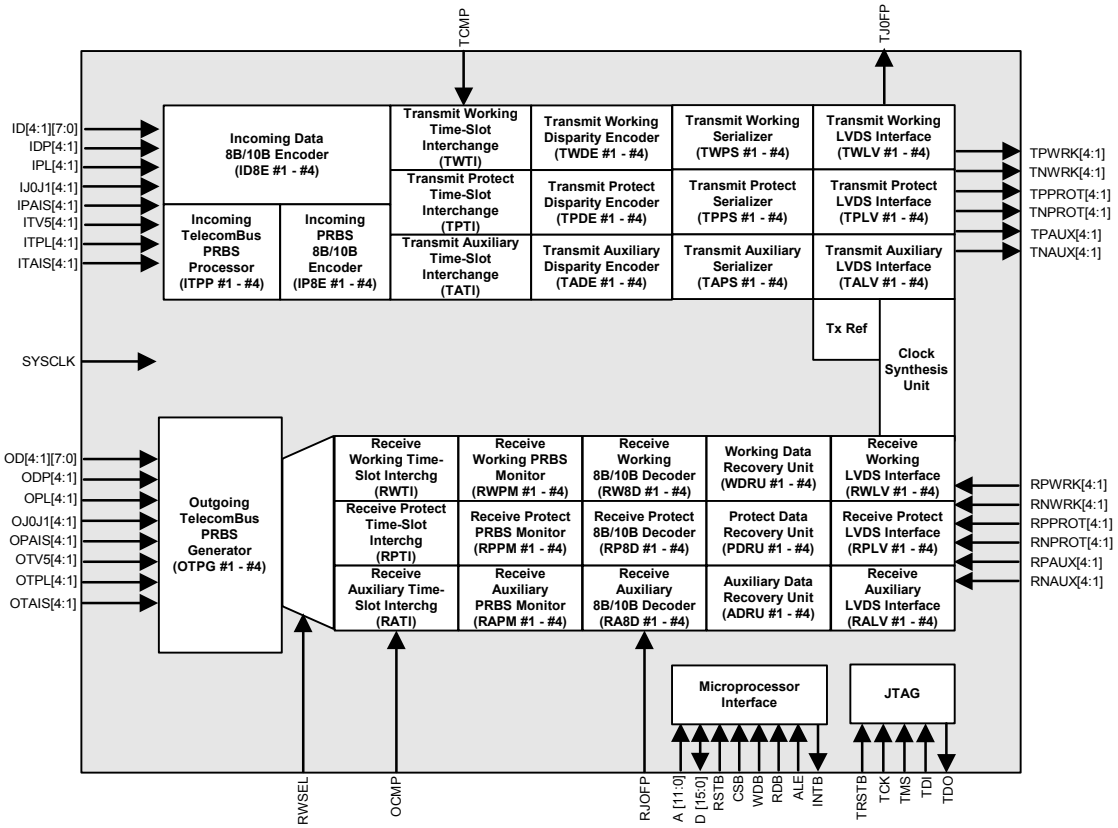
TelecomBus Serializer for 2.5 Gbit/s Interconnect

FEATURES

- Encodes data from the Incoming parallel TelecomBus to a set of four working, a set of four protection, and a set of four auxiliary 777.6 Mbit/s LVDS serial TelecomBus links with extended 8B/10B-based encoding.
- Decodes data from a set of four working, a set of four protection, or a set of four auxiliary 777.6 MHz LVDS serial links with extended 8B/10B-based encoding to the Outgoing TelecomBus stream.
- Provides capacity to carry an STS-12/STM-4 stream in each LVDS serial TelecomBus link. Four links can be aggregated to form an STS-48c/STM-16c stream.
- Provides capacity to carry an STS-12/STM-4 stream in each 8-bit bus of the parallel TelecomBus stream. Four 8-bit buses can be aggregated to carry an STS-48c/STM-16c stream.
- Provides redundant working, protection and auxiliary transmit LVDS serial TelecomBus streams and redundant receive LVDS serial TelecomBus streams for protection switching purposes.
- Provides independent time-slot interchange blocks on the Incoming and Outgoing parallel TelecomBus streams to allow arbitrary arrangement of time-slots at STS-1 granularity.
- Supports redundant working/protection time-space-time switch fabric.
- Supports through-traffic, drop-traffic and protection switching in UPSR, 2-fibre BLSR and 4-fibre BLSR applications (when used with the PM5372 TSE).
- Uses extended 8B/10B-based line coding protocol on the serial links to provide transition density guarantee and DC balance and to offer a greater control character vocabulary than the standard 8B/10B protocol.
- Provides encoding of TelecomBus control signals at the multiplex section termination (MST) point, high-order path termination (HPT) point and low-order path termination (LPT) point.
- Provides optional PRBS generation for each outgoing LVDS serial TelecomBus data link for off-line link verification.
- Provides PRBS detection for each 8-bit bus on the Incoming parallel TelecomBus stream.
- Provides PRBS detection for each incoming LVDS serial TelecomBus stream for off-line link verification.
- Provides optional PRBS generator for each 8-bit bus on the outgoing parallel TelecomBus stream.
- Provides in-service link verification by optionally overwriting the B1 and E1 byte of each constituent STS-1/STM-0 with a unique software programmable byte and its complement.
- Provides pins to coordinate updating of the connection map of the time-slot interchange blocks in the local device, peer PM5310 TBS devices and companion PM5372 TSE devices.
- Derives all internal timing from a single 77.76 MHz system clock.

