PLASTIC OPTICAL FIBER NETWORK
Cost-efficient Ethernet-Networks with High Bandwidth
WHAT IS POF?

POF stands for Polymeric Optical Fiber used for optical communication.

POF is used for local data communication in homes, businesses, industry and automobiles. They provide a bandwidth of up to 1Gb/s in the range up to 100 m.

Due to the easy installation, POF is often described as an optical home network. The fiber, which is only 1 mm thick, is cut to length using a sharp blade. Then the cable is splayed and just plugged into the optical socket. With POF, Ethernet compatible optical home networks are built in no time and without special tools.

KEY FEATURES OF A POF NETWORK

- Easy and inexpensive installation
- The thin fiber is easy to install and route
- The optical communication lies in the visible spectrum and is therefore easy to check. It is also “eye-safe” since no laser is used
- Optimal active and passive electromagnetic compatibility (EMC): No electric smog, immune to electrical interference and coupling
- Electrically insulated network
- Resistant to humidity and heat
- Flexible, light, durable and maintenance-free
- Sustainable and energy efficient (no copper and less plastic than a CAT6 cable)
APPLICATION RANGE

Networks in residential areas
POF is the ideal solution for multi-media and intelligent home networks. POF is especially suitable as a networking medium (backbone) to connect TVs, set-top-boxes, NetTVs, games, computers, network access servers (NAS), internet telephones and WiFi units.

Infrastructure networks
POF is an attractive alternative for telephone companies, city carriers and infrastructure providers who want to provide a complete inexpensive optical solution. POF is often the only solution in highly populated areas where its robustness and millimetre thin profile make it ideal for new and old buildings.

Office networks
POF is a smart alternative to copper cabling for businesses. POF has the advantage that it can be routed via the existing infrastructure conduits such as electrical or telephone conduits to build a network. Further advantages are that data cannot easily be intercepted and bandwidth is guaranteed.

Industrial networks
POF is already used today for industrial Ethernet applications e.g. to link industrial controllers, industrial equipment and control rooms. POF is often the only inexpensive solution in a real industrial environment that can withstand vibration, electromagnetic interference and chemicals.

Automobile, plane and train networks
POF combines the unique advantages of a small, light weight, thin fiber that can withstand vibration and humidity, thus effectively outperforming copper.

PRODUCTS

Media converter
The POF starter and evaluation kit consists of two Ethernet media converters with 2 x 200 Mb/s data rate and a plastic optical fiber. The point to point connection guarantees the best media streaming quality and safety from unwanted data interception. Installation could not be easier due to “plug and play”, and the ease of working with this small, thin and light fiber. Applications include home, office and industrial networks.

POF Switch
The PFS-204A Gigabit Web Smart Switch offers four 200BASE-FX POF fast Ethernet ports plus two gigabit ports. The RJ45 port supports 10/100/1000-Mbps with Auto-MDI/MDIX.

The 1000BASE-SX/LX SFP port offers connections over 100 m (TP), 550 m multi-mode fiber and more than 1 kilometre with single mode fiber via the SFP expansion slot for the MiniGBIC module. The remote web based interface offers advanced switching management functions. Applications are FTTH (fiber to the home), office and home networks.

Embedded POF with ID100/ID200
The ID100/ID200 POF-Interface IC family is software and hardware compatible with Ethernet PHYs. This makes it possible to easily connect applications to the POF-network via the POF-PHY.
POF-INTERFACE IC FAMILY

Innoduls POF family consists of the ID100 and the ID200. The ID200 processes data at up to 1 Gb/s on the Ethernet port and up to 200 Mb/s on the POF port. The use of a standard interface (R/GMII) enables connection to applications such as PCs, modems, printers, scanners, play stations, internet radio, VoIP-telephone, blu-ray players and TVs.

The IC-architecture consists of a “high-speed” fiber PHY, a bandwidth optimised layer 2 processor, a traffic manager and a media access control (MAC) unit. Different power saving modes can be switched on or off via the power manager.

FEATURES

- Integrated POF PHY on the fiber side for a seamless integration to an optical transceiver at speeds of 100 Mbps (ID200 and ID100) or 200 Mbps (ID200)
- Full featured 1000/100/10 Mbps MAC on the cable side, with functionality according to IEEE 802.3
- Fully backward compatible to 100BASE-FX applications
- Supported Ethernet interfaces are: RGMII (ID200 only), GMII (ID200 only) and MII
- Power down and power saving modes for low power consumption
- Internal oscillator circuit simplifies design and reduces overall system cost
- LED drivers for link activity and speed on the fiber side
- Built-in watchdog timer to monitor and recover from unexpected errors
- Single supply (3.3 V). All required voltage regulators are fully integrated
- Package: QFN88
- Temperature operating range: from 0°C to +70°C

MICRODUL AG
Grubenstrasse 9
CH-8045 Zürich, Switzerland
Phone +41 44 450 55 11
Fax +41 44 450 55 10
info@microdul.com
www.microdul.com