

VT/TU Payload Processor/Performance Monitor

FEATURES

- A configurable, multi-channel, payload processor for alignment of SONET Virtual Tributaries (VTs) or SDH Tributary Units (TUs). Configurable to process any legal mix of tributaries.
- Provides independently-configurable AU3/AU4 frame format on incoming and outgoing directions.
- Compensates for pleisiochronous relationships between incoming and outgoing higher level (STS-1, AU4, AU3) synchronous payload envelope frame rates through processing of the lower level (VT6, VT3, VT2, VT1.5, TU3, TU2, TU12, or TU11) tributary pointers.
- Provides for multiframe synchronization or ring closure at the head-end node in a SONET/SDH ring.
- Optionally frames to the H4 byte in the Path overhead to determine tributary multiframe boundaries.
- Inserts valid pointers, and all-zeros transport overhead bytes on the outgoing stream with valid "Telecombus" control signals when configured to operate in locked mode.
- Independently-configurable incoming and outgoing interfaces that operate in byte-interface mode using a 19.44 MHz clock or in nibble-interface mode using a 38.88 MHz clock.
- Provides a generic 8-bit microprocessor bus interface and a standard 5-signal IEEE P1149.1 JTAG test port.
- Low power, +5 V, CMOS technology, TTL-compatible inputs and outputs.
- Available in a 160-pin Plastic Quad Flat Pack (PQFP) package (28 by 28 mm).

PER-TRIBUTARY FUNCTIONS

- Detects Loss Of Pointer (LOP) and reacquisition.
- Extracts and serializes the entire tributary Path overhead of each tributary.
- Detects tributary elastic store underflow and overflow errors.
- Stores and processes 16-byte or 64-byte format tributary Path trace messages (tributary trail trace identifiers). Detects tributary Path Trace Mismatch (TIM) and unstable (TIU) alarms.

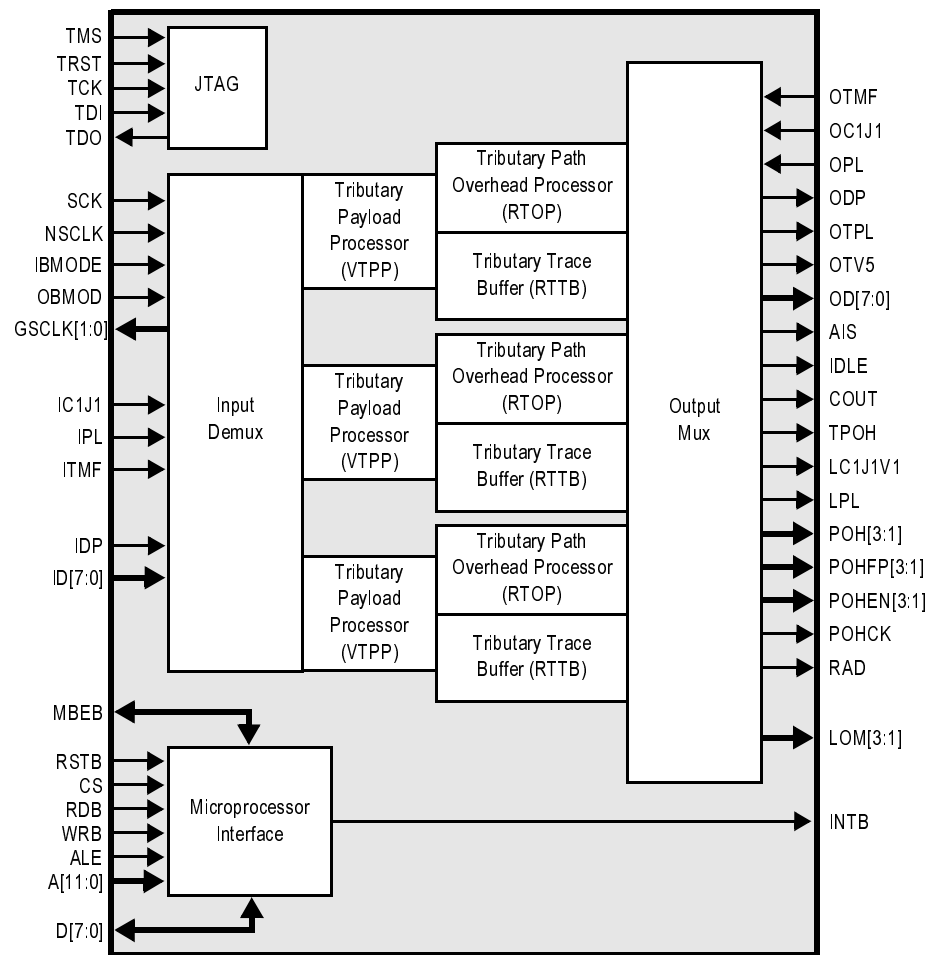
- Extracts tributary Path signal label into internal registers and detects Change Of tributary Path Signal Label (COPSL) events for each tributary.
- Detects tributary Path Signal Label Mismatch (PSLM) and unstable (PSLU) alarms.
- Detects tributary unequipped defect (UNEQ), tributary Path Defect Indication (PDI-V), and the assertion and removal of tributary extended Remote Defect Indications (RDI).
- Extracts and stores the tributary size (SS) bits.
- Calculates and compares the tributary Path BIP-2 error detection code. Accumulates the BIP-2 errors and tributary Path Far-End Block Errors (FEBEs) on a block or bit basis.
- Supports in-band error reporting by updating the FEBE, RDI, and auxiliary RDI bits in the V5 byte (G1 in TU3)