BLOCK DIAGRAM



TelecomBus Serializer for 2.5 Gbit/s Interconnect

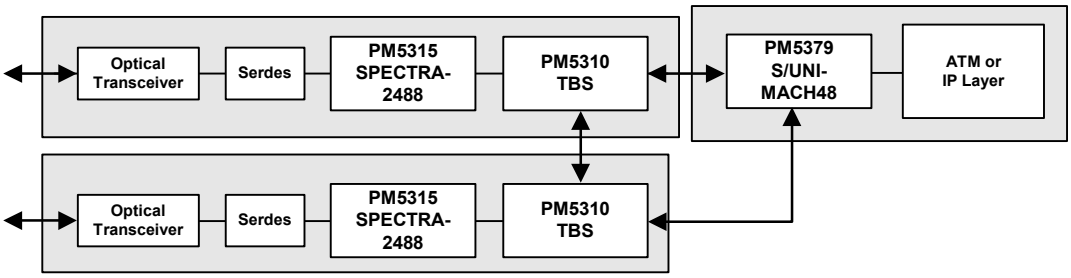
- Provides a generic 16-bit microprocessor bus interface for configuration, control, and status monitoring.
- Implemented in 1.8/3.3 V 0.18 mm CMOS and packaged in a 352 ball UBGA.
- Low power consumption of 4.2 W (maximum).

APPLICATIONS

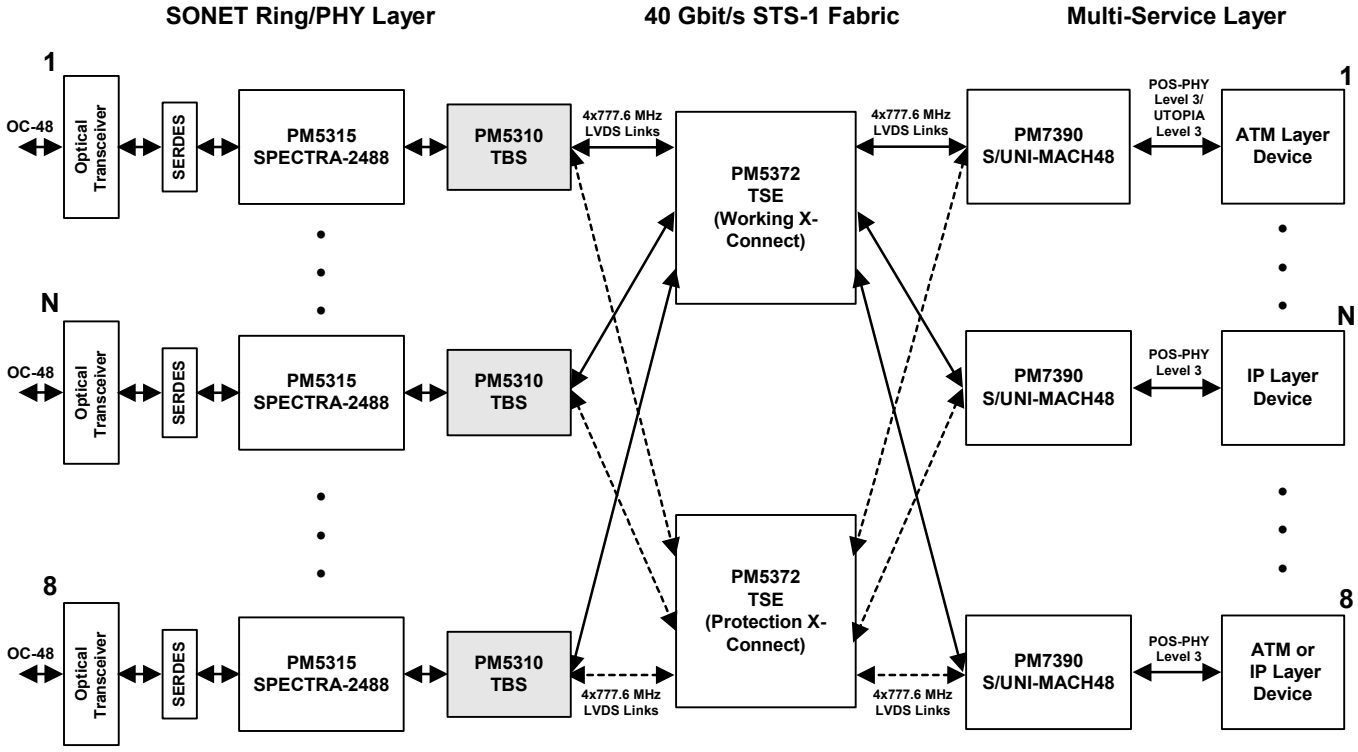
- SONET/SDH Cross-connects.
- SONET/SDH Add-Drop Multiplexors.
- SONET/SDH Terminal Multiplexors.
- TelecomBus Serializer.
- TelecomBus Backplane Driver.

TYPICAL APPLICATIONS

2.5 GBIT/S ADM APPLICATION



MULTI-SERVICE ATM/POS SWITCH PORT APPLICATION



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