Innovative
Communication
Technologies

Products & Services Portfolio

Link S.A

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Innovative Communication Technologies

LINK S.A. Activities & Expertise

- Representation of well established international telecommunication equipment vendors
- Manufacturing and Integration of optical network equipment
- Turn key fiber optic networks implementation
- Submarine fiber optic links construction
- Access networks implementation (copper or fiber xDSL/ xPON / Ethernet)
- Technical Support & Maintenance Services
- Consultancy Services on the field of fiber optic networks

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Our International Partners

3M

EMTELLE

Nilko

ofs

SEIKOH GIKEN

PATTON Electronics Co.

CANOVATE GROUP

HUBER+SUHNER

ZHONE

ACOME

HUBBELL

MITRA ENERGY & INFRASTRUCTURE POWER NEEDS POWER DEEDS

Sorrento NETWORKS Optical networks made simple

LG-ERICSSON

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Key Accounts

ΚΟΙΝΩΝΙΑ ΤΗΣ ΠΛΗΡΟΦΟΡΙΑΣ

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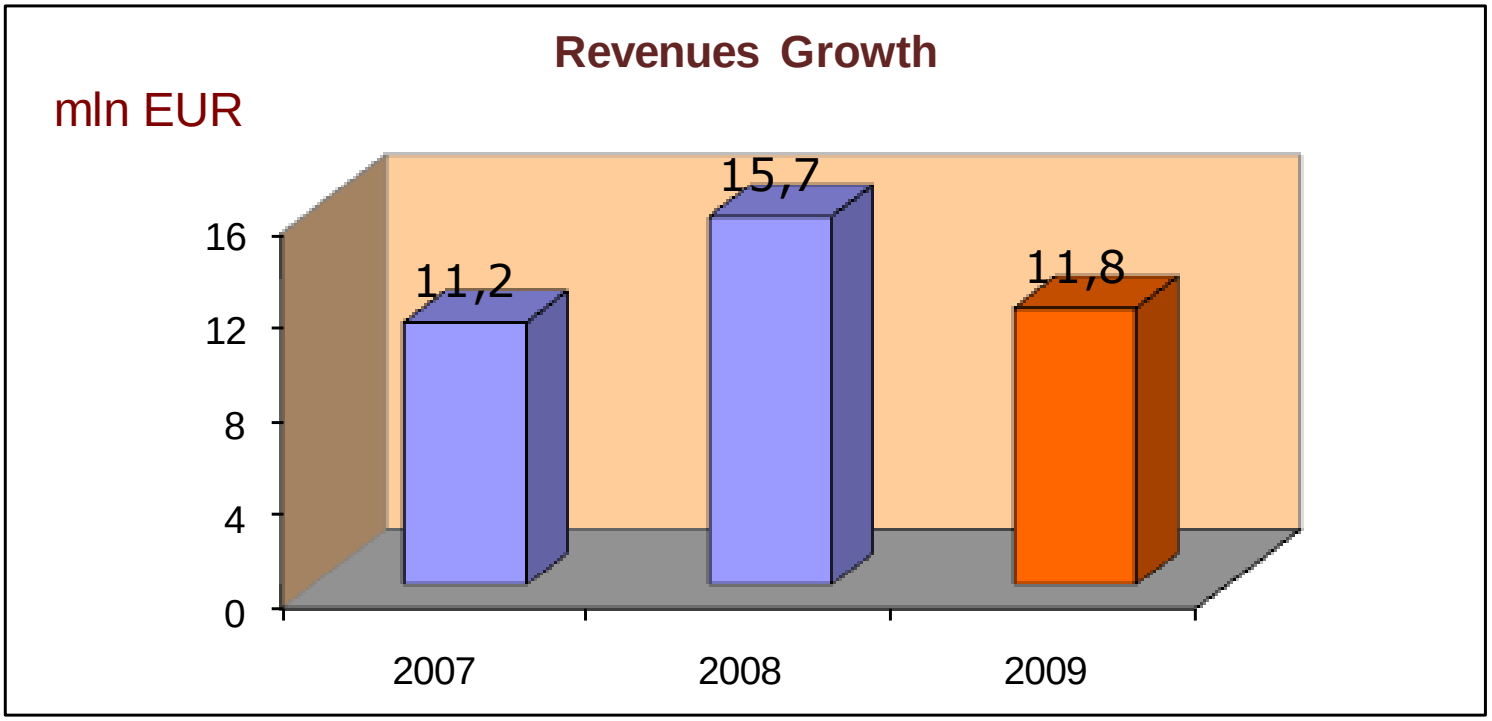
Accomplishments

