

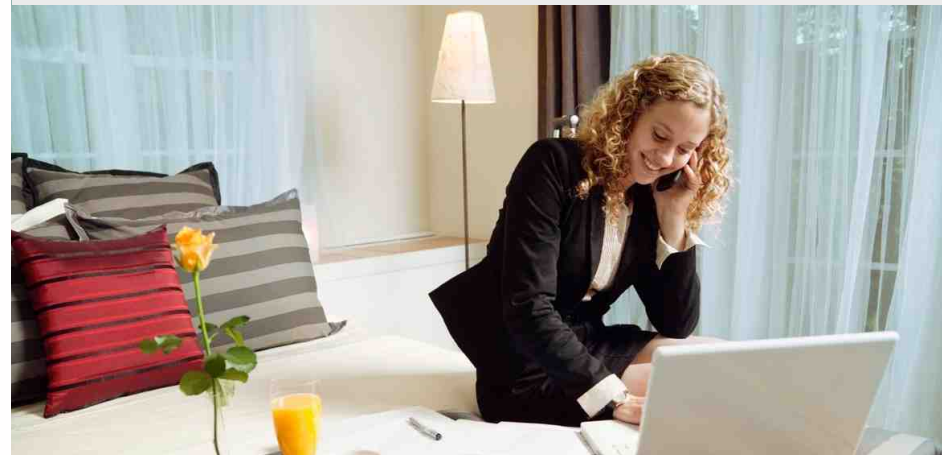
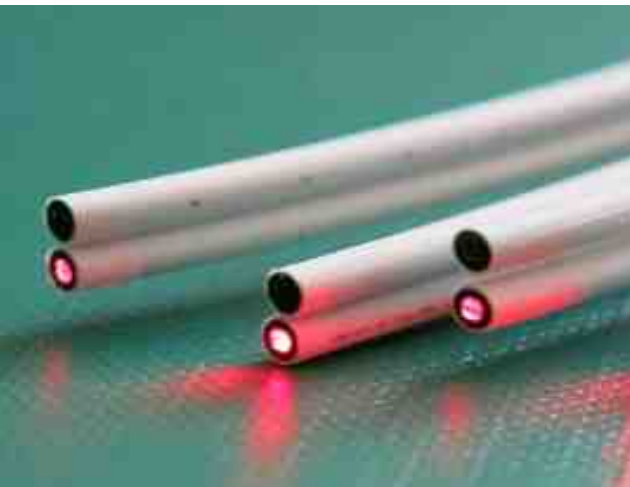
home**fi**bre



SYSTEMS



PRODUCTS



POF GIGABIT ETHERNET

THE NETWORK IS THE KEY TO THE DIGITAL FUTURE HOME

New digital services such as IP-TV, 4K-TV, Internet games, Internet TV, HD video telephony or 3D TV and 3D games are forcing their way into the market. As a result of the massive expansion of the access networks with high bandwidths (FTTH, VDSL, etc.), system providers are increasingly offering higher quality services. In addition, personal digital content such as videos, photos, music and data are being stored at home and transmitted to several appliances. In the field of home automation, energy management and safety, systems and applications are more and more networked with PC, television, smart phones, tablets and touch screens.

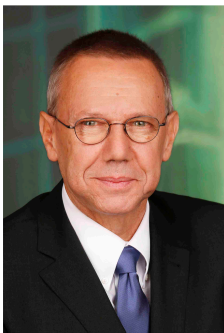
CONNECTIVITY REDEFINED

The ideal network fix wired applications and mobile devices are used in an optimized way. Free frequencies are a limited resource and should only be occupied with mobile applications. Services with high bandwidth demand work best if they are linked to a wired network.

In order to ensure the long-term, consistent and trouble free functioning of this integration, a stable and reliable infrastructure and transmission technology is required in the home. It should be widely available and offer the largest possible number of connection possibilities. For us at Homefibre, the ideal solution is an optical data backbone.

Together with its cooperation partners, Homefibre has set itself the goal of offering innovative products and system solutions, as well as technical support for the installation, that deliver environmentally safe and reliable digital home networking.

With the polymer optical fiber (POF) we use a proven technology that is ideally suited to a new and innovative infrastructure which satisfies these demands.



Josef Faller
Managing Director



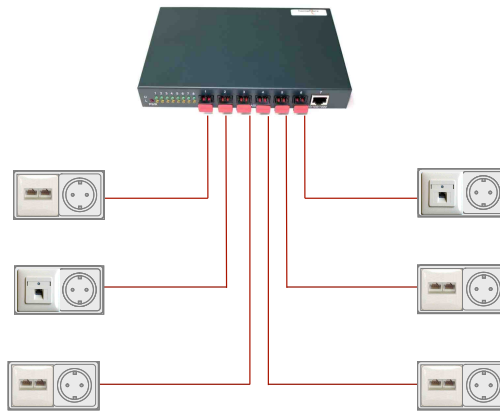
ALL-IP APPLICATIONS AND SERVICES

Digital applications and Services will be more and more networked and connected.



Smart Home - App Steuerung
(Heating, Climatisation, Energie, Shutter, Light etc...)
AAL
(Ambient Assisted Living)
Safety & Security

A1



VIDEO

Today IP-based Internet services are coming from the Internet and, with an increasing number also from home internal sources as e.g. home server. For mobile devices the transmission media is wireless. Considering that higher frequencies as 5GHz have limited transmission areas a combination of wired data backbone and wireless clusters is recommended. High Definition Video Streaming as e.g. UHD, 4k and also HDMI over IP signals need stable connectivity and reliable bandwidth, to be achieved with a wired connection..

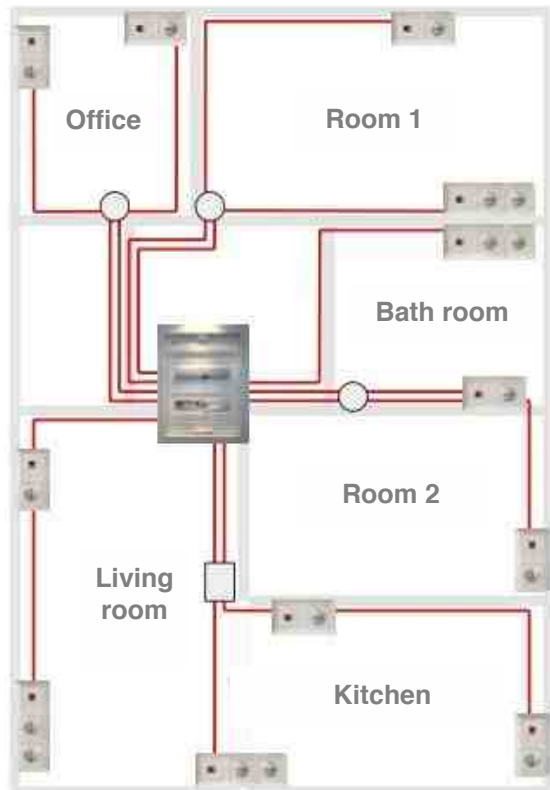
AUDIO

Music and IP-Radio are streamed via the Internet and/or from an home internal audio-video server. The highest quality can be achieved with wired connected devices (server, loudspeaker, audio clients etc..) For wireless streaming small WIFI cluster installed in each room lead to optimized transmission performance. Positive side effect: the WIFI radiation can be minimized and does not disturb neighbor systems.

SMART HOME & SECURITY

To control Smart-Home Systems, mobile devices like Tablets and Smart-Phones are also used in combination with wired Touch-Screens. Mobile devices need an optimized WIFI coverage and fixed installed devices should be hooked to a wired network. Thus wired network access should be available everywhere in the home.

THE OPTICAL IN-HOUSE BROADBAND NETWORK

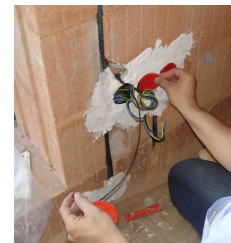
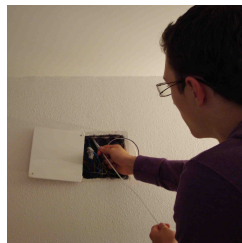
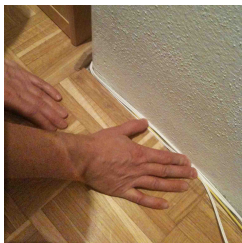


With the concept of optical in-house broadband cabling, Homefibre offers a future-proof and easily installed infrastructure solution with which the computer, multimedia and home automation systems can be optimally integrated via Ethernet and IP (Internet protocol). The optical cable which is made of polymer optical fibers (POF) and has been successfully used in the automotive sector and in industry for many years. The POF cable is robust and can be easily installed and connected. It can be installed separately or drawn into a conduit together with the electrical installation. Every plug socket in the house can thus be inexpensively equipped with a data interface. It is also available for a data connection in all splitter boxes.

