Intel® LXT905 Universal Transceiver
Intel LXT914 Multi-Port Repeater

10BASE-T Connectivity with Intel® Carrier Class Ethernet Support

Intel® Internet Exchange Architecture

Overview

Today, many networking and telecommunications OEMs are selecting high-performance Ethernet building blocks to provide reliable, low-cost communications solutions. These Ethernet components must be capable of operating under harsh environmental conditions.

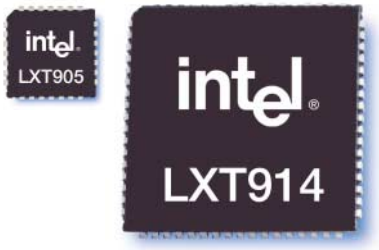
Intel, a leader in Ethernet PHY technology and communications silicon solutions, supports these requirements with the Intel® Carrier Class Ethernet family of products. The LXT905 universal transceiver and the LXT914 multi-port repeater offer 10BASE-T connectivity solutions that support operation over 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.

LXT905 Product Description

The Intel LXT905 universal 10BASE-T transceiver performs physical layer signaling and functions as an integrated physical layer signaling/medium attachment unit (PLS/MAU) in 10BASE-T twisted-pair networks. It performs all required functions defined by the IEEE 802.3 10BASE-T MAU specification including collision detection, link integrity testing, signal quality error messaging, jabber control, and loopback.

The LX905 interfaces a back-end controller to a twisted-pair (TP) cable. The controller interface includes a transmit/receive clock and an NRZ data channel, as well as mode control logic and signaling. Two circuits comprise the twisted-pair interface: twisted-pair input (TPI) and twisted-pair output (TPO). In addition to these two basic



interfaces, the LXT905 contains an internal crystal oscillator and four LED drivers, providing visual status reporting and eliminating the need for an external circuit.

LXT914 Product Description

The Intel LXT914 is an integrated, multi-port 10BASE-T repeater designed for mixed-media applications. The LXT914 provides all the active circuitry required for the repeater function in a single CMOS device, including one attachment unit interface (AUI) port that is mode-selectable for data terminal equipment (DTE) or MAU. DTE mode allows connection to an external transceiver (10BASE-2, 10BASE-5, 10BASE-T or FOIRL) or to a drop cable. MAU mode creates a MAU output, allowing a direct connection to another DTE interface.

The LXT914 also includes four entirely self-contained 10BASE-T transceivers with internal filters that simplify the design work required for FCC-compliant EMI performance. A serial port provides access to network management information. The LXT914 requires only a single 5V power supply and draws less than 1.2W.

LXT905 and LXT914 Applications

- Access devices (DSL and cable modems)
- Ethernet backplane applications (DSLAMs and base stations)
- Telecommunications building blocks, such as management ports on LAN/WAN routers
- Managed stackable and stand-alone hubs/repeaters (LXT914 only)

LXT905 and LXT914 Features

LXT905 and LXT914 Features	Benefits
■ -40°C to +85°C extended temperature range	■ Operates at extreme temperatures required for telecommunications applications
■ Automatic polarity detection and correction	■ Facilitates system implementation and prevents wiring errors

LXT905 Features

LXT905 Features	Benefits
■ Full duplex capability	■ Allows concurrent data transmission and receipt ■ Creates 20Mbps effective bandwidth
■ Power-down mode with tri-state	■ Reduces power consumption when not in use ■ Redeems and isolates output pins, enabling on-board debugging
■ Small-footprint 28-pin PLCC, or 32-pin LQFP package	■ Provides design flexibility and saves valuable board space

LXT914 Features

LXT914 Features	Benefits
■ Four 10BASE-T repeater ports with integrated PHYs and filters	■ Provides integration for low-cost, shared connectivity
■ Serial port for access to statistics and management registers	■ Provides built-in, hardware-based signal integrity and system monitoring capability
■ Synchronous or asynchronous inter-repeater backplane connections	■ Eases design constraints for "hot swappable" repeater clusters
■ Small-footprint 68-pin PLCC package	■ Saves valuable board space

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.

Intel Access

Developer's Site	developer.intel.com
Intel Internet Exchange Architecture Home Page	www.intel.com/IXA
Networking Components Home Page	developer.intel.com/design/network
Other Intel Support:	developer.intel.com/design/litcentr
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