Qualcomm® ETHOS®

The Need. Hunger for bandwidth on today's media rich networks.
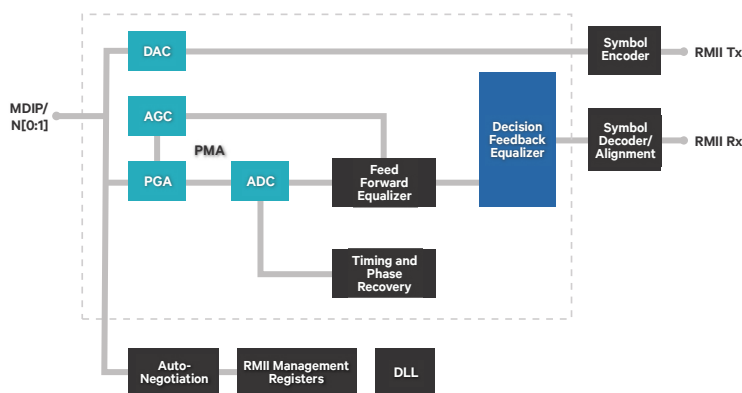The Feed. Ethernet.
Qualcomm Engineered.

Solution Highlights

- General purpose PHY targeting computing, home networking, consumer electronics and infrastructure
- Tiny 5 mm x 5 mm package
- Power savings based on cable length and link status
- Supports 25 MHz external clock for MII mode
- Supports 50 MHz external clock for RMII mode
- Cable Diagnostics Technology (CDT)
- Single 3.3V supply

AR8032 System Architecture

Qualcomm ETHOS

Qualcomm ETHOS technologies provide customers with industry-leading low-power and solution size to enable Fast or Gigabit Ethernet connectivity in networking equipment, consumer electronics and computing platforms. Our PHY, controller and switch solutions support the IEEE 802.3az standard for Energy Efficient Ethernet, to extend battery-charges on computing platforms and deliver power-efficiencies in networking equipment. Qualcomm also enables incremental power-saving techniques to offer our customers the very lowest power Ethernet in the industry today. The unmatched efficiency and advanced carrier-class features of Qualcomm ETHOS solutions give customers a competitive edge when designing products for energy-conscious consumers and businesses.

AR8032 Product Overview

The AR8032 is a highly integrated Fast Ethernet physical layer device that transmits and receives high-speed data over standard category 5 (CAT 5) unshielded twisted pair cable. It is compliant with 100Base-TX and 10Base-T IEEE 802.3 standards.

The AR8032 uses advanced mixed-signal processing technology to integrate functions such as adaptive equalization and timing recovery and delivers substantial power savings and operation in noisy environments.

The AR8032 supports the Media Independent Interface (MII) and Reduced Media Independent Interface (RMII) for direct connection to a Fast Ethernet-capable MAC.

The AR8032 supports the Qualcomm Cable Diagnostic Test (CDT) feature, which uses Time Domain Reflectometer technology to quickly and remotely identify potential cable malfunctions without deploying field support personnel or bringing down the network.

The AR8032 features the industry's lowest power consumption for both hibernation and full line rate traffic. It provides a low power, low BOM (bill-of-materials) cost solution for a wide range of applications including consumer, enterprise, carrier and home networks such as set-top box, connected TV, printer, Game Console, xDSL/xPON CPE, telecom embedded system, voice and video phone, digital media player/eReader and LAN-on-motherboard.

AR8032 Specifications

10/100Base-T IEEE 802.3 compliant

Supports MII/RMII interface

Low power modes with internal automatic DSP power saving scheme

Fully integrated digital adaptive equalizers

All digital baseline wander correction

Supports external 25 MHz clock source in MII mode

Supports external 50 MHz clock source in RMII mode

Automatic MDI/MDIX crossover

Automatic polarity correction

Loopback modes for diagnostics

IEEE 802.3u compliant Auto-Negotiation

Requires only one 3.3V power supply

32-pin QFN 5 mm x 5 mm package

Software programmable LED modes

Cable Diagnostic Test (CDT)

Both Commercial temperature (C-temp) and
Industry temperature (I-temp) grades are available

Qualcomm Atheros is a wholly owned subsidiary of Qualcomm Technologies, Inc. and a leading provider of wireless and wired technologies for the mobile, networking, computing and consumer electronics markets. We're focused on inventing technologies that connect and empower people in ways that are elegant and accessible to all.

Our broad connectivity portfolio allows us to offer our global customer base high-performance, end-to-end solutions, featuring Wi-Fi[®], GPS, Bluetooth[®], FM, Ethernet, HomePlug™ Powerline and PON technologies. By leveraging substantial expertise in RF, signal processing, software and networking we can deliver highly-integrated, low-power, system-level solutions that enable developers to create high-performance, differentiated products.

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