All IP-based automation systems in the house can be linked via the optical cable and integrated into one system with computers and multimedia devices.

The benefits of the Homefibre system are:

- * **reliable** and **stable** data transmission = no interference
- * **unaffected** by electromagnetic interference
- * **radiation-free** = no electromagnetic smog via the leads
- * **simple** and **variable** installation
- * **low power** consumption of the components
- * **lightning protected data link** due to galvanic isolated POF cable.



USER INSTALLATION

Thanks to its simple handling, the POF cable can even be installed by non-experts.

The small cable diameter allows the cable to be placed and concealed behind the skirting board or under the carpet.

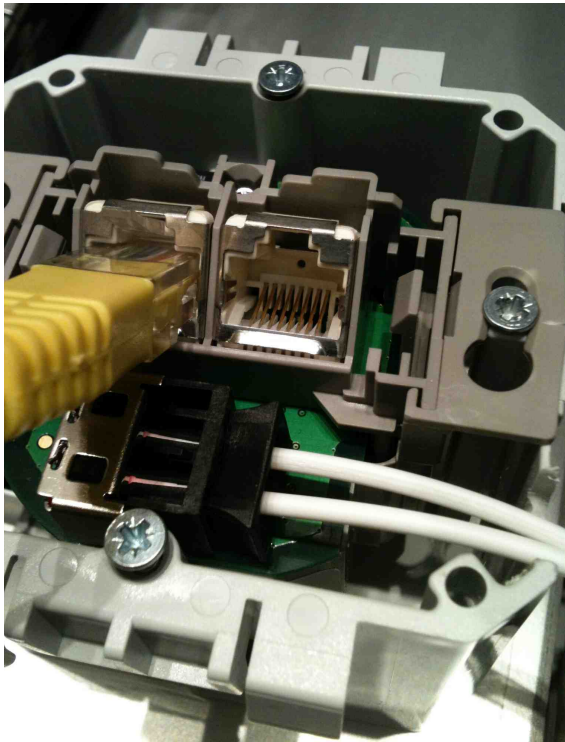
We offer special user installation kits for this purpose.

FOR RETROFITTING

The POF cable can be easily integrated into the existing electrical installation without cutting channels or drilling. Flush-mounting plug sockets, flush-mounting switches or plug socket adapters, serve as interfaces between your device and the network and can be installed as standard in your home.

FOR NEW BUILDINGS

In order to minimize the installation costs of a full-size home network, it is sufficient to lay an inexpensive POF cable together with the electrical cables during the initial installation. A safe optical data port can thus be prepared at each mains plug socket. With the flush-mounted media converters from Homefibre, the connection is transformed into a standard Ethernet port with 1 or 2 RJ45 jacks or a WLAN Access Point.



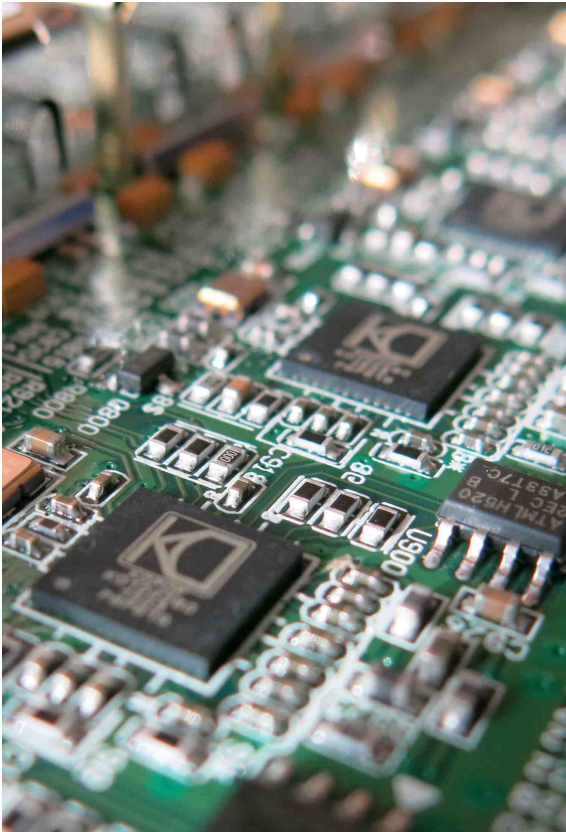
THE TECHNOLOGY

For the optical transmission, electric signals (data) are converted into optical signals, transmitted by light and converted back into an electric signal by a media converter. Today, red light with a wavelength of 650 nm is used for the transmission. The used transmission protocol, IEEE 802.3.u, is internationally standardized. Homefibre offers a wide range of media converters and optical POF switches for the installation of a network.



DATALIGHT is considered as a marketing brand registered by Fränkische Rohrwerke in order to guarantee Interoperability and transmission quality among POF products off different brands applied in electrical installations.

THE CABLE	THE OPTICAL TRANSMISSION	TRANSMITTER AND RECEIVER
<p>The optical cable is sturdy, unaffected by electromagnetic interferences and does not conduct electricity. As a result it can be installed together with the electrical installation, reducing installation cost and time. An optimum network infrastructure is installed at moderate expense.</p> <p>The optical cable can be connected to the optical interface either without plugs (e.g. Optolock™) using a simple cutting tool or with an easily fitted plug (e.g. SMI).</p>	<p>The optical transmission can be tested by measuring the light intensity in dBm at the beginning and end of the optical cable.</p> <p>The typical cable rating is approx. 15 dBm to 18 dBm. Approx. -7 dBm are measured directly at the connection. The receivers can process a signal down to -24 dBm.</p>	<p>The optical interfaces consist of transmitters and receivers.</p> <p>The optical transmission today uses red light with RC-LED (Resonant Cavity Light-Emitting Diode). This transmission using visible light is safe for the human eye and offers easy checking of functionality and connections.</p>



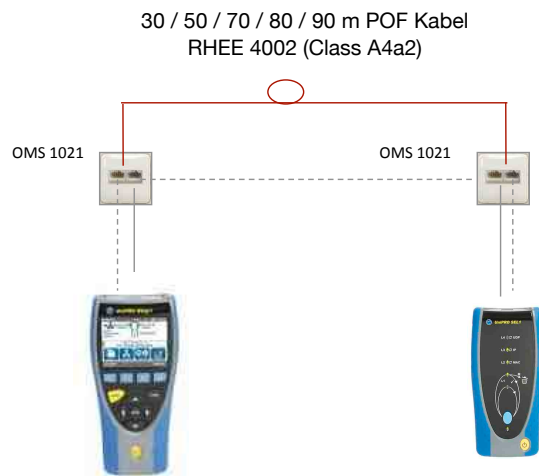
GIGABIT TECHNOLOGY

With the availability of Gigabit transmission over POF the installation of powerful networks becomes much easier.

At Homefibre technology, products and applications are tested in comprehensive scenarios. These tests follow international standards and procedures like e.g. RFC 2544 etc...

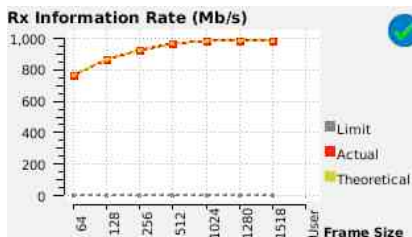
We know that at the end only the real quality of the data throughput is what makes a system working properly.

KD-POF Gigabit Technology is currently to be standardized in the related IEEE working group.



