

YT8011A

车载 100/1000BASE-T1 以太网物理层收发器

1. 简介

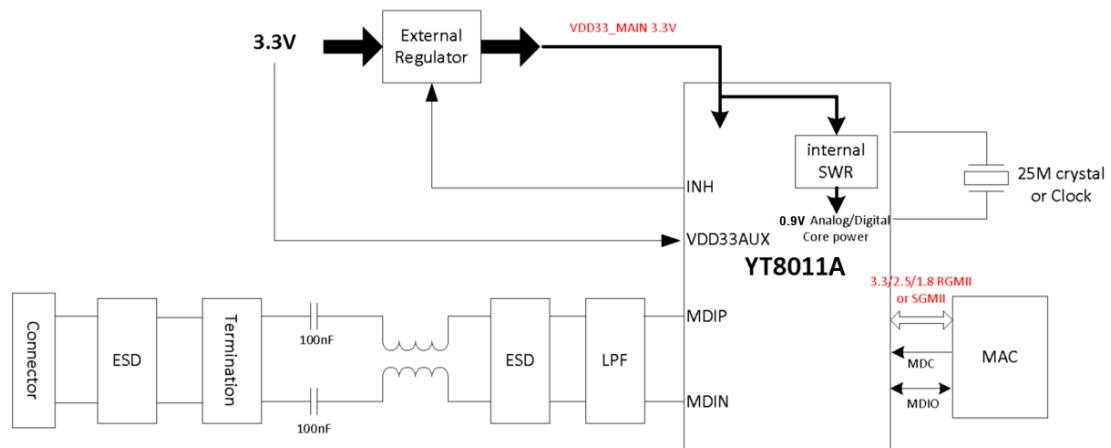
YT8011A 是一款车载千兆单对以太网物理层收发器，支持在非屏蔽双绞线（UTP）上运行。收发器符合 IEEE 802.3bw 和 IEEE 802.3bp 标准定义的 100/1000BASE-T1 的以太网物理层部分，包括自动协商、链路同步和 OAM 功能。

支持精简的千兆媒体独立接口（RGMII）和串行千兆媒体独立接口（SGMII）。支持 RGMII 的 3.3V/2.5V/1.8V I/O 信号。

支持车载以太网的睡眠（SLEEP）/唤醒(WAKE)功能。SLEEP 功能使以太网物理层收发器进入睡眠模式，获得更低的功耗。WAKE 功能可以有效地将以太网物理层收发器从睡眠模式唤醒到正常操作模式。

YT8011A 采用最先进的混合信号技术和模拟前端（AFE），通过 UTP 电缆实现高速数据传输和接收。YT8011A 实现了自适应均衡、串扰消除、回波消除、数据恢复和纠错等功能，以提供 100Mbps 或 1000Mbps 的强大传输和接收能力。它提供高静电放电（ESD）保护，以及优异的电磁兼容性（EMC）性能。

应用框图



2. 主要功能

100/1000BASE-T1

- Compliant with 100/1000BASE-T1 defined by IEEE 802.3bw and 802.3bp standards.
- Fast link-up time(<100ms)
- Full duplex supported
- Auto-negotiation
- Link Synchronization

INTERFACE

- Supports RGMII with optional internal delay on TX and RX path and 1.8V/2.5V/3.3V RGMII IO voltage
- Supports SGMII
- MDC/MDIO management interface
- Interrupt notifications
- PTP GPIO

PRECISION TIME PROTOCOL (PTP)

- Supports for Precision time protocol, including IEEE1588v1,v2 and 802.1AS
- PTP packet parser supports layer 2 Ethernet, IPv4/UDP, IPv6/UDP packets
- One-Step operation supported

- Adjustable PTP clock for synchronization
- Deterministic and low transmission latency for PTP mechanism
- Programmable time application interface through the PTP GPIO
- Selectable PTP clock input from the external reference clock source

CLOCKING

- Supports 25MHz crystal/external clock

POWER SAVING

- Supports sleep & wake up function
- Low power consumption at sleep mode < 30uA
- Supports remote/local wake-up

PERFORMANCE

- AEC-Q100 Grade 1(-40°C~125°C)
- Low Electro-Magnetic Emission
- Fully integrated digital adaptive equalizers, echo cancellers, and crosstalk cancellers
- Advanced digital baseline wander correction

PACKAGES

- 48pin QFN package (7*7)

3. 管脚

