

Quad 155 Mb/s ATM Physical Layer Device

FEATURES

- Quad-channel ATM OC-3c (155 Mb/s) PHY.
- Provides on-chip clock and data recovery and clock synthesis.
- Exceeds Bellcore-GR-253 jitter requirements.
- Provides a generic 8-bit microprocessor interface for device control and register access.
- Provides standard IEEE 1149.1 JTAG test port for boundary scan.

SONET RECEIVER

- Recovers clock and data.
- Frames to and descrambles recovered stream.
- Filters and captures Automatic Protection Switch (APS) bytes (K1, K2) and detects APS byte failure.
- Detects signal degrade and signal failure threshold crossing alarms.
- Captures and debounces synchronization status byte (S1).

- Counts received section BIP-8 (B1), line BIP-24 (B2), and BIP-8 (B3) errors, and line and path FEBEs.
- Detects LOS, OOF, LOF, LAIS, LRDI, LOP, PAIS, PRDI, and PERDI.
- Provides individual divide by eight recovered clocks for each channel.
- Provides individual 8 kHz receive frame pulses for each channel.

SONET TRANSMITTER

- Synthesizes the 155.52 MHz transmit clock from a 19.44 MHz reference.
- Provides a single transmit frame pulse input to align the transport frames to a system reference.
- Provides single transmit clock as timing reference for transmit outputs.
- Inserts register programmable APS (K1 and K2) and synchronization status (S1) bytes.
- Inserts PAIS, PRDI, LAIS, and LRDI.
- Scrambles the transmit data stream.

ATM PROCESSOR

- Implements the ATM Forum User Network Interface Specification.
- Inserts and extracts ATM cells into and from the SONET SPE.
- Performs cell payload scrambling and descrambling.
- Provides a UTOPIA Level 2-compliant system interface.
- Provides synchronous 4-cell transmit and receive FIFO buffers.

