



## MOBILE NETWORKS Solutions

**INDOOR & OUTDOOR**

Developing tomorrow's networks, today



# DISCOVER YOUR MOBILE NETWORKS CATALOGUE

The Mobile offer developed by Telenco networks includes different product categories such as:

- The FTTA Digital Revolution
- 4G/5G cabling architecture
- 4G/5G Mobile Networks offer
- Indoor wireless & Private wireless
- Wireless indoor solutions
- Active DAS XG-optic® Solution
- SB-ICE XG-RF Solution
- Private 5G XG-RAN Solution



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# The FTTA Digital Revolution



The third generation of mobile technology, 3G, offered speed rates of about 1.9Mbit/s. Based on the LTE standard, 4G offers speeds of up to 150Mbit/s. With theoretical speeds of 6 to 60 times higher and almost zero latency, the fifth generation 5G, opens up a very broad range of possibilities.

Well beyond the simple data and voice exchange, the challenge of today's mobile networks consists in opening up new possibilities in all sectors: industry, health, mobility, economics, Smart Cities, machine learning, Services. It is also a real bridge towards enabling access to new technologies for many communities that are poorly covered or not covered at all by wired networks.

It's in this context of digital revolution and driven by its expertise in outside plant optical infrastructures that Telenco has addressed the challenge of FTTA 4G/5G. Telenco networks designs, manufactures and markets reliable and high quality optical solutions for FTTA 4G/5G by applying eco-design principles and taking into account climatic conditions and harsh mechanical environments. By carefully considering the technical, economic and environmental aspects, Telenco offers genuine solutions for all 4G/5G cabling configurations, irrespective of the given network architecture.



## 4G/5G cabling architecture

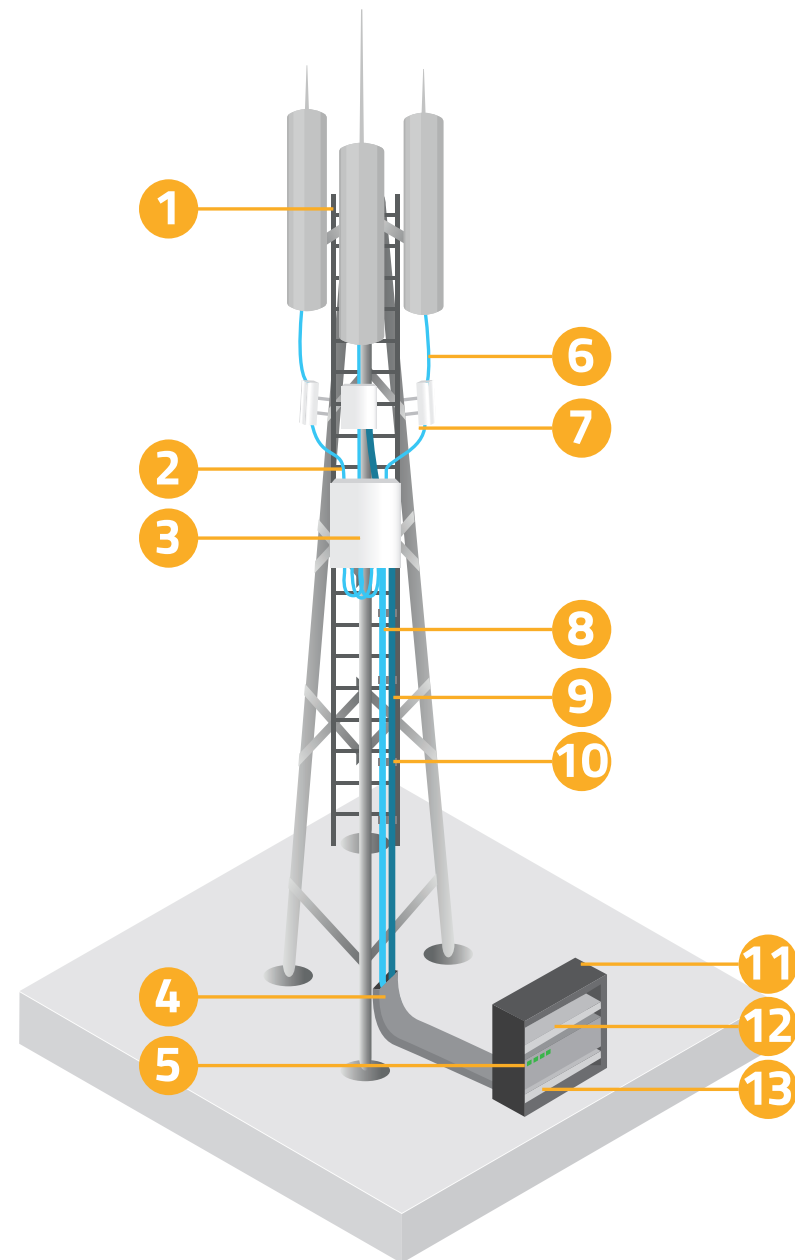
TOWER ARCHITECTURE  
ROOFTOP ARCHITECTURE

