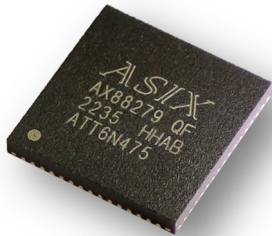# ASIX

AX88279
Product Brief

Release Date: 08/15/2023

USB 3.2 Gen1 to 2.5G Ethernet Controller

The AX88279 is a USB 3.2 Gen1 to 2.5G Ethernet controller with integrated 2.5G/1G/100M Base-T Ethernet PHY. AX88279 supports Precision Time Protocol (PTP), Microsoft Modern Standby, etc. advanced features, and supports Windows 11/10/8.x, Linux/Android/Chrome OS, Nintendo Switch in-box drivers, and macOS/Linux native CDC-NCM driver for driverless, Plug & Play.

The AX88279 is an easy-design, small form factor and cost-efficient solution, which adapts to any platforms required to support 2.5G Ethernet network connectivity via USB port and is suitable for Desktop/Notebook/POS, USB Ethernet dongles, docking stations, smart mobile device cradles, game consoles, smart camera/IP STB, 5G/LTE router/gateway, etc. smart home/office applications.
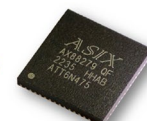
Key Features

- **Single chip USB 3.2 Gen1 to 2.5G Ethernet Controller with Integrated 2.5G/1G/100M Base-T Ethernet PHY**
- **USB Device Controller**
  - Integrates on-chip USB Type-C 3.2 Gen1 PHY and Controller compliant to USB Spec 3.2 Gen1, 2.0 and 1.1
  - Supports all USB 3.2 Gen1 Power Saving modes (U0, U1, U2, and U3)
  - Supports USB Super/High/Full Speed modes with Bus-power or Self-power device
- **2.5G Ethernet Controller**
  - Integrates 2.5G/1G/100M Base-T Ethernet MAC/PHY, compliant to IEEE 802.3, 802.3u, 802.3ab and 802.3bz
  - Integrated XGMII/GMII/MII MAC, 2.5G/1G/100M Base-T PCS/PMA
  - Supports CDC-NCM, CDC-ECM
  - Supports IEEE 802.3az (Energy Efficient Ethernet, EEE)
  - Supports AUTO-MDIX, Flow Control (IEEE 802.3 Annex.31B)
  - Supports IPv4/IPv6 Packet Checksum Offload Engine (COE)
  - Supports TCP Large Send Offload V1/V2
  - Supports up to 9K Jumbo Frame
  - Supports IEEE 802.1Q VLAN Tagging and 4096 VLAN ID Filtering; Received VLAN Tag (4 bytes) can be stripped off or preserved
  - Supports IEEE 802.1P L2 Priority Encoding and Decoding
  - Supports Manageability L2 Filter
  - Supports TCO Filter, L3/L4 IP/Port Filter
  - Supports Second DA RX Filter with bit mask

- **Precision Time Protocol (PTP)**
  - Supports IEEE 1588v2 and 802.1AS
  - Supports Ordinary and Boundary clock
  - Supports 1-step and 2-step Clock Synchronization
  - Supports IEEE 802.3, UDP/IPv4, and UDP/IPv6 Protocol Encapsulations
- **Wake-on-LAN Functions**
  - Supports Suspend mode and Remote Wakeup via Link-Change, Magic Packet, Microsoft Wakeup Frame and external wakeup pin
  - Supports Bonjour Wake-on-Demand
  - Supports Wakeup Packet Indication
  - Supports Microsoft Modern Standby
- **Advanced Power Management Features**
  - Supports Power Management Offload (ARP & NS)
  - Supports ECMA-393 ProxZzzy® for Sleeping Hosts
- **Supports Windows 11/10/8.x, Linux/Android/Chrome OS, Nintendo Switch In-box Drivers, and macOS/Linux Native CDC-NCM Driver for Driverless, Plug & Play**
- **Supports embedded eFuse for die identifier and customized USB ID and Ethernet MAC address**
- **Supports SPI Flash for firmware customization**
- **Single 25 MHz Crystal clock source**
- **Integrates on-chip Power-On Reset circuit**
- **60-pin QFN, 7x7 mm package**
- **Operating Temperature Range: 0 to +70°C**

Target Applications

- Desktop/Notebook/POS
- USB Ethernet Dongle for Ultrabook /Tablet/Smart Phone/etc.
- Docking Station, Cradle
- Game Console
- IP STB, Smart Camera, Smart TV Box, etc.
- 5G/LTE Router/Gateway
- Embedded Systems with USB Host Interface

Windows/ macOS/ Android/ Linux/etc. — SUPERSPEED USB — 2.5G Ethernet

Website   WeChat   LINE