



ELPAS

OPTOPUS
HIGH DENSITY OPTICAL PLATFORM



with OBI-FREE
RFoG Solution

**High Density
Optical Platform**

FROM HFC TO FTTx AND DAA NETWORKS



OPTOPUS Engineered to Perform



Solutions with **OPTOPUS**



HFC

From the Headend to the wall-outlet:
Everything for the cable network.



RF OVER GLASS

RFoG is the solution for FTTH networks
based on DVB and DOCSIS.



RF OVERLAY

Solutions for video services in GPON
and Active Ethernet networks.

OPTOPUS

One Platform for All Networks

The optical platform WISI Optopus is notably flexible and serves high-density needs for all kinds of RF optical networks. The platform is engineered to perform in a large number of environments, such as HFC, RF over Glass, or RF Overlay in FTTx applications.

The **WISI Optopus** meets any carrier's requirements for today's networks. Redundant AC and DC power supply secure uptime, pluggable fan units increase flexibility and advanced management features makes the platform highly appreciated by telecom- and cable operators of today.

Install any module in any location in the **WISI Optopus** Base Unit to configure the platform individually to suit your needs.

With its 14 slots in a 4RU Base Unit the **WISI Optopus Platform** can house 28 transmitters, 56 receivers or a mix of both. Together with passive optics, power supply, and a management unit. The WISI Optopus - Engineered to perform for Telecom- and cable operators that need flexible and cost-efficient optical access networks.

OPTOPUS at a glance

- ✓ Headend processor for residential, regional and national networks
- ✓ A fully modular platform for any application
- ✓ Hot swappable modules simplify upgrades
- ✓ Passive backplate for easy cabling and maintenance simplification
- ✓ Redundant power supplies guarantee system availability
- ✓ Dust-free passive module cooling extends module lifetime
- ✓ Advanced management features for easy installation and operation
- ✓ DOCSIS 3.1 capable



OPTOPUS Solutions



HFC

The HFC networks of network providers and city carriers are no longer designed solely for the broadcasting of analog and digital TV programmes. New Communication services have been added rapidly.

Beyond that, customers want to use more high definition content on their mobile devices. These interactive TV and data services increase the requirements for flexibility and bandwidth, in the backbone as well as in the access network.



OBI-FREE RFOG

Cable providers and city carriers are looking for cost-efficient ways to upgrade their existing network infrastructures to the level of FTTB (Fiber To The Building), or even FTTH (Fiber To The Home).

RFOG is a passive optical network that transmits HF signals via fiber to the subscriber, similar to a HFC network in the downstream direction. A key requirement for the RFOG implementation is to keep the existing DOCSIS infrastructure and provisioning services.



RF OVERLAY

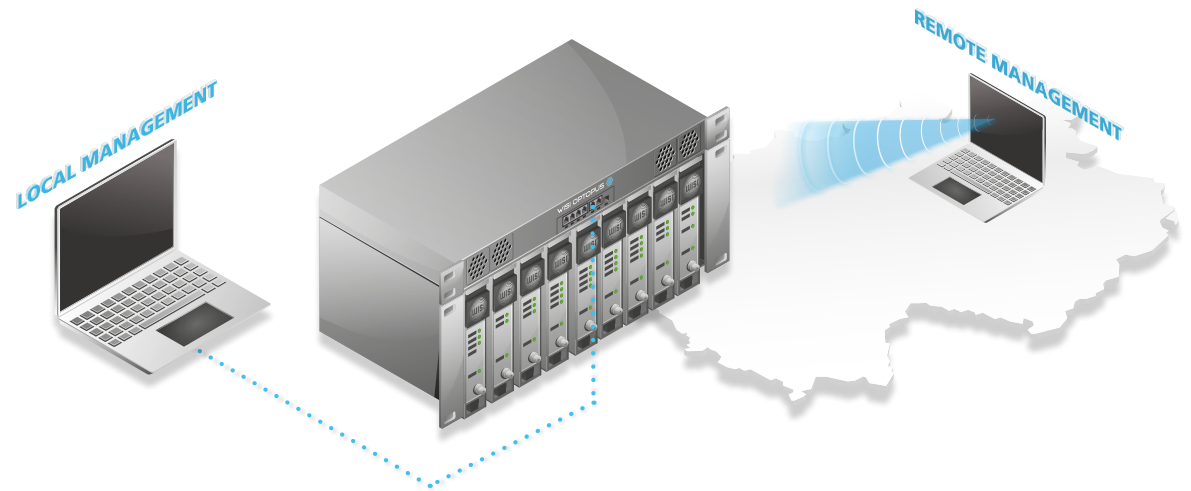
As a rule, TV becomes more interactive and mobile the younger the viewer is. At the same time there is a trend towards HD technology.

As a consequence, bandwidth requirements are rapidly increasing. Telecommunications service providers and city carriers have to take this development into account when expanding their existing network infrastructure.

