



# HT8521SC / HT8521SH

Single-port Gigabit Ethernet physical layer transceiver

## 1.intro

HT8521S is a highly integrated Ethernet transceiver that complies with 10BASE Te, 100BASE-TX, and 1000BASE-T IEEE 802.3 standards. It provides all the physical layer functionality needed to transmit and receive Ethernet packets over the CAT5E UTP cable.

The HT8521S uses the most advanced DSP technology and analog front end (AFE) to enable high-speed data transmission and reception over UTP cables. Achieve robust transceivers at 10Mbps, 100Mbps, or 1000Mbps with cross detection and automatic correction, polarity correction, adaptive equalization, crosstalk cancellation, echo cancellation, timing recovery, and error correction.

1000BASE-T, 100BASE-TX, and 10BASE-Te data transfers between MAC and PHY are carried out through either a Reduced Gigabit Media Independent Interface (RGMII) or Serial Gigabit Media Independent Interface (SGMII) interface. The HT8521S supports a variety of RGMII signal voltages, including 3.3V, 2.5V and 1.8V.

The HT8521S also supports SerDes interfaces that can be configured as SGMII, 1000BASE-X, or 100BASE-FX.

The HT8521S supports the proprietary LRE100-4 feature, which enables devices to automatically negotiate and connect with LRE100-4-compliant link partners in extended cable extension applications up to 400 meters long

