



Your strategic partner for voice and data  
telecommunications networks

## TELECOMMUNICATIONS PRODUCT CATALOGUE

HFC

FTTH-I+M

FTTH-Deployment

Data Center

FTTA

Tools & PPEs

Active Elements

## **HFC Hybrid Fibre-Coaxial**

Hybrid fibre optic network incorporating fibre optic and coaxial cable.

The fibre optic network connects the main nodes to intermediate nodes which are connected to the home via a coaxial network.

Coaxial Cabling

Connectors

Passive RF

## HFC\_Coaxial Cabling

### RG 59 Cable



Copper clad steel wire. Foam (injected gas) bonded to the centre conductor. Aluminium tape bonded to the dielectric. 77% Aluminium braiding. PVC Cover.

### RG 6 Cable



Copper clad steel wire. Foam (injected gas) bonded to the centre conductor. Aluminium tape bonded to the dielectric. 77% Aluminium braiding. PVC Cover.

### Siamese cable



RG6 Siamese coaxial cable. RG6 77% + 1 pair  
0.50mm CU +0.9mm HPE

## HFC Connectors

### Angled FM-FF adapter



F male / F female  
90° angled adaptor

### Female - F-female splice adapter



Suitable for indoor and  
outdoor use at 75  $\Omega$   
nominal impedance.

### RG59 Straight F Connector - Compression



RG59 straight male F  
connector 75  $\Omega$  -  
compression

### RG6 Straight F Connector - Compression



RG6 straight male  
F connector 75  $\Omega$  -  
compression

### Collective antenna splitter



Splitter with 2 outputs  
and standard IEC  
connectors...

### RG6 female IEC connector



IEC female connector for RG6  
Frequency range: 5MHz-  
2200 MHz. Impedance: 75  
Ohm

### RG6 male IEC connector



IEC male connector for RG6  
Frequency range: 5MHz-2200  
MHz. Impedance: 75 Ohm

## HFC Passive RF

### Isolator 1: DOCSIS 3.1 for 1.2 GHz



Isolator with 1 DOCSIS 3.1 output with a frequency range of 5-1218 MHz. (...)

### Isolator 2: DOCSIS 3.1 for 1.2 GHz



Isolator with 2 outputs Suitable for indoor and outdoor use at 75  $\Omega$  nominal impedance.

### DOCSIS 3.1 2-way splitter for 1.2 GHz



DOCSIS 3.1 splitter or pass-through with a frequency range of 5-1218 MHz. (...)

### DOCSIS 3.1 HPF 258 MHz high pass filter



Frequency range of 5-1218 MHz. It lets the high frequencies (258 to 1218 MHz) through and cuts off the low frequencies (5 to 204 MHz) (...)

### 75 ohm F load



75 Ohm non-locking F load.

### 75 ohm F-load safety-TAPs



75 Ohm anti-theft F load.



## FTTH - I+M

Fibre-to-the-home broadband connection.

Connections  
Indoor

Connections  
Outdoor

CTO and Optical  
Rosette Patching

Accessories

## FTTH - I+M / Indoor Connections

**SC/APC 3 MM Indoor Connection**



**SC/APC 4.2 MM Indoor Connection**



**G657A2 - 3MM Indoor Connection Coil 500M**

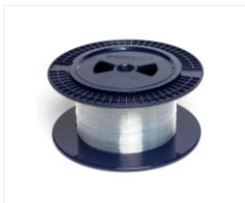


**G657A2 - 2MM Monofibre Cable**



Uses G657.A2 fibre with low bend radius. Connection is used inside buildings to provide individual connections to the FTTH dispersion network or inside the customer's home from indoor optical terminal boxes or in-floor junction boxes (...)

**0.9 mm invisible fibre spool  
G657B3 1FO**



Its small diameter (0.900mm) and transparent cover makes it the solution for installations where the cable should be as inconspicuous as possible. (...)

## FTTH - I+M\_Outdoor Connections

### ECAM Outdoor connection



For outdoor installation under outdoor conditions in overhead lines, trunking or façade in indoor building end sections (...)

### Optitap Outdoor Connection



Optical connection cable with reinforced connector type OPTITAP for outdoor installations in outdoor conditions in overhead, trunking or façade installations as well as indoor building end sections. (...)

### Huawei Connection Outdoor



Optical drop cable with reinforced Bayonet type Easy Clean (BFL) connectors for outdoor installations in outdoor conditions in overhead, trunking or façade installations as well as indoor building end sections.

### Optitap M - Optitap H Extender



Extender for Optitap M - Optitap H connections

### Bayonet M - Optitap H Extender



Bayonet M - Optitap H Drop-in Extender

### Bayonet M - Bayonet H Extender



Bayonet M - Optitap H Drop-in Extender

### Optitap SC/APC Measurement Probe



Optitap to SC-APC Measurement Probe. Cord required for testing outdoor CTOs with Optitap type connectors.

### Huawei SC/APC Probe



Bayonet to SC-APC Measurement Probe. Cord required for testing outdoor CTOs with Bayonet type connectors.

### 3m Measurement Probe. Minicam



Ecama Connect to SC-APC Measurement Probe. Cord required for testing outdoor CTOs with Ecama Connect type connectors.

### G657A2 Indoor / Outdoor Drop SC/APC



Pre-connectorised outdoor drop with a SC/APC connector at one end, made with 4.6mm black cable, with 3mm white inner sub-cable. Indoor use. Uses G657.A2 fibre with low bend radius.