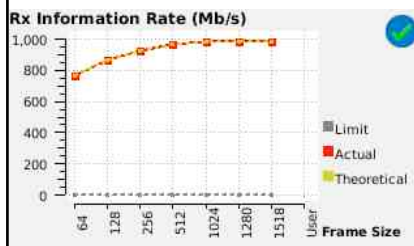
Test Set Up RFC 2544 und SLA-Tick Test

50 METER



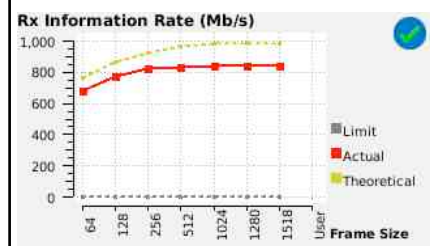
Test Nr: OMS1021_DV_TEST 001
Optical Power: ca. -12,6 dBm

60 METER



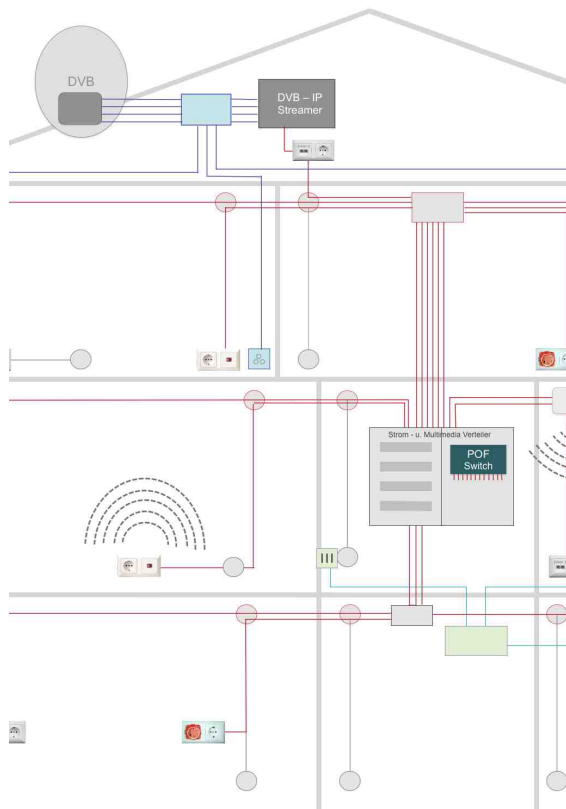
Test Nr: OMS1021_DV_TEST 008
Optical Power: ca. -14,9 dBm

80 METER



Test Nr: OMS1021_DV_TEST 014
Optical Power: ca. -17,9 dBm

Note: The performance of adaptive bandwidth depends on several parameter (e.g. cable attenuation, LED source power, LED receiver sensitivity, operating temperature).



THE SYSTEM

A POF network may be wired as a basic structured installation. However, a home network can go far beyond a simple network. In combination with electrical wiring it is turning into an optical data backbone for all IP applications. Those networks are characterized by a star-tree-layout and allows to easily link new applications and services to the network in the entire home due to pre-installation.

Despite to lower installation cost for wiring (combined installation of mains and POF; fast connecting technology) the amount of available network access points raises to a multiple.

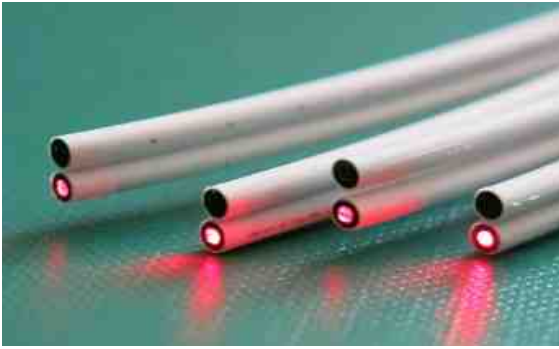
Standard RJ45 ports and WiFi are used as interfaces between the network and all network devices and applications.

The interaction of cable-based and wireless access points permit optimized network access for all stationary and mobile application in the home. For retrofitting a home with an IP network the slim POF cable helps to arrange wiring and network components even with limited offering of space.

* IP = Internet protocol over Ethernet



STANDARDIZING	INTEGRATED NETWORK	ONE NETWORK FOR ALL
<p>POF-home networking is based on international standards and specifications.</p> <p>IEC 60793-2-40: Optical fibres -Part 2-40</p> <p>ETSI TS 105 175-1 V2.0.0 (2011-10): Access, Terminals, Transmission and Multiplexing (ATTM); Plastic Optical Fibre System Specifications for 100 Mbit/s and 1 Gbit/s</p> <p>ISO 11801: Information Technology - Generic Cabling for Customers Premises</p> <p>IEC 60825 series: Safety of laser products</p> <p>DIN EN 50173: Dimensions and broadcasting requirements</p> <p>IEEE 802.3Rhx (working group)</p>	<p>The optical network components are integrated into the electrical installation. Wall outlets and network access points are available anywhere in the home. Devices can be linked to the network on several positions as required in each room.</p> <p>This forces reliability due to no laying-around devices, cables or connections which can be damaged.</p>	<p>The POF cable is available everywhere in the electrical installation. This allows to link new IP applications easy, fast and safe to the network. For example an in-wall distribution box enables to integrate a switch with sensor interfaces or security cameras to the network at every time.</p>



THE OPTICAL CABLE

The Polymer Optical Fibre, also called POF, is being used and approved for years in industry and the automotive industry as well as for lightning issues and many more. POF is a duplex cable which means that one fibre is used for transmission and the other fibre is used for receiving. This increases the transmission length and raises the data transmission quality and bandwidth.

The optical cable may be placed next to all electrical wires due to their galvanic non-conduciveness.

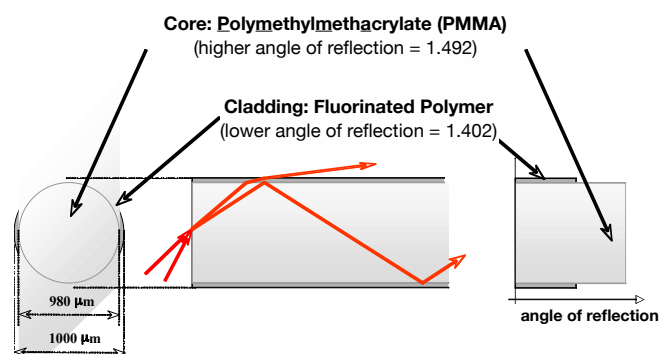
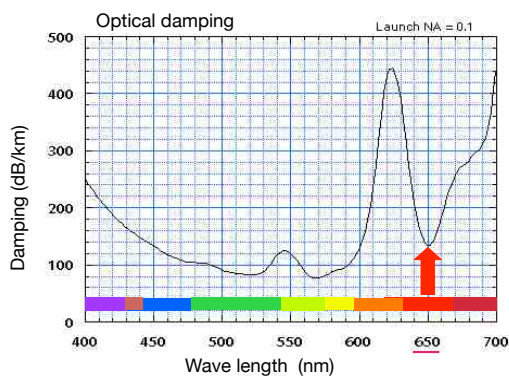
For the core fibre we use the well approved Step Index fibre (SI-fibre). This high quality fibre is made of PMMA (Polymethyl-Methacrylate).

With „OPTOHOME“, a brand of Mitsubishi Rayon, an innovative optical fibre for home and office use was developed. This product was optimized to high robustness and a long life expectancy.

ADVANTAGES

- easy installation
- simple bonding
- sturdy, safe and free from radiation
- visible light for visual proof of function
- galvanically non-conducting, no lightning issues

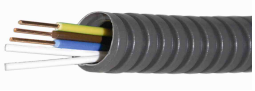

TRANSMISSION

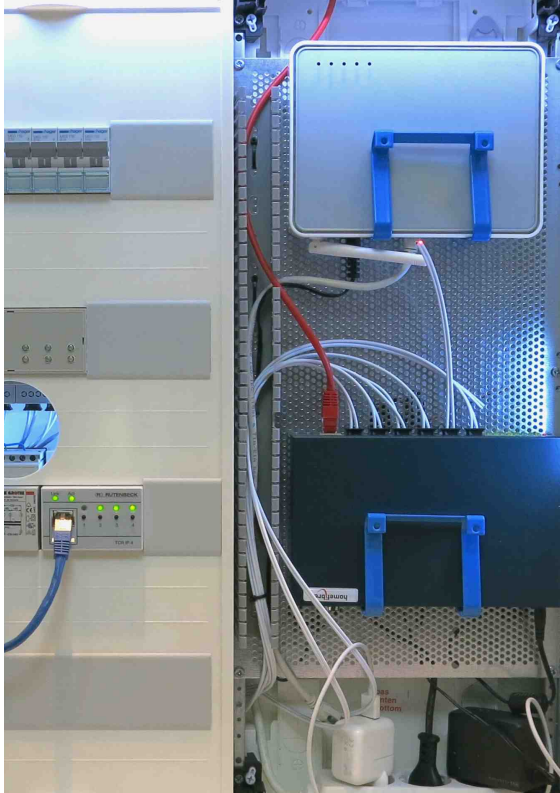


Today a wave length of 650nm is used. The optical fibre shows a minimum of optical damping there. The colors blue, green and yellow may probably be used in future.

POF is a multimode fibre. The light is reflected on the cladding and is transmitted through the PMMA core. The core diameter of 1mm improves the easy installation.



