

Single-Port Gigabit Ethernet PHY for Routers, Switches, and Gateways

PRODUCTS

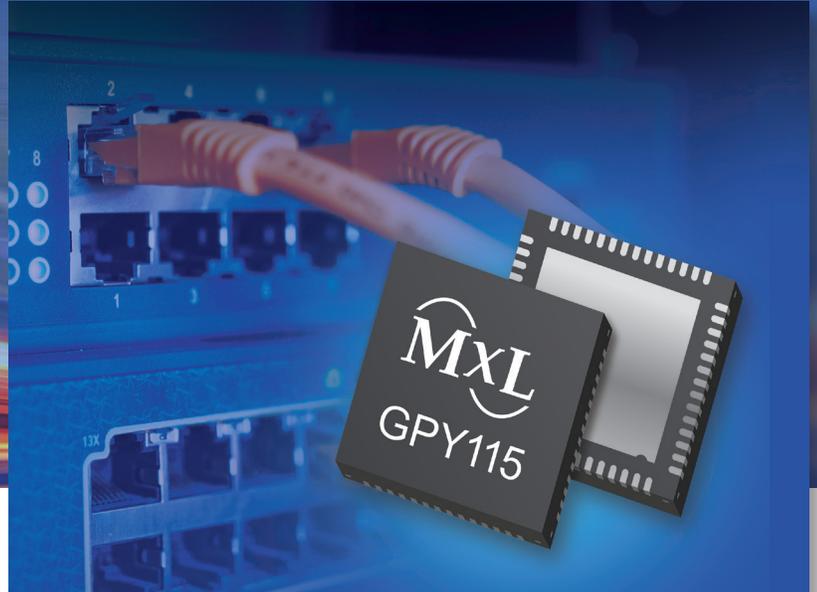
GPY115 Single-port 1GbE PHY with MACsec and SyncE

FEATURES

- Supports IEEE802.3 modes:
 - 1000BASE-T: full-duplex
 - 100BASE-TX: full- and half duplex
 - 10BASE-Te: full- and half-duplex
- Industrial temperature range (-40°C to +85°C)
- SGMII interface for MAC connection
- Rate adaptation over SGMII using IEEE802.3x flow control
- Single power supply of 3.3V using the integrated DC/DC switching regulator or 2 voltage rails without integrated DC/DC
- Single-row VQFN-56 package (7mm x 7mm)
- Control of up to 4 LEDs with smart LED brightness control for link status display
- Smart-AZ feature supports Energy Efficient Ethernet (EEE, IEEE802.3az) with MACs that do not support EEE
- Field firmware upgrade capability with external optional flash memory
- Programmable temperature sensor monitors device temperature for system warning and down speed
- Supports Jumbo frames of up to 10kB
- Cable diagnostics
- Auto down speed for Cat3 (4-wire) cables or bad cables
- Auto MDI/MDI-X and auto polarity correction
- Wake-on-LAN
- Ultra-low power mode with automatic wake-up and power consumption below 10mW, when the cable is unplugged (supported with internal DCDC only)
- Precise time stamping support according to IEEE 1588 Version 2
- MACsec wire-speed data encryption and decryption with 16 security channels and 32 MACsec associations
- Synchronous Ethernet (SyncE) support according to ITU-T G.8262

MAIN APPLICATIONS

- Industrial PC
- Cable, MoCA, G.hn modem
- Wi-Fi 6 / Wi-Fi 7 access point



GPY115 is a single port 1Gb Ethernet PHY for the industrial temperature range with MACsec and Synchronous Ethernet (SyncE) support.

The device supports the 1000BASE-T, 100BASE-TX and 10BASE-Te modes of the IEEE802.3 standard.

GPY115 is connected to the MAC of an SoC or switch with a low pin-count SGMII interface. The SGMII interface supports 10M, 100M and 1G rates or IEEE802.3x rate adaptation using pause frames.

GPY115 supports MACsec point-to-point wire speed encryption and decryption for MAC layer data security, Synchronous Ethernet (SyncE) and the Precision Time Protocol (PTP, 1588v2).

Standards:

- IEEE 802.3: Relevant clauses
- IEEE 1588 Version 2
- ITU-T G.8261/G.8262: SyncE
- IEEE 802.1AE MACSec

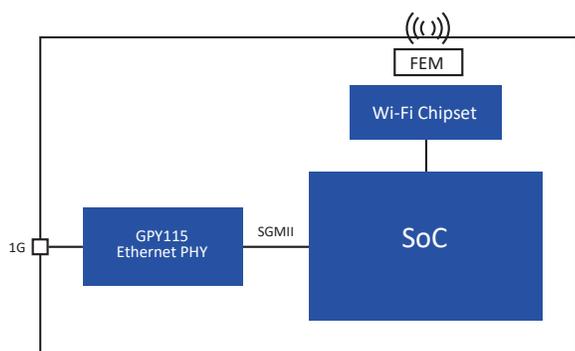
Low Power Consumption

GPY115 has a low power consumption of 620mW in 1000BASE-T mode when the internal DCDC is used. It supports Energy-Efficient Ethernet (EEE) in the 1000BASE-T and 100BASE-TX modes to reduce power consumption during periods of low traffic. Additional power saving can be achieved by using the Wake-on-LAN (WoL) functionality and the ultra-low power mode.

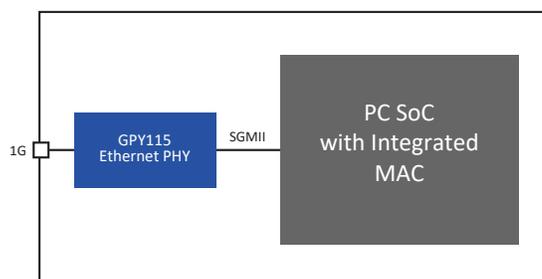
Small Footprint and RBOM

The device is packaged in a small 7 x 7mm single-row VQFN-56 package, ideal for 2 or 4-layer PCBs. A low EMI line driver with integrated termination simplifies the PCB design. GPY115 can be operated from a single 3.3V power supply using the integrated DC/DC switching regulator. It is configurable through pin strapping, MDIO interface, or an optional external flash.

GPY115 is pin compatible with MaxLinear's GPY211, GPY212 and GPY215 2.5Gb Ethernet PHYs.



Wireless Access Point Application



Industrial PC Application

Product Information

Product	Description	Temperature Range	Ordering Code	Package
GPY115C0VI	Single-port 1GbE PHY with MACsec and SyncE	Industrial -40°C to 85°C	99AFCA	VQFN-56



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