### Outdoor Prodigy Drop



Optical drop cable with reinforced Prodigy type connector, compatible with optitap and bayonet connectors for outdoor installations in outdoor conditions in overhead, trunking or façade installations as well as indoor building end sections.



## FTTH - I+M\_CTO and Optical Rosette Patching

### SC/APC-SC/APC Adapter



Female to female adapter, for simplex SC/APC connectors with dust cap.

### SC/APC 0.9-2-3MM Mechanical Connector



Pre-polished mechanical connector SC/APC SM for 3 mm, 2 mm and 0.9 mm cables.

### LC/APC-AS/APC Cord



### SC/APC-SC/APC G657A2 LSZH Cord



### LC/APC - LC/APC Cord



Optical cable consisting of a G.657.A2 low bend sensitivity, monofibre optical fibre with an outer diameter of 3mm fitted at both ends with standard SC/APC or LC/APC connectors, available in different versions. Use indoors at the customer's premises for interconnection between the customer's FTTH equipment and the optical rosette. Angled polishing according to APC standard. Housing made of halogen-free, low flame-spread plastic material (LSZH).

### P/G657A2 Transition Optical Rosette



Rosette and tray for transitioning cable from outdoor to indoor.

### P/G657A2 Optical Rosette + Pigtail + Adapt



End-of-line rosette kit, subscriber end connection, with tray. Thermoplastic material. (...)

## FTTH - I+M\_Accessories

### 5.2 mm Cable Grommet



Polypropylene wall bushing for FO outdoor cable.

### FO Outdoor Drop Cable Retainer



The movable part slides and rotates inside the main body to exert forces that allow the cables to be retained. (...)

### 6x7 Cable + 1 galvanised 4 mm.



Made of galvanised braided steel strands. 1,000 m cable reel for multiple uses.

### THT00152 E-ring for external supply drop cable



Due to its design, installation and uninstallation is extremely easy and prevents accidental release.

### Type 1 Ring for Wall clamp



Ring to be attached to the clamp for fastening additional telephone cables to walls, façades and poles. Ring type 1 is suitable for clamps 00, 0, 1, 2 and 3.

### Retainer anchorage for drop cable



Pole anchorage for fixing hooks to drop cable retainers.

### Drop Cable Retainer Hook



Fixing hook for fibre optic cables on walls, columns, concrete towers and wooden poles. (...)

### Field Installation Connector



Used in indoor FTTx installations where simple, fast and reliable patching of customer drop cables or monofibre patch cords is required. (...)

## FTTH - DEPLOYMENT

FO backbone construction to provide broadband service.

Power supply networks

Distribution networks

Cabling

Shutters and  
accessories

Splice boxes

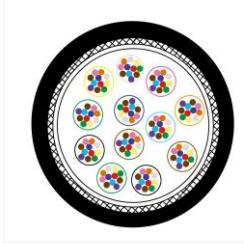
Termination  
boxes

Fasteners

CWDM/DWDM  
Solutions

## FTTH - DEPLOYMENT\_Cabling

### Flexitube KT



Flexible and easily strippable multi-tube loose cable for indoor installation. Tensile elements composed of two glass fibre reinforced rods (GRP). LSZH thermoplastic outer sheath. The number of fibres ranges from 8 to 64 FO.

### KP



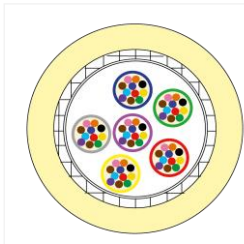
Gel-filled multi-tube loose cable for outdoor installation. Tensile elements composed of aramid yarns and polyethylene outer sheath. The number of fibres ranges from 12 to 576 FO.

### KT



Gel-filled multi-tube loose cable for indoor installation. Tensile elements composed of aramid yarns and polyethylene outer sheath. The number of fibres ranges from 8 to 512 FO.

### Riser



Flexible and easily strippable multi-tube loose cable for indoor installation. Cable for vertical deployment of FTTH networks. Tensile elements composed of aramid yarns. LSZH thermoplastic outer sheath. Euroclass Dca. The number of fibres ranges from 8 to 64 FO.

### VP



Gel-filled multi-tube loose cable with dielectric reinforcement for outdoor installation. Traction elements composed of fibreglass and polyethylene sheath. The number of fibres ranges from 12 to 572 FO.

### PKP



Gel-filled double sheathed multi-tube loose cable for outdoor installation. Tensile elements composed of aramid yarns and polyethylene outer sheath. The number of fibres ranges from 12 to 576 FO.

## FTTH - DEPLOYMENT \_ Shutters and Accessories

### Shutters



This element seals a PVC, PE or metallic trunking and a fibre optic cable or any other type of cable, thus guaranteeing that no fluids, gases, etc. can enter. Consisting of multi-layer sheets, sealing tape, inflation cannula and shut-off valve. Temperature range is -20°C to +60°C with an inflation pressure of 350 kPa ± 0.5 kPa.

We recommend inflating with our dedicated inflator to adjust the required pressure to the shutter.

Models: 25/32/40/63/110



### Inflator



Portable inflator with battery and charger included in case, pressure regulator, includes adapter to attach the shutter cannula for proper inflation. Built-in pressure gauge.

## FTTH - DEPLOYMENT \_ Splice Boxes

### Divicau



Fibre optic splice box with universal access where optical splitters are housed to perform segregation and division of multi-fibre cables in point-to-multipoint optical network deployments.

Allows up to 352 F.O. mergers. IP68 dust and water protection. It can accommodate up to 10 optical splitters.