OPTOPUS System Advantages

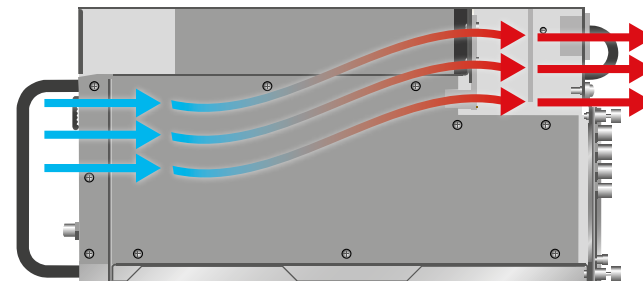
Advanced **MANAGEMENT FEATURES**

The system offers **comprehensive local and remote monitoring features** for each and every module. Supervision and operation is realized using state-of-the-art SNMP features and/or a web interface.



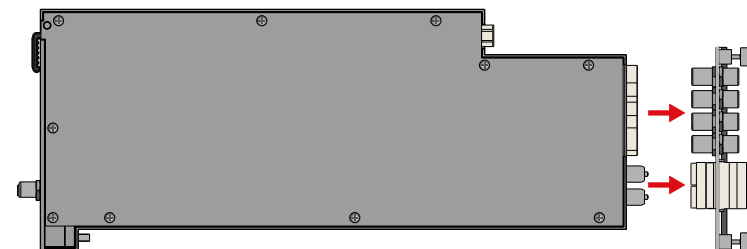
Extending the lifetime of modules thanks to **PASSIVE MODULE COOLING**

The **cooling and ventilation system** of OPTOPUS is designed to prolong the operating lifetime of modules. The equipment uses a passive cooling without active fans or ventilation holes in the modules.



Reduction of maintenance outages thanks to **PASSIVE BACKPLATE**

The **passive backplate system** allows exchange of modules during operation without re-cabling. The system therefore significantly reduces maintenance outages.



OPTOPUS Base Units

LX 50

4 Rack Unit Chassis, 14 slot



- ✓ Tool less hot-swap modules, power supply units and fans
- ✓ Mechanical backplate for optical and electrical connectors enables module exchange without recabeling
- ✓ Local and remote management
- ✓ Fully redundant power supply concept
- ✓ High density: up to 14 modules per shelf
- ✓ Very low power consumption

LX 52

1 Rack Unit Chassis, 2 slot



- ✓ Tool less hot-swap modules, power supply units and fans
- ✓ Fully redundant power supply concept
- ✓ Local and remote management
- ✓ 2 OPTOPUS slots in a single rack unit
- ✓ Management via SNMP or web-UI
- ✓ Cost and space efficient solution for smaller networks

Just Facts

"Fiber is a green technology, due to its reduced energy consumption compared to other connection types."



OPTOPUS Power Supplies

LX 55 0048/0230 (LX 50 only)

Power Supply



- ✓ Hot pluggable
- ✓ Redundant usage
- ✓ Carrier grade
- ✓ 48 VDC and 230 VAC

LX PS A065

Power Supply



- ✓ Hot pluggable
- ✓ Redundant usage
- ✓ Carrier grade
- ✓ 48 VDC and 65 VAC

LX PS A230/B230 (angled conn.)

Power Supply



- ✓ Hot pluggable
- ✓ Redundant usage
- ✓ Carrier grade
- ✓ 100...240 VAC

OPTOPUS Transmitters



DOCSIS 3.1

HFC

1310 nm

LX 11 Single transmitter

- ✓ Cost-effective HFC downstream transmission

LX 12 Dual transmitter

- ✓ Cost-effective HFC downstream transmission



DOCSIS 3.1

BROADCAST

1550 nm

LX 15 DML Directly modulated

- ✓ Full Spectrum broadcast transmission
- ✓ DWDM

LX 15 Externally modulated

- ✓ Long Haul broadcast transmission
- ✓ DWDM

LX 18 Dual DML/ExMOD

- ✓ Full Spectrum broadcast transmission
- ✓ DWDM



DOCSIS 3.1

UPSTREAM

CWDM / DWDM

LX 13 Dual CWDM transmitter

- ✓ Upstream transmission

LX 16 DWDM transmitter

- ✓ Upstream transmission over long distances

OPTOPUS Downstream Transmitters 1310nm

LX 11 S 2x00

Single 1310 nm transmitter



- ✓ Adjustable OMI, Slope, NC-Input
- ✓ Automatic level control (ALC)
- ✓ Fullband transmitter 15...1218 MHz, Docsis 3.1 Ready
- ✓ High RF Input Isolation
- ✓ OMI Control Testport
- ✓ SBS suppression

LX 12 S xx00

Dual 1310 nm transmitter



- ✓ Adjustable OMI, Slope, NC-Input
- ✓ Automatic level control (ALC)
- ✓ Dual Fullband transmitter 15...1218 MHz, Docsis 3.1 Ready
- ✓ High RF Input Isolation
- ✓ OMI Control Testport
- ✓ SBS suppression

Just Facts

"WISI Transmitters provide dedicated broadcast (full spectrum) and narrow-cast inputs."

"This internal combining allows installations with much less rack space compared to external combiners."