POF CABLE	POF CABLE	POF CABLE LSZH / FIRE RETARDANT
<p>RHEE 4002-2.2 / 30 30m bundle RHEE 4002-2.2 / 50 50m bundle RHEE 4002-2.2 / 70 70m bundle RHEE 4002-2.2 / 100 100m bundle</p>	<p>RHEE 4002-2,2 500 500m reel RHEE 4002-2,2 1000 1000m reel RH 4002-2,2 500 black 500m reel <i>(available on request)</i></p>	<p>RHA 4002-2,2 500 500m reel <i>(available on request)</i></p>
<p>Cladding: double Polyethylen cladding Core diameter: 980 µm Numerical Aperture: 0.5 Outer diameter: 2 x 2.2 mm Jacketing: white Transmission length: 100 Mbit/s / 80 m * 1 Gbps up to 50m * with ABA: around 400Mbps at 80m Operating temperature: -55° C to 70° C Delivery unit: 30m, 50m, 70m, 100m bundle ABA = Adaptive Bandwidth Allocation <i>* with Homefibre media converters</i></p>	<p>Cladding: double Polyethylen cladding Core diameter: 980 µm Numerical Aperture: 0.5 Outer diameter: 2 x 2.2 mm Jacketing: white Transmission length: 100 Mbit/s / 80 m * 1 Gbps up to 50m * with ABA: around 400Mbps at 80m Operating temperature: -55° C to 70° C Delivery unit: 500m or 1000m reel ABA = Adaptive Bandwidth Allocation <i>* with Homefibre media converters</i></p>	<p>Cladding: double Polyethylen cladding Core diameter: 980 µm Numerical Aperture: 0.5 Outer diameter: 2 x 2.2 mm Jacketing: grey Transmission length: 100 Mbit/s / 80 m * 1 Gbps up to 50m * with ABA: around 400Mbps at 80m Operating temperature: -55° C to 70° C Delivery unit 500m or 1000m reel ABA = Adaptive Bandwidth Allocation <i>* with Homefibre media converters</i></p>
<p>POF CABLE 1,5MM</p>	<p>PRE-WIRED POF-YE INSATLATION CONDUIT (KOBER)</p> 	<p>POF - INSTALATION CONDUIT (FRÄNKISCHE ROHRWERKE)</p> 
<p>RHEE 4002 1,5 <i>(available on request)</i></p>	<p>FMP 20+3XYE1.5+POF 2.2 Pre-wired installation conduit diameter 20mm FMP 16+3-YE1.5+POF 2.2 Pre-wired installation conduit diameter 16mm</p>	<p>FFFKUS-POFnet 25 Installation conduit with integrated 2.2mm POF cable</p>
<p>Cladding: with (chamoir) Polyvinylchloride Core diameter: 980 µm Numerical Apertur: 0.5 Outer diameter: 2 x 1.5 mm Transmission length: 100 Mbit/s / 80 m * (techn. capacity: 1 Gbps up to 50m) * Operating temperature: -55° C to 70° C Delivery unit: 500m reel; smaller bundle on request. <i>* with Homefibre media converters</i></p>	<p>BENEFITS</p> <ul style="list-style-type: none"> • quick and cost saving network wiring combined with electrical installation • Customized designs available on request (e.g. YE1.5 + 2xPOF; coax cable + POF, etc...) • parameter POF cable see RHEE 4002 2,2mm <p>Delivery unit: 50m bundle</p>	<p>BENEFITS</p> <ul style="list-style-type: none"> • optical wire pre-installed in the whole installation • more pre-installed network access points • low installation cost <p>Delivery unit: 50m bundle</p>



INSTALLATION MATERIAL & SWITCHES

In media converters, electrical data signals (IP-packages) are converted into optical (light) signals to be transmitted over Polymer Optical Fibre (POF; plastic fibre). The receiver converts the optical signal back into an electrical IEEE 802.3 signal to allow communication to all network devices via RJ45 jacks or wireless access points.

A variety of products is designed to perfectly fit in electrical installation. Flush mounted devices as well as rail-mounting devices are the centerpieces of the installation material.

Switches are Layer 2 or Smart Switches with optical Ports and RJ45 interfaces.

The optical fibre is linked over the OPTOLOCK™ interface which allows to make connections with little effort due to their connector less termination.



OMC100REG - OPTICAL MEDIA CONVERTER FAST ETHERNET	OMS112AP -POF EXPOSED-FITTING MEDIA CONVERTER FAST ETHERNET	OMS113 - 3 POF AND 1 RJ45 FAST ETHERNET MEDIA SWITCH
<p>OMC100REG-220 OPTOLOCK™ interface 2.2 mm</p> <p>FUNCTIONS</p> <ul style="list-style-type: none"> • for DIN rail mounting • 1x POF Port with OPTOLOCK™ interface • 1x Ethernet Port – RJ45 Standard 	<p>OMS112AP-220 OPTOLOCK™ interface 2.2 mm</p> <p>FUNCTIONS</p> <ul style="list-style-type: none"> • 2x POF Port with OPTOLOCK™ interface • 1x Ethernet Port – RJ45 Standard • satisfies IEEE 802.3 Ethernet and IEEE 802.3u Fast Ethernet Standard 	<p>OMS113-220 OPTOLOCK™ interface 2.2 mm</p> <p>FUNCTIONS</p> <ul style="list-style-type: none"> • 3x POF Port with OPTOLOCK™ interface • 1x RJ45 Port for UTP cable up to 100m • satisfies IEEE 802.3 Ethernet and IEEE 802.3u Fast Ethernet Standard • Store und Foreward Switching with 1K MAC Address Table • Auto MDI/MDI-X on UTP Port

