

Motorcomm YT8531 Product Brief

The YT8531C-CA/YT8531H-CA/YT8531DC-CA/YT8531DH-CA/YT8531P-CA is a highly integrated Ethernet transceiver that complies with 10BASE-Te, 100BASE-TX, and 1000BASE-T IEEE 802.3 standards.

Overview

YT8531C-CA/YT8531H-CA/YT8531DC-CA/YT8531DH-CA/YT8531P-CA provides all the necessary physical layer functions to transmit and receive Ethernet packets over CAT.5E UTP cable.

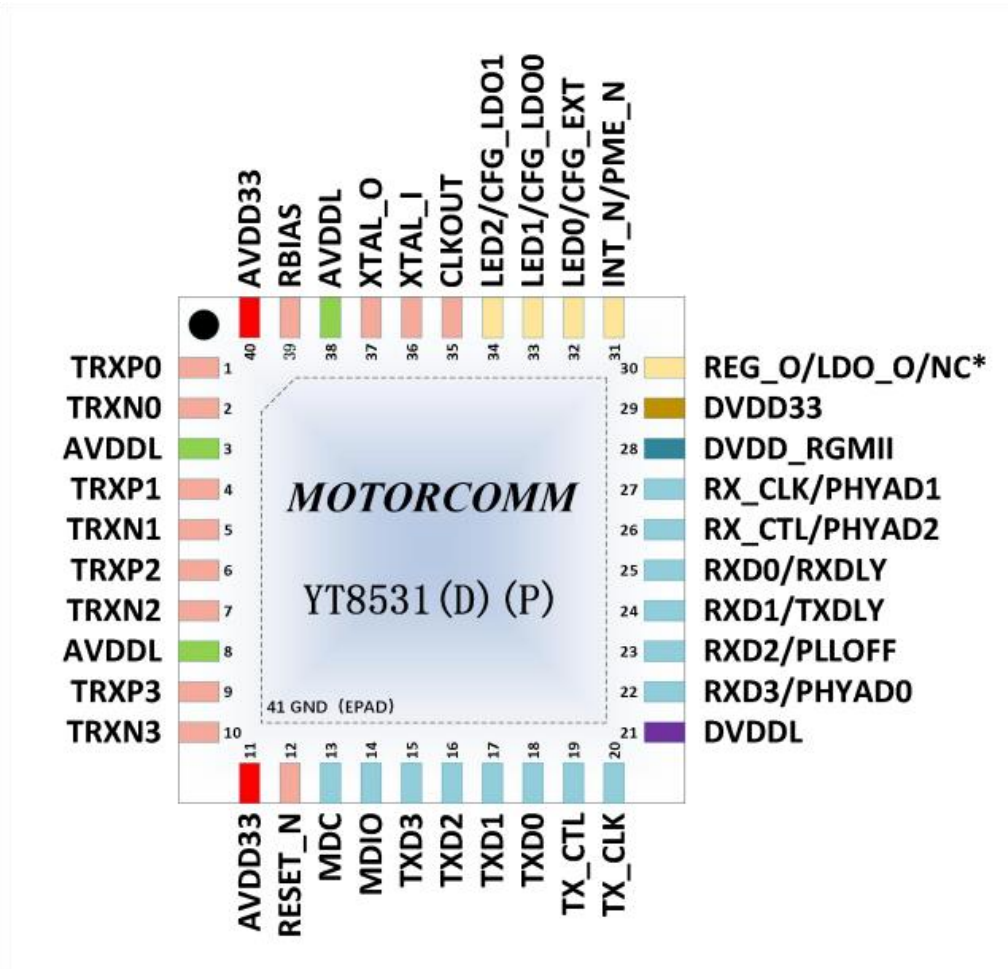
The YT8531C-CA/YT8531H-CA/YT8531DC-CA/YT8531DH-CA/YT8531P-CA uses state-of-the-art DSP technology and an Analog Front End (AFE) to enable high-speed data transmission and reception over UTP cable. Functions such as Crossover Detection & Auto-Correction, polarity correction, adaptive equalization, cross-talk cancellation, echo cancellation, timing recovery, and error correction are implemented in the YT8531C-CA/YT8531H-CA/YT8531DC-CA/YT8531DH-CA/YT8531P-CA to provide robust transmission and reception capabilities at 10Mbps, 100Mbps, or 1000Mbps.

Data transfer between MAC and PHY is via the Reduced Gigabit Media Independent Interface (RGMII) for 1000BASE-T, 100BASE-TX and 10BASE-Te.

