

# YT8531(D)H/YT8531(D)C/YT8531P

单口千兆以太网物理层收发器

## 1. 简介

YT8531H / YT8531C / YT8531DH / YT8531DC / YT8531P 是一款高度集成的以太网收发器，符合 10BASE-Te、100BASE-TX 和 1000BASE-T IEEE 802.3 标准。提供了通过 CAT5E UTP 电缆传输和接收以太网数据包所需的所有物理层功能。

YT8531(D) (P) 采用最先进的 DSP 技术和模拟前端 (AFE)，可通过 UTP 电缆实现高速数据传输和接收。YT8531(D) (P) 实现了交叉检测和自动校正、极性校正、自适应均衡、串扰消除、回声消除、定时恢复和纠错等功能，以提供强大的 10Mbps、100Mbps 或 1000Mbps 传输和接收能力。

MAC 和 PHY 之间的数据传输是通过 1000BASE-T、100BASE-TX 和 10BASE-Te 的精简千兆位媒体独立接口 (RGMII)。YT8531(D) (P) 支持各种 RGMII 信号电压，包括 3.3V、2.5V 和 1.8V。

YT8531(D) (P) 具有称为 LRE100-4 的 Motorcomm 专有功能，使该设备能够在扩展电缆范围应用中（最长 400 米的 CAT5E 电缆），以 100Mbps 的收发速率，与符合 LRE100-4 标准的链路伙伴，进行自动协商并连接。

商业级型号:YT8531C, YT8531DC, YT8531P

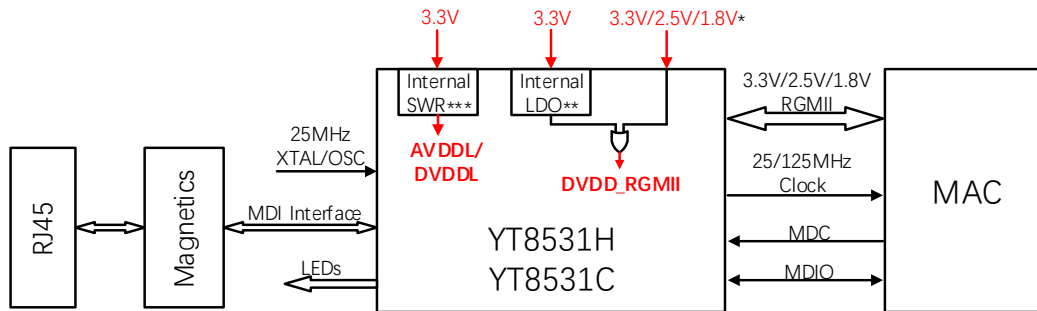
工业级型号:YT8531H, YT8531DH

## 应用

- 数字电视
- 游戏机
- 打印机和办公机器
- DVD 播放器和摄像机
- 以太网交换机
- 基站和控制器
- 路由器
- PON 设备
- 测试和测量系统
- 工业和工厂自动化设备
- 多媒体同步与实时网络
- 带有以太网 MAC 且需要 UTP 物理连接的嵌入式系统

应用框图

YT8531H/YT8531C

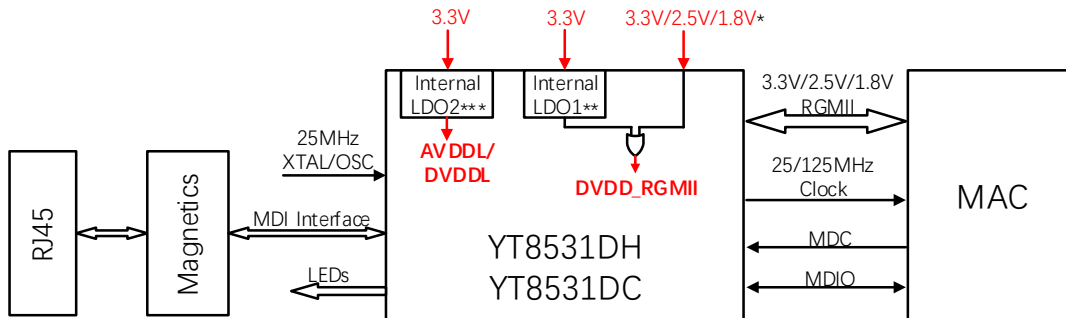


\*Note: 3.3V/2.5V/1.8V power here means I/O power sourced from external power, not from the internal LDO.

\*\*Note: I/O power only support 2.5V/1.8V when sourced from the internal LDO.

\*\*\*Note: Internal SWR is for YT8531H/YT8531C.