- More than 1500km complete construction of fiber optic network
- Design, Installation & Maintenance of ON Telecom's CWDM metro transmission network
- Design, Installation & Maintenance of more then 60 xDSL MSAN nodes for HOL
- ZEP Kozanis FTTH Project

Revenues Growth



Market Opportunities

- Broadband infrastructure projects financed by EC
- Operators' demand for innovative products and services
- The trend for fast deployment of Fiber To The Home (FTTH)
- New customers with specific broadband needs

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Future Goals

- Strengthen our position on the broadband telecommunication market
- Expand towards the wider Balkan area
- Enlarge our integrated telecom products and services
- Enhance our presence on the Energy cabling and infrastructure market

Our FTTH Network Policy

- Developing a complete yet versatile portfolio that can be adjusted to all possible types of FTTH network requirements
- Selecting the optimal combination of equipment and practices aiming to fulfil operators' needs
- Proposing practical, operational and cost effective solutions adjusted to the local landscape

Cables

Fibers

- OFS AllWave® Zero Water Peak (ZWP) single-mode optical fiber is the industry's first full-spectrum fiber designed for optical transmission systems operating over the entire wavelength range from 1260 nm to 1625 nm

Blown Cables

- MiDia ® FX Cable: reduced diameter, blown cable, up to 144 fibers
- AccuBreeze™ FX Cabled Fiber Unit: up to 12 fibers bundle

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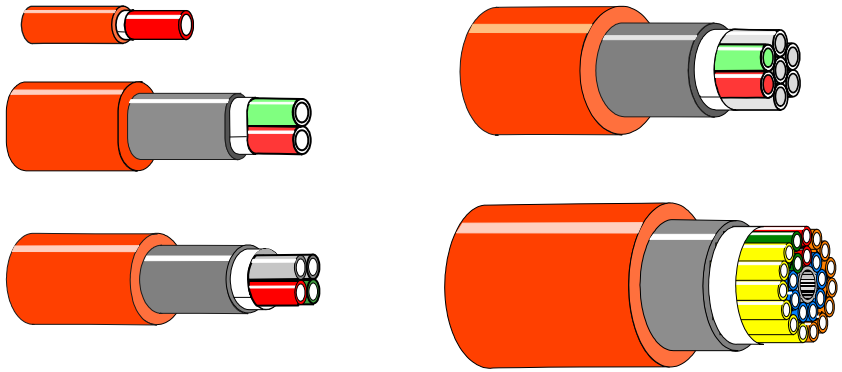
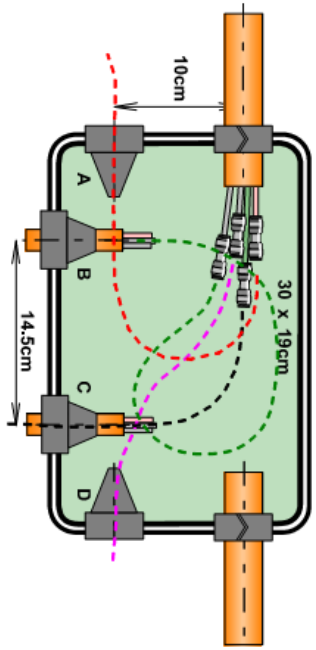
Products

Multiducts & Accessories

EMTELLE

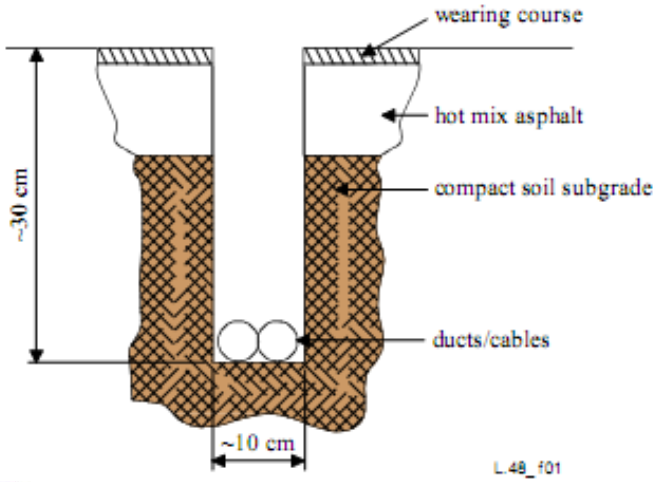
- Complete dimension variety
- Direct Burial & Direct Installation products
- Inner Aluminum sheath to provide better moisture and anti rodent performance