### Minicau



Compact splice and segregation box for small and medium sized optical cables. Up to 128 F.O. mergers. IP68 dust and water protection.

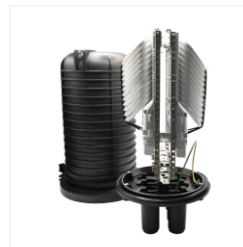
It can accommodate up to 16 PLC optical splitters and the input/output of up to 12 fibre cables.

### Cau



Universal access fibre optic splice box, allows continuity and segregation of high capacity optical cables. Allows up to 512 F.O. mergers. IP68 dust and water protection.

### Torpedo



Vertical splice closure with universal access for continuity and segregation of medium and high-capacity optical cables. Up to 672 F.O. mergers. IP68 dust and water protection.

## FTTH - DISPLAY \_ Termination Boxes

### Outdoor

**16-port Outdoor CTO**



Box for continuity and segregation of optical cables allowing the connection of 16 individual optical connections to the customer's premises. Shafts 2 slots for cassette-type splitters. Supports up to 96 F.O. mergers. IP65 dust and water protection.

**8-port Outdoor CTO**



Box for continuity and segregation of optical cables allowing the connection of 16 individual optical connections to the customer's premises. Shafts 2 slots for cassette-type splitters. Supports up to 96 F.O. mergers. IP65 dust and water protection.

**16-port Compact Outdoor CTO**



Compact box for optical interconnection allowing the connection of 16 individual optical connections to the customer's premises. Supports up to 96 F.O. mergers. Housing for 1 PLC type optical splitter. IP65 dust and water protection.

**8-port Outdoor Mini CTO**



A very compact box for optical interconnection that allows the on-demand connection of 8 individual optical connections to the customer's premises. Housing for 1 PLC type optical splitter. IP65 dust and water protection.

### Indoor

**4/8-port in-floor junction box**



Junction box that allows the vertical distribution cable of the building to be segregated at ground level, enabling the quick and direct connection of individual optical connections to the customer's premises. Internal panel with 4 or 8 SC type optical adapters.

**12-port in-floor junction box**



Junction box that allows the vertical distribution cable of the building to be segregated at ground level, enabling the quick and direct connection of individual optical connections to the customer's premises. Internal panel with 12 SC type optical adapters.

**16-port in-floor junction box**



Junction box that allows the vertical distribution cable of the building to be segregated at ground level, enabling the quick and direct connection of individual optical connections to the customer's premises. Internal panel with 16 SC type optical adapters. It can accommodate one 1:16 splitter or two 1:8 splitters.

## FTTH - DEPLOYMENT \_ Fasteners

**M10 X 300 DIN 976 threaded rod, with 4 nuts**



Intended for installation of copper splices and installation of universal CAU bracket or fibre optic splice bracket.

**57x57x6 mm square washer**



Intended for installation of studs in multiple supports.

**Cable backup storage holder**



Facilitates the proper storage and fastening of surplus optical cable or drop cable in the immediate area of optical terminal boxes or splice boxes. Made of fully dielectric thermoplastic material. Can be fixed to poles, façades or walls.

**M 16 X 360 DIN 976 threaded rod, with 4 nuts**



Intended for installation of multiple supports

**Aerial anchor clamp**



Anchor clamp for fibre optic cables on poles or façades, for cables up to 22mm in diameter. Breaking load of 200daN

**Multiple bracket for installation of the universal service connection retainer on poles**



The following materials will be required for installation: 1 M16 X 360 stud + 4 square washers + 4 M16 nuts.

**Aerial tension clamp**

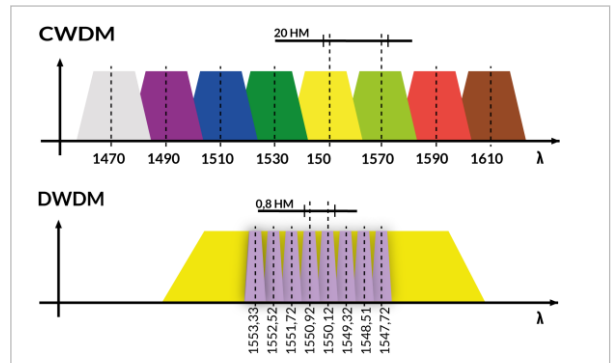
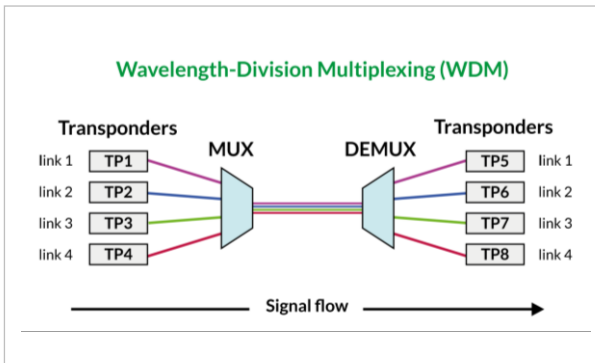


Tension clamp for cables from 4 to 14mm in outer diameter, for pole or façade installation, aluminium alloy body with high mechanical strength. Two U.V. protected synthetic wedges.



## FTTH - DEPLOYMENT \_ CWDM / DWDM Solutions

WDM technology involves combining several wavelengths on the same fibre simultaneously. Each optical channel can support any transmission format. WDM technology dramatically increases the capacity of a fibre network, known as Layer 1 transport technology at all levels of the network.



