

Quad T1/E1 Multi-PHY SATURN User Network Interface

FEATURES

- Monolithic single-chip quad ATM Physical Layer User Network Interface (UNI) operating at 1.544 Mbit/s or 2.048 Mbit/s.
- Integrates a quad full-featured dual-mode T1/E1 framer/transmitter for terminating four duplex 1.544 Mbit/s DS1 or four duplex 2.048 Mbit/s E1 signals. Recovers T1/E1 clock and data using a digital phase locked loop for high jitter tolerance.
- Implements the ATM Forum UNI Specification V3.1 for DS1 and E1 transmission rates.
- Implements the ATM physical layer for Broadband ISDN according to ITU-T Recommendation I.432.
- Implements direct mapping into four T1 or E1 streams according to ITU-T Recommendation G.804.
- Provides UTOPIA L1-compliant, UTOPIA L2-compatible ATM-PHY interface with parity and multi-PHY control signals.
- Software-compatible with the PM4341A T1XC, PM6341 E1XC, PM4351 COMET, PM5346 S/UNI®-LITE and PM7345 S/UNI-PDH.
- Application-compatible with the PM8313 D3MX, PM4314 QDSX, and PM7323 RCMP-200.
- Provides a generic 8-bit

microprocessor bus interface for configuration, control, and status monitoring.

- Low power, +5 V, CMOS technology.
- Packaged in a 128-pin rectangular (14 mm by 20 mm) PQFP package.

T1 FRAMER/TRANSMITTER

- Supports SF or ESF format signals using B8ZS or AMI line code.
- Provides Loss Of Signal (LOS) detection and red, yellow and Alarm Indication Signal (AIS) alarm detection. Supports transmission of (AIS) or yellow alarm signal in all formats.
- Detects violations of the ANSI T1.403 12.5% pulse density rule over a moving 192-bit window.
- Supports line and path performance monitoring according to ANSI specifications. Accumulators are provided for counting ESF CRC-6 errors, framing bit errors, LCVs, and LOF, or frame alignment events.
- Provides ESF bit-oriented code detection/generation, and an HDLC interface for terminating/generating the ESF datalink.
- Extracts/inserts the datalink in ESF mode.

E1 FRAMER/TRANSMITTER

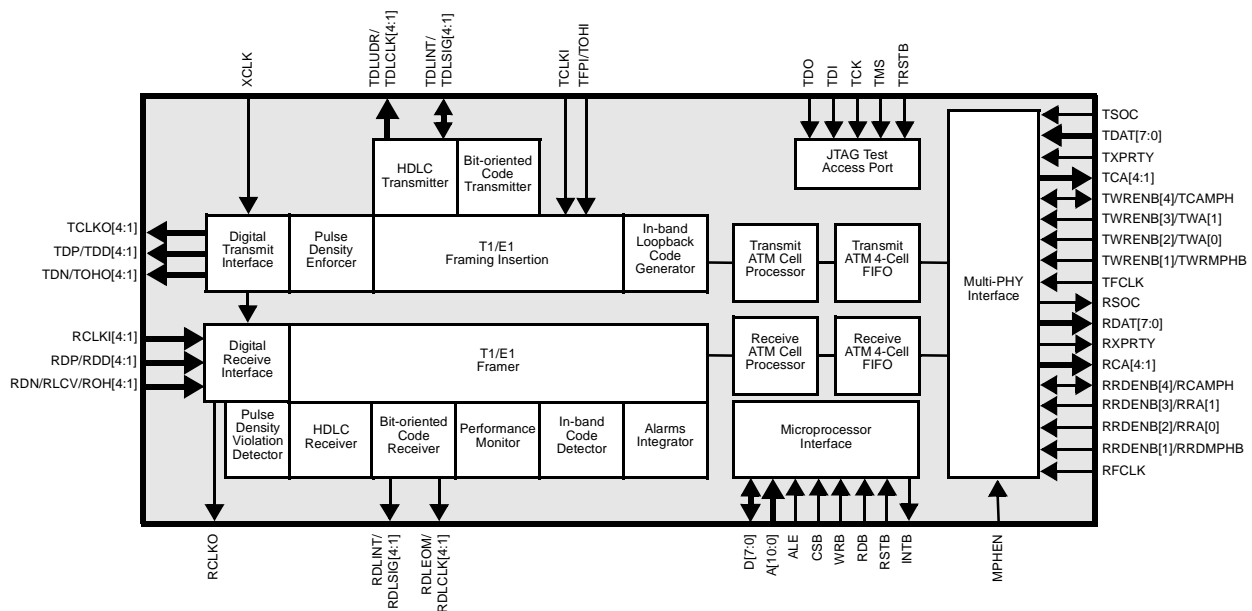
- Supports G.704 2048 kbit/s format using HDB3 or AMI line coding.