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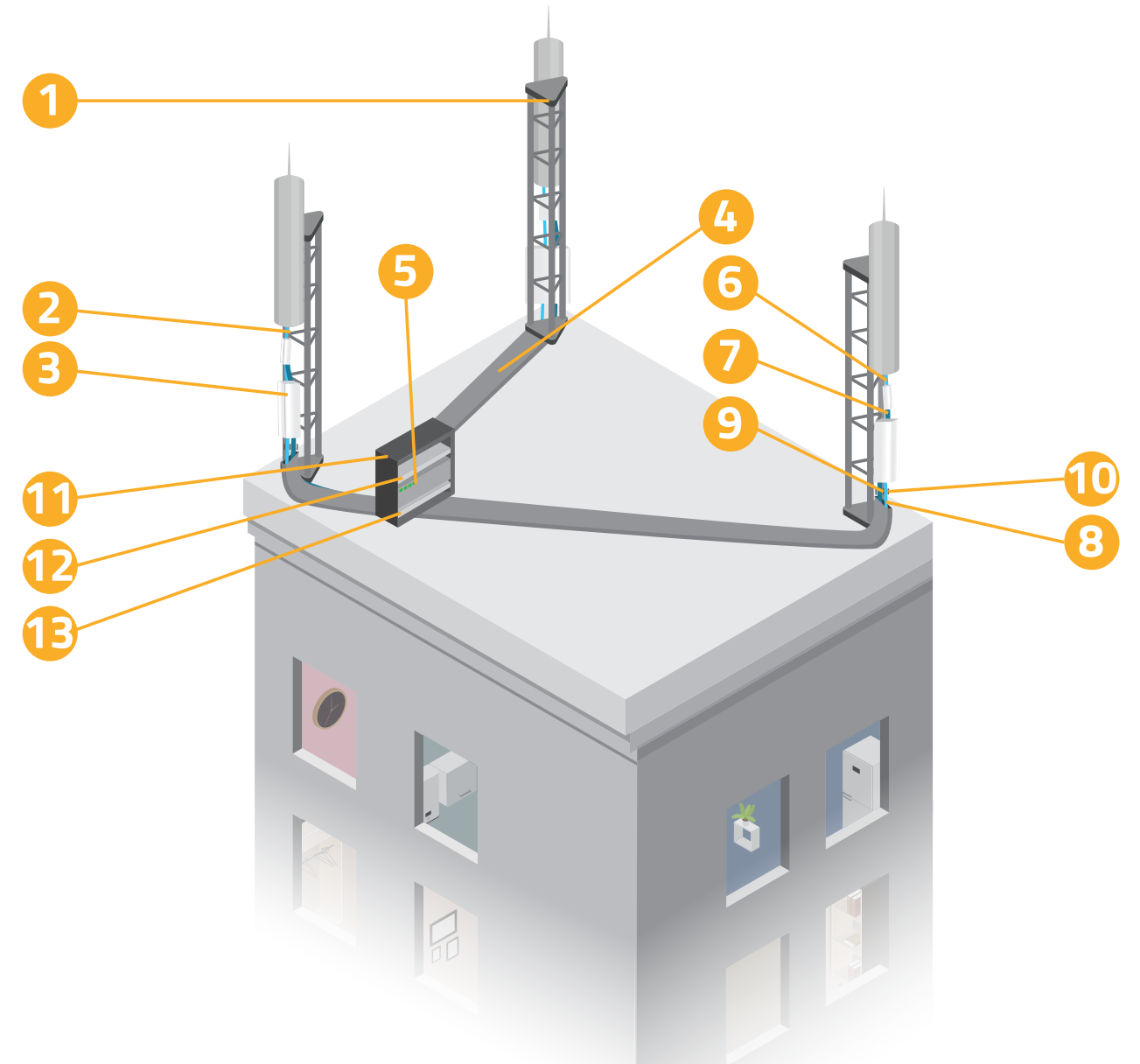




## TOWER ARCHITECTURE



## ROOFTOP ARCHITECTURE



### Legend

- |                                     |                           |
|-------------------------------------|---------------------------|
| 1 Antenna masts / Structure Sensors | 8 Optical Breakout cables |
| 2 2FO outdoor patchcords            | 9 Power cables            |
| 3 XG-optic® boxes                   | 10 Cable clamps           |
| 4 Cables trays                      | 11 Outdoor cabinets       |
| 5 Transceivers                      | 12 Optical patchpanel     |
| 6 RF jumper cables                  | 13 WDM solutions          |
| 7 5G Connectors                     |                           |



Glossary

- **BTS** = Base Transceiver Stations
- **BBU** = Base Band Unit
- **RRU = RRH** = Remote Radio Unit = Remote Radio Head
- **FTTA** = Fiber to the Antenna
- **HTTA** = Hybrid to the Antenna (Hybrid = optical/power)
- **PTTA** = Power to the Antenna
- **Breakout = Trunk** = Pre-terminated or half-pre-terminated optical cable

Optical connectivity solutions for FTTA networks

Depending on the RRU/RRH model, the protection of the connectors installed on the FTTA outdoor pre-terminated breakouts may be different, although the basic connector remains the LC/UPC Duplex.



**LC/UPC duplex connector without protection**  
There is no specific protection for the connectors, which are protected within the RRU/RRH itself.



**LC/UPC duplex connector with NSN type protection**  
The NSN boot (Nokia Siemens Networks), also known as flexible boot, is a system enabling to reliably protect connectors against dust and water. Thanks to its simple structure, this boot is easy to implement while also compatible with a small footprint use



**LC/UPC duplex connector with FullAXS type protection**  
The FullAxs is an IP67 waterproof system offering both a high mechanical protection and a complete dust protection. This boot locks onto a compatible base thanks to a rugged bayonet mount system.



**SC/APC & SC/UPC connector**  
Not widely used, these connectors are mainly found at the BTS/BBU level.



**5G specific connector – Clamp connector**  
The evolution of technologies, particularly 5G, has led to a significant development in protection, in order to optimize implementation time and the protection of optical links. Multiconnector clamp protection is one of these developments.



**5G specific connector – Pushpull connector**  
The pushpull connector, like the clamp connector, enables secure deployment while reducing intervention time. This type of connector is used on the new O-RAN networks.

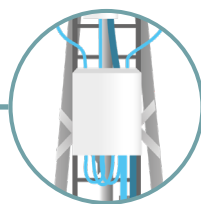
When it comes to FTTA 4G/5G optical cabling architectures, there are 2 main use cases: the deployment of new sites, and the upgrade of already equipped sites. Whatever the objective: increasing the coverage, integrating new networks operators, or simply upgrading to a higher technology generation, issues of space are inevitable.

# 4G/5G Mobile Networks offer

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# XG-optic® FTTA BOXES

Telenco's FTTA boxes, available in pre-terminated and pre-terminated/spliced versions, stand out as the first box solutions entirely designed and developed to simplify optical connection within indirect cabling infrastructures used in 4G and 5G network deployments. These FTTA boxes guarantee smooth, intuitive optical interconnection, whatever the installation configuration.

They are specially engineered and rigorously tested to ensure their resistance to harsh climatic conditions, including temperature variations, as well as to severe mechanical stress, such as winds of up to 250 km/h.

