



HT8531SC/HT8531SH

Single-port Gigabit Ethernet physical layer transceiver

1. intro

The HT8531SC/HT8531SH is a highly integrated Ethernet transceiver that complies with the 10BASE-T_e, 100BASE-TX and 1000BASE-T IEEE 802.3 standards. It provides all the physical layer functionality needed to transmit and receive Ethernet packets over CAT5E UTP cables.

The HT8531SC/HT8531SH uses the most advanced DSP technology and analog front end (AFE) to enable high-speed data transmission and reception over UTP cables. The HT8531SC/HT8531SH implements cross-detection and automatic correction, polarity correction, adaptive equalization, crosstalk cancellation, echo cancellation, timing recovery, and error correction to deliver powerful 10Mbps, 100Mbps or more 1000Mbps transmission and reception capability.

Data transfer between MAC and PHY is via the Reduced Gigabit Media Independent Interface (RGMI) of 1000BASE-T, 100BASE-TX, and 10BASE-T_e, or the Serial Gigabit Media Independent Interface (SGMI).

The HT8531SC/HT8531SH supports a variety of RGMII signal voltages, including 3.3V, 2.5V and 1.8V.

HT8531SC/HT8531SH also supports SerDes interfaces that can be configured as SGMII, 1000BASE-X, or 100BASE-FX.

Commercial grade model :HT8531SC

Industrial model :HT8531SH

Apply

- Digital television
- Game machine
- Printers and office machines
- Ethernet switch
- Base station and controller
- Router
- PON equipment
- Test and measurement systems
- Industrial and factory automation equipment
- Multimedia synchronization and real-time networking
- Embedded systems with Ethernet MAC that require a UTP physical connection