A WDM system requires a multiplexer at the transmitter to join the various signals and a demultiplexer at the receiver to separate them, as shown in the following illustration.

CWDM and DWDM are two effective methods to meet the growing bandwidth demand.

The main difference between these two solutions is the channel spacing. The channel spacing in CWDM is wider.

DWDM is more beneficial for those requiring higher bandwidth. CWDM is cheaper and suitable for shorter distances.

DWDM is able to reach a greater distance than CWDM because DWDM wavelengths are widely integrated into the fibre during light transmission.

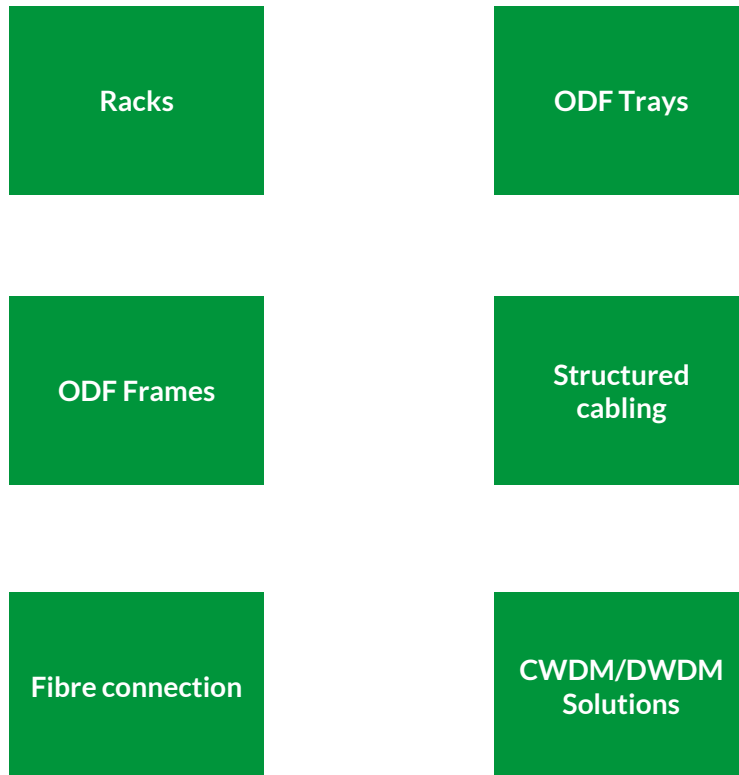
### Transceivers type



- 100/200/400/800G
- 10/25/40G
- 100mb/1G

## DATA CENTER

An installation that provides shared access to applications and data through a complex network, computing and storage infrastructure.





## DATA CENTER\_Racks

Racks

Trays

Panels

Accessories

## DATA CENTER\_Racks

**Wall 6u 600x450x370 with glass door rack, 12 screws + nut, black**



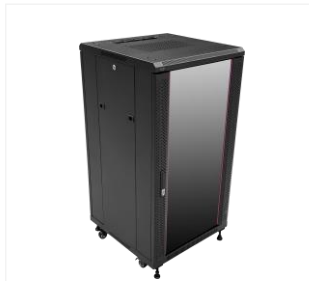
19" wall/floor racks for general purpose use. Wall mounted 19" glass door rack cabinet, 60kg load capacity.

**600AX450F mounted 12u rack, 60 Kg. Lockable door**



19" wall/floor glass door rack cabinets. 12U 635x600x450mm glass door wall mounted rack cabinet, load 60kg

**600x600x1166mm 22u glass door rack, castors + 24 screws + nuts**



19" glass door rack cabinets. 800Kg load, glass front door + metal rear door, 4 castors + lifting feet. (...)

**32u 600x600x1610 glass door rack, castors, 24 screws + 80 nut**



19" glass front door floor standing racks. 19" floor standing rack, 32U, F600 / AN 600 / AL 1610mm, 800kg load.

**42u 800x800x2055 glass door wheeled general rack, 24 screws + 80 nut**



19" glass door rack cabinet 42U 2055x800x800mm glass front door + metal rear door rack, 4 castors + lifting feet. (...)

**42u 800x1000x1992 perforated doors server rack, 180° castors, 1050kg**



Floor standing server cabinet. 19" 1050Kg load rack -server use - 42U 1992x800x1000mm rack cabinet, double opening front grille door + double rear grille door, 4 castors + feet.

## DATA CENTER - RACKS / Trays

### 35 cm universal sliding tray



600 mm deep rack -  
1u front/rear  
support. 35 Kg

### 35 cm extendable fixed universal tray



600 mm deep rack. 1u  
Front/rear fastening.  
Load of 100 Kg.

### 2u fixed reinforcement tray



Fixed trays with  
front fastening

### Universal fixed tray extendable 55cm rack, f800 mm



19" fixed tray with  
telescopic front/rear  
fastening

### 19" telescopic fibre tray



24 SC/LCdx, 2band  
x 12 fus (without  
adapters)

### 2u 19" rack metal tray, rails and key



Metal drawers for  
documentation/tools  
2u with key.

## DATA CENTER - RACKS / Panels

19" Keystone FTP 24 90-180° empty panel



600 mm deep rack - 1u  
front/rear support. 35 Kg

1u brush panel to be screwed on enclosed base



Rack cable organiser.  
1U metal 19" brush  
panel to be screwed  
open at the bottom.

19" metal blank panel



19" metal blank panel  
for screw mounting

19" panel including DIN rail, 3U.



19" black fixed tray  
with telescopic  
front/rear fastening

19" cat6 utp 24p 50 micron dual patch panel.