## Product specifically designed for 4G/5G

### The key benefits:

- + Captive parts
- + Fast and patented coupling system
- + High environmental resistance



### Specifications:

Material	Plastic (PA)	
Colour	Grey RAL 7035	
Wind test (NF EN1991-1-4 )	180 Km/h in all configurations 250 Km/h with pole band and 2-12 OMEGA bracket fixing (on single box or coupled by 2 and by 3)	
Waterproofing	IP55	
Impact resistance	IK 09	
Flammability	UL 94 HB	
UV resistance	UL 746 C	
Fiber bending radius	15mm (Supports G657A2 or G652D fibers and multimode fiber)	
Fiber management	Loosetube or Flexible tubes possible	
Temperature	-40°C to +65°C	
2 available versions	Pre-terminated	Pre-terminated/Spliced
Capacity	•1x 24FO Cable from Ø 7,5 to Ø 10 mm •12x 2FO patchcords LC/UPC : from Ø 4,5 to Ø 6,0 mm •12x LC/UPC duplex singlemode pre-installed adaptors	•1x 24FO Cable : from Ø 7,5 to Ø 10 mm •12x 2FO LC/UPC Patchcords : from Ø 4,5 to Ø 6,0 mm •12x LC/UPC duplex singlemode pre-installed adaptors •24x LC/UPC 900µm G657A2 preinstalled pigtails •2x12FO splice cassette : storage capacity of 2.4m x12 / splice cassette

### Fixings:



20mm pole band  
(in option - Ref 0038)



Metallic cable tie for pole  
fixing  
(in option - Ref 5647/5648)



2-12 OMEGA bracket  
(in option - Ref 0163)



Wall fixing bracket for wall  
mounting  
(included)

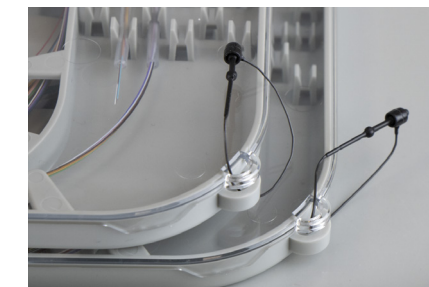
### The key benefits: Captive parts



+ Open/Close with captive plastic screws



+ Captive enclosure cover

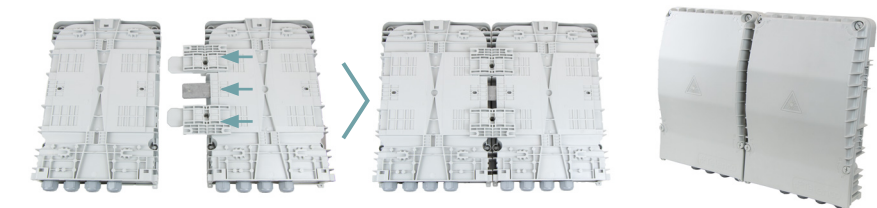


+ Captive splice cassette cover

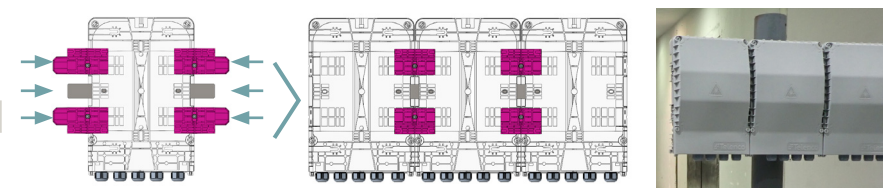
### The key benefits: Fast, patented coupling system

**Coupling kit :**  
2 coupling elements and 1 galvanized steel reinforcement bar  
+ Patented system  
+ Fast, tool-free coupling system for 2 or 3 boxes

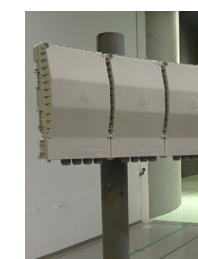
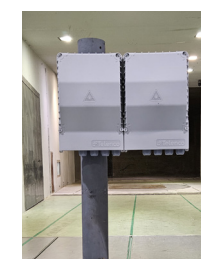
#### Coupling by 2 boxes



#### Coupling by 3 boxes



### The key benefits: High environmental resistance



- + Withstands 250km/h winds
  - On one single box or, boxes coupled by 2 or 3
  - 360°testing
  - To meet emerging challenges in the face of extreme climatic events



- + Resistance to temperature variations
  - -40°C to +65°C



- + Impact resistance
  - IK 09



- + Waterproofing
  - IP55



Pre-terminated/spliced version

The Telenco's FTTA box pre-terminated/spliced version is the first solution 100% designed for splicing optical cables at 4G/5G sites. It enables simple, intuitive interconnection of optical links, and features a unique system for comfortable fiber splicing, whatever the conditions. This box is designed and tested to withstand harsh climatic conditions, such as temperature changes and severe mechanical stress, such as 250 km/h winds.

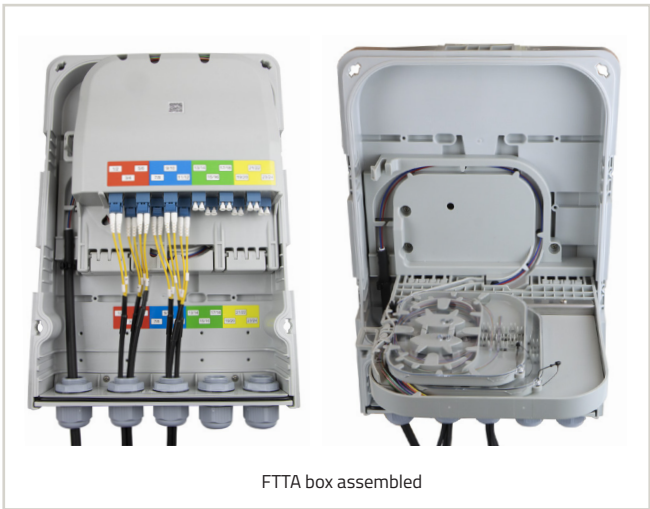


**The key benefits:**  
+ Ergonomic operating area  
+ 2 Distinct areas : 24FO cable installation area and 2FO patchcord operating area  
+ Intuitive installation

