JL2308 Product Brief

10/100/1000M Ethernet PHY Transceivers

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PB016-JL2308-v1.01-EN

October 2023

Overview

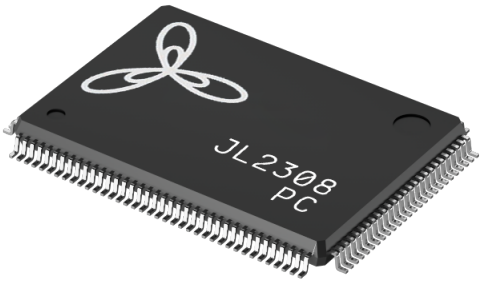
The JL2308 device integrates octal 10/100/1000M Ethernet PHY transceivers, compliant with IEEE 802.3 standards. The 10/100/1000M Ethernet PHY transceiver includes the PMD, PMA, and PCS sublayers, and uses advanced mixed-signal processing to perform equalization, echo and crosstalk cancellation, data recovery, and error correction functions.

With support for 2 Quad Serial Gigabit Media Independent Interfaces (QSGMII) or 1 Octal Universal Serial Gigabit Media Independent Interface (O-USGMII), the JL2308 provides a direct connection to a MAC/Switch port. The JL2308 device also supports Synchronous Ethernet (SyncE) and Precise Timing Protocol (PTP) Time Stamping, which is based on IEEE 1588 version 2 and IEEE 802.1AS, for precise timing and synchronization. Additionally, the JL2308 features an integrated Virtual Cable Tester, which can detect short, open, and cable lengths.

In summary, the JL2308 provides an efficient and robust solution for high-speed networking applications, offering advanced features such as SyncE and PTP Time Stamping, along with reliable data transmission and cable testing capabilities.

Typical Applications

- Multi-port Gigabit Ethernet Switch



Features

- Integrated Octal-port 10/100/1000M Ethernet PHY transceivers
- Each port supports full-duplex 10/100/1000M connectivity and the half-duplex only supported in 10/100M mode
- Supports O-USGMII and QSGMII
- Supports auto MDI/MDIX crossover function for 10BASE-T/100BASE-TX/1000BASE-T
- Supports auto-detection and auto-correction for pair polarity
- Supports Parallel Detection and Downshift function
- Supports Baseline Wander Correction
- Supports IEEE 802.3az Energy Efficient Ethernet (EEE) and Link Down Power Saving
- Supports IEEE 802.3 Clause 22 and Clause 45 MDC/MDIO management interface
- Supports Serial LED function for max 4 LEDs per port
- Supports interrupt pin output for notification
- Built-in Wake-on-LAN (WOL) function
- Supports Synchronous Ethernet (SyncE) for 1000BASE-T and 100BASE-TX
- Hardware supports Synchronous Ethernet and Precision Time Protocol (PTP), including IEEE 1588 v1, v2, and 802.1AS
- Supports Various Self-Loopback Diagnostic capability
- Supports Temperature Sensor in PHY
- Supports TDR-based Cable Test Diagnostic
- Supports 25 MHz crystal/OSC input and 125 MHz reference clock option
- LQFP-128 E-PAD package