PMC-Sierra

PM4351 COMET

Combined E1/T1/J1 Transceiver/Framer

FEATURES

- Monolithic 3.3 V device that integrates an E1/T1/J1 Framer and line driver for shorthaul and longhaul applications.
- Software selectable between T1/J1 and E1 operation on a per device basis.
- Provides fully programmable shorthaul and longhaul pulse templates and line build out.
- Meets or exceeds T1, J1, and E1 shorthaul and longhaul network access specifications, which include: ANSI T1.102, T1.403, T1.408, AT&T TR 62411, ITU-T G.703 and G.823, as well as the newer G.775 and ETSI 300-011 specifications.
- Supports B8ZS, HDB3, and AMI line codes.
- Provides receive clock recovery and line performance monitoring.
- Provides on-board binary sequence generators and detectors that can be configured with various patterns for error testing, including those conforming to ITU-T 0.151.
- Provides transmit and receive jitter attenuation.
- Provides three full-featured HDLC controllers, each with 128-byte transmit and receive FIFOs, enabling dual compliance to the V5.1 and V5.2 interface standards.
- Supports an IEEE P1149.1 JTAG test port.
- Automatically generates DS1 performance report messages to ANSI T1.231 and other specifications.
- Compatible with Mitel ST®-bus, AT&T CHI®, and MVIP PCM backplanes supporting rates of 1.544 Mbit/s, 2.048 Mbit/s, 4.096 Mbit/s and 8.192 Mbit/s.
- Provides an 8-bit microprocessor bus interface for configuration, control, and status monitoring.
- Low power +3.3 V CMOS technology.
- Available in an 80-pin PQFP (14 mm by 14 mm) and an 81-pin CABGA (9 mm by 9 mm) package.
- Provides a -40 °C to +85 °C industrial temperature operating range.

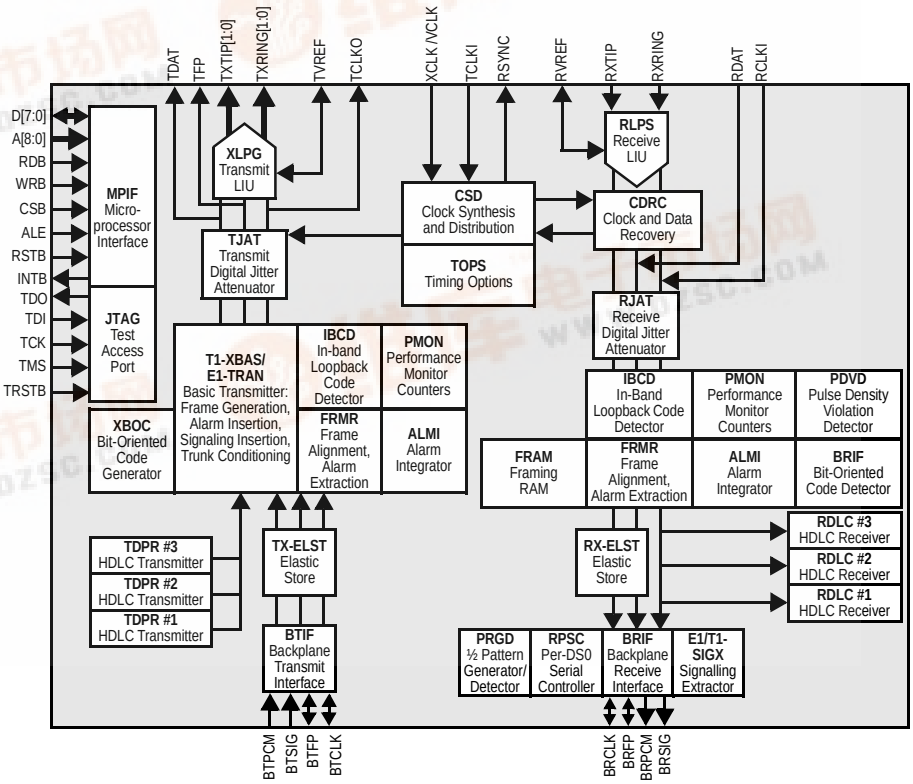
RECEIVE

- Provides single-rail digital PCM and signaling outputs for 1.544 Mbit/s, 2.048 Mbit/s, 4.096 Mbit/s, or 8.192 Mbit/s backplane buses.
- Guaranteed signal recovery of up to -36 dB at 1024 kHz (E1) and 772 kHz (T1/J1) under production test conditions (VDD = 3.069 V, 25 °C) using PIC-22 gauge cable emulation.
- Frames to a G.704 E1 signal.
- Frames to a JT-G704 J1 signal.
- Frames to a DSX/DS-1 signal in D4, SF, ESF, or SLC®96 formats.
- Accommodates up to 0.4 UI peak-to-peak, high frequency jitter as required by AT&T TR 62411.
- Supports line and path performance monitoring to AT&T and ANSI specifications and ITU-T recommendations.
- Detects both programmable in-band loopback activate and deactivate code sequences received in the DS1/E1 data stream.