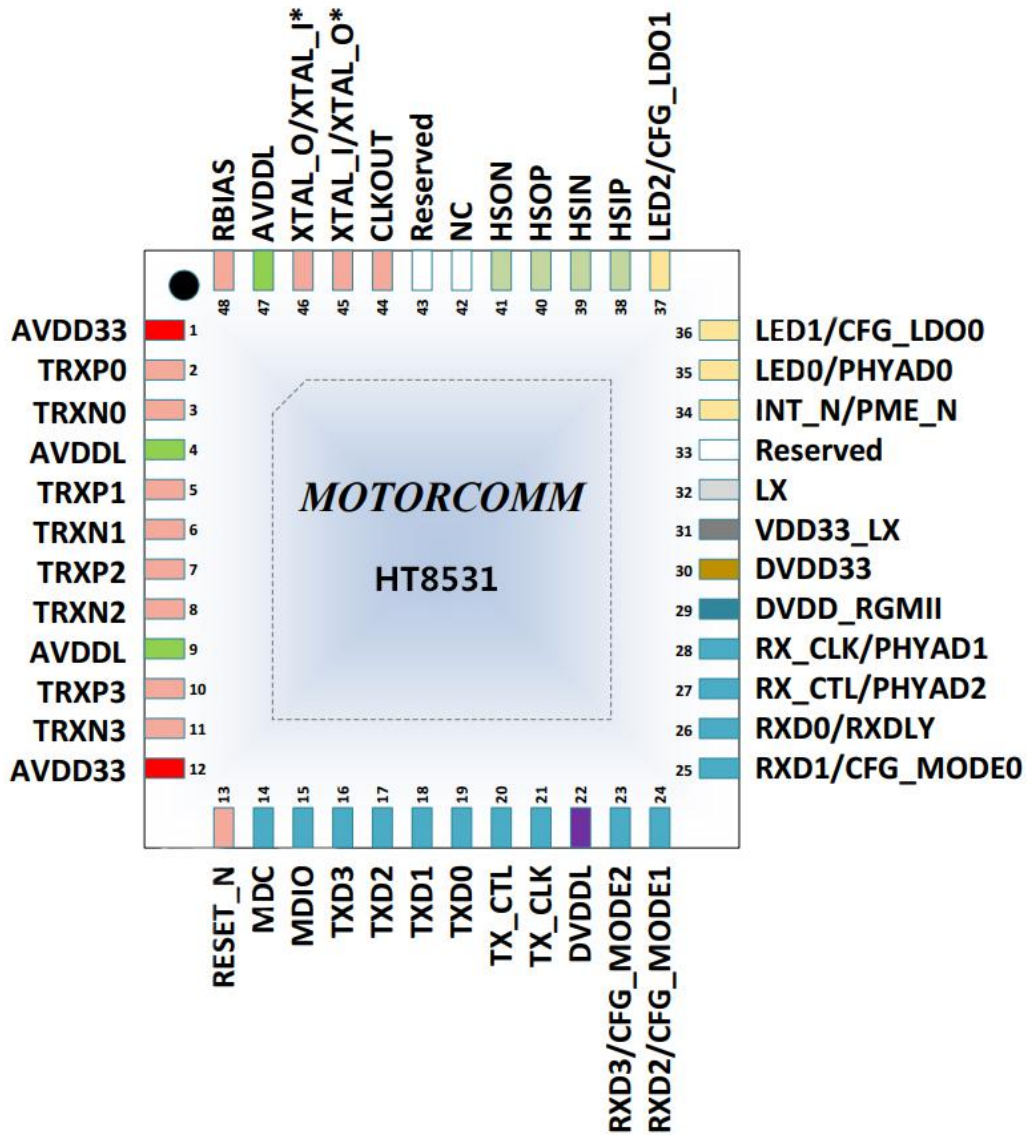


2. Main function

- 1000BASE-T IEEE 802.3ab Compliant
- 100BASE-TX IEEE 802.3u Compliant
- 10BASE-Te IEEE 802.3 Compliant
- Support 1000BASE-X / 100BASE-FX
- Supports RGMII/SGMII MAC interface
- Supports IEEE 802.3az-2010 (Energy Efficient Ethernet)
- Supports Synchronous Ethernet (Sync-E)
- Built-in Wake-on-LAN (WOL) over UTP/Fiber
- Supports interrupt function over UTP/Fiber
- Supports Parallel Detection
- Crossover Detection & Auto-Correction
- Automatic polarity correction
- Baseline Wander Correction
- Supports 120m for CAT.5E cable in 1000BASE-T
- Selectable 3.3V/2.5V/1.8V signaling for RGMII.
- Supports 25MHz external crystal or OSC
- Provides 25MHz/125MHz clock source for MAC
- Provides 3 network status LEDs
- Supports Link Down Power Saving (Sleep Mode)
- Supports SERDES (SGMII/1000BASE-X/100BASE-FX)
- Supports 1000BASE-X/100FX unidirection
- Supports Fiber-to-UTP Media Convertor mode or SGMII-to-RGMII Bridge mode
- Supports UTP/Fiber Auto Detection
- Supports 18k bytes jumbo frame for 1000BASE-T and 100BASE-TX, and 10k bytes for 10BASE-Te
- Built-in Switching Regulator for core power 1.1V
- Built-in LDO for RGMII IO power 2.5V/1.8V
- Industrial grade manufacturing process for HT8531SH
- 3.3V and 1.1V power supply
- 48-pin QFN Green Package



