

# Intel® LXT971A

## Dual-speed 3.3V 10/100 Ethernet Transceiver

### With Intel® Carrier Class Ethernet Support

#### Product Description

High-performance network applications that demand lower power are growing rapidly in today's marketplace. Intel, a leading provider of Ethernet silicon solutions, has enhanced the commitment to its Ethernet product family with its latest 10/100 Fast Ethernet transceiver. The Intel® LXT971A is a next-generation low-power, single-port PHY with significantly expanded Cable Discharge Event (CDE) protection.

Revolutionary design techniques incorporate Intel's Optimal Signal Processing (OSP) architecture, an ideal combination of digital signal processing and analog design techniques designed for die size, power consumption, performance, reliability, and testability.



LXT971A offers a Sleep mode in addition to two Power Down modes. When the LXT971A detects an absence of energy on the twisted-pair input, it minimizes power consumption by shutting down the transmitter and placing the receiver in low-power mode.

#### Intel Carrier Class Ethernet

Many networking and telecom applications require high-performance Ethernet components capable of operating under harsh environmental conditions. Intel® Carrier Class Ethernet products support operation over the entire extended temperature range while providing features that increase reliability. Each device has an operation lifetime of at least 10 years with less than 100 failures per billion hours. All Intel Carrier Class Ethernet devices will be available a minimum of 5 years from product introduction.

The Intel Carrier Class Ethernet product portfolio includes solutions for Ethernet physical layer, switching and repeater technologies at a variety of speeds. Intel Carrier Class Ethernet products are ideal for applications where equipment must function reliably in uncontrolled environmental conditions such as base stations, telecom/network switches, factory floor equipment, and industrial computers.

#### Applications

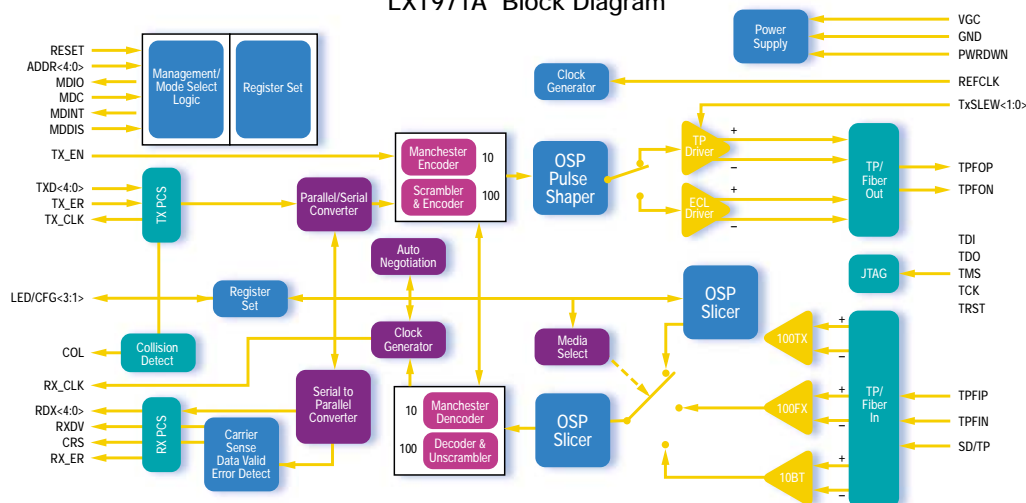
Low-power, dual-speed network applications for the LXT971A transceiver include: network interface cards (NICs), PCMCIA cards, cable modems, set-top boxes and IP phones.

The LXT971A includes an MII with extended register capability and an optional 2.5V power supply interface for additional power savings. For 100BASE-FX fiber networks, the LXT971A is designed with a pseudo-ECL (PECL) interface for seamless integration with common industry-standard fiber modules.

#### Innovative Packaging

Intel delivers the LXT971A in a 7mm x 7mm plastic ball grid array (PBGA) packaging. This revolutionary package helps save board space and is available in the popular industrial temperature range that is ideal for network applications in extreme thermal environments. For flexibility in very low-power applications, the

LXT971A Block Diagram



## Features

- 3.3V power supply
- 64-pin, 7mm x 7mm PBGA package
- -40°C to +85°C temperature testing
- Sleep mode
- MII interface
  - 2.5V MII interface option
- Optimal Signal Processing
- Baseline Wander Correction
- Next Page Exchange
- PECL interface
- Programmable LED drivers
- 10/100Mbps full-duplex operation
- Boundary scan (JTAG) test port

## Benefits

- Helps lower power consumption
- Provides small-profile packaging
- Enables industrial applications
- Helps minimize power consumption
- Complies with industry standards
  - Additional power savings
- Helps improve data recovery and EMI performance
- Provides consistent, error-free performance
- Enables transfer of additional information during auto-negotiation
- Provides 100BASE-FX fiber-optic capability
- Enables flexible network monitoring
- Allows simultaneous transmit and receive
- Enables board-level testing of the LXT971A

## LXT971A Product Family

Product Identifier	Package	Temperature Range
LXT971ABC	64-pin PBGA	Commercial 0°C to +70°C
LXT971ABE	64-pin PBGA	Extended -40°C to +85°C
LXT971ALC	64-pin LQFP	Commercial 0°C to +70°C
LXT971ALE	64-pin LQFP	Extended -40°C to +85°C

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

Information in this document is provided in connection with Intel products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right. Intel products are not intended for use in medical, life-saving or life-sustaining applications. Intel may make changes to specifications and product descriptions at any time, without notice.

Designers must not rely on the absence or characteristics of any features or instructions marked "reserved" or "undefined." Intel reserves these for future definition and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to them.

\* Other names and brands may be claimed as the property of others.



UNITED STATES AND CANADA  
Intel Corporation  
Robert Noyce Building  
2200 Mission College Blvd.  
P.O. Box 58119  
Santa Clara, CA 95052-8119  
USA

EUROPE  
Intel Corporation (UK) Ltd.  
Pipers Way  
Swindon  
Wiltshire SN3 1RJ  
UK

ASIA-PACIFIC  
Intel Semiconductor Ltd.  
32/F Two Pacific Place  
88 Queensway, Central  
Hong Kong, SAR

JAPAN  
Intel Japan (Tsukuba HQ)  
5-6  
Tokodai Tsukuba-shi  
300-2635 Ibaraki-ken  
Japan

SOUTH AMERICA  
Intel Semicondutores do Brasil LTDA  
Rua Florida, 1703-2 and CJ 22  
04565-001 Sao Paulo, SP  
Brazil