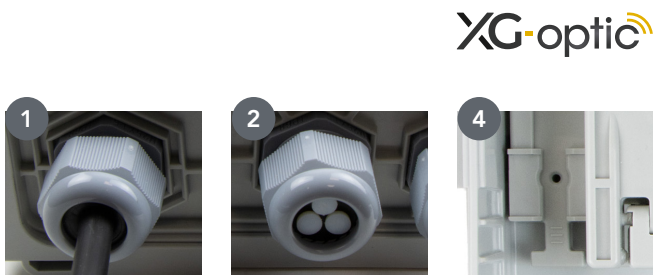
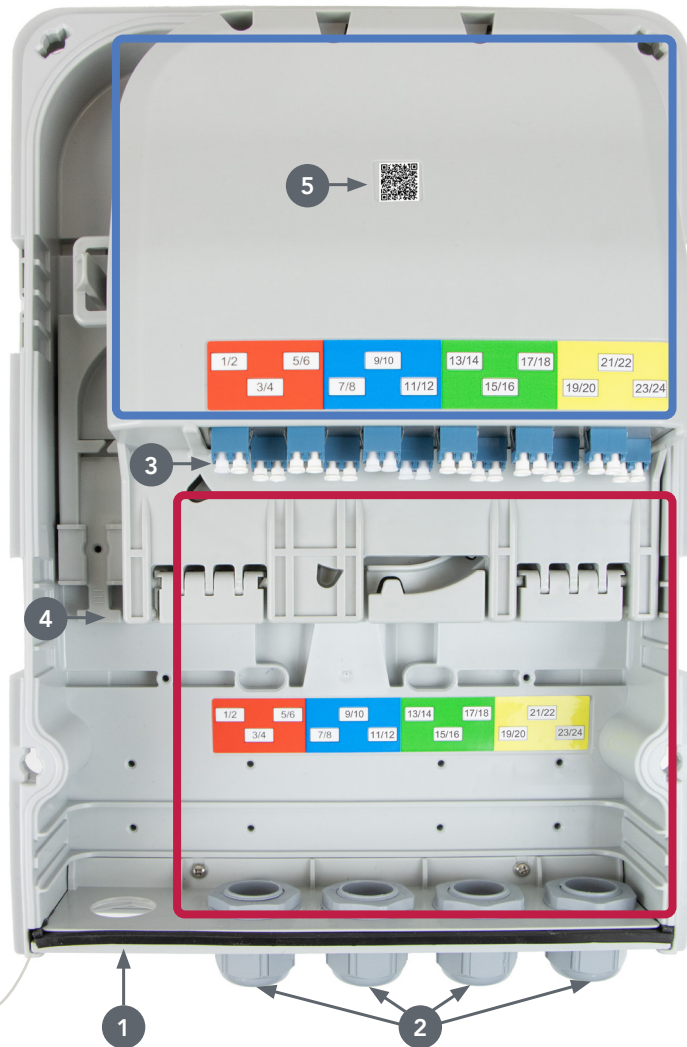
Ref	Designation	Dimensions	Weight	Packing	Packing dimensions	Packing Weight
1002116	FTTA Box Pre-terminated/Spliced 24FO LC/UP	L 260 x W 380 x H 97	2.1 kg	1 unit	L 300 x W 400 x H 150	2.46 kg

**Characteristics:**  
+ 1 input 24FO – 4 outputs 3x2FO

**Capacity:**  
+ 1x 24FO Cable from Ø 7,5 to Ø 10 mm  
+ 12x 2FO Patchcords LC/UPC : from Ø 4,5 to Ø 6,0 mm  
+ 12x Adaptors LC/UPC duplex singlemode pre-installed  
+ 24x Pigtails LC/UPC Ø900 µm G657A2 pre-installed  
+ 2x 12FO splice cassette with a storage capacity of 2.4m x12 / cassette



FTTA box assembled



- Splicing area (24FO Cable):**  
24FO cable splicing area protected by a cover (cover opens and closes by clipping) + storage area for 24 LC/UPC pigtails. The Ø900 µm pigtails are installed, stripped and coiled in the splice cassette, ready for connection.
- Operating area (2FO Patchcords) :**  
2FO Patchcords entry and connectorization area

- 1 Location for M25 cable gland for 24FO cable entry
- 2 4 M25 triple cable glands for 2FO patchcords entry
- 3 12 LC/UPC duplex adaptors
- 4 Fixing for the 24FO cable
- 5 QR code to access the box installation guide

Find the 2FO patchcords on page 24





Pre-terminated version

The Telenco’s FTTA box pre-terminated version is the first solution 100% designed for optical junctions in 4G/5G indirect cabling structures. It enables simple, intuitive interconnection of optical links, whatever the conditions. This box is designed and tested to withstand harsh climatic conditions, such as temperature changes and severe mechanical stress, such as 250 km/h winds.



**The key benefits:**

- + Ergonomic operating area
- + Separate area for connectorization of the Breakout 24FO Breakout and connectorization of the 2FO Patchcords
- + Intuitive installation

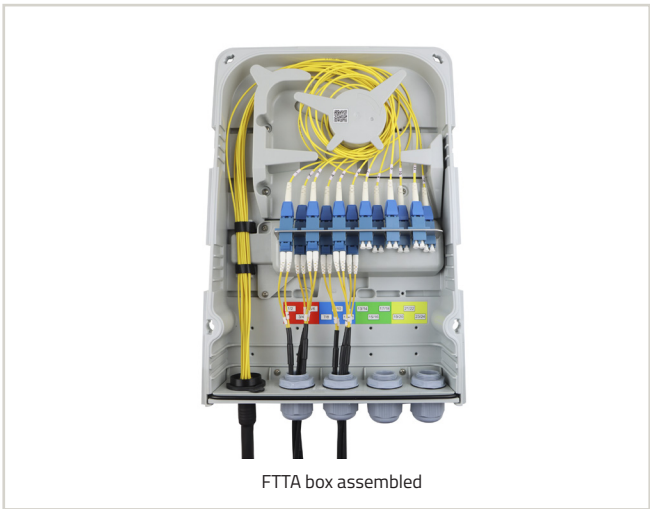
Ref	Designation	Dimensions	Weight	Packing	Packing dimensions	Packing Weight
1002115	FTTA Box Pre-terminated 24FO LC/UPC	L 260 x W 380 x H 97	2.1 kg	1 unit	L 300 x W 400 x H 150	2.46 kg