19" Cat6 UTP 24p  
1U 180° dual panel  
with rear frame

19" Keystone FTP 24 90-180° empty panel



19" Empty Patch  
Panel for FTP 24p, 1U  
rear rack, front label

## DATA CENTRE - RACKS / Accessories

### 19" Keystone FTP 24 90-180° empty panel



In-line couplers are the solution for cases where continuity is needed in a twisted pair cable.

### Single fan with 120x120x38mm cover and metal protector



Wall Rack Fan with grille (16w 50Hz, dimensions 120x120x38mm)

### 19" rack 4 units ventilation module, on/off thermostat



Set of 4 fans for 19" telescopic rack with on/off thermostat

### 1U cable organiser 5 plastic rings



19" rack cable organiser. Open base organiser and 5 plastic rings.

### 19" 6 Shukos power strip with overvoltage protection. 2 m cable



Multiple socket outlet with 6 earthed socket outlets, positioned at an angle of 45°, with overvoltage protection and safety switch

## DATA CENTRE - ODF Trays

### 72 FO optical splitter module



High density optical splicing and interconnection module with fibre-to-fibre optical connection capability in FTTH networks. These modules are designed for installation inside standard 19" and 21" racks for telecommunication equipment.

### 1U Modular optical distribution tray



Modular optical distribution tray for rack mounting up to 32 SC type optical adapters. Optical connection distributor with a height of 1U for mounting in 19" racks.

Can act as a modular optical splitter, front patch panel or optical interconnection point. The distribution tray, splice trays and accessories can be removed and slid out from the front for easy access to the fibres.

### 2U Modular optical distribution tray



Modular optical distribution tray for rack mounting up to 64 SC type optical adapters. Optical connection distributor with a height of 1U for mounting in 19" racks. Can act as a modular optical splitter, front patch panel or optical interconnection point. The distribution tray, splice trays and accessories can be removed and slid out from the front for easy access to the fibres.

### Folding storage tray



Hinged cord storage tray for 19" rack mounting, very compact dimensions: 1U. Allows managing, tracing and storing surplus single-fibre strands used in rack-mount interconnection equipment and distribution frames.

### Fixed storage tray



Fixed cord storage tray for 19" rack mounting, very compact dimensions: 1U. Allows managing, tracing and storing surplus single-fibre strands used in rack-mount interconnection equipment and distribution frames.



## DATA CENTER - ODF Racks

### 256 F.O. Modular Optical Distribution Frame



Rack designed for FTTH exchanges for high-capacity optical interconnection. Allows the optical fibres of the power or link cables to be terminated in connectors, and to carry out fibre-to-fibre optical interconnection between different networks or equipment. Optical splitter with 8 or 16 fusing trays. Management of up to 256 single-fibre optical strands.

### 1U Modular optical distribution tray



Rack designed for FTTH exchanges for high-capacity optical interconnection. Allows the optical fibres of the power or link cables to be terminated in connectors, and to carry out fibre-to-fibre optical interconnection between different networks or equipment. Side doors hinged at the front and divided into independent sectors. Optical splitter with 9 modules with 576 F.O. termination capacity.

### Optical distribution cabinet with a capacity of up to 366 F.O. fusions.



Optical distribution point for fibre FTTX deployments. For direct underground installation up to the height of the plinth without the need to build a concrete pedestal.

Open front access for placement and handling of the entire splicing system, management of fibre optic cables and accessories.

## DATA CENTER - Structured cabling

### Cables



- Category 6
- Category 6A
- Category 7
- Category 8

### Elements and accessories



- Connectors
- Keystone
- Patch panel
- Certifiers

## DATA CENTER\_Fibre connection

### Singlemode fibre patch cords



Designed to interconnect fibre networks.

Single-fibre or two-fibre cords. The most common connectors and polishes are as follows:

SC/APC, SC/UPC, LC/UPC, LC/APC

### Multimode fibre patch cords



Designed to interconnect fibre networks.

Different configurations in OM1, OM2, OM3 and OM4.

Single-fibre or two-fibre cords. The most common connectors and polishes are as follows:

LC/UPC and SC/UPC

### MTP/MPO fibre optic patch cords

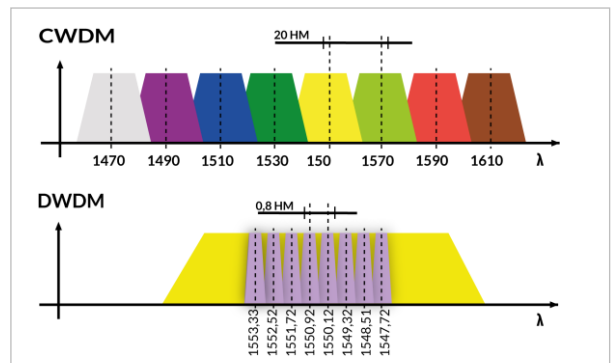
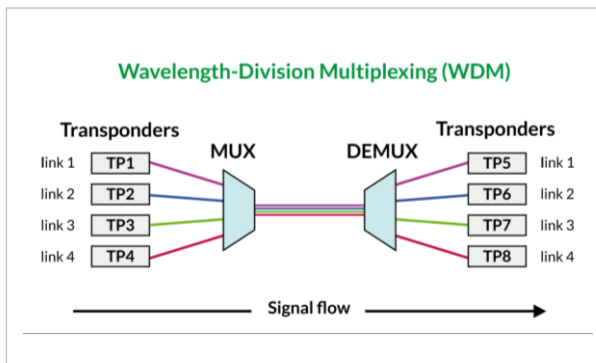


Designed for greater deployment efficiency and greater adaptability and flexibility in a smaller footprint.