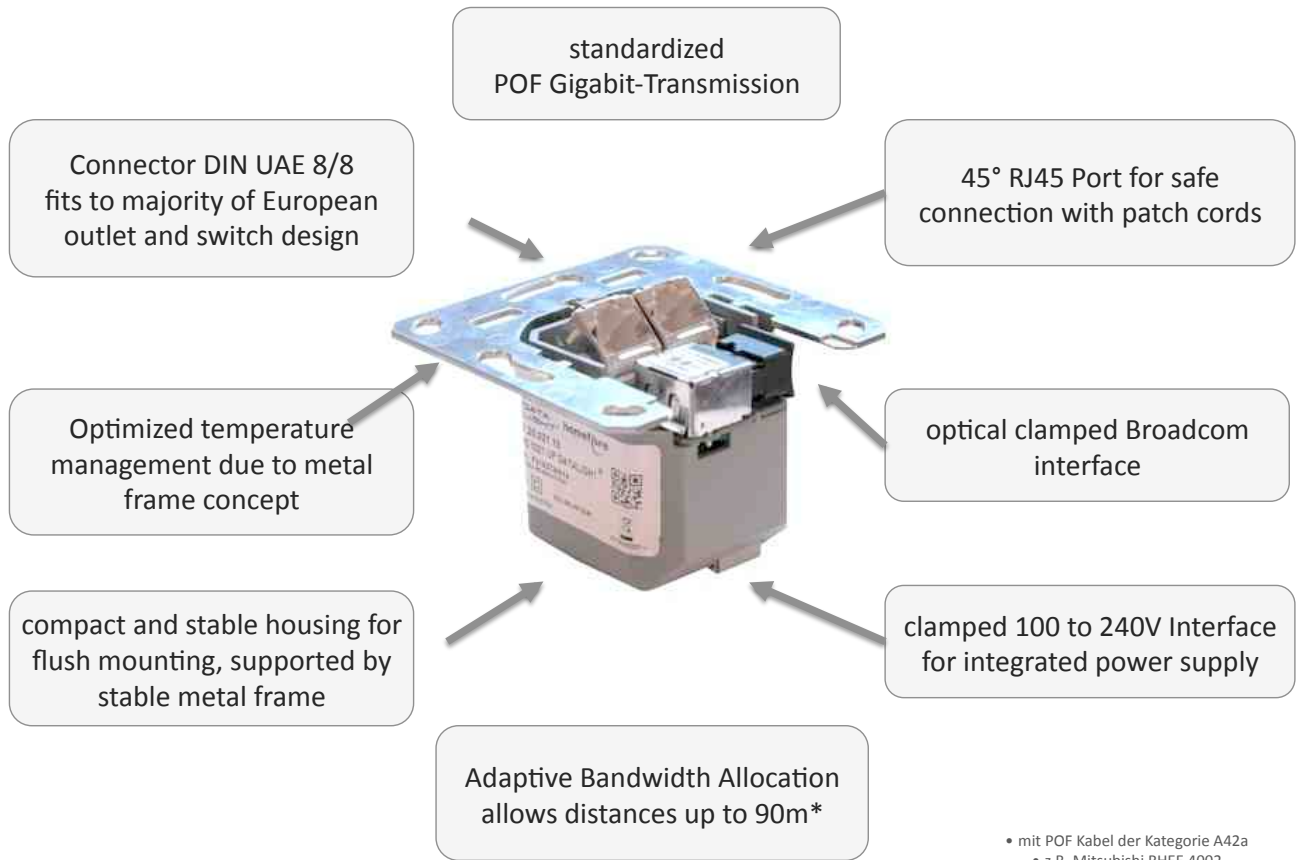
**NEW !
Gigabit Switch**



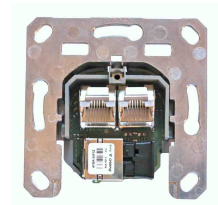
OMS105 - FAST ETHERNET OPTICAL MEDIA SWITCH	OMS126 - FAST ETHERNET OPTICAL MEDIA SWITCH	OMS126 - FAST ETHERNET OPTICAL MEDIA SWITCH
<p>OMS105-220 OPTOLOCK™ interface 2.2 mm</p>	<p>OMS126-220 OPTOLOCK™ interface 2.2 mm</p>	<p>OMS1026-220 Connector less clamped Broadcom optical interface interface 2.2 mm</p>
<p>FUNCTIONS</p> <ul style="list-style-type: none"> • 5x POF Port with OPTOLOCK™ interface • satisfies IEEE 802.3 Ethernet and IEEE 802.3u Fast Ethernet Standard Store and Forward Switching with 1K MAC Address Table 	<p>FUNCTIONS</p> <ul style="list-style-type: none"> • 6x POF Port with OPTOLOCK™ • 1x Ethernet Port – RJ45 Standard • satisfies IEEE 802.3 Ethernet and IEEE 802.3u Fast Ethernet Standard Gigabit RJ45; SFP Gigabit • Smart Switch • to be programmed over webinterface • Store and Forward Switching with 1K MAC Address Table 	<p>FUNCTIONS</p> <ul style="list-style-type: none"> • 6x POF Port connector less / Broadcom • 2x Ethernet Port – RJ45 Standard • IEEE 802.3az Ethernet Gigabit • IEEE 802.3bv compatibel (Gigabit Ethernet over POF categorie A4a2) • Unmanaged Layer 2 switch



GIGABIT WALL MOUNT DATA OUTLET

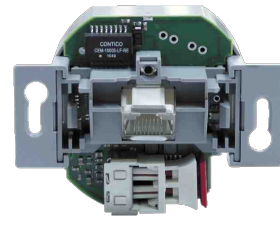
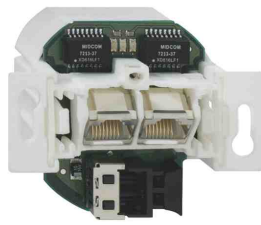
NEW



• mit POF Kabel der Kategorie A42a
• z.B. Mitsubishi RHEE 4002



INSTALLATION EXAMPLE		OPTICAL GIGABIT 2-PORT DATA OUTLET SWITCH
<p>MOUNTED IN MAIN POWER SOCKET</p> 	<p>IN SURFACE MOUNT FRAME</p> 	<p>FUNCTION</p> <ul style="list-style-type: none"> • 1x POF Port with Broadcom connector less interface • 2x RJ45 Port for UTP / STP Kabel • IEEE 802.3u and IEEE 802.3az Ethernet • Store und Forward Switching Layer 2 Switch • Auto MDI/MDI-X am UTP Port • Full Duplex Gigabit transmission up to 50m (POF cable categorie A4a2) • Adaptive Bandwidth Allocation from 50m to 90m link distance.



OMC100UP - FLUSH-MOUNTED MEDIA CONVERTER FAST ETHERNET

OMS121UP - POF FLUSH-MOUNTED MEDIA CONVERTER SWITCH

OMA111WLAN - POF FLUSH-MOUNTED WLAN ACCESS POINT

OMC100UP-220

OPTOLOCK™ interface 2.2 mm

FUNCTIONS

- 1x POF Port with OPTOLOCK™ interface
- 1x Ethernet Port – RJ45 Standard
- satisfies IEEE 802.3 Ethernet and IEEE 802.3u Fast Ethernet Standard
- proper cover plates available from multiple well-known manufacturers

OMS121UP-220

OPTOLOCK™ interface 2.2 mm

FUNCTIONS

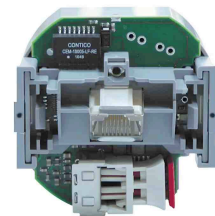
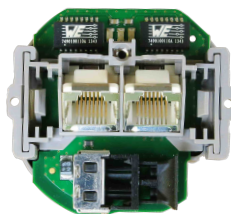
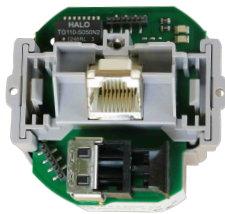
- 1x POF Port with OPTOLOCK™ interface
- 2x Ethernet Ports – RJ45 Standard
- satisfies IEEE 802.3 Ethernet and IEEE 802.3u Fast Ethernet Standard
- Port based VLAN configuration factory-provided (on request)
- proper cover plates available from multiple well-known manufacturers

OMA111WLAN-220

OPTOLOCK™ interface 2.2 mm

FUNCTIONS

- 1x POF Port with OPTOLOCK™ interface
- 1x Ethernet Port – RJ45 Standard
- **1x integrated W-LAN**
- satisfies IEEE 802.3 Ethernet and IEEE 802.3u Fast Ethernet Standard
- proper cover plates available from multiple well-known manufacturers



OMC100UP-CH - FLUSH-MOUNTED MEDIA CONVERTER FAST ETHERNET SWISS VERSION

OMS121UP-CH - POF FLUSH-MOUNTED MEDIA CONVERTER SWITCH SWISS VERSION

OMA111WLAN-CH - POF FLUSH-MOUNTED WLAN ACCESS POINT SWISS VERSION

OMC100UP-220 CH

OPTOLOCK™ interface 2.2 mm

FUNCTIONS

- 1x POF Port with OPTOLOCK™ interface
- 1x Ethernet Port – RJ45 Standard
- satisfies IEEE 802.3 Ethernet and IEEE 802.3u Fast Ethernet Standard
- proper cover plates available from multiple well-known manufacturers
- look for swiss intermediate frames for cover plates on page 15

OMS121UP-220-CH

OPTOLOCK™ interface 2.2 mm

FUNCTIONS

- 1x POF Port with OPTOLOCK™ interface
- 2x Ethernet Port – RJ45 Standard
- satisfies IEEE 802.3 Ethernet and IEEE 802.3u Fast Ethernet Standard
- Port based VLAN configuration factory-provided (on request)
- proper cover plates available from multiple well-known manufacturers
- look for swiss intermediate frames for cover plates on page 15

OMC100SDA-220-CH

OPTOLOCK™ interface 2.2 mm

FUNCTIONS

- 1x POF Port with OPTOLOCK™ interface
- 1x Ethernet Port – RJ45 Standard
- **1x integrated W-LAN**
- satisfies IEEE 802.3 Ethernet and IEEE 802.3u Fast Ethernet Standard
- proper cover plates available from multiple well-known manufacturers
- look for swiss intermediate frames for cover plates on page 15

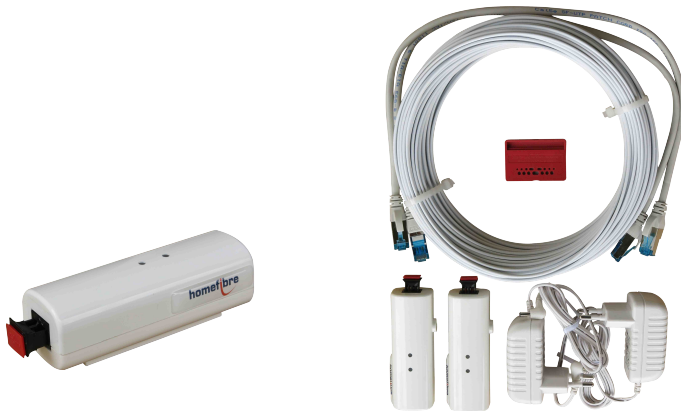


MEDIA CONVERTERS AND KITS

In media converters, electrical data signals (IP-packages) are converted into optical (light) signals to be broadcasted over Polymer Optical Fibre (POF; plastic fibre). The receiver converts the optical signal back into an electrical signal to allow communication to all network devices.