OPTOPUS Downstream Transmitters 1550nm

LX 15 S 12xx DML

Single Full Spectrum Transmitter



- ✓ Adjustable OMI, Slope, NC-Input
- ✓ Automatic level control (ALC)
- ✓ Fullband transmitter 15...1218 MHz, Docsis 3.1 Ready
- ✓ High RF Input Isolation
- ✓ OMI Control Testport
- ✓ Electronic predistortion
- ✓ SBS suppression
- ✓ Dispersion compensation
- ✓ 15 km, 25 km, 45 km

LX 15 S 50xx ExMOD

Single Full Spectrum Transmitter



- ✓ Adjustable OMI, Slope, NC-Input
- ✓ Automatic level control (ALC)
- ✓ Electronic predistortion
- ✓ SBS-Suppression
- ✓ Dispersion compensation
- ✓ 40 km, 80 km

LX 18 S 1xxx DML / 5xxx ExMOD

Dual Full Spectrum Transmitter



- ✓ Adjustable OMI, Slope, NC-Input
- ✓ Automatic level control (ALC)
- ✓ Electronic predistortion
- ✓ SBS suppression
- ✓ Dispersion compensation
- ✓ 40 km, 80 km

OPTOPUS Upstream Transmitter

LX 13 S 05xx

Dual CWDM Upstream Transmitter



- ✓ Highest performance with dual-stage isolator
- ✓ Adjustable OMI
- ✓ Upstream transmitter 5...500 MHz
- ✓ 5 dB output power

LX 16 S 10xx

DWDM Upstream Transmitter



- ✓ SBS suppression
- ✓ Adjustable OMI
- ✓ Upstream transmitter 5...500 MHz
- ✓ 10 dB output power

Just Facts

"Fiber isn't just for TV and Internet; it also has practical applications in digital signage, imaging optics, hydrophones and spectroscopy"



OPTOPUS Receivers



DOWNSTREAM

LX 21 Broadband receiver

- ✓ Broadband downstream reception
- ✓ Headend and Hub locations



UPSTREAM HFC

LX 22 Upstream receiver

- ✓ Automatic Level Control (ALC)
- ✓ Up to 200 MHz

LX 22 H Upstream receiver

- ✓ Ultra sensitive
- ✓ Up to 200 MHz



UPSTREAM RFoG

LX 23 Upstream receiver

- ✓ Quad Upstream Receiver
- ✓ Built-in RFoG Filter

LX 24 Upstream receiver

- ✓ OBI-free Upstream Receiver
- ✓ xPON transparent

LX 25 Upstream receiver

- ✓ OBI-free Upstream Receiver
- ✓ low Upstream attenuation

OPTOPUS Downstream Receiver

LX 21 S 0100

Single DS Receiver



- ✓ Automatic level control (ALC)
- ✓ Hot Plug In/Out
- ✓ Automatic Level Control (optical ALC) for constant RF-output level

OPTOPUS Upstream Transmitter

LX 22 S 0400

Quad upstream receiver



- ✓ 4 independent upstream channels per unit or ne combined output
- ✓ -17...0 dBm optical input level
- ✓ 4 RF output ports at rear
- ✓ Optical automatic level control (ALC) for constant RF-Level
- ✓ Redundancy switching option with LX71

LX 22 H 0400

Quad upstream receiver (ultra low noise)



- ✓ 4 independent upstream channels per unit or ne combined output
- ✓ -28...-10 dBm optical input level
- ✓ 4 RF output ports at rear
- ✓ Optical automatic level control (ALC) for constant RF-Level
- ✓ Redundancy switching option with LX71

OPTOPUS Upstream Receiver RFoG US Rx

LX 23 L 0431 / 0461

Quad RFoG upstream receiver



- ✓ 4 independent upstream channels per unit or one combined output
- ✓ 4 RF output ports at rear
- ✓ Integrated RFoG-Filter (1310 nm / 1610 nm)
- ✓ IDS noise suppression (Squelch)

Just Facts

“Fiber cables are quite sturdy.
While strands of glass are at the core of fiber-optic cable, most fiber cables are engineered to withstand challenging conditions and rugged installations. In fact, the military even uses fiber cables to keep its lines of communication open in the toughest of conditions.”

OPTOPUS OBI-free RFoG Upstream Receiver (PON transparent)

LX 24 x xS0x

Multidiode Receiver for RFoG Networks, electrical upstream



- ✓ Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- ✓ Remote optical input power reading and switch off functionality per port via SNMP und WEB
- ✓ Electrical upstream test port
- ✓ Local or remote powered version available

LX 24 x xSxx

Multidiode Receiver for RFoG Networks, dual fiber version with optical upstream



- ✓ Dual Fiber Version
- ✓ Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- ✓ Remote optical input power reading and switch off functionality per port via SNMP und WEB
- ✓ Integrated CWDM Upstream transmitter
- ✓ Optical upstream port (CWDM grid)
- ✓ Local or remote powered version available

Just Facts

"Fiber is sustainable; it is made from Silicon Dioxide, the second-most abundant element on Earth after Oxygen"

OPTOPUS OBI-free RFoG Upstream Receiver

LX 24 x xCxx

Multidiode Receiver for RFoG Networks, single fiber version



- ✓ Single fiber version
- ✓ Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- ✓ Remote optical input power reading and switch off functionality per port via SNMP und WEB
- ✓ Integrated CWDM Upstream transmitter
- ✓ Electrical upstream test port
- ✓ Local or remote powered version available

LX 24 x xExx

Multidiode Receiver for RFoG Networks, dual fiber version with EDFA



- ✓ Dual Fiber Version
- ✓ Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- ✓ Remote optical input power reading and switch off functionality per port via SNMP und WEB
- ✓ Integrated CWDM Upstream transmitter
- ✓ Integrated EDFA to compensate splitter loss
- ✓ Electrical upstream test port
- ✓ Local or remote powered version available