Civil Works / Mini and Micro Trenching Techniques

ITU-T Recommendations L.48/L.49



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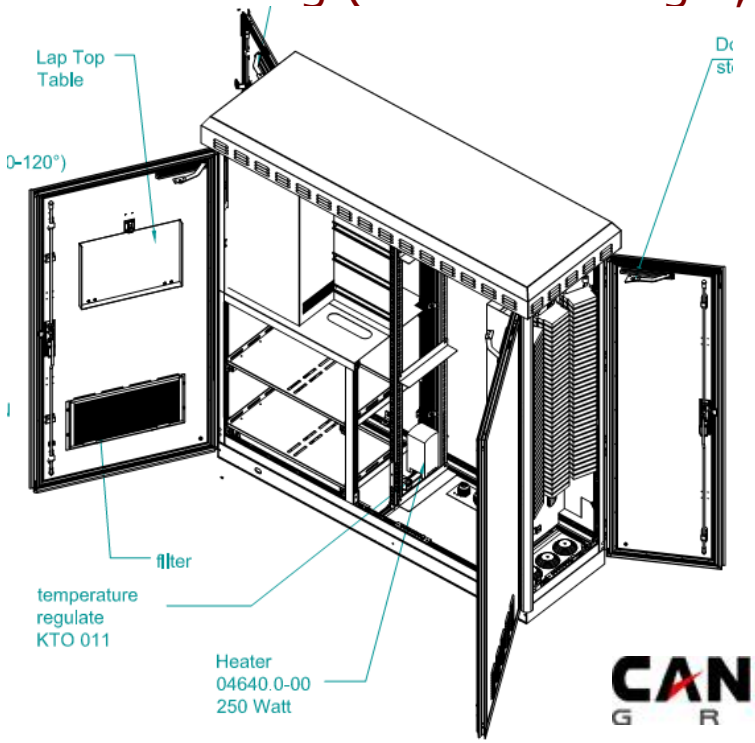
Products

Outdoor Cabinets

- Customised Cabinets for outdoor installations
- Aluminium or stainless steel frame
- Special design for active equipment hosting (heat exchanger, filters, fans, double wall IP 55 e.tc.)



Nilko

CANOVATE GROUP

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Products

Power Supplies

MITRA ENERGY & INFRASTRUCTURE
POWER NEEDS POWER DEEDS

- DC Power Systems from 500W to 15,6KW
- N+1 power redundancy
- Hot swappable and field replaceable rectifiers
- Remote Feeding system up to 900W
- New enhanced NMS

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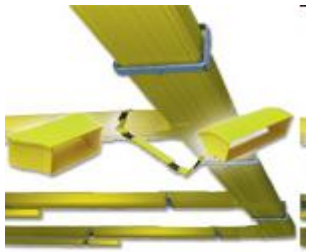
Products

Central Office ODFs

HUBER+SUHNER



- MultiCircuit and SingleCircuit compact module technology for FrontAccess
- Ultra High Density systems
- Static fiber management without moving parts
- Modular frame design

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Products

Passive Network Components

Optical splitters -attenuators - jumper wires - pig tails

HUBER+SUHNER

SEIKOH GIKEN

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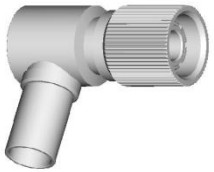
Products

Passive Network Components



RF Coaxial Cables and Connectors

HUBER+SUHNER

PATTON Electronics Co.

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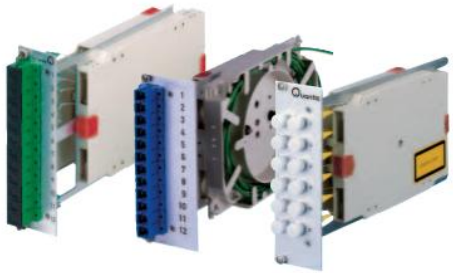
Optical Distribution Frames

3M

High and Medium Density Modular Distribution Frames



3M™ FO-19" Patchpanel

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Products

Splice Closures

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Multi circuit splice closures