Those products are available as single media converters or in comprehensive sets which also can be installed without prior know- ledge.

Beside the devices for on-wall mounting, several products for in-wall and rail mounting are available. (therefore see chapter „Installation material“, page 8)



OMC100D - OPTICAL MEDIA CONVERTER FAST ETHERNET

OMC100-220
OPTOLOCK™ interface 2.2 mm

BENEFITS

- easy installation with slim POF cable
- robust, reliable & radiation-free
- visible light for optical function control
- wall mounting fixture
- optical link and RJ45 control light
- easy self installation
- delivery with power adapter

OMC100D - OPTICAL MEDIA CONVERTER KIT

OMC100D - 220 - 30 SI
OPTOLOCK™ interface 2.2 mm
200Mbps duplex - optical; 1 Gbps RJ45

SET INCL.

- 2 x OMC100D incl. power supply
- 30m RHEE4002 bundle
- 1 x POF-Unicut
- 2 x RJ45 patch cable
- user manual

OMC1000 GIG - OPTICAL MEDIA CONVERTER KIT

OMC1000GIG-220-30SI
Connector less Broadcom Interface 2.2 mm

SET INCL.

- 2 x OMC1000GIG
- 2 x USB cables with main power adapter
- 30m RHEE4002 bundle
- 1 x POF-Unicut
- 2 x RJ45 patch cable
- user manual



TOOLS

The POF cable can be placed in a conduit together with the electrical installation cables or on the surface. This method offers cost savings, less installation work and maximum safety and efficiency. A safe broadband port can thus be created at any mains plug socket in your home or office within a minimum of time.

This can even be carried out by the end user, as shown in our videos (see: <http://www.youtube.com/homefibre>).

To guarantee the best POF connection a clean and smooth cut of the cable ends is essential. Different cutting tools are available (see below).

For optical quality and function control of POF links we offer optical measurement tools.

The tools described here simplify the installation and testing of the optical POF network.



<p>POF CUTTER</p>	<p>POF 600 004 - POF CONNECTING TOOL Length: 190 mm Weight: 495 & 505 g Capacity: 2x Ø 2.2 mm Material: Special tool steel</p>	<p>OFT-820 N POF SERIES PLASTIC OPTICAL FIBRE – POWER LOSS TEST SET Photodetector: 3 mm Si Wavelength: 650 nm, 850 nm typ. Metering range: -35 dBm bis +10 dBm Operating temperature: -10° to + 50°C Dimensions: 165 x 80 x 50 mm</p>
<p>POF-UNICUT</p> <p>FUNCTIONS</p> <ul style="list-style-type: none"> • Tool for cutting POF-cable • for Ø 1.5 mm and Ø 2.2 mm 	<p>POF 600 004-2-3 tool with safety cutting system and stripping aid</p> <p>FUNCTIONS</p> <ul style="list-style-type: none"> • with integrated cutting system for cutting and stripping of fiber-optical cable for Ø 2.2mm • stripping free of damage, exact adjustment of cable • exact cut surface by special cutting system • no polishing of cut surface necessary, immediate subsequent treatment possible • bronzed with two-component handle bars 	<p>OFT-820-POF-OL2-LD650 OFT-820 with Optolock 2.2 mm and 650 nm LED</p> <p>FUNCTIONS</p> <ul style="list-style-type: none"> • combines 2 optical test equipments - Light Source and Power Meter in one. • absolute and relative optical power measurement • different types of connectors are available on request • storage and uploading of up to 3000 measurements to the PC • „SmartProtocol PC“ evaluation software supports test reporting generation



PLUGS AND CONNECTOR ACCESSORIES

Accessories for optical cables, media converters and switches.

The flush-mounted devices are manufactured in close cooperation with Rutenbeck. As a result, cover plates suitable for Rutenbeck flush-mounted plug sockets are available in the switch product ranges of leading manufacturers can be employed. The standard Rutenbeck covers are available from Homefibre as listed below.



WALL PLATE
Dimensions: 80 x 80 x 5 mm
Weight: 12 g



ZST UAE 8 - STANDARD CENTER PLATE WITH LABELING FIELD FOR 1 RJ45 PLUG
Dimensions: 50 x 50 x 13 mm
Weight: 6g
for 1 RJ45 interface (for OMC100UP, OMA111WLAN)



ZST UAE 8/8 -STANDARD CENTER PLATE WITH LABELING FIELD FOR 2 RJ45 PLUG
Dimensions: 50 x 50 x 13 mm
Weight: 6g
for 2 RJ45 interfaces (for OMS121UP)

AP RW ; 100 100 51
Color: similar RAL 9010; pure white

ZST UAE 8 RW ; 130 100 52
Color: similar RAL 9010; pure white

ZST UAE 8/8 RW ; 130 100 53
Color: similar RAL 9010; pure white



UAE-6APG RW - SURFACE MOUNTED HOUSING
Dimensions: 80 x 80 x 46 mm
Weight: 93 g



INTERMEDIATE FRAME CH
Intermediate frame for Swiss Standard



CENTER PLATE FOR OPTOLOCK KEYSTONE

UAEAPG RW; 135 115 03
Color: similar RAL 9010; pure white

INTERMEDIATE FRAME
Color: similar RAL 9010; pure white

ZST UM-MA 2 RW; 139 100 03
Center plate for 2 modules, pure white
ZST UM-MA 3 RW; 139 100 02
Center plate for 3 modules, pure with



<p>UAE-6APG RW - MOUNTING FRAME FOR FLUSH-MOUNTING Dimensions: 70 x 70 x 17 mm Weight: 25 g</p>	<p>SMI ADAPTER / CONNECTOR 2 x SMI socket</p>	<p>SMI100 - SMI PLUG CRIMPABLE FOR POF Core diameter: 1 mm Outside diameter: 2.2 mm</p>
<p>POF-MA UP ; 180 100 01 Center plate pure white</p>	<p>KM-POF SMI 2,2MM ; 180 100 02 for duplex POF cable (2 x Ø 2.2 mm) black</p>	<p>POF SMI 100 POF plug for crimp connection for duplex POF cable (2 x Ø 2.2 mm)</p>

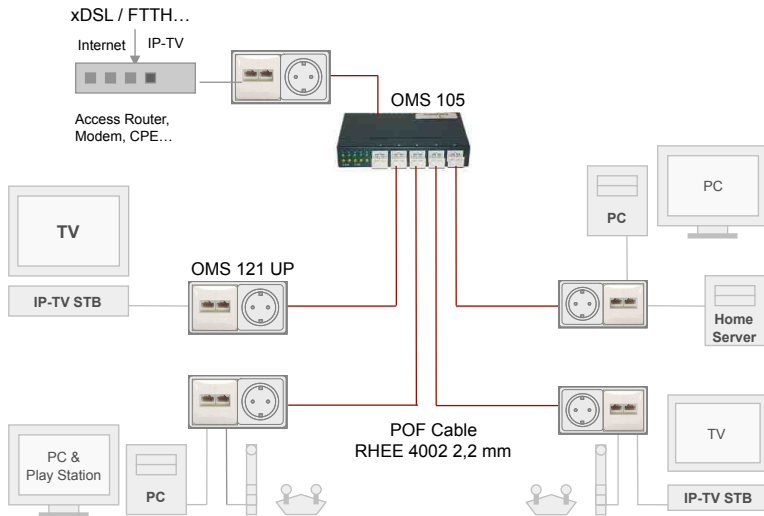


<p>MOUNTING FRAME FOR OPTOLOCK KEYSTONE Dimensions: 70 x 70 x 17 mm Weight: 25g</p>	<p>POF OPTOLOCK KEYSTONE Connector with 2x Optolock interfaces Damping: ca. 2.5 dBm for POF duplex cable (2 x Ø 2.2 mm)</p>	<p>POF CONNECTOR Basic connector for POF duplex cable 2 x Ø 2.2 mm</p>
<p>POF-MA 2UP ; 139100 01 Mounting frame for 2 modules</p> <p>POF-MA 3UP ; 139100 02 Mounting frame for 3 modules</p>	<p>POF OPTOLOCK KEYSTONE black</p>	<p>POF VB grey</p>

