



LU6612 Single-FET for 10Base-T/100Base-TX

Features

10 Mb/s Transceiver

- Compatible with *IEEE* * 802.3u 10Base-T standard for twisted-pair cable
- Autopolarity detection and correction
- Adjustable squelch level for extended wire line length capability (two levels)
- Interfaces with *IEEE* 802.3u media independent interface (MII)
- On-chip filtering eliminates the need for external filters
- Half- and full-duplex operations

100 Mb/s Transceiver

- Compatible with *IEEE* 802.3u MII (clause 22), PCS (clause 23), PMA (clause 24), autonegotiation (clause 28), and PMD (clause 25) specifications
- Scrambler/descrambler bypass
- Encoder/decoder bypass
- 3-statable MII in 100 Mb/s mode
- Selectable carrier sense signal generation (CRS asserted during either transmission or reception in half duplex, CRS asserted during reception only in full duplex)
- Selectable MII or 5-bit code group interface
- Half- or full-duplex operations
- On-chip filtering and adaptive equalization that eliminates the need for external filters

General

- Autonegotiation (*IEEE* 802.3u clause 28):
 - Fast link pulse (FLP) burst generator
 - Arbitration function
 - Accepts preamble suppression
 - Operates up to 12.5 MHz
- Supports the station management protocol and frame format (clause 22):
 - Basic and extended registers
 - Supports next-page function
 - Accepts preamble suppression
 - Operates up to 12.5 MHz
- Supports the following management functions via pins if station management is unavailable:
 - Speed select
 - Encoder/decoder bypass
 - Scrambler/descrambler bypass
 - Full duplex
 - Autonegotiation
- Supports half- and full-duplex operations
- Provides four status signals: receive/transmit activity, full duplex, link integrity, and speed indication
- Powerdown mode for 10 Mb/s and 100 Mb/s operation
- Pin Compatible to Quality Semiconductor, Inc QS6611
- Loopback for 10 Mb/s and 100 Mb/s operation
- 0.35 μ m low-power CMOS technology
- 64-pin TQFP
- Single 5 V power supply

* *IEEE* is a registered trademark of The Institute of Electrical and Electronics Engineers, Inc.

Note: Advisories are issued as needed to update product information. When using this data sheet for design purposes, please contact your Lucent Technologies Microelectronics Group Account Manager to obtain the latest advisory on this product.

Description

The LU6612 is a single-channel, single-chip complete transceiver designed specifically for dual-speed 10Base-T and 100Base-TX repeaters and switches.

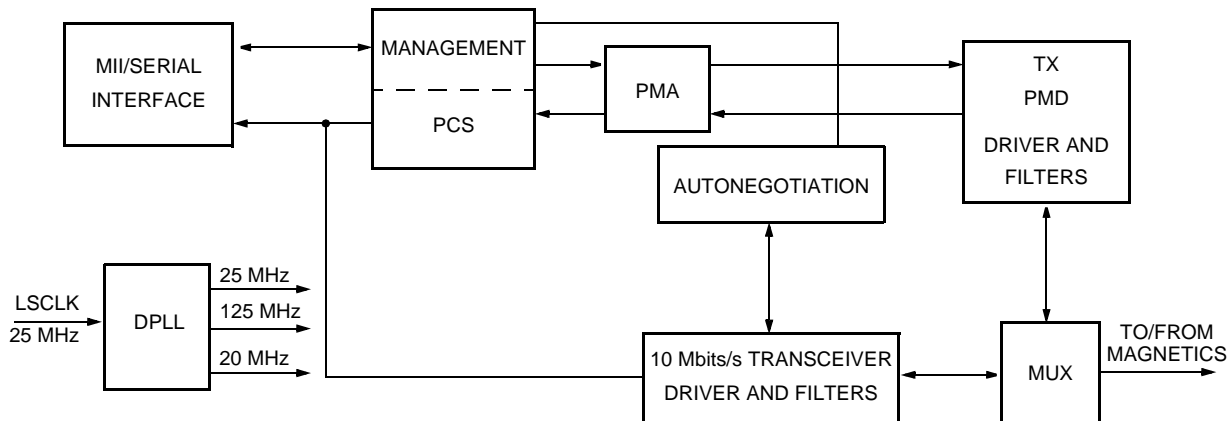
LU6612 implements:

- The 10Base-T transceiver function of *IEEE* 802.3u.
- The physical coding sublayer (PCS) of *IEEE* 802.3u.
- The physical medium attachment (PMA) of *IEEE* 802.3u.
- Autonegotiation of *IEEE* 802.3u.

- MII management of *IEEE* 802.3u.
- Physical medium dependent (PMD) of *IEEE* 802.3u.

This device supports operation over category 3 unshielded twisted-pair (UTP) cable, according to *IEEE* 802.3u 10Base-T specification, and over category 5, Type 1, UTP and Type 1 shielded twisted-pair cable, according to *IEEE* 802.3u 100Base-X specification.

Figure 1 illustrates a functional overview of the LU6612.



5-5600(F)

Figure 1. Functional Block Diagram: Device Overview

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