BPEO & Dome

HUBER+SUHNER

- Single circuit and ODF type splice closures

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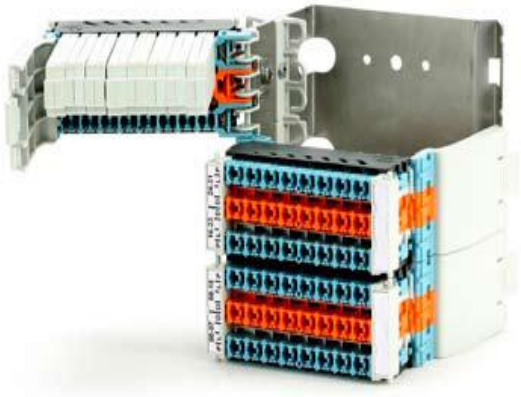
Products

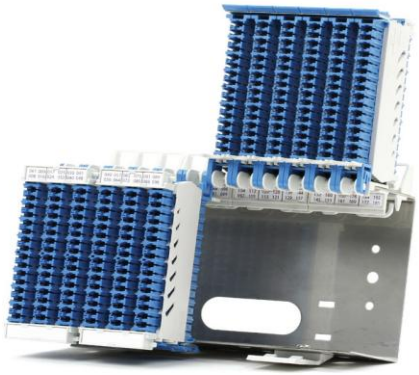
Fast Mechanical Connectivity

3M



3M™ BRCP integrated splitter block
Terminal block for all access ports in xDSL transmission

The 3M™ High Density Block BRCP-HD
High Density Terminal Block for xDSL and NGN Equipment Interconnection



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Products

Fast Mechanical Connectivity

3M

- **Fibrlok** mechanical connector
- Loss =0,1 dB
- Time to connect <2 min
- No need for expensive splicing equipment

- **No Polish** mechanical connectors
- Loss =0,5 dB
- Time to connect <2 min
- No need for expensive splicing equipment

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Products

Structure cabling products

HUBBELL

Server racks, Cat 6a,6 & 5e Patch Panels, jacks and cables

Complete indoor optical solutions “Plug n Play system”

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Products

Transport Solutions

Sorrento NETWORKS
Optical networks made simple™

- DWDM & CWDM Carrier Grade systems
- Up to 40G traffic Capacity
- Support for extended distances up to 250km
- SNMP and browser-based GUI NMS
- Multi-protocol service ports
- Various solutions on Optical Filters

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Products

Network Access Solutions

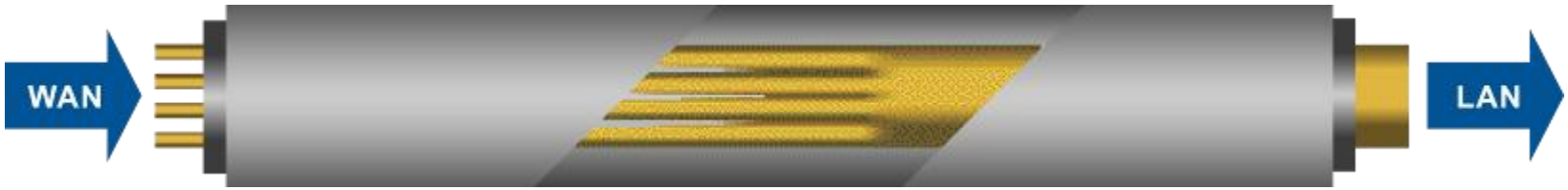
ZHONE

- ADSL2+ / VDSL2 / EFM services
- Narrowband, Specials, T1 / E1
- Universal Access for Triple Play
- Resilient Packet Ring (RPR)
- Integrated Voice Gateway: GR-303 / V5.2

EFM Technology Advantages

ZHONE

EFM enables any service, over any wire, to deliver Ethernet access anywhere.



Fiber capacity & quality over copper pairs

- Lower Overhead
- Lower BER
- Hitless operation – resilient bonding
- Low jitter & latency
- QoS and CoS – prioritization & shaping

