National Semiconductor

Advance Information

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DP83891 Gig PHYTER™ 10/100/1000M

General Description

The DP83891 is the first fully integrated, feature rich Physical Layer transceiver with integrated PMD sublayers to support 10BASE-T,100BASE-TX and 1000BASE-T Ethernet protocols. It operates on existing CAT5 cables which reduces deployment costs.

The DP83891 is designed for easy implementation of 10/100/1000 Mb/s Ethernet LANs. It interfaces directly to Twisted Pair media via an external standard Quad transformer. The DP83891 connects to the MAC layer through the IEEE 802.3u Standard Media Independent Interface (MII) or the IEEE 802.3z Gigabit Media Independent Interface (GMII).

Applications

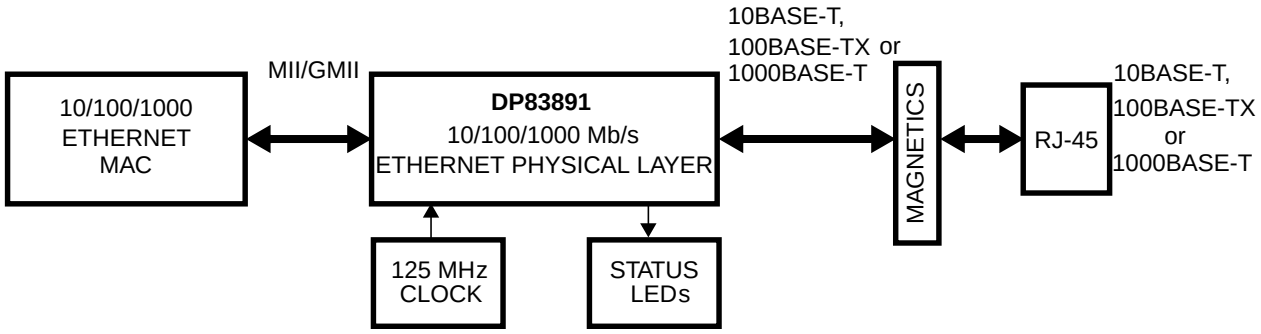
The DP83891 fits applications in:

- 10/100/1000 Mb/s capable node cards
- Switches with 10/100/1000 Mb/s capable ports
- High speed uplink ports (backbone)
- High end workstations

Features

- Fully integrated 10BASE-T,100BASE-TX and 1000BASE-T capable
- Single Quad TX-Transformer interface for all speeds
- Fully compliant to IEEE 802.3u 100BASE-TX and IEEE 802.3z/ab 1000BASE-T specifications. Fully integrated and fully compliant ANSI X3.T12 PMD physical sublayer that includes adaptive equalization and Baseline Wander compensation.
- Supports Auto-MDIX
- IEEE 802.3u Auto-Negotiation and Parallel Detection
  - Fully auto-negotiates between 10, 100 and 1000 Mb/s full duplex and half duplex devices
- 3.3 V MAC interfaces:
  - IEEE 802.3u MII
  - IEEE 802.3z GMII
- LED support (Link, Speed, Activity, Duplex, Collision, Auto-Negotiation, TX and RX indications)
- Management Register Set (MDIO and MDC)
- Single 3.3 V power supply
  - 5 V tolerant I/Os
- 208-pin PQFP package

System Diagram



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