Intel® LXT6282 Digital Interface

Product Description

The Intel® LXT6282 digital interface is the telecommunication industry's first octal E1 digital interface. It is the only solution to simultaneously address the widespread problems of jitter, wander, and E1 performance monitoring in the Synchronous Digital Hierarchy (SDH) network.

As SDH/SONET (Synchronous Optical Network) technology is increasingly used in the access networks, synchronization problems caused by low-frequency wander become more apparent. The Intel LXT6282 digital interface helps eliminate synchronization issues, allowing a higher quality migration of signals from Plesiochronous Digital Hierarchy (PDH) to SDH networks.

With the introduction of the LXT6282 digital interface, Intel now offers a seamless, end-to-end solution that includes an overhead terminator (the Intel LXT6051), a 21 E1 mapper (the Intel LXT6251A), and an E1 line interface unit (the Intel LXT380).

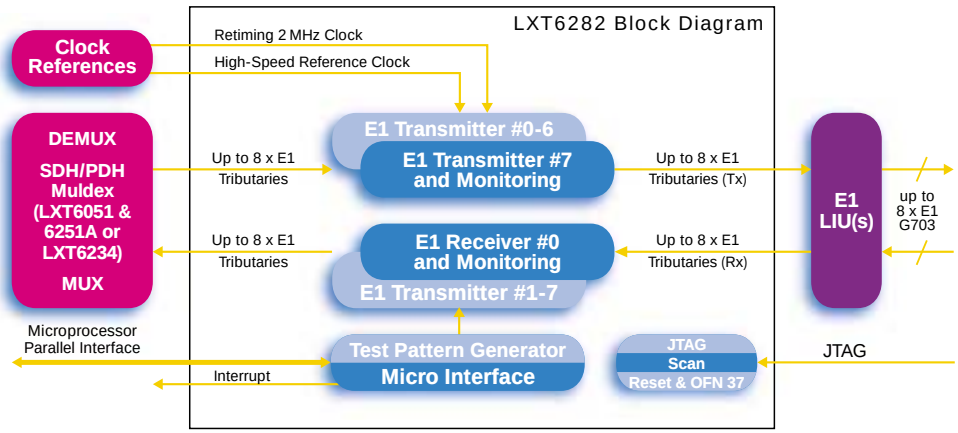
The Intel LXT6282 digital interface is an eight-channel E1 digital interface that helps eliminate synchronization problems caused by wander from SDH TU12 pointer movements. This allows telecom operators to monitor the quality of the E1 signals entering or leaving the PDH network. With E1 Cycle Redundancy Check (CRC)-4 monitoring capability in both transmit and receive directions, the Intel LXT6282 digital interface can serve as a digital phase-locked loop or provide signal retiming capability to help solve SDH-induced wander problems. The chip integrates a programmable retiming block with a two-frame elastic store.

The Intel LXT6282 digital interface can also be used in a PDH multiplexer for performance monitoring or as a drop-in solution to make existing equipment compatible with more stringent jitter specifications. It is designed for SDH applications and can be used in conjunction with the Intel LXT6251A (21 E1 mapper).

The Intel LXT6282 has a low power consumption (3.3V, 5V tolerant I/O's) interface in a 144-pin TQFP package. It is designed to comply with IEEE 1149.1 Joint Test Action Group (JTAG) and the latest G.707 and G783 International Telecommunications Union (ITU) specifications.

With eight independent E1 transmitter blocks, the Intel LXT6282 digital interface can be configured for a variety of different applications, and offers these important features:

- The octal E1 digital interface operates with both octal LIUs and mappers.
- The high-density design minimizes board real estate.
- Jitter attenuation functions are performed on a gapped clock supplied by a PDH or SDH multiplexer, which meets stringent SDH jitter requirements for access systems and products.



This diagram outlines major functional blocks in the Intel LXT6282 digital interface.

Intel® Internet Exchange Architecture

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- CRC-4 monitoring on both transmit and receive sides allows operators to monitor the quality of signals entering and leaving the SDH network.
- The retiming function on the transmit side for SDH applications assures that the time slot assignment at the output of the device is maintained.
- The device is microprocessor programmable for added flexibility in device configuration over a Motorola* or Intel interface.
- Designed to meet ITU G.775 recommendation on AIS defect detection on an incoming E1 signal, the Intel LXT6282 digital interface meets SDH/SONET alarm processing requirements for AIS insertion associated with loss of signal.
- The pattern generation capabilities enable chip testing without outside test equipment.

Support Collateral

- LXT6282 Digital Interface Datasheet
- CANDO™ Software
- LXT6282 FAQs
- LXT6282 Demoboard Kit
  - LXT6282 Demoboard
  - LXT6282 Demoboard Guide
- LXT6282 User Guide

Key Applications

- OC3/STM1 SONET/SDH Cross Connects
- OC3/STM1 SONET/SDH Add/Drop Mux
- OC3/STS3/STM1 Short Haul Serial Links
- OC3/STM1 ATM/WAN Access Systems
- OC3/STM1 SONET/SDH Digital Loop Carriers
- OC3/STS3/STM1 ATM/WAN Transmission Systems

Intel® Internet Exchange Architecture

Intel® Internet Exchange Architecture is an end-to-end family of high-performance, flexible and scalable hardware and software development building blocks designed to meet the growing performance requirements of today's networks. Based on programmable silicon and software building blocks, Intel IXA solutions enable faster development, more cost-effective deployment and future upgradability of network and communications systems.

Intel Access

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