LX 24 x xFxx

Multidiode Receiver for RFoG Networks, single fiber version with EDFA



- ✓ Single fiber version
- ✓ Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- ✓ Remote optical input power reading and switch off functionality per port via SNMP und WEB
- ✓ Integrated CWDM Upstream transmitter
- ✓ Integrated EDFA to compensate splitter loss
- ✓ Electrical upstream test port
- ✓ Local or remote powered version available

OPTOPUS OBI-free RFoG Upstream Receivers (low US attenuation)

LX 25 x xS0x

Multidiode Receiver for RFoG Networks, electrical upstream



- ✓ Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- ✓ Remote optical input power reading and switch off functionality per port via SNMP and WEB
- ✓ Electrical upstream test port
- ✓ Local or remote powered version available

LX 25 x xSxx

Multidiode Receiver for RFoG Networks, dual fiber version with optical upstream



- ✓ Dual Fiber Version
- ✓ Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- ✓ Remote optical input power reading and switch off functionality per port via SNMP and WEB
- ✓ Integrated CWDM Upstream transmitter
- ✓ Optical upstream port (CWDM grid)
- ✓ Local or remote powered version available

LX 25 x xCxx

Multidiode Receiver for RFoG Networks, single fiber version



- ✓ Single fiber version
- ✓ Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- ✓ Remote optical input power reading and switch off functionality per port via SNMP and WEB
- ✓ Integrated CWDM Upstream transmitter
- ✓ Electrical upstream test port
- ✓ Local or remote powered version available

OPTOPUS OBI-free RFoG Upstream Receivers (low US attenuation)

LX 25 x xExx

Multidiode Receiver for RFoG Networks, dual fiber version with EDFA



- ✓ Dual Fiber Version
- ✓ Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- ✓ Remote optical input power reading and switch off functionality per port via SNMP and WEB
- ✓ Integrated CWDM Upstream transmitter
- ✓ Integrated EDFA to compensate splitter loss
- ✓ Electrical upstream test port
- ✓ Local or remote powered version available

LX 25 x xFxx

Multidiode Receiver for RFoG Networks, single fiber version with EDFA



- ✓ Single fiber version
- ✓ Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- ✓ Remote optical input power reading and switch off functionality per port via SNMP and WEB
- ✓ Integrated CWDM Upstream transmitter
- ✓ Integrated EDFA to compensate splitter loss
- ✓ Electrical upstream test port
- ✓ Local or remote powered version available

LX 25 x xDxx

Multidiode Receiver for RFoG Networks, dual downstream input



- ✓ Converts existing RFoG networks to OBI free solutions without exchange of fiber nodes
- ✓ Remote optical input power reading and switch off functionality per port via SNMP and WEB
- ✓ Two downstream input ports
- ✓ Electrical upstream test port
- ✓ Local or remote powered version available

OPTOPUS Optical Amplifiers



LX BLADE

LX 30 EDFA

- ✓ Input -3...+10 dBm
- ✓ Adjustable output power

LX 32 EDFA

- ✓ Input +5...+10 dBm
- ✓ Constant power or gain



RACK MOUNT 19"

LX 35 Y/EDFA

- ✓ Very high internal power
- ✓ LC/SC/E2000

LX 37 Y/EDFA

- ✓ Up to 64 ports (SC) in one RU
- ✓ LC/SC/E2000

LX 37 W xPON Y/EDFA

- ✓ xPON enabled OLT ports
- ✓ LC/SC/E2000



RACK MOUNT 19" SHORT

LX 33 EDFA (fixed/modular)

- ✓ Input -3...+10 dBm
- ✓ 230 VAC/ 48 VDC

OPTOPUS Optical Amplifiers

LX 30

Optical Amplifier Module (EDFA)



- ✓ High power efficiency
- ✓ Up to 24 dBm total output power in an OPTOPUS module (4x 17.5 dBm)
- ✓ Carrier-grade functionalities via OPTOPUS chassis LX 50 / LX 52
- ✓ Signal connections on the rear

LX 32 L xxxx

Optical Amplifier



- ✓ APC and AGC regulation
- ✓ Up to 30 dBm total output power in an OPTOPUS module (8x 21 dBm)
- ✓ Integration in WISI Optopus system LX50
- ✓ Extensive management via SNMP and HTTP
- ✓ Closed module housing without fans
- ✓ Optical test port for the output signal on the front
- ✓ Low power consumption

OPTOPUS Optical Amplifier 19" short

LX 33 x xxxx

Optical Amplifier (EDFA)



- ✓ APC (power) + AGC (gain) regulation
- ✓ Up to 29 dBm total output power in one RU (8x 20 dBm)
- ✓ 19" rack based for stand-alone operation or integration in a WISI
- ✓ Ultra compact street cabinet size KvZ (shallow depth)
- ✓ Extensive management via SNMP and HTTP
- ✓ Two SFP interfaces for remote management (same fiber)
- ✓ Redundant fans
- ✓ Redundant and pluggable power unit
- ✓ Front connectors only

OPTOPUS Optical Amplifiers 19"