**Characteristics:**

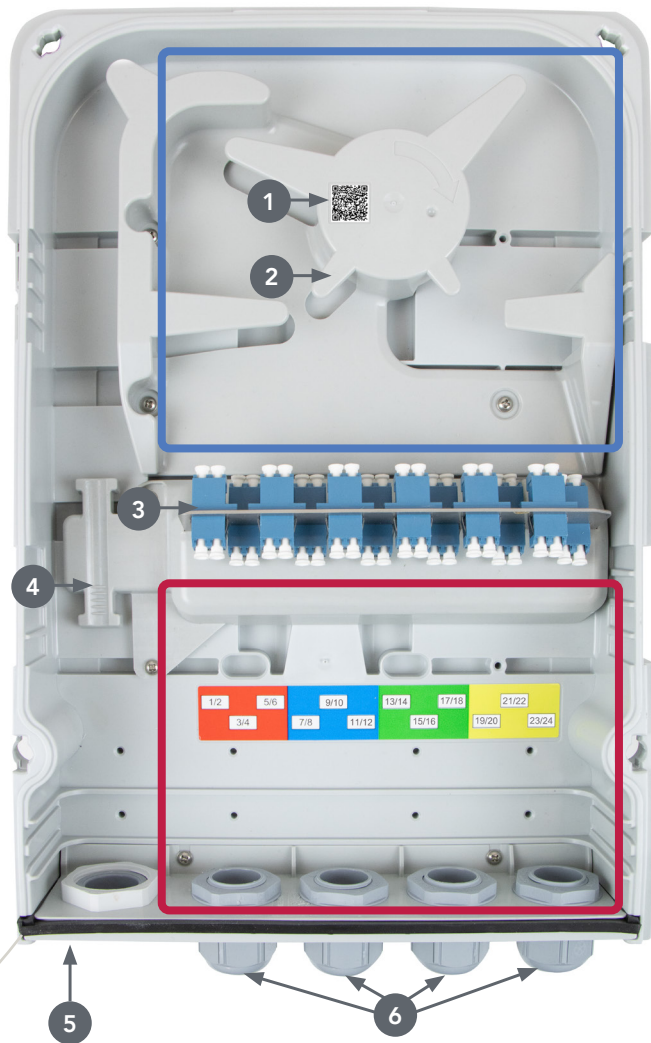
- + 1 input 24FO – 4 outputs 3x2FO

**Capacity:**

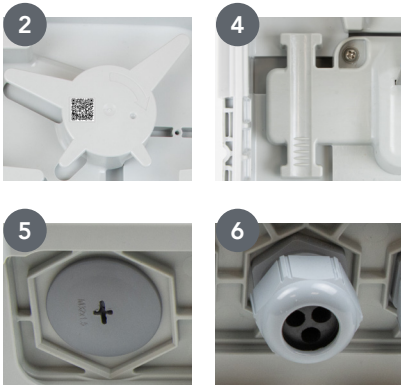
- + 1x 24FO cable : from Ø 7,5 to Ø 10 mm
- + 12x 2FO LC/UPC Patchcords : from Ø 4,5 to Ø 6,0 mm
- + 12x Adaptors LC/UPC duplex singlemode pre-installed



FTTA box assembled



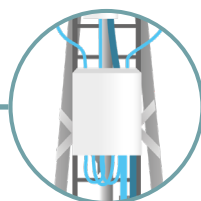
- Installation area:**  
24FO breakout cable arrival and coiling area
- Operating area:**  
2FO Patchcords entry and connection area



- 1 QR code to access the box installation guide
- 2 Coiling cylinder fins hold fibers in place without obstructing access to connectors
- 3 12 Adaptors LC/UPC duplex pre-installed and easily accessible for cleaning
- 4 Fixing system for the 24FO breakout fanout
- 5 1 slot for M32 cable gland, closed with a screwed cap
- 6 4 M25 triple cable glands for 2FO patchcords entry

Find the  
> Telenco breakout push-clip fanout solution page 21  
> Breakouts page 19  
> Patchcords page 24





# XG-optic® FTTA STORAGE BOX

## XG-optic® FTTA storage box

The Telenco's FTTA Storage box is the first solution 100% designed to storage the cables in 4G/5G cabling and protect them to the rodents. It enables simple intuitive storage fiber cables, and can be coupling with the Telenco's FTTA box or PTTA box. Whatever the conditions, this box is designed and tested to withstand harsh climatic conditions, such as temperature changes and severe mechanical stress, such as 250 km/h winds.



With captive cover

### The key benefits:

- + FTTA Specific Design
- + Easy to install and use
- + Can be coupled with other XG-optic® boxes

### Characteristics:

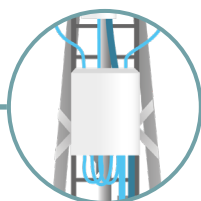
- + Compatible with XG-optic® coupling system
- + Cables storage system
- + Opposite inputs and outputs

Ref	Designation
1004599	XG-optic® FTTA Storage Box

### Specifications:

Dimensions	L 300mm x W 400mm x H 150mm
Weight	2,0 kg
Material	Plastic (PA)
UV	UV Resistant
Colour	Grey RAL 7035
Capacity	Cable Ø4,5mm to Ø9,8mm
Inputs / Ouputs	Open for easy installation of cable strands
Impact	IK09
Protection	Protection against rodents
Temperature	-40°C to +65°C
Installation	Pylon / Wall / Pole

Telenco is entitled to modify the specifications without prior notice.



# XG-optic® FLEX BOXES

## XG-optic® FLEX box

FLEX XG-optic® box have been specially designed for integrated management of the network, power supply and connection of remote systems. They are configurable and adaptable to specific needs, and can be used, for example, to connect wireless systems for the deployment of connected objects, or to build networks parallel to MNO mobile networks.

Based on Telenco's XG-optic® box technology, they offer all the advantages and technological innovations of Telenco's XG-optic® boxes, while being perfectly adapted to harsh climatic conditions, and able to withstand significant temperature changes and mechanical stress.

We support you in configuring your box.



With captive cover

### The key benefits:

- + Flexible design
- + Easy to install and use
- + Can be coupled with other XG-optic® boxes

### Characteristics:

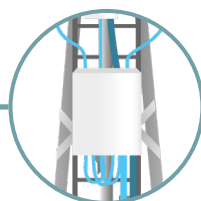
- + Compatible with XG-optic® coupling system
- + Customizable
- + Evolving Inputs

### Specifications:

Dimensions	L 300 mm x W 400mm x H 150mm
Weight	Variable
Material	Plastic (PA)
UV	UV Resistant
Colour	Grey RAL 7035
Inputs / Ouputs	Configurables
Impact	IK09
Temperature	-40°C / +65°C
Installation	Pylon / Wall / Pole

Telenco is entitled to modify the specifications without prior notice.



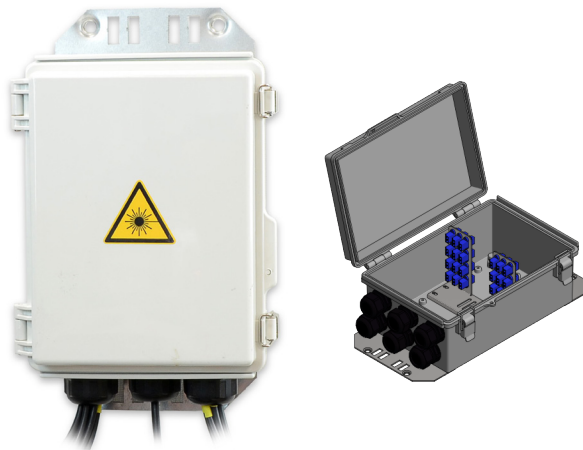


# XG-optic® FTTA BOX HIGH CAPACITY

## XG-optic® FTTA box Pre-terminated high capacity 48FO

The FTTA box Pre-terminated high capacity 48FO have been developed to enable to manage up to 48 fibers. The preinstalled brackets ensure an easy installation at wall or on mast. The lid of the box is hinged with lever latches that do not require screws, facilitating high-altitude installations.