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Products

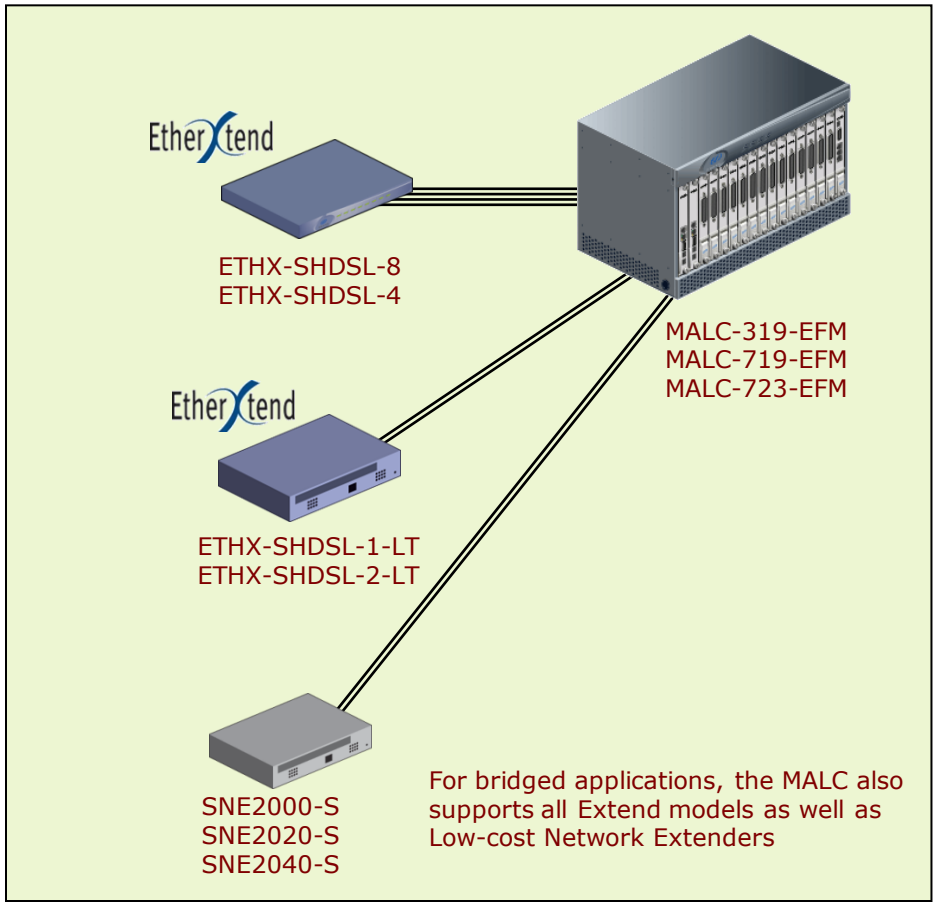
EFM Achievable Data Rates

ZHONE

Distance (m) SHDSL	Normal Rate (1 line)	Loop Bonded (2 lines)	Data Rate (4 lines)	Data Rate (8 lines)
1350	5,7 Mbps	11,4 Mbps	22,8 Mbps	45 Mbps
2400	4 Mbps	8 Mbps	16 Mbps	32 Mbps
3000	2,6 Mbps	5 Mbps	10 Mbps	20 Mbps
3660	2,064 Mbps	4,128 Mbps	8,25 Mbps	16 Mbps
5040	784 Kbps	1,56 Mbps	3,12 Mbps	6 Mbps
5520	528 Kbps	1,05 Mbps	2,1 Mbps	4 Mbps
5820	400 Kbps	800 Kbps	1,6 Mbps	3 Mbps
6060	272 Kbps	544 Kbps	1 Mbps	2 Mbps
7620	144 Kbps	288 Kbps	576 Kbps	1 Mbps

EFM Deployment Options

ZHONE



Many carriers upgrade to Carrier Ethernet using EFM Or Ethernet over copper (EoC) for E-Line, E-LAN and VPLS services.

Up to 45,6 Mbps by bonding 8 G.SHDSL.bis pairs.

Other deployment options include:

- Point – to – Point (EtherXtend)
- Multi – Point (EtherXtend)