LX 35 S

Standalone Optical Amplifier (EDFA)



- ✓ High power, high density
- ✓ Up to 38 dBm total output power in 1 RU (32x 20 dBm)
- ✓ Stand-alone operation with remote management, redundant power supplies and fans

LX 37 S

Standalone Optical Amplifier (EDFA)



- ✓ 64 output ports in 2 RU
- ✓ Management via SNMP, web-interface and handset
- ✓ Redundant hot pluggable power supplies (AC/DC) and fans
- ✓ Different connector styles: SC/APC, LC/APC, E2000/APC

LX 37 W

High Power YEDFA



- ✓ Very high optical power with 38 dBm internally
- ✓ Stand-alone operation or integrated with WISI Optopus
- ✓ Management via SNMP and HTTP
- ✓ Carrier grade functions with hot pluggable and redundant power and fans
- ✓ Integrated multiplexers for PON overlay

OPTOPUS Fiber Nodes



LR 4x

LR 47 HFC

- ✓ Redundancy, pluggable RX/TX modules
- ✓ Electronic US configuration

LR 45 Remote-PHY

- ✓ 1 DS, up to
- ✓ Lowest power consumption

LR 44 Inverted Node

- ✓ Fiber "extension" for coax networks
- ✓ 4...32 ports

LR 42 EoC Gateway

- ✓ Ethernet over Coax
- ✓ 10 Gbps in parallel to DOCSIS 3.1



LR 2x

LR 22 HFC Fiber Node

- ✓ High power output
- ✓ Optional LT 22 CWDM US Tx

LR 27 RFoG Node

- ✓ High power output
- ✓ CWDM US integrated



LR 9x

LR 94 RF Overlay Receiver

- ✓ -6...+2 dBm input
- ✓ Optical ALC

LR 95 HFC Fiber node

- ✓ -6...+2 dBm input (ALC)
- ✓ 80/97 dBμV (flat/slope)

LR 93 RFoG Node

- ✓ -6...+3 dBm input (ALC)
- ✓ 80/97 dBμV (flat/slope)



LR 1x

LR 10 FTTH Platform

- ✓ Passive Base plate
- ✓ Various active extensions

LR 11 RFoG Node

- ✓ Desktop housing
- ✓ Remote management

GLOBAL LINE Nodes

LR 47

Optical Node



- ✓ Redundant Node with two distribution and one line output
- ✓ Pluggable (2x) receiver and (2x) transmitter modules
- ✓ Local and remote feeding types
- ✓ All settings available locally manageable with a OH 41 handset from WISI, Android app via Bluetooth or via remote connected NMS with HMS transponder installed
- ✓ Duplex filters and splitter / tap modules pluggable
- ✓ Electronic upstream configuration redundancy/ clustering
- ✓ One ICS-switch for every input
- ✓ Automated level setting control (ALC) via optical input power or pilot controlled VX 58 B



LR 46

Downstream Receiver for LR 4x



- ✓ Optical downstream receiver for LR4x fiber nodes
- ✓ Wide wavelength range of 1290 ... 1610 nm
- ✓ Different connector types available
- ✓ Single mode fiber
- ✓ Optical input level -6 ... +2 dBm

LT 46

CWDM Upstream Transmitter for LR 47



- ✓ Optical upstream transmitter for LR4x fiber nodes
- ✓ CWDM wavelength grid (1270, 1290, ..., 1610 nm)
- ✓ Different connector types available
- ✓ Single mode fiber
- ✓ Up to 204 MHz upstream
- ✓ Pilot tone generator

Just Facts

"Resistance to Interference

Copper cable Internet that supports broadband is sensitive to electromagnetic interference. Fiber signals do not degrade or disappear due to electromagnetic interference. "

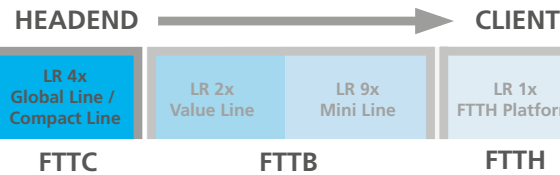
GLOBAL LINE Nodes

LR 45

Remote-PHY Node



- ✓ High-speed 10-GbE throughput
- ✓ Single DS port, up to two US ports
- ✓ Superior RF performance
- ✓ Fully standard compliant with DOCSIS 3.0 and 3.1
- ✓ Precision IEEE 1588 PTP synchronization
- ✓ Deep fiber deployments with high-speed data and video
- ✓ Increase network capacity for offering future bandwidth-hungry services
- ✓ Optional RF Overlay



VT 45

DVB Monitoring module for LR 4x



- ✓ Plug-in module for WISI Nodes
- ✓ Dual DVB-C/T/T2 tuner for continuous selective monitoring
- ✓ Downloadable channel table
- ✓ QAM RF and MPEG TS signal quality measurement
- ✓ TS 101 290 P1 support