These boxes are designed to withstand harsh weather conditions and are able to resist to significant temperature variations and high mechanical stress.



### The key benefits:

- + Specific design for 4G/5G installation
- + Excellent mechanical performances
- + Easy installation and use
- + Compact design

### Characteristics:

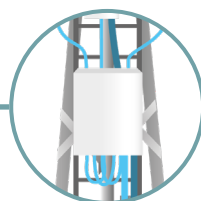
- + Input x2 PE M32 for cable
- + Output x4 PE M32 multi-holes for 24 cables from Ø4 to Ø6mm
- + Venting valve

Ref	Designation
93151	FTTA Box Pre-terminated 48FO LC/UPC

### Specifications:

Dimensions	L225mm x W392mm x 182mm
Capacity	48FO for installations of 1 breakout 48FO or 2 breakout 24FO 24 Patchcords 2FO 24 adaptors LC/UPC Duplex
Material	Polycarbonate (PC) resin 10% glass fiber field
UV	UV Resistant
Water resistance	IP65
Environment	RoHs compliant UL industrial controls & CE Low Voltage directive 2006/95EC listed Non-chlorinated & non-brominated flame retardant with UL-94 5VA Suitable for outdoor use respect to exposure to Ultraviolet Light, Water Exposure and Immersion in accordance with UL746C
Temperature	-40°C to +95°C
Installation	Pylon / Wall / Pole

Telenco is entitled to modify the specifications without prior notice.



# XG-optic® FTTA MINI-HUB

## XG-optic® FTTA Mini-Hub

XG-optic® Mini-Hub Closure provide the most cost-effective method of deploying optical fiber in Mobile site at speeds significantly fast than traditional field installations. The assemblies guarantee an easy, one-step connection system with the combined push-pull insertion and nut-style mechanical latch. Mini-Hub Closure provides quick installation solutions and has good performance on mating with SuperTap connector (MPO).



### The key benefits:

- + Specific design for 4G/5G installation
- + Excellent mechanical performances
- + Easy installation and use
- + Compact design

### Characteristics:

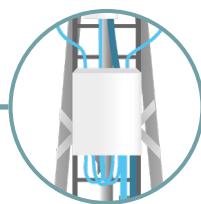
- + Input: MPO connector SuperTap up to 24FO
- + Output: IP68 duplex connectors LC

Ref	Designation
93158	Mini-Hub 12FO ODVA-LCD XG-optic®
93159	Mini-Hub 24FO ODVA-LCD XG-optic®
93160	Bracket Mini-Hub 12FO ODVA-LCD XG-optic®
93161	Bracket Mini-Hub 24FO ODVA-LCD XG-optic®

### Specifications:

Standards	Comply to GR-3120, GR-3152, IEC 61753-1, IEC 61754-4
Insertion Loss (SuperTap/SC&LC)*	Max. 0.5dB, Mean 0.15dB (8° angled)
Insertion Loss (SuperTap/MPO)	Max. 0.6dB, Mean 0.35dB (8° angled)
Return Loss (SuperTap/SC&LC)	Min. 55dB
Return Loss (SuperTap/MPO)	Min. 55dB (8° angled)
Fiber Type	ITU-T G.657A2
Operation Temperature	-40°C to 70°C
Storage Temperature	-40°C to 70°C
Cable Dimension	4.8mm
Dust Cap Max. Pulling Force	100lb
Water Resistance	IP68

Telenco is entitled to modify the specifications without prior notice.

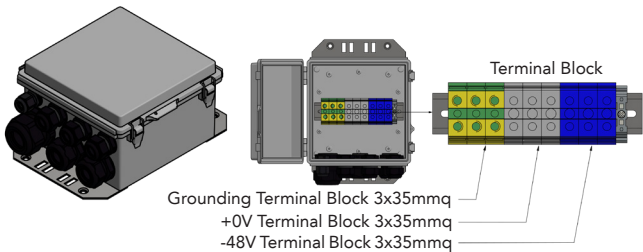


# XG-optic® PTTA BOXES

## XG-optic® PTTA Outdoor Power box 3 RRU/RRH

The PTTA outdoor power boxes have been developed to enable the connection of power cables within the 4G/5G cabling structure. Enable the management and distribution of power cables. Supports up to 3 remote radio heads.

These boxes are designed to withstand harsh weather conditions and are able to resist to significant temperature variations and high mechanical stress.



### The key benefits:

- + Specific design for 4G/5G installation
- + Excellent mechanical performances
- + Easy installation and use
- + Compact design

### Characteristics:

- + Input x1 PE M40 for cable from Ø12 to Ø32mm
- + Input x2 PE M32 for cable from Ø13 to Ø25mm
- + Input x1 PE M20 for grounding cable Ø7 to Ø13mm
- + Output x3 PE M25 for RRH cables from Ø8 to Ø17mm
- + Venting valve
- + Screw terminals for wires with up to 35mm²

Ref	Designation
92856	PTTA Outdoor power box 3 RRU/RRH

### Specifications:

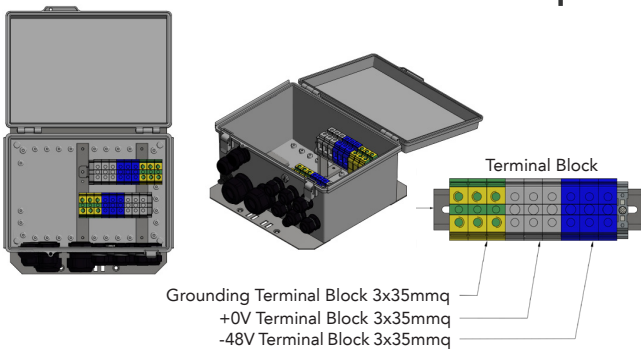
Dimensions	L210mm x W290mm x 135mm
Capacity	For installations with up to 3 power supply cables / Supports up to 3 remote radio heads 3x Ground terminal block green/yellow 35mm² 3x Negative pole terminal block blue 35mm² 3x Positive pole terminal block grey 35mm²
Material	Body Made of Gray Polycarbonate (PC) resin 10% glass fiber field Cover Made of Gray Polycarbonate (PC)
UV	UV Resistant
Water Resistance	IP65
Environment	RoHs compliant UL industrial controls & CE Low Voltage directive 2006/95EC listed Non-chlorinated & non-brominated flame retardant with UL-94 5VA Suitable for outdoor use respect to exposure to Ultraviolet Light, Water Exposureand Immersion in accordance with UL746C
Temperature	-40°C to +95°C
Installation	Pylon / Wall / Pole

Telenco is entitled to modify the specifications without prior notice.