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FTTx – WDM PON

LG-ERICSSON

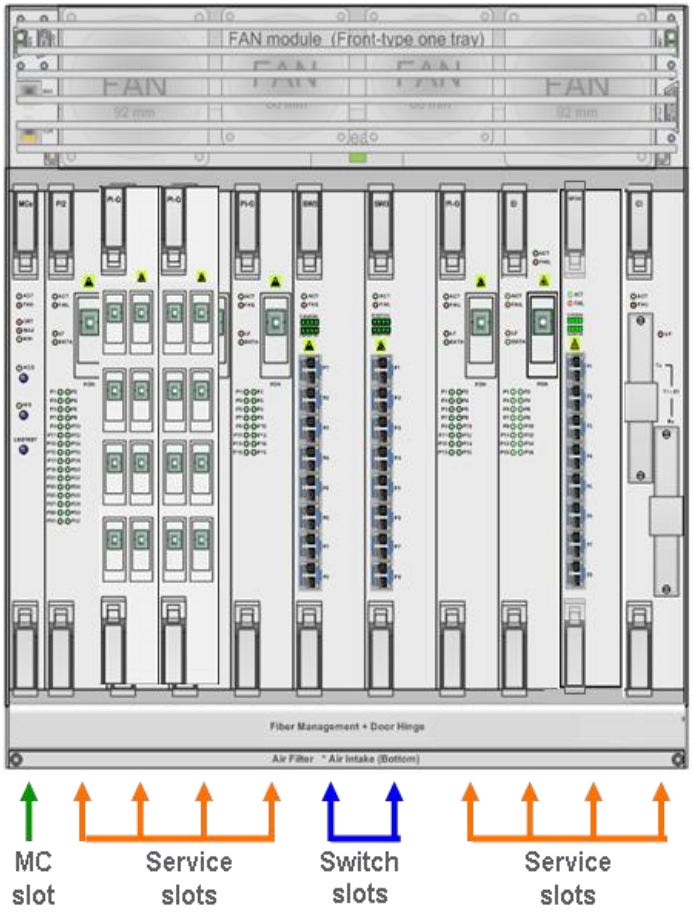
Ethernet Access 1100

Next Generation Fiber Access platform
with an evolution to 40G per slot

Carrier-grade 11-slot chassis, 8 Service Slots
- 19” (W) x 10U (H) x 14” (D); 4 shelves/2.2m rack
- Integrated cooling units & maintenance ports
- 8 Universal Service Slots

Integrated Packet Fabric
- Redundant, 1+1 protected 240G Switch Fabric
- Up to 8 SFP+ uplinks (GE / 10GE) per Switch card

Service Interfaces
- Ethernet WDM PON
  - Single Port/Single Fiber Working/Colourless
  - ITU-T G.8032 E-SPRING Support
  - 32 wavelength / 100Mbps
  - 16/32 wavelength / 1Gbps
- E1/T1 Circuit Emulation Service card
  - 32xE1/T1 per CES interface card



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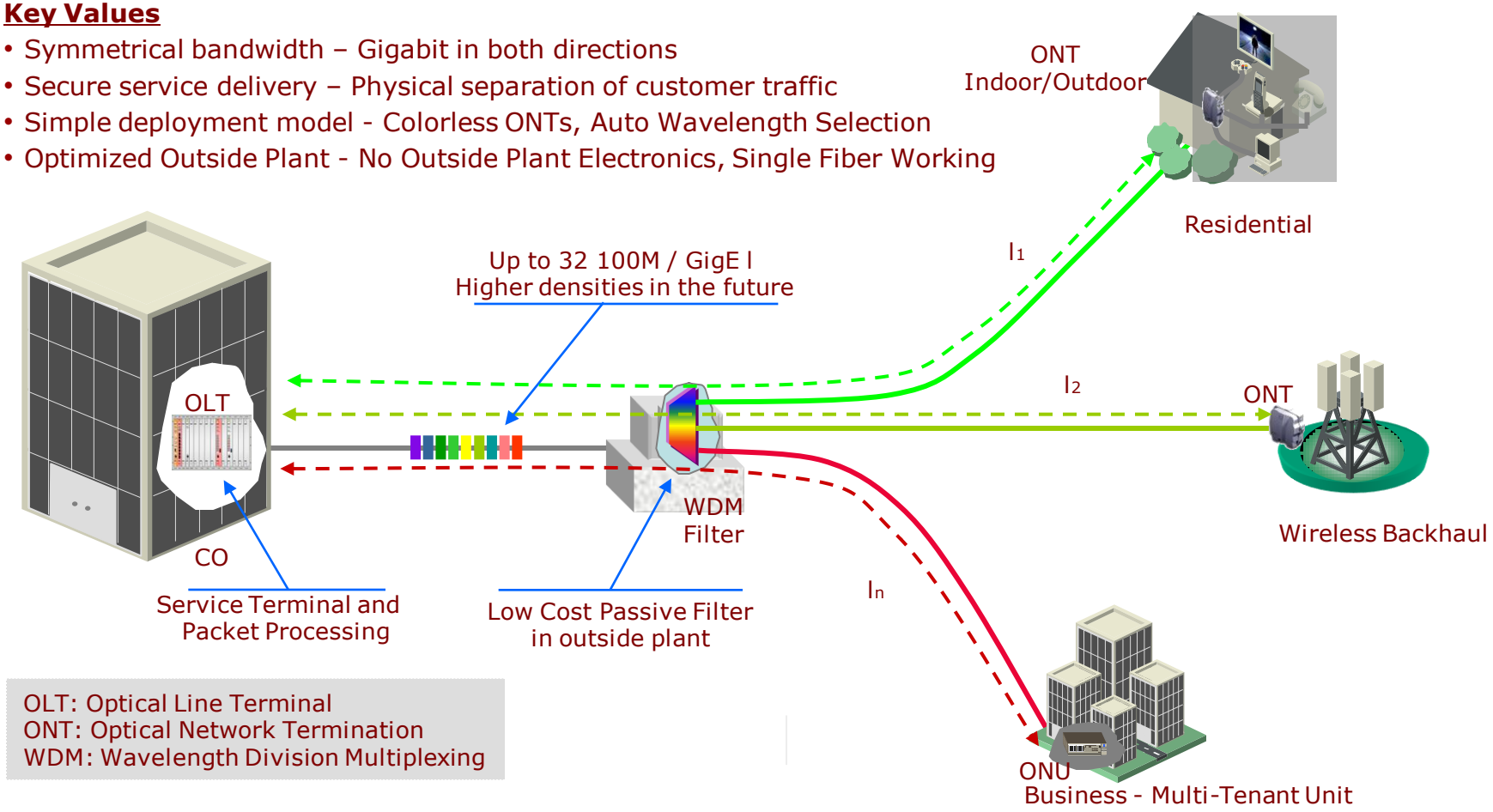
Products