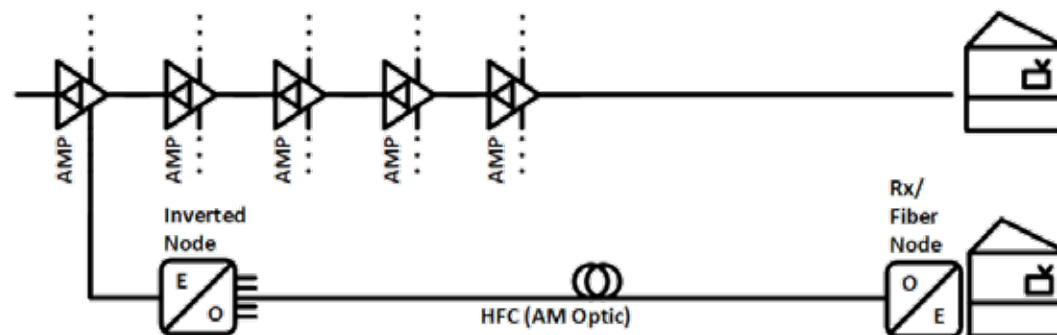
Compact LINE Nodes

LR 44

Inverted node in compact housing



- ✓ Futureproof architecture
- ✓ Instant FTTH access through your existing HFC plant
- ✓ Local or remote feeding
- ✓ Superior RF performance
- ✓ Fully standard compliant with DOCSIS 3.0 and 3.1
- ✓ OBI free RFoG
- ✓ Optional integrated EDFA



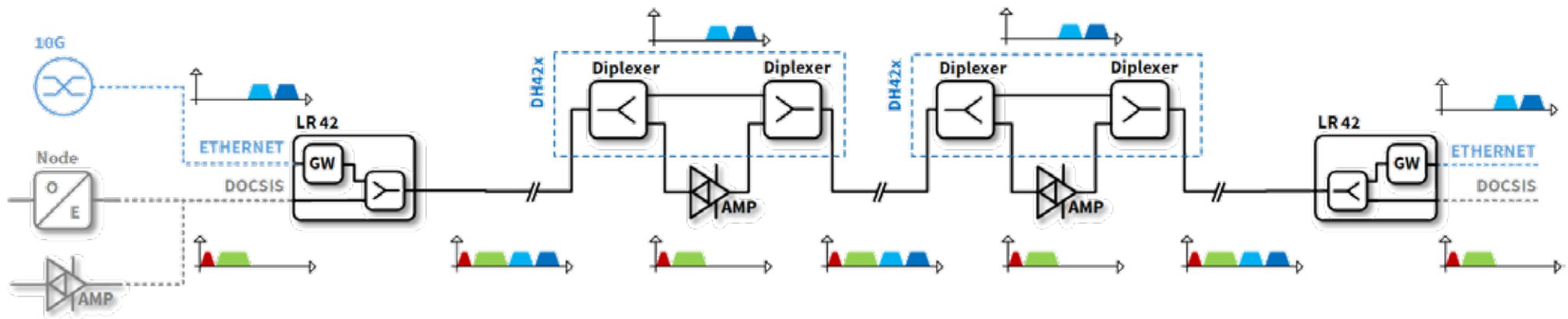
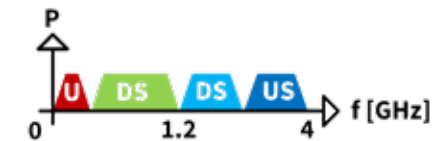
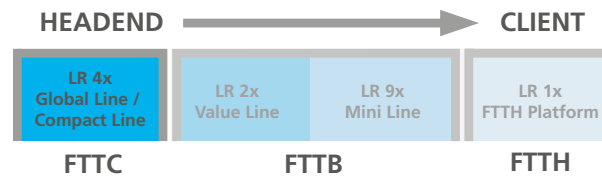
Compact LINE Nodes

LR 42

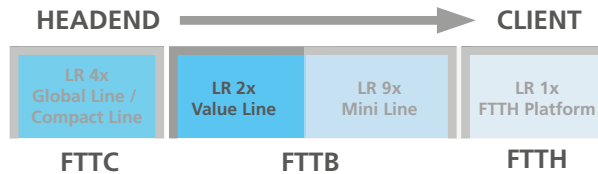
Ethernet over Coax Gateways



- ✓ Clock transfer incoming/outgoing from all 10G interfaces
- ✓ PTP 1588v2 transparent clock device
- ✓ Remote Management Interface (In-Band Management Interface)
- ✓ 10 Gbps symmetrical Ethernet
- ✓ Connect digital B2B Services (mobile, backhaul, xPON, ...)
- ✓ Works on top of the DCOSIS spectrum



VALUE LINE Nodes



LR 22

RF overlay and HFC node



- ✓ High output level for MDU applications 117 dBμV (6dB slope) / 114 dBμV (flat)
- ✓ Two configurable RF outputs with pluggable splitters/taps
- ✓ Downstream up to 1.2 GHz and Upstream up to 204 MHz
- ✓ Pluggable duplex filters for migration
- ✓ Full adjustment control via wireless bluetooth app or handset OH 41
- ✓ Compact housing for outdoor use (IP66)
- ✓ Locally powered (LR 2x 2xxx) or remote powered (LR 2x 6xxx)

