



XWAY™ PHY11G

10/100/1000 Mbps PHY with SerDes and DC/DC Regulator

Ethernet Features

- Energy-Efficient Ethernet:
 - 10BASE-Te
 - 100BASE-TX
 - 1000BASE-T
 - Wake-on-LAN
 - Auto Power-Down Modes
- Jumbo Frames of up to 10 kB
- Cable Diagnostics
- Auto-Downspeed
- Wiring Fault Tolerant:
 - Auto-MDI/MDI-X
 - Auto Polarity Correction
- Copper + Fiber Applications:
 - Single-Media
 - Dual-Media
 - Media Converter
- RGMII v1.3 and v2.0 MAC interface with Delay Compensation (RGMII-ID)
- Standards:
 - IEEE 802.3-2008 (relevant clauses)
 - IEEE 802.3az (Energy-Efficient Ethernet)
 - ANSIX3.263-1995
 - IEEE 1149.1

Main Features

- Full-Duplex and Half-Duplex modes for 10BASE-T(e), 100BASE-TX, 1000BASE-T and 1000BASE-X
- Low-EMI linedriver with integrated line termination
- Single power supply at 2.5 - 3.3 V using the integrated DC/DC Switching Regulator
- Industry's smallest footprint using the VQFN48 (reduced xMII only) or LQFP64 package variants
- Ultra-low power consumption of typically 400 mW

The XWAY™ PHY11G family of Physical Layer (PHY) ICs incorporates a set of single Gigabit-Ethernet (GbE) PHY devices that support the 10BASE-T(e), 100BASE-TX, 1000BASE-T and 1000BASE-X standards in both the half-duplex and full-duplex modes. The performance requirements set by these standards are exceeded by the XWAY™ PHY11G family. Implementation of an integrated SerDes allows for support of 1000BASE-X and SGMII.

The XWAY™ PHY11G family is characterized by an ultra-low power consumption of 400 mW in 1000BASE-T mode. Support of Energy-Efficient Ethernet allows for an even further reduction in power consumption that depends on link utilization. Power savings at system level are introduced using the Wake-on-LAN feature. The comprehensive design of the ICs integrates support for single-media, dual-media and media-conversion applications for both copper and fiber media. In applications using the copper medium, the low-EMI line driver with integrated termination facilitates a simplified PCB design. The PHY devices are available in the VQFN48 and LQFP64 small-package variants, thereby setting a new benchmark in footprint minimization. Both package types support the RMII, RGMII interface types, while the latter additionally supports GMII.

Optionally, the devices can be operated from a single power supply, with a range of 2.5 V to 3.3 V by using the integrated DC/DC switching regulator with minimal external cost. The XWAY™ PHY11G devices are configurable via pin-strapping, by means of the MDIO interface, or optionally by connecting an external EEPROM.

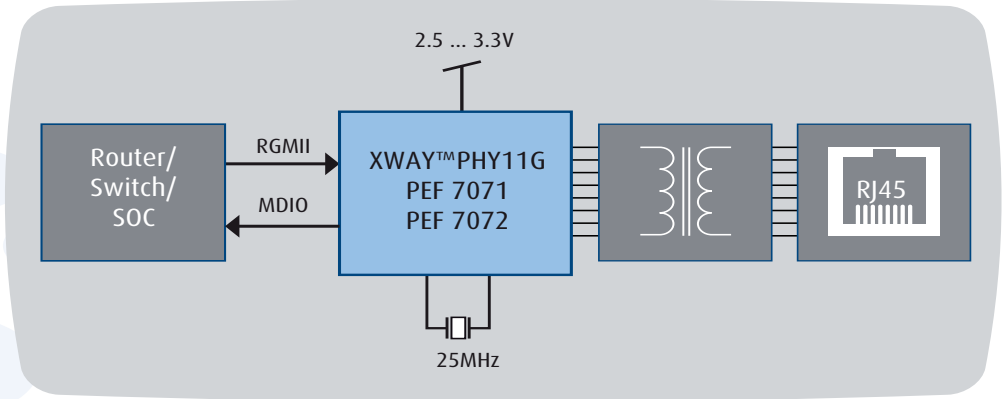
Applications

- Broadband Appliances:
 - xDSL Routers and PON Routers
- Home Gateway:
 - Home Server, Home Storage (NAS)
 - Gigabit SMB/SOHO Routers
- IP Phone
- Consumer Applications:
 - IPTV, Set-Top Boxes, Game Consoles
 - Printers
- Media Converter (Copper to Fiber)

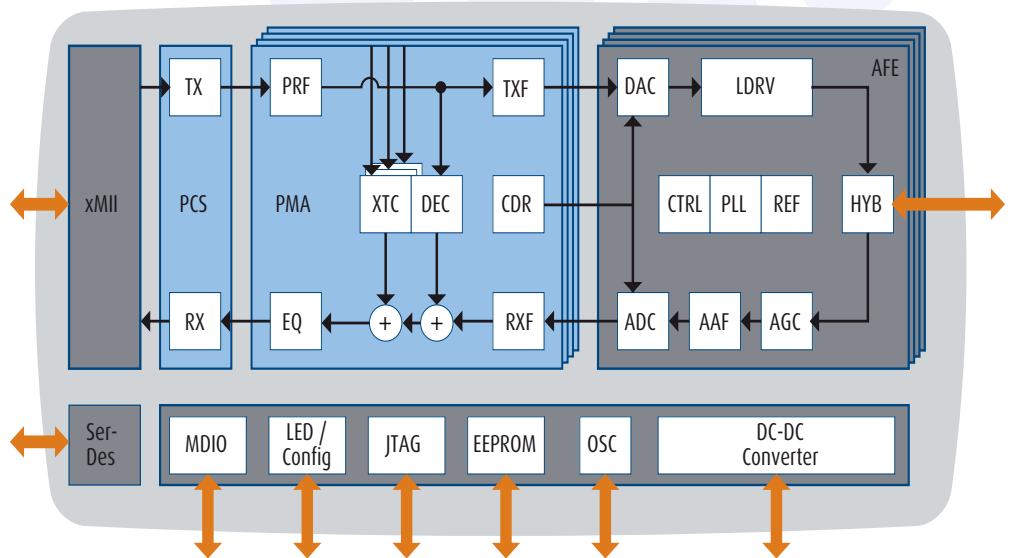
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XWAY™ PHY11G Application Example



XWAY™ PHY11G Block Diagram



Product Summary

Product Name	Sales Code	Description	Package
XWAY™ PHY11G	PEF 7071	10/100/1000 Mbps Ethernet PHY with RMII, RGMII, and SGMII	PG-VQFN-48
XWAY™ PHY11G	PEF 7072	10/100/1000 Mbps Ethernet PHY with MII, RMII, GMII, RGMII and SGMII	PG-LQFP-64



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