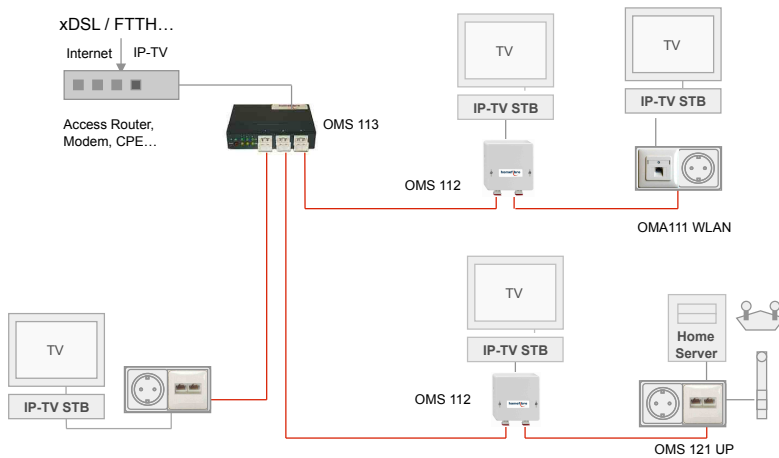


<p>POF CONNECTOR Basic connector for POF duplex cable from 2 x 1,5mm POF to 2 x 2,2mm POF cable</p>	<p>POF MOUNTING CLIP ADHESIVE POF Clip 2.2mm for POF cable diameter of 2.2 mm</p>	<p>SMI ADAPTER with flap mounts</p>
<p>POF VB 1,5 / 2,2 grey</p>	<p>POF Clip 2.2 mm packing unit: 30 pieces</p>	<p>POF SMI Adapter for duplex POF cable (2 x Ø 2.2 mm) grey</p>

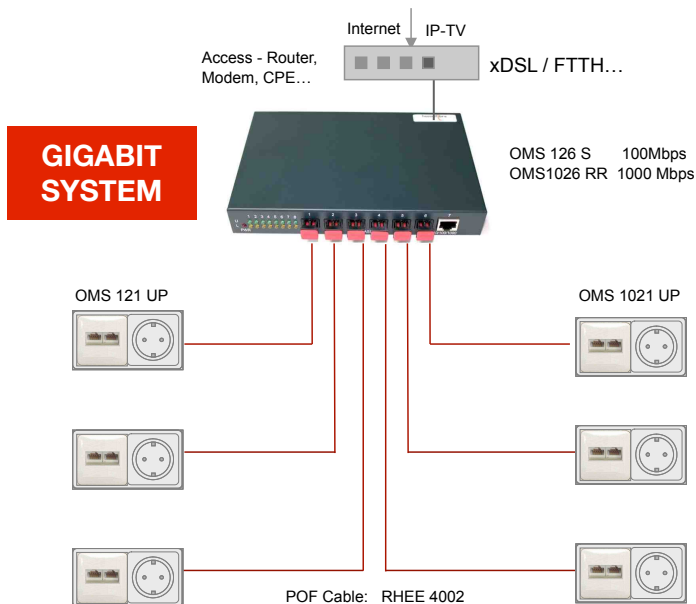
APPLICATION EXAMPLES



In this sample a typical POF home network with 5 star wired links is demonstrated. On three (3) links an OMA111WLAN flush mounted WIFI Access Point is installed. One of them is used to link the internet access modem to the network. Besides the OMC100UP there are also two (2) OMS121UP which provide two RJ45 ports each. This network installation offers network access for up to six (6) devices. (



This sample shows an extended star - and daisy chain layout network. The internet modem is directly linked to the RJ45 port of the POF-Switch (OMS113). Surface mounted daisy chain switches (OMS112) and flush mounted wall outlet switches are linked to the central switch. All in all this simple basic POF-network provides seven (7) RJ45 ports to connect devices to the network.



This optical network consists of an OMS126 and six (6) OMS121UP. The internet access modem can be linked directly to the RJ45 port of the POF-switch if they are located nearby. Six (6) POF-lines lead to the six (6) in-wall switches (OMS121UP) which allow to link up to twelve (12) devices to the optical broadband network. It is also possible to connect the central switch over its SFP-port to a glas fibre network

In the Gigabit version the switch is OMS1026RR and the 2-port wall outlet OMS1021UP-220.

Due to interoperability 100Mbps and 1 Gbps wall outlets can be used in mixed mode.

APPLICATION: MULTIMEDIA DISTRIBUTION CABINET



A multimedia distribution box offers a variety of ways to realize modern multimedia-installations.

The picture to the left shows a distribution box with a POF-switch, an internet access modem and a SAT>IP device. Six (6) POF-lines lead to the network access points in the different rooms. If the main distribution box is close to the multimedia distribution box, the POF can be wired together with the electrical installation.

The internet access modem is connected directly to the RJ45 port of the OMS126 switch.

Satellite TV-signals are converted to IP-signals through the SAT>IP device. The new TV signal is broadcasted over the optical network, a TV can be located at each network access point in the home.

Network attached storage, server or coax more-way distributors are further applications which can be placed in a multimedia distribution cabinet.



Multimedia Cabinets are available in different sizes. They are chosen in dependence of the size and the type of dwelling.

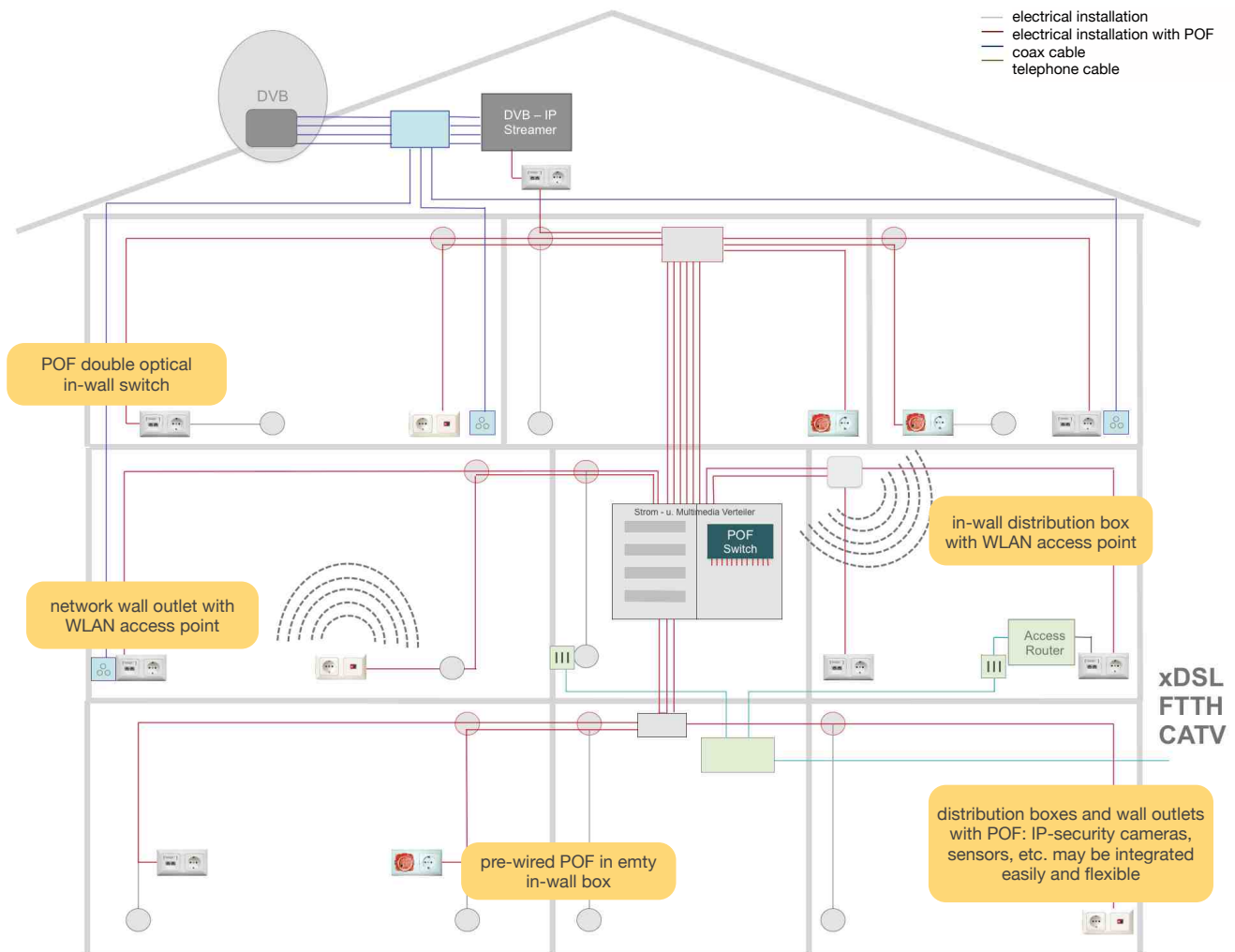


Multimedia Cabinet
5 rows high, e.g. for
SAT-IP Server
Access Router
POF &-Port Switch

Multimedia Cabinet
4 rows high
e.g. for
Access Router
POF 6 Port Switch

Multimedia Cabinet
3 rows high
e.g. for
CATV-HF Splitter
Access Router
POF 3-Port Switch

APPLICATION EXAMPLES



The draft above shows a house with combined POF and electrical installation. So the majority of the main wall outlets are supplied with the optical cable. If needed, a flush mounted network wall plug or WLAN access point can be installed at each main wall outlet. All other main wall outlets are pre-wired with POF cables and an active network access point can be created by installing a media converter. Network cabling is prepared in the entire house and can easily be activated anywhere.