LR 22 W x001 / x00E

HFC Fiber Node



- ✓ High RF output level of 109 dBμV for a full DOCSIS 3.1 load in FTTC or FTTB networks
- ✓ Downstream up to 1.2 GHz, Upstream up to 204 MHz
- ✓ Pluggable duplexers enable migration towards DOCSIS 3.1 upstream
- ✓ PON pass-through port for CATV overlay signals in single-fiber FTTx networks
- ✓ Pluggable output splitters / taps for flexible configuration of the two RF outputs
- ✓ Device control via bluetooth app or via handset OH 41
- ✓ Compact housing for outdoor deployment (IP66)
- ✓ Optical ALC for regulated output levels

LT 22

Optical Upstream Modul for LR 22



- ✓ Laser type isolated CWDM DFB lasers
- ✓ Optical output power +3 dBm output power
- ✓ Frequency range 5 to 204 MHz
- ✓ Wave length 1270 ... 1610 nm CWDM grid
- ✓ Nominal input level (5 % OMI) 75 dBμV

VALUE LINE Nodes

LR 27

RFoG Node



- ✓ High output level for MDU applications 117 dBμV (6dB slope) / 114 dBμV (flat)
- ✓ Two configurable RF outputs with pluggable splitters/taps
- ✓ Downstream up to 1.2 GHz and Upstream up to 204 MHz
- ✓ Pluggable duplex filters for migration
- ✓ Remote control (compliant to IEC 60728-14) via FSK receiver module
- ✓ Compact housing for outdoor use (IP66)
- ✓ Locally powered (LR 2x 2xxx) or remote powered (LR 2x 6xxx)

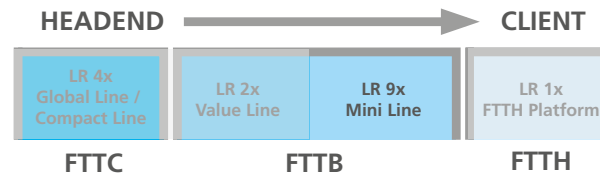
LR 27 W

RFoG Node with WDM



- ✓ High RF output level of 109 dBμV for a full DOCSIS 3.1 load in FTTC or FTTB networks
- ✓ Downstream up to 1.2 GHz, Upstream up to 204 MHz
- ✓ Pluggable duplexers enable migration towards DOCSIS 3.1 upstream
- ✓ Pluggable output splitters / taps for flexible configuration of the two RF outputs
- ✓ PON pass-through port for CATV overlay signals in single-fiber FTTx networks
- ✓ Compact housing for outdoor deployment (IP66)
- ✓ Optical ALC for regulated output levels

OPTOPUS Micronodes



LR 93

RFoG Fiber Node



- ✓ DOCSIS 3.1 compliant
- ✓ Optical input power -6 ... +2 dBm
- ✓ Output power 98 dBuV (5 dB slope) or 80 dBuV (flat)
- ✓ Pluggable Diplex Filter
- ✓ Switchable downstream / upstream test port
- ✓ LED monitoring of downstream input power and upstream laser activity
- ✓ LR 93 W: integrated PON filter for open access architectures

LR 95

HFC Fiber Node



- ✓ DOCSIS-3.1-compliant frequency range: Downstream up to 1218 MHz, Upstream up to 204 MHz
- ✓ Pluggable diplexers enable migration towards DOCSIS 3.1 upstream
- ✓ Compact housing for indoor deployment (IP20)
- ✓ Optical ALC for regulated output levels
- ✓ Optional Remote Management (FSK)

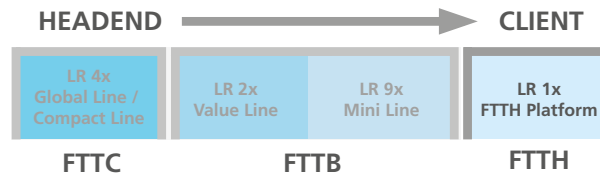
Just Facts

"Fiber Optic Cables Design

Due to its fragile structure, Fiber cables must be protected and must have very good mechanical properties to work in harsh environments such as underground ducts, direct burial or Aerial Application.

That's why fibers are wrapped by protective materials including coating and cabling."

OPTOPUS FTTH Platform



LR 10 E LRx0

RFoG Node

- ✓ Extension for the LR 10 series, intended for mounting on passive baseplate
- ✓ Living room adopted case design
- ✓ DOCSIS 3.1 ready: US up to 204 MHz, DS 1218 MHz
- ✓ Remote Control feature according to EN 60728-14
- ✓ Selectable upstream bandwidth via remote control interface or fixed frequency
- ✓ Optical ALC
- ✓ Optical input range -6 ... +2 dBm



LR 10 E LU00

1 GHz CATV Receiver

- ✓ Extension for the LR 10 series, intended for mounting on passive baseplate
- ✓ Optoelectronic CATV receiver for o/e-conversion of broadcast TV signals
- ✓ Frequency range 47... 1006 MHz
- ✓ 72 / 82 dBμV output power



LR 10 E LT00

2.4 GHz CATV+SAT Receiver

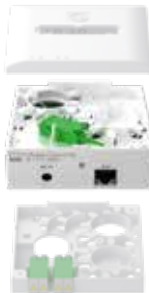
- ✓ Extension for the LR 10 series, intended for mounting on passive baseplate
- ✓ Optical receiver for distribution of CATV and SAT
- ✓ Automatic output level control (ALC)
- ✓ DC powered via RF output
- ✓ Frequency range 47... 2400 MHz
- ✓ 75 / 80 dBμV output power
- ✓ LED for displaying optical input power