Allow simultaneous connection of up to 72 FO.

## DATA CENTER\_CWDM / DWDM Solutions

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### Transceivers type



- 100/200/400/800G
- 10/25/40G
- 100mb/1G



## FTTA

Wireless architecture where optical fibre is distributed to the top of the tower.

Cabling

Jumpers &  
Conectors

Coax and Hybrid  
clamps (DC+FO)

Tools &  
Accessories

## FTTA - Cabling

### RFS Cellflex



The Radio Frequency Systems' coaxial CELLFLEX cable portfolio make up the largest corrugated transmission-line portfolio in the wireless infrastructure industry. The foam dielectric cables combine remarkable flexibility with high strength and superior electrical performance to ensure uninterrupted communications.

Twenty unique CELLFLEX types, ranging in size from 1/4" to 1-5/8", provide users with a perfect match for even the most complicated and demanding applications. Every cable comes with a guarantee of reliability, performance and cost-effectiveness. RFS CELLFLEX Flame-Retardant Cables implies with the highest requirement.

Superflexible cable 1/2"	SCF12-50J
Superflexible cable 1/2" LSZH B2ca s1a d0 a1	SCF12-50JFN
Flexible cable 1/2	LCF12-50J
Flexible cable 1/2" LSZH B2ca s1a d0 a1	LCF12-50JFN
Flexible cable 7/8 "CU	LCF78-50JA
Flexible cable 7/8 "CU LSZH B2ca s1a d0 a1	LCF78-50JFNA
Flexible cable 1-5/8	LCF158-50JA
Flexible cable 1-5/8" LSZH B2ca s1a d0 a1	LCF158-50JFNA

### RFS Hybriflex



Radio Frequency Systems' HYBRIFLEX riser and jumper cables include any combination of power wires, optical fiber and other cable types in a single lightweight and crush-resistant cable. These extensively field-proven cable solutions reduce installation time, complexity and cost.

#### Features

- Best-in-class bending radius
- Robust
- Strong core retention force
- Proven corrosion resistance

#### Applications

- High-power 5G radio deployments
- Small cell 5G mmWave radio deployments
- Cloud-RAN (C-RAN) deployments
- In-building Distributed Antenna System (DAS) solutions
- In-tunnel connectivity solutions

3 F/O Pairs, Single Mode, DLC to ODVA Connectors, includes ODVA inline adapter preinstalled - FIBER CONNECT FIBER TRUNK FIXED LENGTH ASSEMBLIES FOR UP TO 3RRU, 0X3 (from 10 m to 200 m length)	HA-FOTF-VL-03SM-xxx-01
6 F/O Pairs, Single Mode, DLC to ODVA Connectors, includes ODVA inline adapter preinstalled - FIBER CONNECT FIBER TRUNK FIXED LENGTH ASSEMBLIES FOR UP TO 3RRU, 0X6 (from 10 m to 200 m length)	HA-FOTF-VL-06SM-xxx-01
12 F/O Pairs, Single Mode, DLC to ODVA Connectors, includes ODVA inline adapter preinstalled - FIBER CONNECT FIBER TRUNK FIXED LENGTH ASSEMBLIES FOR UP TO 6RRU, 0X12 (from 10 m to 200 m length)	HA-FOTF-VL-12SM-xxx-01
24 F/O Pairs, Single Mode, DLC to ODVA Connectors, includes ODVA inline adapter preinstalled - FIBER CONNECT FIBER TRUNK FIXED LENGTH ASSEMBLIES FOR UP TO 12RRU, 0X24 (from 10 m to 200 m length).	HA-FOTF-VL-24SM-xxx-01
6 DC Pairs, 12 F/O Pairs, 6 AWG, 1-1/4" Single-Mode, Duplex LC Connectors, Low Inductance - HYBRIFLEX® HYBRID RISER FIXED LENGTH ASSEMBLIES, 6X12 (from 3 m to 300 m length).	HB114-U6S12-xxx-LI
12 DC Pairs, 24 F/O Pairs, 6 AWG, 1-5/8" Single Mode, Duplex LC Connectors, Low Inductance - HYBRIFLEX® HYBRID RISER FIXED LENGTH ASSEMBLIES, 12X24 (from 3 m to 210 m length)	HB158-U12S24-xxx-LI

## FTTA\_Jumpers & Conectors

### RFS Cellflex



Radio Frequency Systems' CELLFLEX® Factory-Fit Jumpers work seamlessly within end-to-end transmission line solutions to maintain transmission quality and performance in any deployment scenario. Every jumper cable in our comprehensive portfolio is engineered from the ground-up to:

- Minimize interference and maximize throughput
- Withstand harsh conditions for many years
- Enable fast, easy and cost-effective installation – with or without weatherproofing boots
- Support all network frequencies, technologies and applications with very low losses.

We offer a variety of features and configuration options for each jumper cable type and size. Options include:

- Jacket type: Standard or flame-retardant
- Connector type for each endpoint: NEX10, 4.3-10, N-Type or 7-16 DIN right-angled or straight connectors
- Performance: UltraPIM or Premium PIM
- Length: 1 m to 20 m or 3 ft to 50 ft.