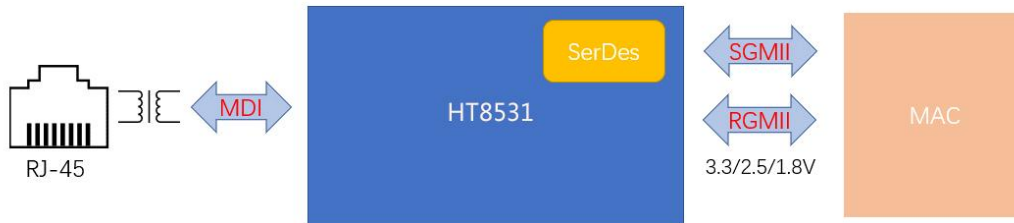
3. pin



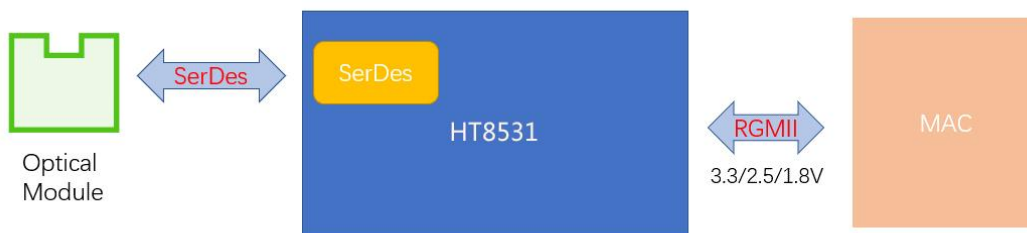


Application mode

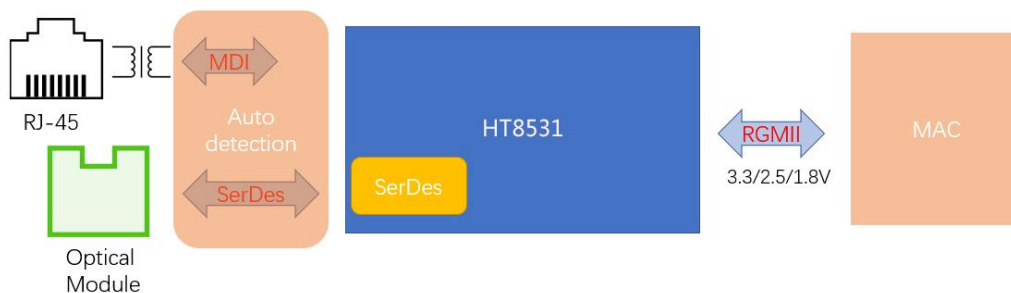
UTP (UTP<->RGMII / UTP<->SGMII) APPLICATION



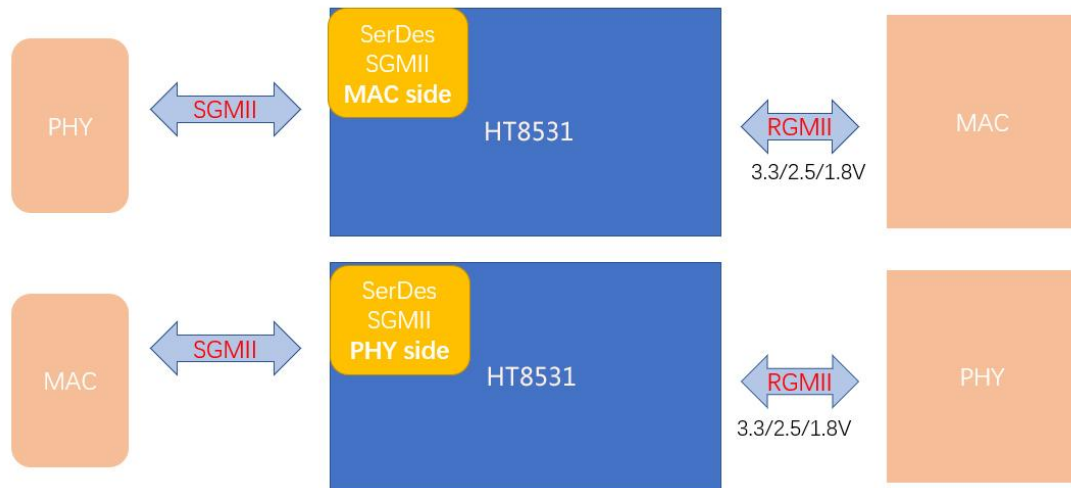
FIBER (FIBER<->RGMII) APPLICATION



UTP/FIBER TO RGMII (UTP/FIBER MEDIA AUTO DETECTION RGMII) APPLICATION



SGMII TO RGMII (SGMII <->RGMII BRIDGE MODE) APPLICATION



FIBER TO UTP (UTP<->FIBER MEDIA CONVERTER) APPLICATION