FTTx – WDM PON

LG-ERICSSON

Key Values

- Symmetrical bandwidth – Gigabit in both directions
- Secure service delivery – Physical separation of customer traffic
- Simple deployment model - Colorless ONTs, Auto Wavelength Selection
- Optimized Outside Plant - No Outside Plant Electronics, Single Fiber Working



OLT: Optical Line Terminal
ONT: Optical Network Termination
WDM: Wavelength Division Multiplexing

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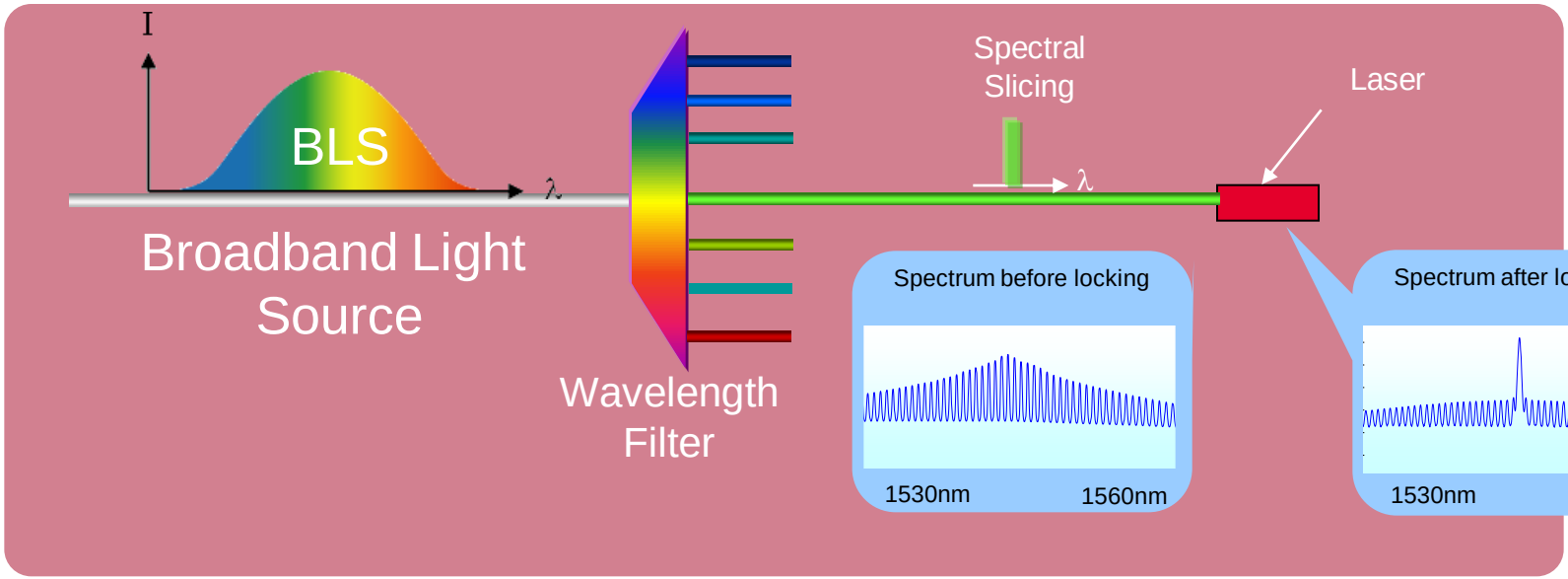
Products