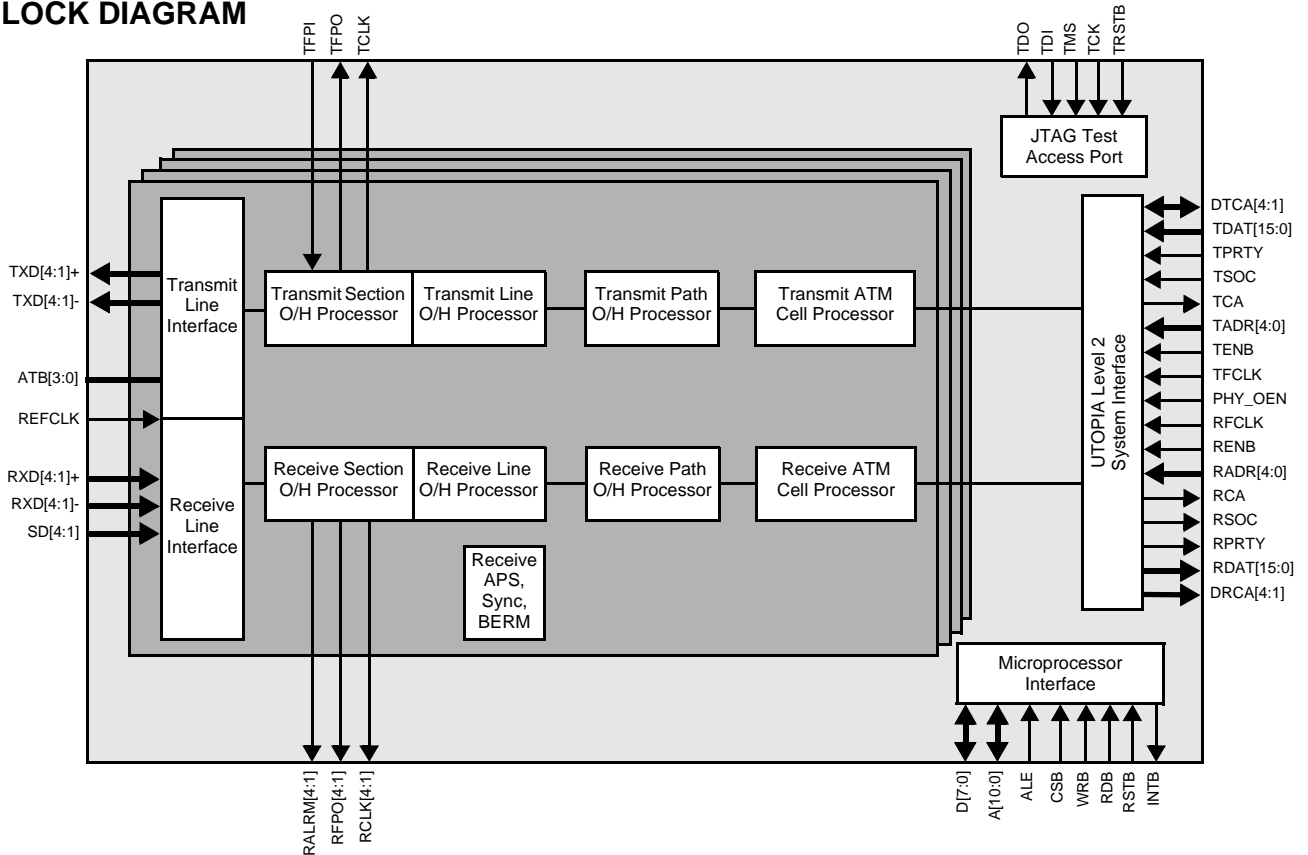
PACKAGING

- Implemented in low power 3.3 V CMOS technology.
- Packaged in a 304-pin Ball Grid Array (BGA) package.
- Industrial temp. range (-40° to +85°C).

APPLICATIONS

- Enterprise and Edge ATM Switches
- ATM Switches and Hubs
- Multiprotocol Switches

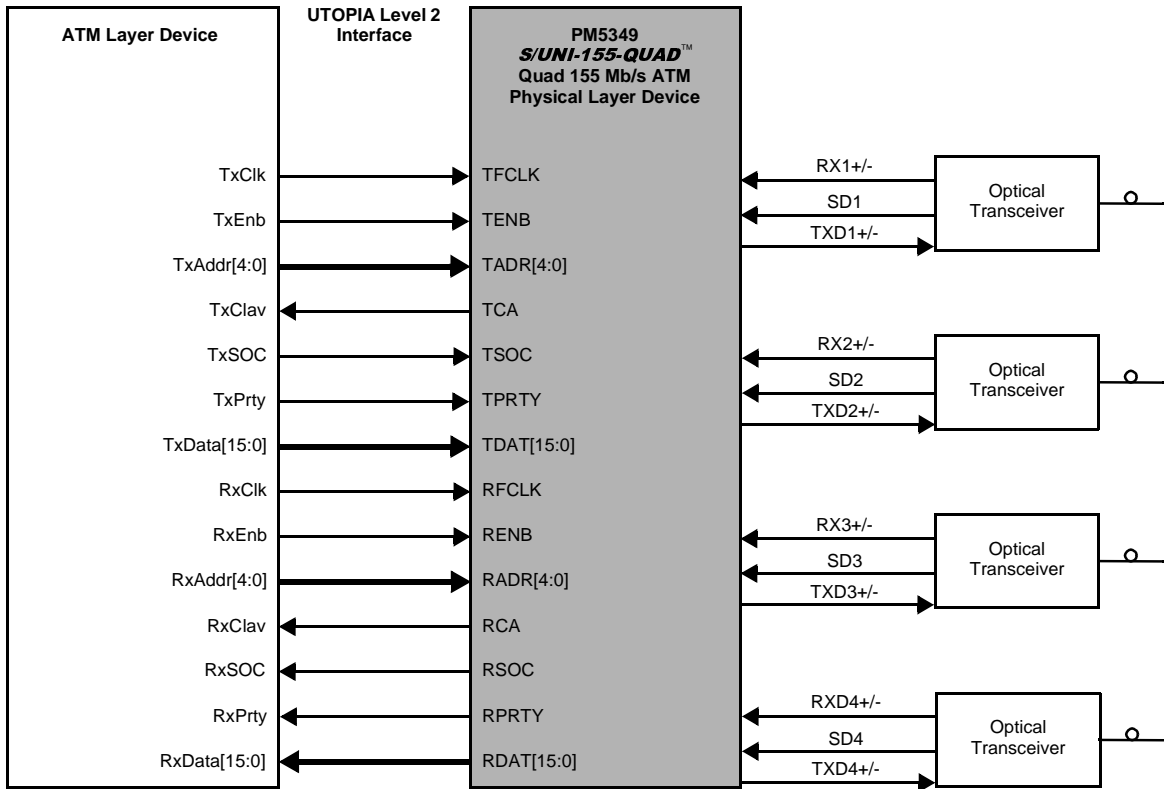
BLOCK DIAGRAM



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TYPICAL APPLICATION

STS-3c (STM-1) ATM SWITCH PORT APPLICATION



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