

# Intel® LXT380/381

## Octal E1 Line Interface Unit

### Intel Delivers

Intel introduces a family of T1/E1 3.3V transceivers that are pin-to-pin and software compatible. This LXT product series includes the Intel® LXT380 and LXT381 (detailed in this product brief), and the LXT384, LXT386, and LXT388 (detailed in separate product briefs). With Intel's range of transceivers, you have the flexibility to change from E1-only designs to T1/E1 designs and migrate from two to eight ports (or vice versa) with little time and effort.

The Intel® LXT380 is an octal short-haul PCM transceiver for use in 2.048Mbps (E1) applications. It incorporates eight receivers and eight transmitters in a single 144-pin LQFP or 160 PBGA package. Controllable through either hardware or host mode (serial or parallel interface), the LXT380 exceeds the latest ETSI return loss recommendations. You can configure the LXT380 as a seven-channel transceiver for SDH tributary port cards with the additional channel configured as a G.772-compliant nonintrusive performance monitor. The Intel® LXT381 provides the same features, without support for nonintrusive performance monitoring or clock recovery.

### Intel Advantage

With the introduction of its LXT38x series, Intel offers a transceiver that supports G.772 nonintrusive performance monitoring. This feature allows one channel to eavesdrop on other channels for remote monitoring and debugging purposes without interrupting



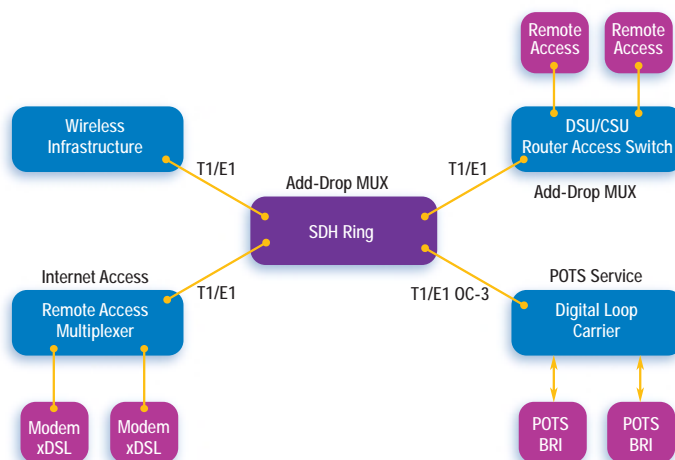
service. This powerful tool can help you reduce system downtime and achieve faster time-to-market.

The Intel® LXT380/381 incorporates fast tri-stateable drivers and a constant delay Jitter Attenuator (JA). The Intel® Hitless Protection Switching (Intel® HPS) helps you reduce system cost by eliminating costly mechanical relays and opto-isolators in 1+1 protection and redundancy applications. The switch from primary to backup board is less than 1µs—more than 1,000 times faster than mechanical relays—and helps eliminate loss of frame synchronization. A maximum of 1 bit error is generated when Intel® HPS is used instead of relays, which can generate more than 6,000 bit errors. Analog and digital JTAG can also help reduce test costs by reducing test times.

Alternate solutions require triple the PCB space or more for an eight-channel 1+1 protection application.

Intel®  
Internet Exchange  
Architecture

Application Diagram



intel®

## Features

- Intel® Hitless Protection Switching
- Nonintrusive performance monitor (LXT380)
- 3.3V supply with 5V I/O capability
- Analog and digital JTAG
- 15x15mm BGA package

## Benefits

- Helps eliminate expensive relays needed for 1+1 redundant applications
- Allows eavesdropping on other channels without interrupting service
- Easy integration and lower power consumption
- Helps reduce test costs and increase test coverage
- Leads to higher integration, helps reduce PCB real estate, and helps increase ports per card

## Support Collateral/Tools

Item	Description	Order Number
Support Products	■ LXT380 Octal E1 G.703 Transceiver Data Sheet	248995
	■ LXT380 Design Assistant	248836
	■ LXD380—Evaluation Board for Octal E1 Applications Developer Manual	249212
	■ LXT380/381 Frequently Asked Questions (FAQs)	249181
Application Notes	■ LXT380/381—G.703 Annex B Compliance	249198
	■ Timing Interface using the LXT380	249129
	■ LXT380/381—Receive Return Loss	249130
	■ Transformer Specification for Intel® Transceiver Applications	249133
	■ LXT380/381/384/386/388 Redundancy Applications	249134
	■ LXT380/384 Octal T1/E1 LIUs—Interfacing with the Transwitch Octal Framer	249136
	■ Intel® Hitless Protection Switching Backup Board not Powered	249143

## Applications

- SDH tributary interfaces
- Digital cross connects
- Public/private switching trunk line interfaces
- Microwave transmission systems
- Channel banks
- E1-E3 multiplexers

## Intel® Internet Exchange Architecture

Intel® Internet Exchange Architecture (IXA) 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. Additional information can be found at [www.intel.com/IXA](http://www.intel.com/IXA).

## Intel Access

Developer Web Site	<a href="http://developer.intel.com">http://developer.intel.com</a>
Intel® Internet Exchange Architecture Home Page	<a href="http://intel.com/IXA">http://intel.com/IXA</a>
Networking Components Home Page	<a href="http://developer.intel.com/design/network">http://developer.intel.com/design/network</a>
Intel Literature Center	<a href="http://developer.intel.com/design/litcentr">http://developer.intel.com/design/litcentr</a> (800) 548-4725 7 a.m. to 7 p.m. CST (U.S. and Canada) International locations please contact your local sales office.
General Information Hotline	(800) 628-8686 or (916) 356-3104 5 a.m. to 5 p.m. PST

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