Commercial grade model :HT8521SC

Industrial model :HT8521SH

## Apply

- Digital television
- 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

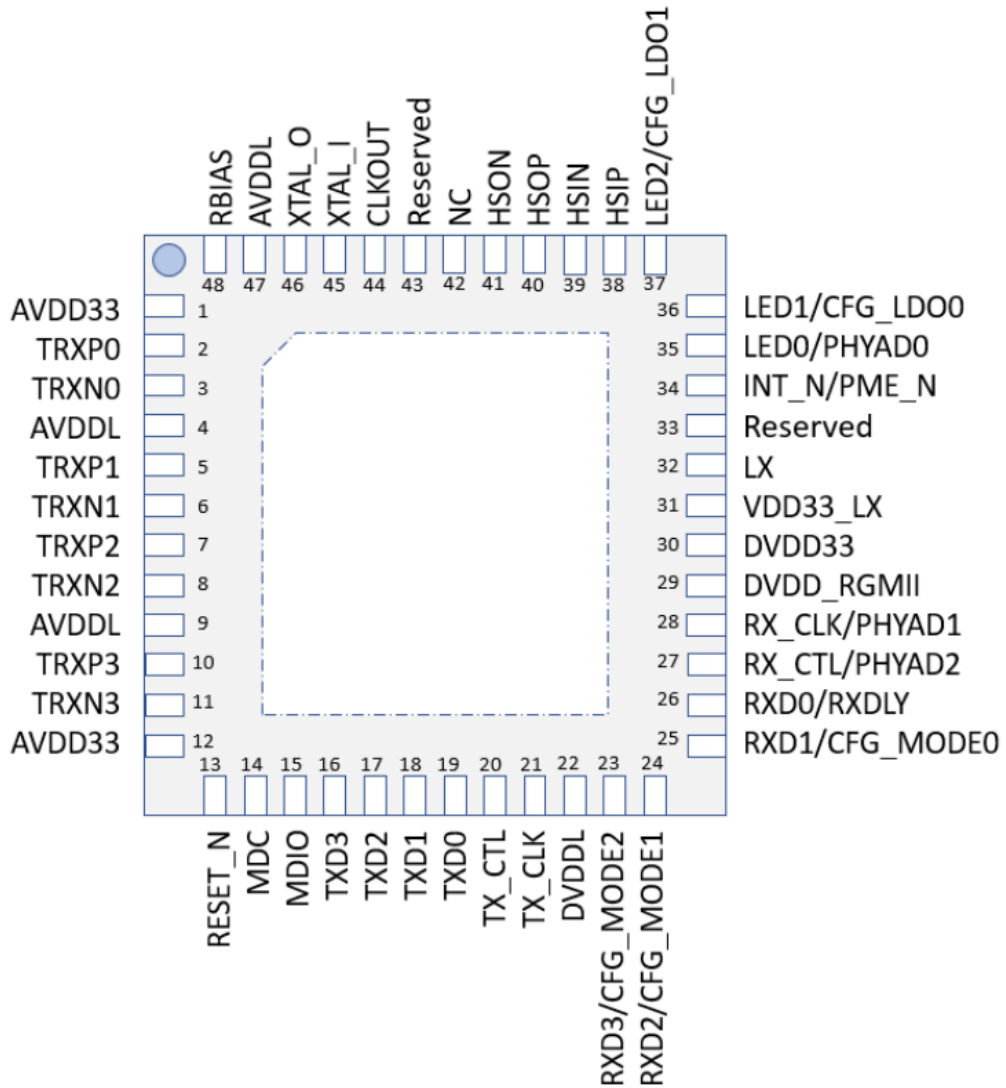


## 2. Main function

- 1000BASE-T IEEE 802.3ab Compliant
- 100BASE-TX IEEE 802.3u Compliant
- 10BASE-Te IEEE 802.3 Compliant
- Support 1000BASE-X / 100BASE-FX
- Support LRE100-4
  - Long Reach Ethernet up to 400 meter @100Mbps by 4-pairs in the CAT.5E UTP cable
- Supports RGMII/SGMII MAC interface
- Supports IEEE 802.3az-2010 (Energy Efficient Ethernet)
  - EEE Buffering
  - Incorporates EEE buffering for seamless support of legacy MACs
- 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 125MHz clock source for MAC
- Provides 3 network status LEDs
- Supports Link Down Power Saving (Sleep Mode)
- Built-in Switching Regulator and LDO
- Industrial grade manufacturing process
- Supports SERDES (SGMII/1000BASE-X )
- Supports Fiber-to-UTP Media Convertor mode or SGMII-to-RGMII Bridge mode
- Supports UTP/Fiber Auto Detection
- Supports 18k bytes jumbo frame when 1000BASE-T and 100BASE-TX, and 10k bytes when 10BASE-Te
- 48-pin QFN Green Package



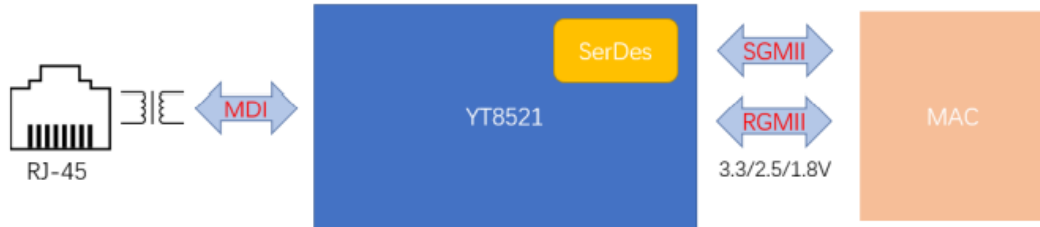
3.pin



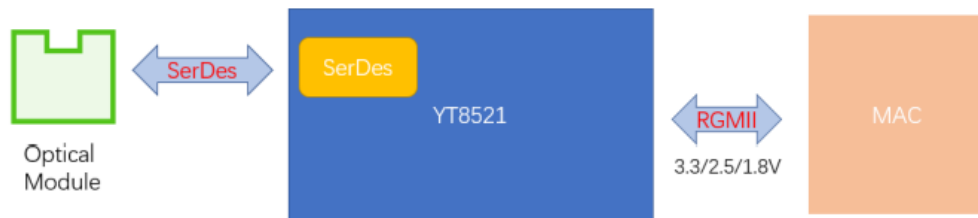


4.mode

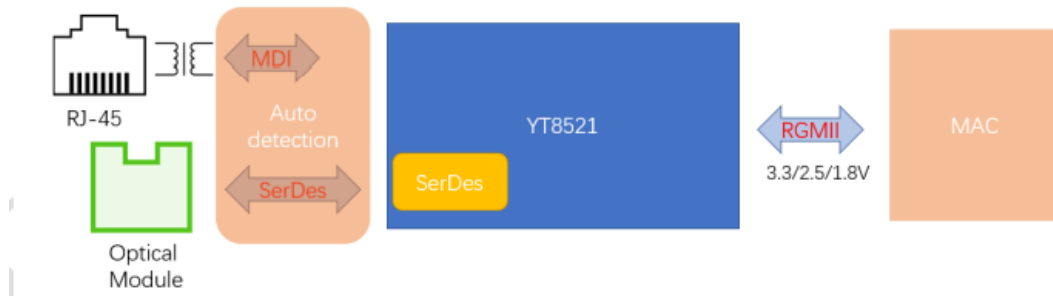
UTP (UTP<->RGMII / UTP<->SGMII) APPLICATION



Fiber (FIBER<->RGMII) Application

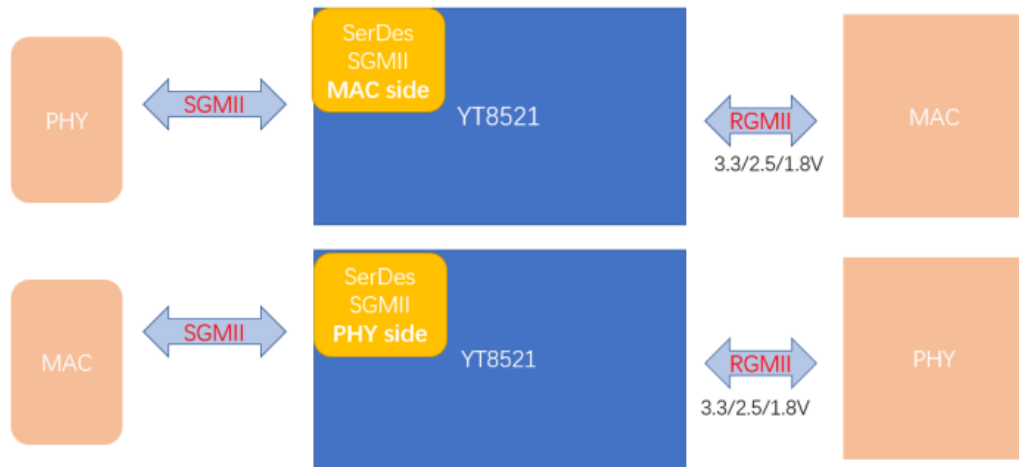


UTP/FIBER TO RGMII (UTP/FIBER MEDIA AUTO DETECTION RGMII) APPLICATION





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



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