FTTx – WDM PON

LG-ERICSSON

Automatic Wavelength Locking



Colourless ONUs

→Low inventory management cost

→Elimination of high cost wavelength-specific lasers

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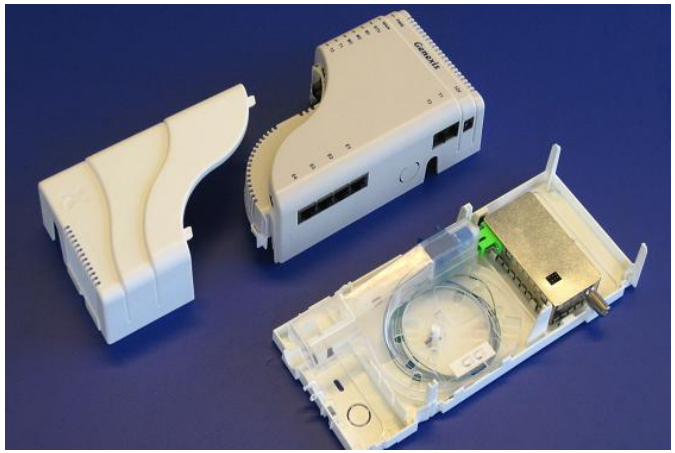
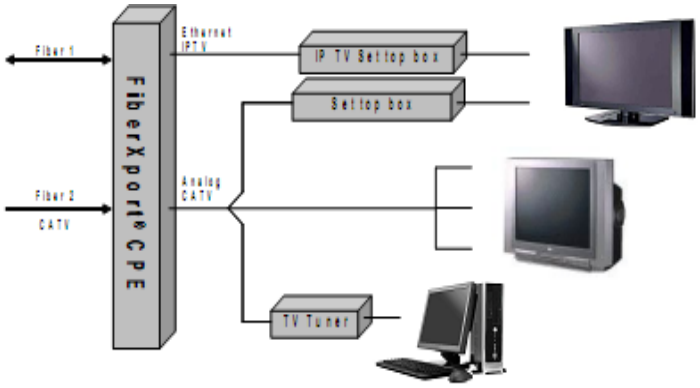
Products

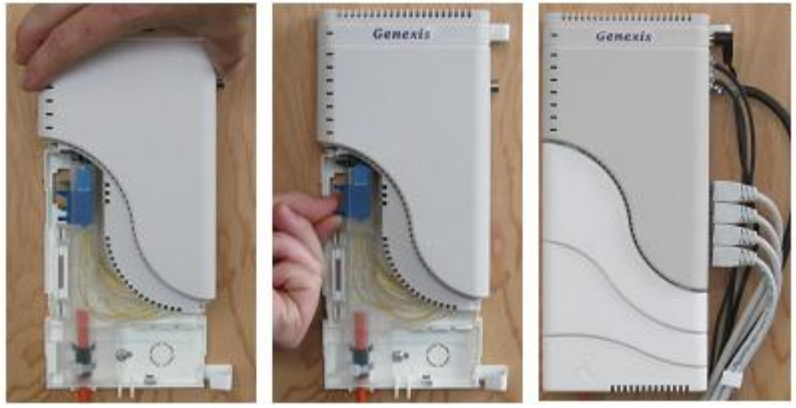
FTTH CPEs

Genexis
fiber to the home



- Double Functionality Fiber Termination + CPE
- Media Converter Functionality or
- Managed Ethernet Gateway or
- Managed Ethernet + VoIP Gateway or
- Managed Gigabit Ethernet Gateway





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Special Access Applications

PATTON Electronics Co.

- Network Ethernet extenders
- DSL CPEs
- Voip Gateways & Routers

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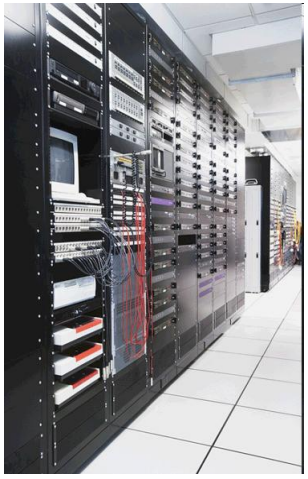
Professional Services

- First & Second Level Support for layer 2 technologies
- Installation & Commissioning services
- Acceptance testing services
- Network Design and implementation services (turn key Projects)



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