Jumpers superflexible 4.3-10 male - 4.3-10 male JFN CPR B2ca s1a d0 a1  
 Jumpers superflexible 4.3-10 male - 4.3-10 male 90° JFN CPR B2ca s1a d0 a1  
 Jumpers superflexible 716 male - 4.3/10 male JFN CPR B2ca s1a d0 a1  
 Jumpers superflexible 716 male 90° - 4.3/10 male JFN CPR B2ca s1a d0 a1  
 Jumpers superflexible 716 male-716 male JFN CPR B2ca s1a d0 a1  
 Jumpers superflexible 716 male-716 female JFN CPR B2ca s1a d0 a1  
 Jumpers superflexible 716 male-716 male 90° JFN CPR B2ca s1a d0 a1

Jumpers flexible 4.3-10 male 4.3-10 male  
 Jumpers flexible 716 male 4.3-10 male  
 Jumpers flexible 716 male 90° - 4.3/10 male  
 Jumpers flexible 716 male-716 male  
 Jumpers flexible 4.3/10 male-N male

### RFS Hybriflex



Radio Frequency Systems' CELLFLEX® Factory-Fit Jumpers feature specially designed connectors which are soldered-on in a strictly controlled industrial process to ensure industry leading performance for today's high performance wireless systems. The connector design and manufacturing process has been optimized to produce premium VSWR and IM levels. Injection molded boots provide reliable and repeatable additional sealing level and strain relief.

OMNI FIT™ high performance connectors are designed for use with both CELLFLEX® (copper) and CELLFLEX® Lite (aluminum) cables. They are designed specifically to provide the highest quality connector-cable interface while simplifying and speeding up connector attachment. All RFS connectors are fully tested for mechanical and electrical compliance to industry specifications.

Conector 4.3-10 male for  
 Conector 4.3-10 male for  
 Conector 4.3-10 female for  
 Conector 4.3-10 female for  
 Conector 4.3-10 male 90° for  
 Conector 4.3-10 male 90° PREMIUM for  
 Conector 716 male for  
 Conector 716 male PREMIUM for  
 Conector 716 female for

Conector 716 female PREMIUM for  
 Conector 716 male 90° for  
 Conector 716 male 90° PREMIUM for  
 Conector N male for  
 Conector N male PREMIUM for  
 Conector N female for  
 Conector N female PREMIUM for  
 Conector N male 90° PREMIUM for

## FTTA\_Coax and Hybrid clamps (DC+FO)

### Coaxial clamps



Coaxial cable clamps for 1/4", 1/2", 7/8" and 1-5/8" cables

### Hybrid clamps



Hybrid cable clamps for power cables plus 1, 2 or 3 F.O.



## FTTA-Tools and accessories

### Hybrid quarter wave surge arrester



### Combined connector preparation tool



LCF12	TRIM-SET-S12-C02
SCF12D01	TRIM-SET-S12-D01
LCF12	TRIM-SET-L12-C02
LCF12D01	TRIM-SET-L12-D01
LCF78	TRIM-SET-L78-C02
LCF78 D01	TRIM-SET-L78-D01
LCF158	TRIM-SET-L158-C02
LCF 158 D01	TRIM-SET-L158-D01

### Stripping tool for high speed earthing kit



GKSPEED LCF12	JSTRIP-12-3
GKSPEED LCF78	JSTRIP-78-2
GKSPEED LCF158	JSTRIP-158-2

This special stripping tool makes it easier to prepare the cable before fitting the connector. In addition, it avoids the use of other tools to prepare the cable for connector installation. This is due to the unique design of the stripping tool which combines all necessary functions in one tool.



## TOOLS & PPE

Ladders

Instrumentation  
and measuring  
equipment

Tools

Cable Laying

PPEs

## TOOLS & PPEs\_Ladders

### Wooden ladders



Single flight ladder  
Manual extension ladder  
Rope extension ladder  
Stepladder  
Industrial stepladder

### Fibre ladders



Single flight ladder  
Two flight transformable ladder  
Three flight transformable ladder  
Rope extension ladder  
Stepladder  
Stepladder with platform  
Telescopic ladder  
Work platform

### Aluminium ladders



Single flight ladder  
Folding single flight ladder  
Manual extension ladder  
Rope extension ladder  
Combination ladder  
3 flight combination ladder  
Stepladder  
Double stepladder  
Conical stepladder  
Telescopic stepladder  
Stepladder with platform and wide aluminium rungs  
Double ladder with wide aluminium rungs  
Plug-in pole ladder

### Safety ladders



Safety ladders  
Safety façade ladders

### Accessories



Basic supplements  
Height adjustable legs  
Hooks, chains and eyebolts  
Support and lashing tape  
Work platform  
Ladder transport fastener  
Folding footrest

## TOOLS & PPEs\_ Instrumentation and measuring equipment

### Fibre Optic Instrumentation



- Fusion Splicers
- Fibre Optic Cutter and accessories
- Power meter
- Laser sources
- Fibre identifier
- OTDRs
- OTDR accessories
  - Launching coil
  - FWDM filter
  - Connector cleaner

### Copper Instrumentation



- ADSL / VDSL / ISDN measuring equipment
- Troubleshooter
- Cable tester
- Structured certifier

### Measuring equipment



- Locator
- Probes and generators
- TV / CATV field meters
- Electrical meters

## TOOLS & PPEs\_Tools

### Optical Fibre



- Cable stripper
- Cable cutter
- Stripping tool
- Kevlar scissors
- Cable stripping tool
- Isopropyl alcohol
- Wipes
- Cleaner for SC, LC connectors