## XG-optic® PTTA Outdoor Power box 6 RRU/RRH

The PTTA outdoor power boxes have been developed to enable the connection of power cables within the 4G/5G cabling structure. Enable the management and distribution of power cables. Supports up to 6 remote radio heads.

These boxes are designed to withstand harsh weather conditions and are able to resist to significant temperature variations and high mechanical stress.



### The key benefits:

- + Specific design for 4G/5G installation
- + Excellent mechanical performances
- + Easy installation and use
- + Compact design

### Characteristics:

- + Input x2 PE M40 for cable from Ø12 to Ø32mm
- + Input x1 PE M16 for grounding cable Ø4.5 to Ø10mm
- + Output x6 PE M25 for RRH cables from Ø9 to Ø16mm
- + Venting valve
- + Screw terminals for wires with up to 35mm²

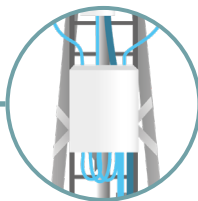
Ref	Designation
92857	PTTA Outdoor power box 6 RRU/RRH

### Specifications:

Dimensions	L360mm x W342mm x 182mm
Capacity	For installations with up to 6 power supply cables / Supports up to 6 remote radio heads 6x Ground terminal block green/yellow 35mm² 6x Negative pole terminal block blue 35mm² 6x Positive pole terminal block grey 35mm²
Material	Body Made of Gray Polycarbonate (PC) resin 10% glass fiber field Cover Made of Gray Polycarbonate (PC)
UV	UV Resistant
Water Resistance	IP65
Environment	RoHs compliant UL industrial controls & CE Low Voltage directive 2006/95EC listed Non-chlorinated & non-brominated flame retardant with UL-94 5VA Suitable for outdoor use respect to exposure to Ultraviolet Light, Water Exposureand Immersion in accordance with UL746C
Temperature	-40°C to +95°C
Installation	Pylon / Wall / Pole

Telenco is entitled to modify the specifications without prior notice.





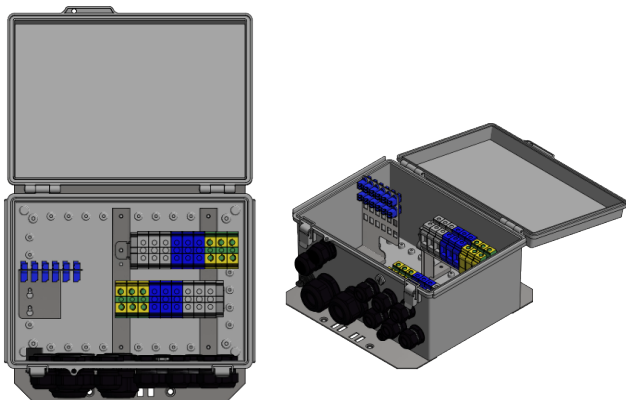
# XG-optic® HTTA BOXES

## XG-optic® HTTA Outdoor Hybrid box 24FO - 6 RRU/RRH



The HTTA outdoor hybrid box 24FO have been specifically developed to enable the connection and distribution of optical and power links within the 4G/5G indirect cabling structure. HTTA outdoor hybrid box 24FO are placed as close as possible from the RRU/RRH.

They enable the connection and management of the FTTA outdoor pre-terminated breakout up to 24FO and the FTTA outdoor patchcords 2FO, as well as the power management and distribution for 6 RRU/RRH with 18 terminal blocks (18x35mm<sup>2</sup>). HTTA outdoor hybrid boxes are made to withstand harsh weather conditions, as well as significant temperature changes and high mechanical stress.



### The key benefits:

- + Specific design for 4G/5G installation
- + Excellent mechanical performances
- + Easy installation and use
- + Compact design

### Characteristics:

- + Optic
  - + Input x1 PE M32 or M25
  - + Output x2 PE M32 multi-holes for 12 cables from Ø4 to Ø6mm
- + Power
  - + Input x2 PE M40 for cable from Ø12 to Ø32mm
  - + Input x1 PE M16 for grounding cable Ø4.5 to Ø10mm
  - + Output x6 PE M25 for RRH cables from Ø9 to Ø16mm
  - + Venting valve
  - + Screw terminals for wires with up to 35mm<sup>2</sup>

Ref	Designation
92854	HTTA Outdoor hybrid box 24FO LC/UPC – 6 RRH

### Specifications:

Dimensions	L360mm x W342mm x 182mm
Capacity	For installations with up to 6 power supply cables / Supports up to 6 remote radio heads For 24FO LC/UPC Duplex 6x Ground terminal block green/yellow 35mm <sup>2</sup> 6x Negative pole terminal block blue 35mm <sup>2</sup> 6x Positive pole terminal block grey 35mm <sup>2</sup>
Material	Body Made of Gray Polycarbonate (PC) resin 10% glass fiber field Cover Made of Gray Polycarbonate (PC)
UV	UV Resistant
Water Resistance	IP65
Environment	RoHs compliant UL industrial controls & CE Low Voltage directive 2006/95EC listed Non-chlorinated & non-brominated flame retardant with UL-94 5VA Suitable for outdoor use respect to exposure to Ultraviolet Light, Water Exposureand Immersion in accordance with UL746C
Temperature	-40°C to +95°C
Installation	Pylon / Wall / Pole

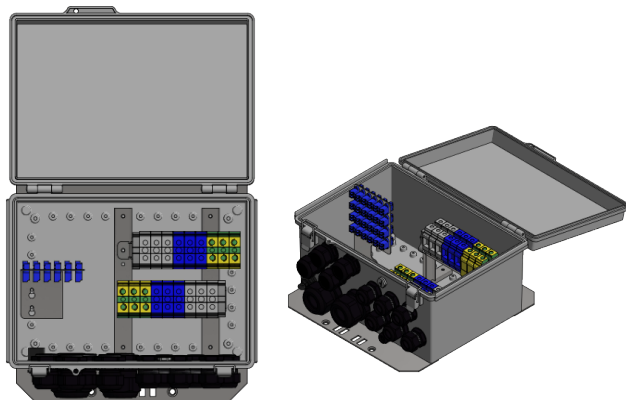
Telenco is entitled to modify the specifications without prior notice.