TRANSMIT

- Supports transfer of transmitted PCM and signaling data from 1.544 Mbit/s, 2.048 Mbit/s, 4.096 Mbit/s, or 8.192 Mbit/s backplane buses.
- Supports tristate line outputs.
- Generates DSX-1 T1 shorthaul- and T1 longhaul-compatible pulses with programmable pulse shape to AT&T and ANSI specifications and ITU-T recommendations.
- Generates G.703 E1 pulses.
- Detects violations of the ANSI T1.403 12.5% pulse density rule over a moving 192-bit window.
- Allows insertion of in-band loopback code sequences.
- Supports transmission of the Alarm Indication Signal (AIS) or the yellow alarm signal in all formats.
- Provides a FIFO for jitter attenuation in the transmit path.
- Complies to all jitter attenuation, jitter transfer and residual jitter specifications required by AT&T TR 62411 and ETSI TBR12/13.

BLOCK DIAGRAM



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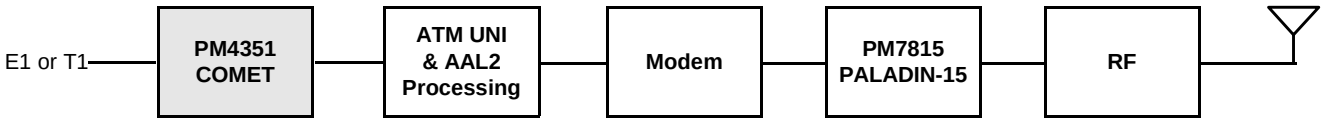
APPLICATIONS

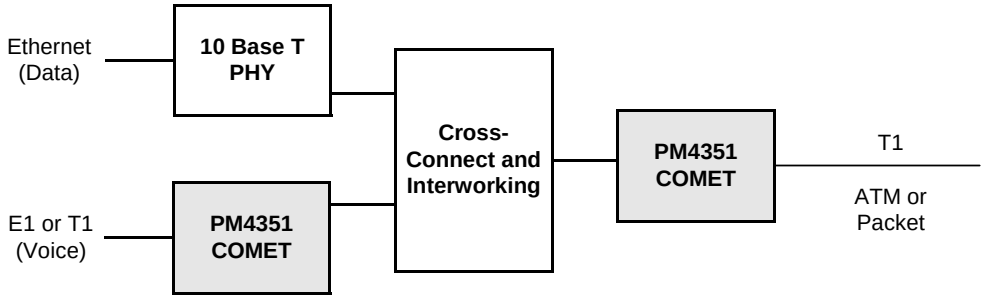
- Wireless Base Transceiver Station and Digital LoopCarriers (DLCs).
- BITS Timing Systems.
- Integrated Access Device (IAD).
- Channel and Data Service Units (CSU/DSU).
- Enterprise Routers.
- V5.1/V5.2 Interfaces.

TYPICAL APPLICATIONS

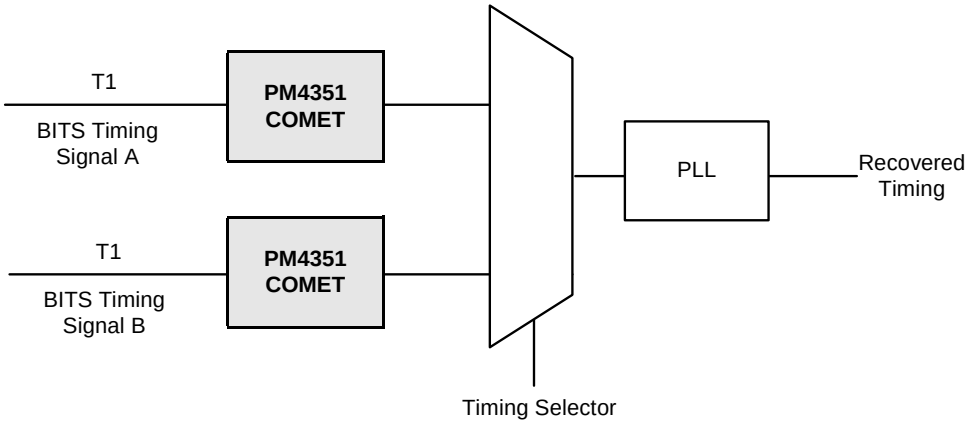
WIRELESS BASE TRANSCEIVER STATION (BTS)



INTEGRATED ACCESS DEVICE (IAD)



BITS TIMING APPLICATION



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