### Copper



- KRONE Inserter
- KRONE-POUYET Inserter
- QDF Inserter
- QUANTE SID inserter
- Crimper
- ADSL attenuator
- Hook for recording chamber
- Electrician scissors
- Punch tool
- Clamps

### CATV



- RG59/RG6 compression tool
- Compression tool for F connectors
- F load extractors
- Torque spanner
- Coaxial stripper

### Electricity Market



- Drill
- Drill bits
- Universal Pliers / Insulated / Pointed
- Cutting pliers / extended pliers
- Mounting pliers (stork mouth)
- Straight nose pliers / 45
- Multi-functional utilities key
- 1,000 V insulated screwdriver
- Screwdriver with T-handle
- Pole finder screwdriver
- 45° / Flathead screwdriver
- Phillips screwdriver
- Socket head screwdriver
- Other professional screwdrivers
- Universal key for electrical panels UKC4

## TOOLS & PPEs\_Cable Laying

### Cable Laying



- Roller bobbins
- Pulling sleeve
- Reel jack

### Ropes



- Polyester braided rope
- Standard flexible rope head
- Fibreglass rope
- Vertical rope holder
- Rope holder with castors
- Flexible rope heads

### Accessories



- Aluminium rolling pin
- Coupling sleeves + sheaves
- Aluminium hooking rings
- Terminals
- Repair kit
- Jointing kit
- Fibre adhesive
- Lubricant
- Gel

### Beaconing



- Polyethylene cone
- Extendable plastic fence
- Modular barriers
- Beacon tapes

## TOOLS & PPEs\_PPEs

### Working at Heights



- Harnesses
- Slings
- Lifelines
- Anchorages
- Tool fall prevention
- Tool bags

### Confined Spaces



- Rescue harnesses
- Breathing equipment
- Gas detectors
- Tool fall prevention
- Tool bags
- Signalling lights
- Protective coveralls
- Protective helmets

### Helmets and Audiovisual



- Headsets
- Intercom headsets
- Hearing aids and earplugs
- Protective goggles
- Protective screens

### Clothing and Road Safety

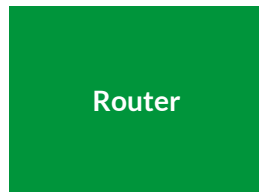
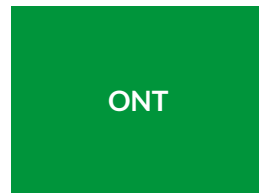
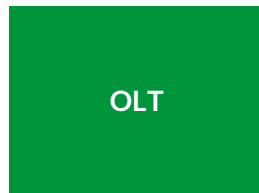


- Multi-standard technical clothing
- High visibility outdoor clothing
- Beacons
- Signalling



## ACTIVE ELEMENTS

Equipment that actively distributes information across the network.





## ACTIVE ELEMENTS\_OLT

### NuCom EPON OLT 4 PON 4 GE/SFP 2 10G/SFP+ Redundant power supply 1AC - 1DC



The 4-port dual-source OLT EPON CORE 1 T5EP442 from NuCom is a small, convenient, flexible, high-performance and easy-to-implement terminal. The device is suitable for a compact environment, while still being versatile enough to be implemented in any other installation. The equipment complies with relative IEEE 802.3x and FSAN standards; and supports Triple Play applications, CPN, IP cameras, enterprise LANs and IoT ecosystems.

## ACTIVE ELEMENTS\_ONT

### **NCGP744GVR NuCom AC1200 Wireless Dual-Band Gigabit GPON Router with VoIP**



NCGP744GVR ONT that upgrades your network to next generation Wi-Fi. Combining speeds of up to 1.2Gbps and 4 antennas, this device provides better wireless speeds and range. Dual Band 2.4GHz and 5 GHz device. When you prefer to connect via cable, the 11AC has 10/100/1000Mbps ports.

### **VOLA 1 NuCom AX1800 Wireless Dual-Band Gigabit GPON Router with VoIP**



The NuCom VOLA1: AX1GPV AX1800 GPON Dual-Band GE Router with VoIP is a pioneering next-generation router with WiFi 6 (802.11ax) wireless technology, fast speed, low delay, high capacity, better security and greater energy savings. It achieves wireless speeds of up to 574 Mbps on 2.4GHz and up to 1,201 Mbps on the 5GHz network, for dual-frequency wireless speeds of up to 1,800 Mbps.

## ACTIVE ELEMENTS\_Router

### NCWR644GACV NuCom AC1200 Wireless Dual-Band Gigabit Router with VoIP



NCWR644GACV is a router that upgrades your network to next generation WiFi. Dual Band 2.4GHz and 5 GHz device. 2 FSX ports for VoIP services.

### NJ-6R AC1200 Wireless Dual-Band Gigabit Router



NJ-6R PRO is an AC1200 Router that upgrades your network to the next generation of WiFi. With combined wireless speeds of up to 1.2Gbps and 4 antennas, this device provides better wireless speeds and range. Dual Band device with a combined total speed of up to 1,200 Mbps; 300Mbps over the 2.4 GHz network and 867 over the 5 GHz network.

### NuCom AX1800 Wireless Dual-Band Gigabit Router with VoIP



NuCom GATE 1: AX1GEV AX1800 Wireless Dual-Band GE Router with VoIP is a pioneering next-generation router with WiFi 6 (802.11ax) wireless technology, fast speed, low delay, high capacity, better security and greater energy savings. It achieves wireless speeds of up to 574 Mbps on 2.4GHz and up to 1,201 Mbps on the 5GHz network, for dual-frequency wireless speeds of up to 1,800 Mbps...