

Communications

XRT81L27

Seven Channel E1 Line Interface Unit with Clock Recovery

Features

- Seven (or one) independent E1 (CEPT) line interface units (transmitter and receiver) one chip
- Generates transmit output pulses that are compliant with the ITU-T G.703 pulse template for 2.048Mbps (E1) rates
- On-chip pulse shaping
- Compliant with ITU-T G. 838 jitter tolerance requirements
- Declares and clears Loss of Signal (LOS) meeting ITU-G.775 standards
- Ultra low power dissipation
- Low power 3.3V operation
- Functions over industrial temperature range

Applications

- PDH multiplexers
- SDH multiplexers
- Digital cross-connect systems
- DECT (Digital European Cordless Telephone) base stations
- CSU/DSU equipment

Long established in the E1 arena, Exar proves again, it has the right combination of design expertise, and market knowledge to bring innovative products to market. The XRT82D20 (single-channel), and the XRT81L27 (seven-channel) join several other E1 AFEs and LIUs to give designers a multitude of architecture combinations to meet, or exceed their OEM market requirements.

These new E1 devices, coupled with an already extensive product line including two seven-channel AFEs (XRT5897 and XRT5997), several four-channel devices (XRT5894, XRT5793, XRT5794 and XRT82L24), plus two single-channel parts (XRT59L91 and XRT7288) give EXAR a distinct marketplace advantage. These new products, along with Exar's other E1 LIUs and AFEs give customers a clear, and rich product family spanning DS1/E1 to SONET/SDH. Applications for these new devices include multiplexers (PDH and SDH), digital cross connects, DECT (Digital European Cordless Telephone) base stations, and CSU/DSU equipment.

The seven-channel (XRT81L27), and single-channel device (XRT82D20) complement Exar's already strong E1. The XRT81L27 contains seven independent E1 channels, including data and clock recovery circuits. Each channel performs the driver and receiver functions necessary to convert bipolar signals to logical levels as well as the reverse. Devices with seven E1 interfaces provide the most efficient method of implementing 21-channel line cards.

The device offers two distinct modes of Loss of Signal (LOS) detection: 1) the first approach does not require an external clock, but provides an LOS output indication signal that complies with ITU G.775 requirements; 2) the other approach does invoke an external clock that increases delay of LOS declaration and clearing. This allows the designer to implement LOS specifications that require a greater delay than the G.775 standard.

The XRT82D20 single-channel line interface device supports 75 ohm and 120 ohm E1 applications. It consists of a receiver with adaptive data slicer for accurate data and clock recovery, and a transmitter which accepts either single, or dual-rail digital input for signal line transmission using a low-impedance differential line driver. The XRT82D20 also includes a crystal-less jitter attenuator for clock and data smoothing which can be selected in either the transmit or receive path. The device is a complete line interface unit that allows the physical layer of the system to be implemented without additional components.