LR 10 E LM00

1 Gbps Mediaconverter

- ✓ Extension for the LR 10 series, intended for mounting on passive baseplate
- ✓ Media converter functionality for P2P ethernet connections over FTTH infrastructure



LR 10 E LD00

1 Gbps Mediaconverter incl. 1 GHz CATV RX

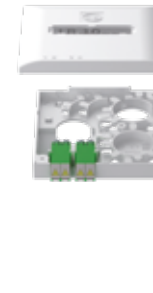
- ✓ Extension for the LR 10 series, intended for mounting on passive baseplate
- ✓ Media converter functionality for P2P ethernet connections over FTTH infrastructure
- ✓ Integrated optoelectronic CATV receiver for o/e-conversion of broadcast TV signals



LR 10 K LB0x

FTTH network termination with 2/4 LC/APC connectors

- ✓ Extension for the LR 10 series, intended for mounting on passive baseplate
- ✓ Modular platform for easy migration with extension modules
- ✓ Wall-mounted FTTH network termination
- ✓ LC/AP Ports



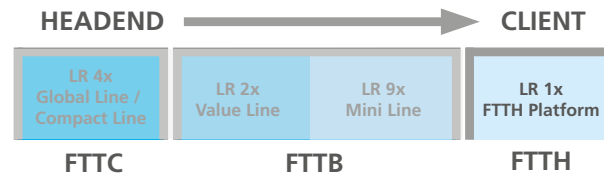
OPTOPUS FTTH

LR 11

FTTH Fiber Node



- ✓ Perfect for FTTH deployments
- ✓ Created for living room environments
- ✓ Sleek design to accommodate modern living ambients
- ✓ Single fiber operation
- ✓ DOCSIS 3.1 RFoG Node
- ✓ Upstream with 65 MHz or 204 MHz or remote switchable
- ✓ Optical ALC ensures a smooth rollout and operation



OPTOPUS Accessories



LD 7x

Optical passive Networks

- ✓ Fit LX 50 and LX 52 as well as LP 40
- ✓ CWDM / DWDM filters
- ✓ Custom filter types available



LD 9x

Optical passive Networks

- ✓ Fit LX 50 and LX 52 as well as LP 40
- ✓ Singel, dual, triple, quad splitter
- ✓ Variable attenuator



LP 9x

19" optical passives

- ✓ 1 RU size
- ✓ different splitting factors
- ✓ WDM versions available



LP 40

19" passives shelf

- ✓ 19" shelf to hold optical passive LD modules
- ✓ LP 40 up to 4 modules
- ✓ LP 40 0014 up to 14 modules

OPTOPUS Optical Passives.

LD 7x

Optical passives



- ✓ LD 71 - single filter
- ✓ LD 72 - dual filter
- ✓ LD 74 - CWDM filter
- ✓ LD 75 - DWDM filter
- ✓ LD 76 - CWDM OADM
- ✓ LD 77 - DWDM OADM
- ✓ LD 78 - Circulator

LD 9x

Variable Attenuator



- ✓ LD 91 - single splitter
- ✓ LD 92 - dual splitter
- ✓ LD 93 - triple splitter
- ✓ LD 94 - quad splitter
- ✓ LD 95 - variable attenuation

LP 9x

PLC splitters for RFoG and FTTx networks



- ✓ Optical PLC splitter module LP90 for FTTx applications in 1RU
 - 1:8 splitter LP90 0108
 - 1:16 splitter LP90 0116
 - 1:32 splitter LP90 0132
 - 1:64 splitter LP90 0164
- ✓ Insertion loss:
 - ≤ 10.5 dB (1:8)
 - ≤ 13.8 dB (1:16)
 - ≤ 17 dB (1:32)
 - ≤ 21 dB (01:64)

LP 40

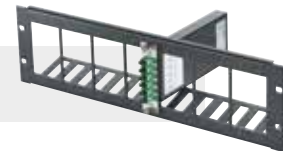
19" rack mount



- ✓ Up to 4 passive optical modules LD in 19" 1RU
- ✓ Different optical modules available, e.g. WDM filters, splitters

LP 40 0014

19" rack mount



- ✓ Up to 14 passive optical modules LD in 19" 1RU
- ✓ Different optical modules available, e.g. WDM filters, splitters

Just Facts

"The art of cleaning during the installation process"

When a fiber optic network is installed, a specific installation routine must be followed in order to have a quick and error-free operational network. It's helping to keep this phrase in mind: "First time right."

WISI Tools

We provide several different tools to help you make the most out of your WISI products. The tools give you easy access to support such as forums, FAQ's and help with configuring your installations. They are available without any extra fee for all customers.

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WISI Online Catalog

Item catalog, datasheets & more

If you are looking for technical information and downloadable data sheets about our different products, our online product catalog is the place to go to!

wisiconnect.tv



WISI Connect

Register for manuals & firmware updates

WISI Connect is our support site where you can register and manage your units, download software, read FAQs and submit support tickets.

HFC Manager APP



WISI Control

Control & manage your Bluetooth enabled devices

The WISI HFC Manager+ is an application for field technicians. Use this tool to monitor and configure your WISI fiber nodes. Easily download and install it on your Mobile.



Engineered to Perform



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