

YT8821-VD Product Brief

10/100/1000M/2.5G ETHERNET TRANSCEIVER

Overview

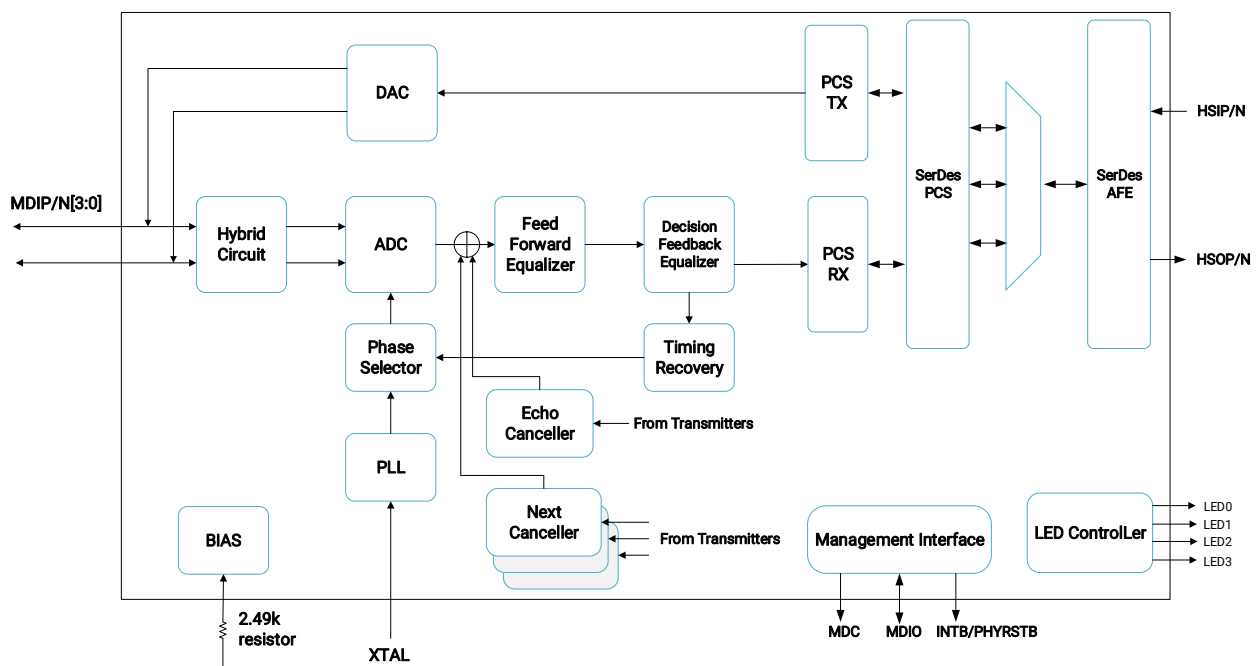
YT8821-VD is a 10BASE-Te, 100BASE-TX, 1000BASE-T, and 2.5GBASE-T transceiver highly integrated into a single monolithic CMOS chip. It is compatible with both the IEEE 802.3 standard and the NBASE-T Alliance PHY and performs all the necessary physical layer functions for 10BASE-Te, 100BASE-TX, 1000BASE-T, and 2.5GBASE-T Ethernet over CAT.5e UTP cable.

YT8821-VD uses advanced DSP technology and an Analog Front End to enable high-speed data transmission and reception over UTP cable. It is a highly integrated solution combining digital

adaptive equalizers, ADCs, line drivers, echo cancellers, crosstalk cancellers, phase-locked loops, etc. Functions such as Crossover Detection & Auto-Correction, and polarity correction are also supported.

Data transfer between MAC and YT8821-VD is by the SerDes interface, which can be configured as SGMII, 2500BASE-X, and 2.5G SGMII. YT8821-VD operates at multiple digital I/O voltages, including 3.3V and 1.8V.

Block Diagram



Key Feature

- Compatible with IEEE 802.3, IEEE 802.3u, IEEE 802.3ab
- Support IEEE 802.3az (Energy Efficient Ethernet)
- Support IEEE 802.3bz (2.5GBASE-T)

- Support Full Duplex flow control (IEEE 802.3x)
- Support IEEE 802.3 optional ability (Fast Retrain)
- Integrated 10BASE-T_e, 100BASE-TX, 1000BASE-T and 2.5GBASE-T IEEE 802.3 Compliant transceiver
- Support 1G Lite
- Auto-Negotiation with extended next page capability (XNP)
- Compatible with NBASE-T Alliance PHY Specification
- Support pair swap/polarity/skew correction
- Crossover detection and auto-correction
- Configurable MDI port ordering (MDI swap) for easy PCB layout
- Support power down/link down power saving mode
- Support clause 22 and clause 45 MDC/MDIO management interface
- Support rate adaptor for SerDes
- Selectable SerDes interface to MAC control (SGMII/2500BASE-X/2.5G SGMII)
- Built-in Wake-on-LAN (WOL) over UTP
- Support the Interrupt function over UTP
- Support parallel detection
- Baseline wander correction
- Support 3.3/1.8V signaling for MDIO access
- Support 25MHz crystal or external OSC
- Provide 25MHz clock source for MAC
- Provide 4 network customized LEDs with controllable LED blinking frequency and duty cycle
- Self-Loopback diagnostic capability

Target Applications

- Ethernet Switch
- Digital TV (DTV)
- Communication and Network Riser
- Routers, PON Equipment
- Printer and Office Machine