DATA SHEET

Communications

XRT83SL34

Quad T1/E1/J1 SH Transceiver with Clock Recovery and Jitter Attenuator

Features

- Fully integrated four channel short-haul transceivers for E1, T1 or J1 applications.
- Programable Transmit Pulse Shaper for E1,T1 or J1 short-haul interfaces.
- Five fixed transmit pulse settings for T1 short-haul applications plus a fully programmable waveform generator for transmit output pulse shaping.
- Selectable receiver sensitivity from 0 to 36dB cable loss.
- Receive monitor mode handles 0 to 29dB resistive attenuation along with 0 to 6dB of cable attenuation for both T1 and E1 modes.
- Supports 75Ω and 120Ω (E1), 100Ω (T1) and 110Ω (J1) applications.
- Internal or external impedance matching for 75Ω,100Ω, 110Ω and 120Ω.
- Tri-State transmit output and receive input capability for redundancy applications
- Transmit return loss meets or exceeds ETSI 300 166 standard
- On-chip digital clock recovery circuit for high input jitter tolerance
- Crystal-less digital jitter attenuator with 32-bit or 64- bit FIFO Selectable either in transmit or receive path
- On-chip frequency multiplier generates T1 or E1 Master clocks from variety of external clock sources
- High receiver interference immunity
- On-chip transmit short-circuit protection and limiting, and driver fail monitor output (DMO)
- Receive loss of signal (RLOS) output
- On-chip HDB3/B8ZS/AMI encoder/decoder
- QRSS pattern generation and detection for testing and monitoring
- Error and Bipolar Violation Insertion and Detection
- Receiver Line Attenuation Indication Output in 1dB steps
- Network Loop-Code Detection for automatic Loop-Back Activation/Deactivation
- Transmit All Ones (TAOS) and In-Band Network Loop Up and Down code generators
- Supports Analog, Remote, Digital and Dual Loop-Back Modes
- Meets or exceeds T1 and E1 short-haul network access specifications in ITU G.703, G.775, G.736 and G.823; TR-TSY-000499; ANSI T1.403 and T1.408; ETSI 300-166 and AT&T Pub 62411
- Supports both Hardware and parallel Microprocessor interface for programming
- Programmable Interrupt
- Low power dissipation
- Logic inputs accept either 3.3V or 5V levels
- Single +3.3V Supply Operation
- 128 pin TQFP package
- -40°C to +85°C Temperature Range

Applications

- T1 Digital Cross-Connects (DSX-1)
- ISDN Primary Rate Interface
- CSU/DSU E1/T1/J1 Interface
- T1/E1/J1 LAN/WAN Routers
- Public switching Systems and PBX Interfaces
- T1/E1/J1 Multiplexer and Channel Banks

The XRT83SL34 is a fully integrated Quad (four channels) short-haul line interface unit for T1 (1.544Mbps) 100Ω, E1 (2.048Mbps) 75Ω or 120Ω and J1 110Ω applications.

In T1 applications, the XRT83SL34 can generate five transmit pulse shapes to meet the short-haul Digital Cross-Connect (DSX-1) template requirements.

The XRT83SL34 provides both parallel Host microprocessor interface and Hardware mode for programming and control. Both B8ZS and HDB3 encoding and decoding functions are included and can be disabled as required. On-chip crystal-less jitter attenuator with a 32 or 64 bit FIFO can be placed either in the receive or the transmit path with loop bandwidths of less than 3Hz. The XRT83SL34 provides a variety of loop-back and diagnostic features as well as transmit driver short circuit detection and receive loss of signal monitoring. It supports internal impedance matching for 75Ω, 100Ω, 110Ω and 120Ω for both transmitter and receiver. For each receiver this is accomplished internal resistors or through the combination of one single fixed value external resistor and programmable internal resistors. In the absence of the power supply, the transmit output and receive input are tri-stated allowing for redundancy applications. The chip includes an integrated programmable clock multiplier that can synthesize T1 or E1 master clocks from a variety of external clock sources.