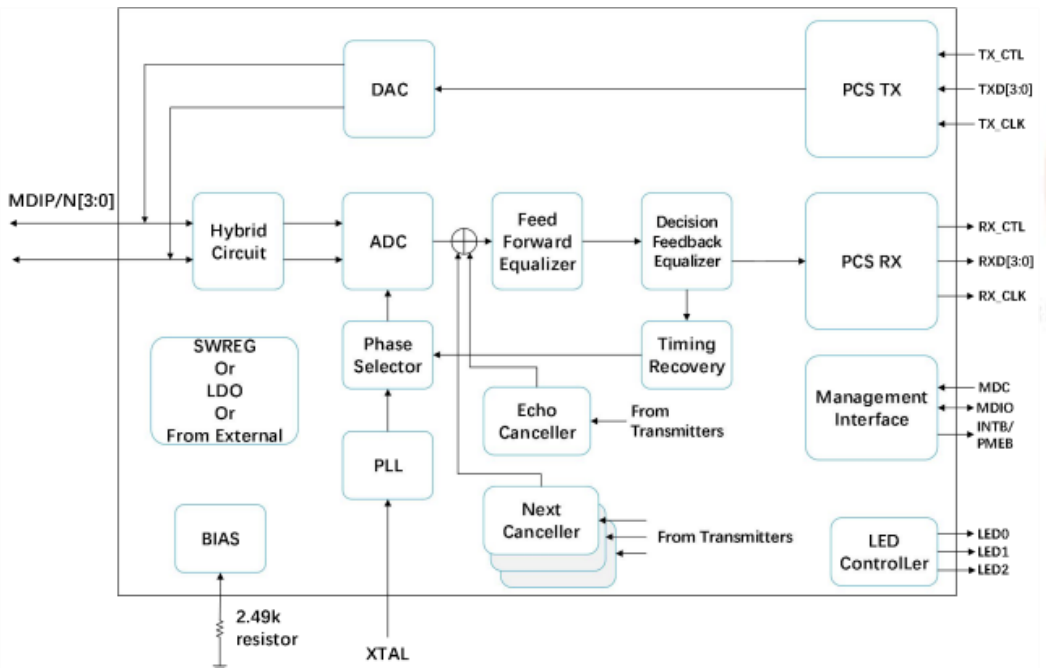
The YT8531C-CA/YT8531H-CA/YT8531DC-CA/YT8531DH-CA/YT8531P-CA supports various RGMII signaling voltages, including 3.3V, 2.5V, and 1.8V.

The YT8531DC-CA/YT8531DH-CA/YT8531P-CA features a Motorcomm proprietary feature called LRE100-4, which enables the device to auto-negotiate and link up with LRE100-4 compliant link partners in extended cable reach applications up to 400 meter at 100Mbps over CAT.5E cable.

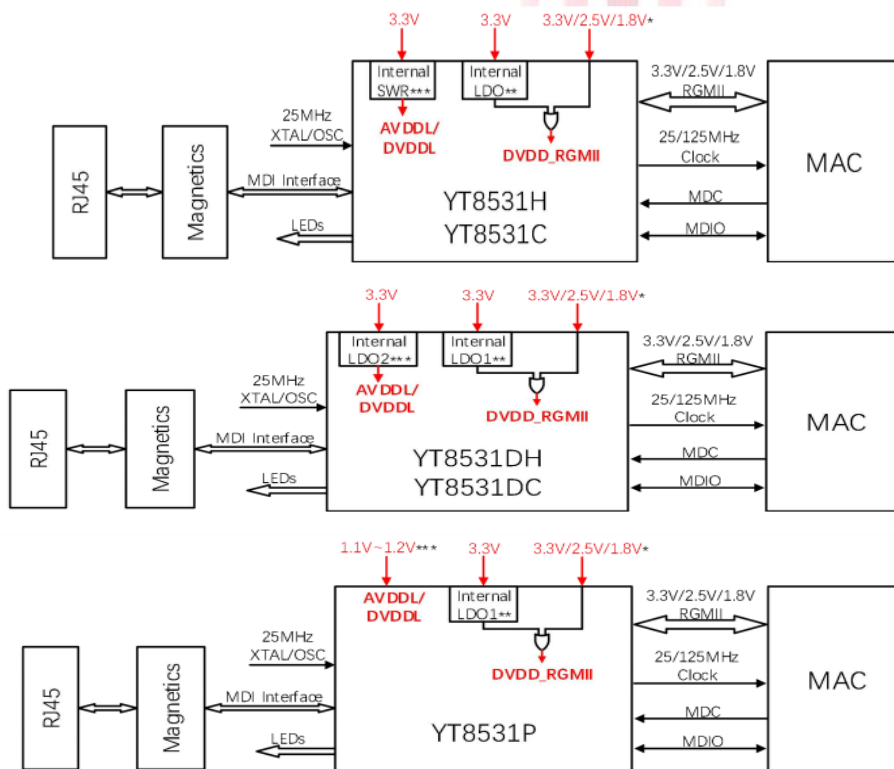
Pin Assignment



Block Diagram



Application Diagram



Key Features

- 1000BASE-T IEEE 802.3ab Compliant
- 100BASE-TX IEEE 802.3u Compliant
- 10BASE-Te IEEE 802.3 Compliant
- Support LRE100-4 for YT8531DC-CA/YT8531DH-CA/YT8531P-CA
 - Long Reach Ethernet up to 400 meter @100Mbps by 4-pairs in the CAT.5E UTP cable
- Supports RGMII
- Supports IEEE 802.3az-2010 (Energy Efficient Ethernet)
- Supports Synchronous Ethernet (Sync-E)
- Built-in Wake-on-LAN (WOL) over UTP
- Supports interrupt function over UTP
- 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)
- Built-in Switching Regulator or LDO
- Supports 18k bytes jumbo frame for 1000BASE-T and 100BASE-TX, and 10k bytes for 10BASE-Te
- Industrial grade manufacturing process for YT8531H-CA and YT8531DH-CA
- 40-pin QFN Green Package

Target Applications

- DTV (Digital TV)
- MAU (Media Access Unit)
- CNR (Communication and Network Riser)
- Game Console
- Printer and Office Machine
- DVD Player and Recorder
- Ethernet Hub
- Ethernet Switch
- Base Stations and Controllers
- Routers, DSLAMs, PON Equipment
- Test and Measurement Systems
- Industrial and Factory Automation Equipment
- Multimedia synchronization and Real Time Networking
- Any embedded system with an Ethernet MAC that needs a UTP physical