In addition the POF cable is available in all in-wall distribution boxes. Sensors, cameras, home automation devices, etc. can be linked into the network without huge effort.

SAT>IP allows to provide Satellite-TV over the optical and wireless network in the whole house.

The central switch is located in the main distribution cabinet. Access devices (e.g. internet access modem) may be linked to the network at any network access point.

SPECIFICATION - OPTICAL CABLE

PARAMETER	RH 4002	RHEE 4002	GHA 4002	RHA 4002
Fibre				
Core Material	Polymethyl-Methacrylate Resin (PMMA)			
Cladding	Flourinated Polymer			
Core Refractive Index	1.49			
Refractive Index Profile	Step Index			
Numerical Aperture	0.5			
Core diameter (µm)	Min. 920 typ. 980 Max. 1040			
Diameter with Cladding (µm)	Min. 940 typ. 1000 Max. 1060			
Jacket				
Material	Polyethelene with high density	Polyethylene, double jacketing	Polyvinylchloride	Polyvinylchloride, double jacketing
Color	white			
Dimension (mm)	Minor Achse - Min. 2.13 typ. 2.2 Max. 2.27 Major Achse - Min. 4.3 typ. 4.4 Max. 4.5			
Fibre identification	One fibre of the duplex cable has the following indication in pink: ESKA OPTOHOME MITSUBISHI RAYON			
Weight (g/m)	ca. 7.5			
Reel	30m, 50m, 70m, 100m bundle 500m, 1000m reel		500 m reel	
Characteristics	low cost	low cost, no light leakage on bendings	fire retardant UL-VW1	fire retardant, UL-VW1, no light leakage on bendings
Mechanics				
Operating temperature	-55/+70°C (in dry climate) max. 60°C (up to 95% humidity)			
Transmission losses	170dB/km (at 650nm)			
Bandwidth	Launch NA = 0.65; up to 100 Mbit/s Fast Ethernet			
Minimum bend radius	Loss <= 0.5dB 25mm @100% transmission (quarter bending)			
Tensile strength	Tensile force @ 5% elongation: 140N			
Compression (at 50kg weight)	0,4dB increasing of attenuation			
Standard	IEC 60793-2-40 Optical fibres -Part 2-40			

SPECIFICATION - MEDIA CONVERTER

PARAMETER	OMC100UP	OMC100REG	OMC100D	OMC1000GIG
Standard	IEEE 802.3, IEEE 802.3.u			
Accreditation	FCC Part 15, Class B, EN 55022, Class B			
Optical interface	OPTOLOCK™			
Wave Length	650 nm typ.			
Electrical Interface	100 Mbit/s RJ45			1 Gbps RJ45
Power supply	240 V-AC; integrated power supply	8 V - 24V AC; external power supply	4.5-6 V DC; external power supply	4-5 – 6 V DC; external power supply
Power consumption typ.	0.9 W	0.9 W	0.9 W	1,5 W
Operating temperature	- 5° to + 45°C	- 5° to + 45°C	- 20° to + 60°C	- 20° to + 60°C
Mechanical Dimensions (mm)	suitable for DIN in-wall mounting box	ca. 70 x 73 x 18	ca. 90 x 39 x 30	ca. 35 x 17 x 11
Color		grey	white	white
Recommended POF Cable	Step Index Fibre; e.g. Mitsubishi OPTOHOME RHEE 4002 (NA 0,5)			
Applications	Optimized for IP-TV and Multimedia; computer and Office networks			
Characteristics		is delivered <u>without</u> the external power supply		

SPECIFICATION - FAST ETHERNET SWITCHES

PARAMETER	OMS113	OMS105 OMS 105 REG	OMS126	OMS121UP	OMS112AP
Standard	IEEE 802.3, IEEE 802.3.u				
			IEEE 802.3.ab, IEEE 802.3.z		
QoS			IEEE 802.1Q, IEEE 802.1p		
			port based VLAN	port based VLAN ¹ (on request)	
Accreditation	FCC Part 15, Class B, EN 55022, Class B				
Number Optical Interfaces	3	5	6	1	2
Optical Glas Fibre Interface SFP			1		
Wave length	650 nm typ.				
Electrical Interface RJ45	1		1	2	1
Power supply	5V DC; external power supply	5V DC; external power supply	5V DC, max. 1.6A; external power supply	240 V-AC; integrated power supply	12V DC; external power supply
Power consumption typ.				0.9 W	0.9 W
Operating temperature	0 to + 50°C	0 to +50°C	- 10° to + 70°C	-5° to + 45°C	- 5° to + 45°C
Mechanical Dimensions (mm)	ca. 84 x 61 x 20	ca. 120 x 80 x 20	ca. 196 x 124 x 30	suitable for DIN in-wall mounting box	ca. 80 x 80 x 33,5
Recommended POF cable	Step Index Fibre; e.g. Mitsubishi OPTOHOME RHEE 4002 (NA 0,5)				
Applications	Optimized for IP-TV and Multimedia; computer and Office networks				

SPECIFICATION - GIGABIT ETHERNET SWITCHES

PARAMETER	OMS 1021 UP	OMS 1026 RR			
Ethernet Standard	IEEE 802.3, IEEE 802.3.u				
	IEEE 802.3.ab, IEEE 802.3.z	IEEE 802.3.ab, IEEE 802.3.z			
QoS	Layer 2	Layer 2			
Accreditation	FCC Part 15, Class B, EN 55022, Class B				
Backward-Compatibility	compatible with products according IEEE 802.3 FX - 100Mbps POF				
Optical Interface	1	6			
Optical Interface SFP	-	-			
Wavelength	650 nm typ.				
Data Rate	1000 Mbps - adaptive bandwidth allocation according power budget				
Opt. Gigabit Output Power	- 5,8 dBm min.				
Opt.Gigabit Input Sensitivity	- 16,5 dBm min				
Optical Transmission Distance Gigabit	50m (with POF Cabel category A4a2 - IEC 60792-2)				
Optical Transmission Distance Gigabit Adaptive Bandwidth	up to 90m (with POF Cabel category A4a2 - IEC 60792-2)				
Electrical Data Interface	1	2			
Power Supply	integrated power supply 100 - 240 V-AC 50-60 Hz	5V DC; ext.power supply 100-240V-AC 50-60 Hz			
Power Consumption typ.	2,8 Watt	10 Watt typ.			
Protecting Class DIN EN 60529	IP 20	IP 20			
Protecting Class DIN EN 61140	II	II			
Operation Temperature	0° bis + 40°C	0° bis + 42°C			
Mechanical Dimension (mm) Width x Hight x Depth	fits to DIN Flush mounting boxes depth 60mm	196 x 124 x 30 mm			
Recommended POF cable	Step Index Fibre; e.g. Mitsubishi OPTOHOME RHEE 4002 (NA 0.5)				
Applications	IP-TV, Multimedia; PC und Office				

SPECIFICATION - WLAN ACCESS POINT

PARAMETER	OMA111-WLAN
Type	OMA111-WLAN-220
Function	Access Point, Repeater, Bridge
	to be managed via Web Interface
Security	WEP, WPA, WPA2
Data Rate WLAN	150Mbps
Standard	IEEE 802.3, IEEE 802.3.u
	IEEE 802.3.b,g,n
Accreditation	FCC Part 15, Class B, EN 55022, Class B
Optical Interface	1
	Connector less Interface for 2,2mm POF Cable
WLAN Interface	1
Wavelength POF	650 nm typ.
Electrical Interface RJ45	1
Power Supply	Integrated Power Supply 100 - 240 V-AC
Power Consumption typ.	ca. 1,2 W to <3 W
Operation Temperature	- 5° bis + 45°C
Mechanical Dimension	fits into DIN Flush Mount Boxes
Recommended POF Cable	Step Index Fibre; z.B. Mitsubishi OPTOHOMERHEE 4002 (NA 0,5)
Applications	IP-TV and Multimedia; PC und Office Networking

NOTES

NOTES



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