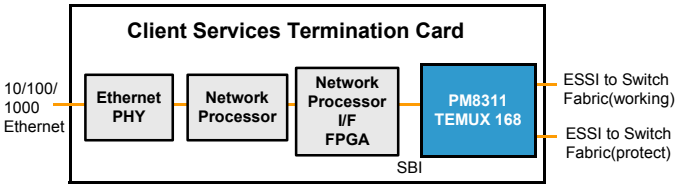
## PACKAGE

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

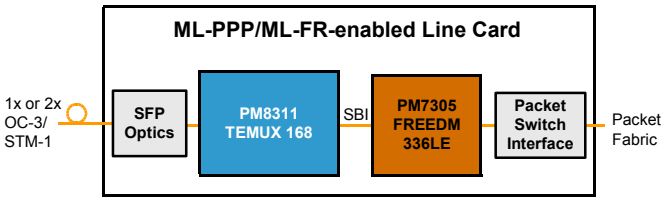
## APPLICATIONS

- 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

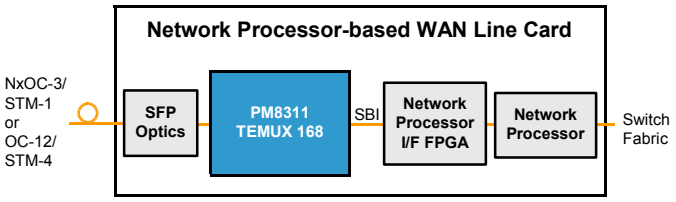
## TRANSPORT EQUIPMENT ADM, MSPP & PACKET ADMS



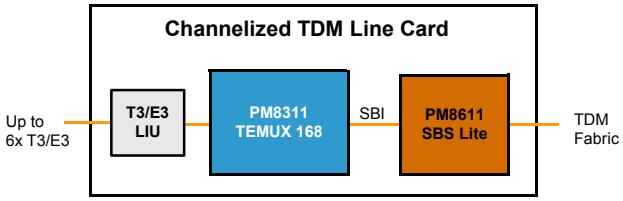

## ROUTER/MULTI-SERVICE SWITCH




## WIRELESS CARD




## NEXT-GENERATION VOICE




## FURTHER RESOURCES

### WIRELINE EQUIPMENT 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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