- with the status of the incoming stream.
- Optionally generates tributary Path AIS on the detection of LOP, loss of tributary multiframe, trace identifier unstable, trace identifier mismatch, signal label unstable, and /or signal label mismatch. Also allows software to force AIS insertion.
- Under software control, allows insertion of all-zeros or all-ones tributary idle code with unequipped indication.

APPLICATIONS

- SONET/SDH Add/Drop and Terminal Multiplexers
- SONET/SDH Broadband Cross-Connects
- SONET/SDH and ATM Test Equipment

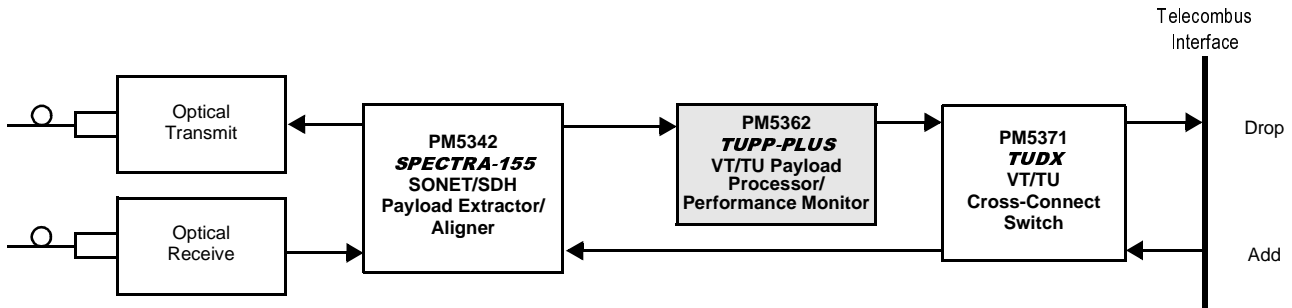
BLOCK DIAGRAM



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TYPICAL APPLICATIONS

STS-3 (STM-1)/STS-1 (STM-0) AGGREGATE INTERFACE WITH TRIBUTARY CROSS-CONNECT



STS-12 (STM-4) AGGREGATE INTERFACE WITH TRIBUTARY CROSS-CONNECT