YT8531DH/YT8531DC

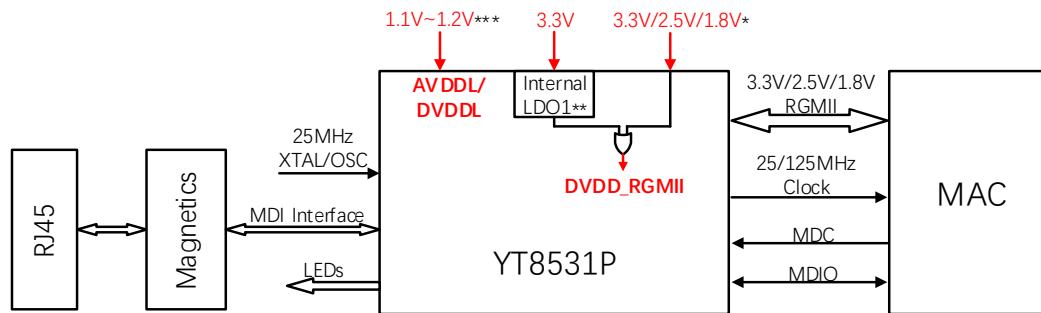


\*Note: 3.3V/2.5V/1.8V power here means I/O power sourced from external power, not from the internal LDO.

\*\*Note: I/O power only support 2.5V/1.8V when sourced from the internal LDO.

\*\*\*Note: Internal LDO2 is for YT8531DH/YT8531DC

YT8531P



*\*Note: 3.3V/2.5V/1.8V power here means I/O power sourced from external power, not from the internal LDO.*

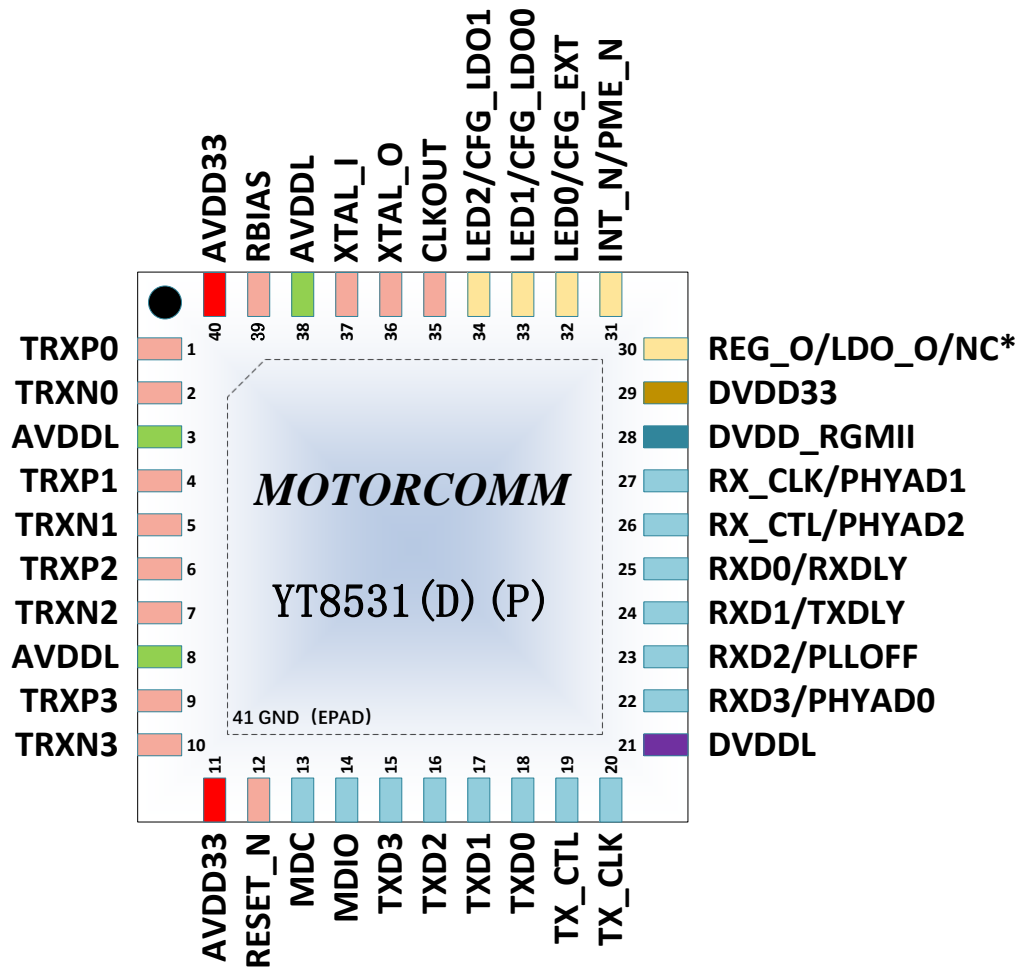
*\*\*Note: I/O power only support 2.5V/1.8V when sourced from the internal LDO.*

*\*\*\*Note: 1.1V~1.2V means core power sourced from external power for YT8531P.*

## 2. 主要功能

- 1000BASE-T IEEE 802.3ab Compliant
- 100BASE-TX IEEE 802.3u Compliant
- 10BASE-Te IEEE 802.3 Compliant
- Support LRE100-4 only for YT8531D/YT8531P
  - 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 (YT8531H/YT8531DH)
- 40-pin QFN Green Package

### 3. 管脚



\*Note:

For YT8531H/YT8531C, pin 30 is REG\_O, which means switch regulator output.

For YT8531DH/YT8531DC, pin 30 is LDO\_O, which means LDO output.

For YT8531P, pin 30 is NC, which means no connection.