- Supports CRC multiframe alignment or the signalling multiframe alignment.
- Declares red and AIS alarms using Q.516 recommended integration periods. Provides LOS detection, and indicates loss of frame alignment (OOF), loss of signalling, and loss of CRC multiframe alignment.
- Supports line and path performance monitoring according to ITU-T recommendations. Accumulators are provided for counting CRC-4 errors, FEBE, frame sync errors, and LCVs.
- Supports reception and transmission of remote alarm and AIS.
- Provides an HDLC interface for terminating/generating a datalink.
- Supports the timeslot 16 (64 kbit/s) datalink which may be used for common channel signalling, or any combination of the national bits.

APPLICATIONS

- ATM Switches Supporting DS1 or E1 UNI Ports
- ATM Switches Supporting DS3 or E3 Ports Carrying Multiplexed DS1 or E1 UNI Signals
- ATM Switches Supporting SONET/SDH Ports Carrying Tributary Mapped DS1 or E1 UNI Signals
- ATM Customer Premise Equipment Supporting Multiple DS1 or E1 UNI Ports

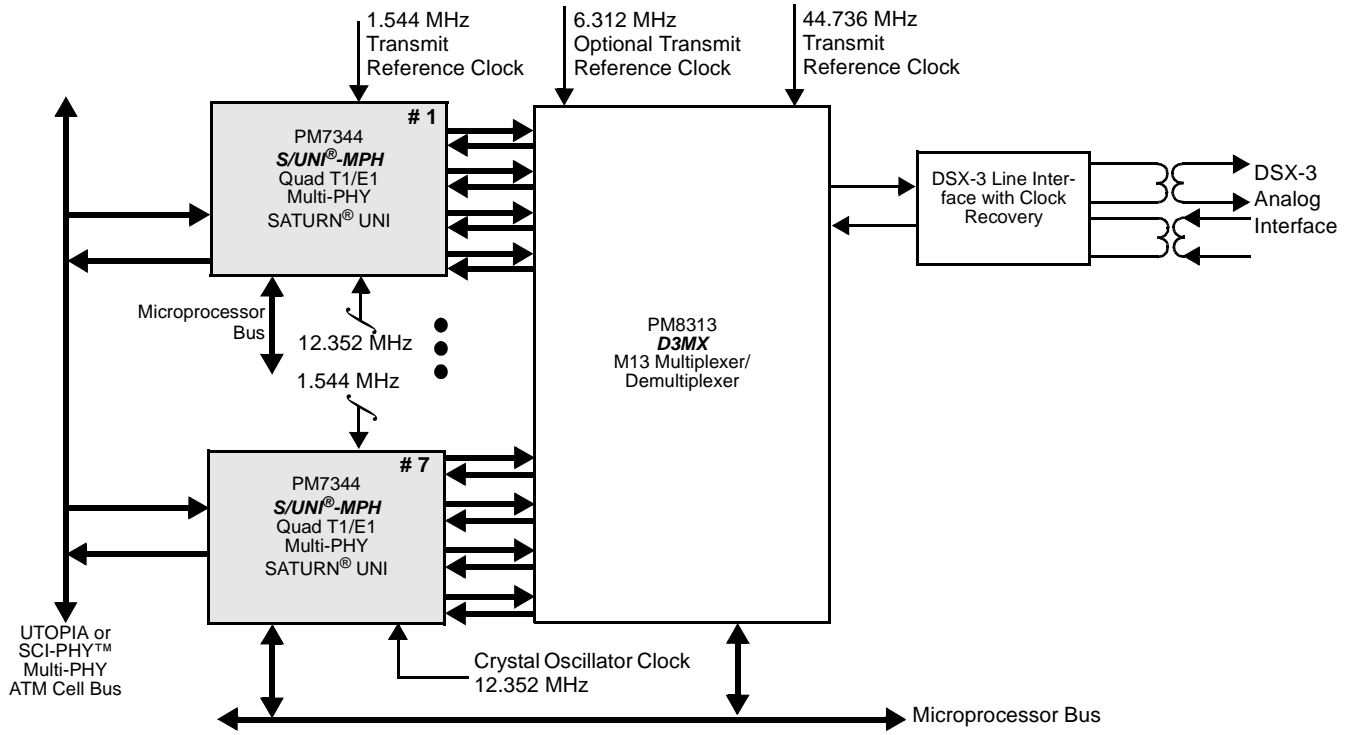
BLOCK DIAGRAM



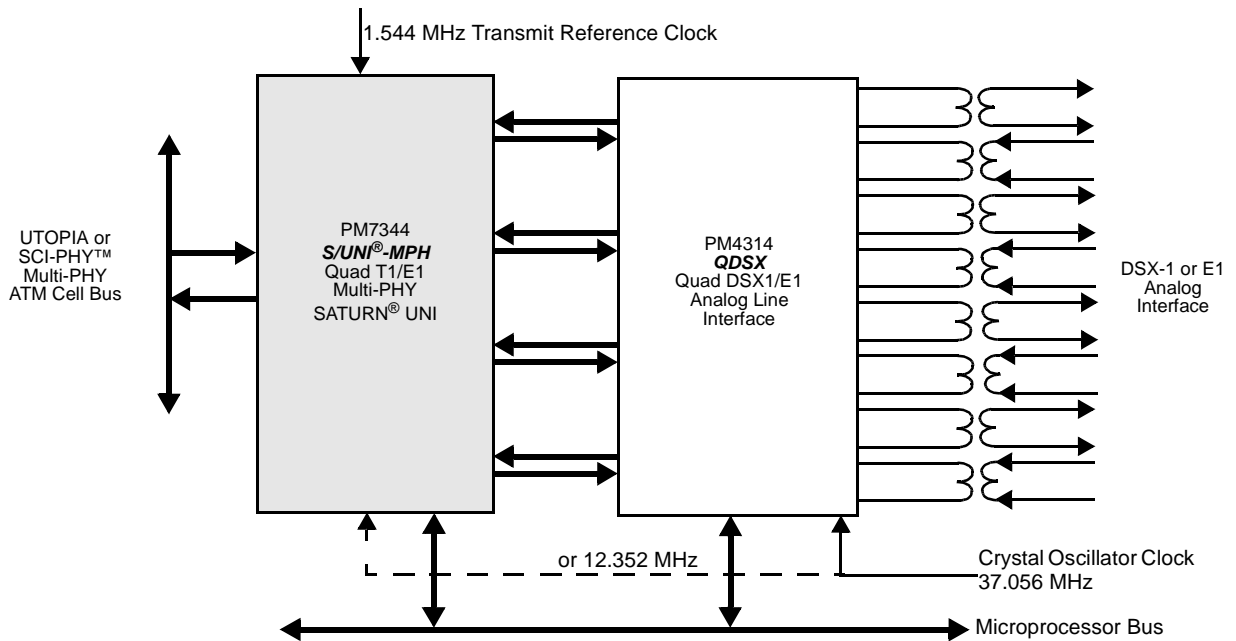
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TYPICAL APPLICATIONS

DS3 PORT CARRYING MULTIPLEXED T1 ATM UNI SIGNALS



T1 OR E1 MULTI-PHY ATM UNI



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