## XG-optic® HTTA Outdoor Hybrid box 48FO - 6 RRU/RRH



The HTTA outdoor hybrid box 48FO have been specifically developed to enable the connection and distribution of optical and power links within the 4G/5G indirect cabling structure. HTTA outdoor hybrid box are placed as close as possible from the RRU/RRH.

They enable the connection and management of the FTTA outdoor pre-terminated breakout up to 48FO and the FTTA outdoor patchcords 2FO, as well as the power management and distribution for 6 RRU/RRH with 18 terminal blocks (18x35 mm<sup>2</sup>). HTTA outdoor hybrid boxes are made to withstand harsh weather conditions, as well as significant temperature changes and high mechanical stress.



### The key benefits:

- + Specific design for 4G/5G installation
- + Excellent mechanical performances
- + Easy installation and use
- + Compact design

### Characteristics:

- + Optic
  - + Input x2 PE M32 or M25
  - + Output x4 PE M32 multi-holes for 24 cables from Ø4 to Ø6mm
- + Power
  - + Input x2 PE M40 for cable from Ø12 to Ø32mm
  - + Input x1 PE M16 for grounding cable Ø4.5 to Ø10mm
  - + Output x6 PE M25 for RRH cables from Ø9 to Ø16mm
  - + Venting valve
  - + Screw terminals for wires with up to 35mm<sup>2</sup>

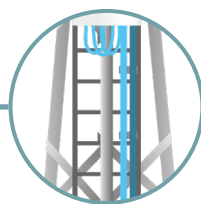
Ref	Designation
93153	HTTA Outdoor hybrid box 48FO LC/UPC – 6 RRH

### Specifications:

Dimensions	L360mm x W342mm x 182mm
Capacity	For installations with up to 6 power supply cables / Supports up to 6 remote radio heads For 48FO LC/UPC Duplex 6x Ground terminal block green/yellow 35 mm <sup>2</sup> 6x Negative pole terminal block blue 35 mm <sup>2</sup> 6x Positive pole terminal block grey 35 mm <sup>2</sup>
Material	Body Made of Gray Polycarbonate (PC) resin 10% glass fiber field Cover Made of Gray Polycarbonate (PC)
UV	UV Resistant
Water Resistance	IP65
Environment	RoHs compliant UL industrial controls & CE Low Voltage directive 2006/95EC listed Non-chlorinated & non-brominated flame retardant with UL-94 5VA Suitable for outdoor use respect to exposure to Ultraviolet Light, Water Exposureand Immersion in accordance with UL746C
Temperature	-40°C to +95°C
Installation	Pylon / Wall / Pole

Telenco is entitled to modify the specifications without prior notice.



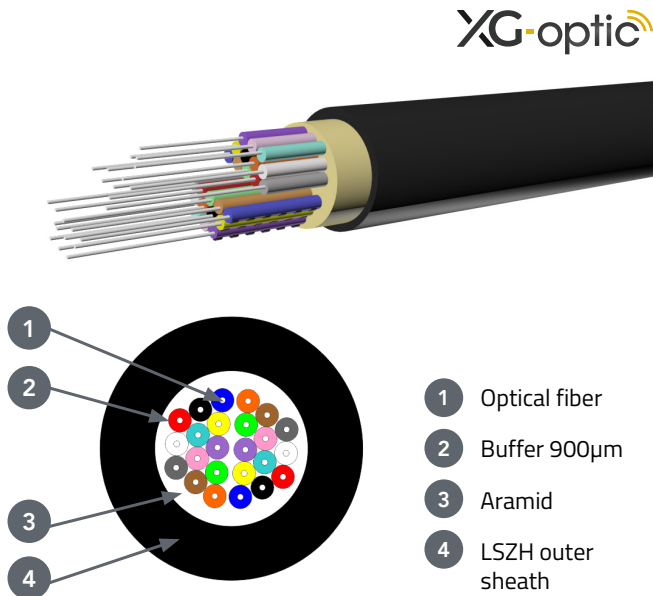


# XG-optic® FTTA BREAKOUTS

## Standard cables

Telenco FTFA 12-24FO standard breakout cables are high-performance 12 FO or 24 FO outdoor cables, specially designed to connect the BBU to optical boxes on 4G/5G sites. They can withstand harsh climatic conditions, temperature changes and high mechanical stress. They are available in 12FO and 24FO connectorized versions.

- The key benefits:**
- + High environmental and mechanical resistance
  - + Simple construction
  - + Compact design



## Specifications:

Modules	Ø 0,85mm +/-0,05mm LSZH
Modules colours	FR colour code
Cable reinforcement	Aramid
Waterproofing	Waterblocking aramid
External sheath	12FO - Ø6,4mm +/-0,2mm 24FO - Ø8,0mm +/-0,2mm
Cable sheath material	RoHS / LSZH / UV resistant
Cable colour	Black

Telenco is entitled to modify the specifications without prior notice.

## Performances :

Flexion	IEC 60794-1-21 E11	20xØ
Impact	IEC 60794-1-21 E4	ΔIL≤0,1dB to 1550nm
Tensile strength	IEC 60794-1-21 E1	660 N
Torsion	IEC 60794-1-2 E7	+/-180°/m, L=120N, ≤0,1dB/km
Crush	IEC 60794-1-21 E3	1000 N/10cm
Temperature range		-40°C / +70°C

## XG-optic® Standard FTFA breakouts

The Telenco 12-24FO standard FTFA breakouts are high-performance 12 FO or 24 FO outdoor cables, specially designed to connect the BTS/BBU to the optical boxes on 4G/5G sites. They can withstand harsh climatic conditions, temperature changes and high mechanical stress. With their simple, economic conception, they can be adapted to all pre-terminated deployments.

- The key benefits:**
- + High environmental and mechanical resistance
  - + Premium optical performances
  - + Easy, secure installation

- Characteristics:**
- + LC/UPC duplex uniboot connectors
  - + Available with specific protection
  - + Lengths available from 20 to 200 m

## Specifications:

Connector type	LC/UPC duplex uniboot
Fanout	Standard or for M32 cable gland
Insertion loss	IL≤0,25dB
Return Loss	RL>50dB
Mechanical tests	ΔIL≤0,2dB and RL>50dB
Environmental tests	ΔIL≤0,2dB and RL>50dB
Connectorization	On 2 sides
Cable length	20m to 200m
Fanout identification	Numbered clips
Fanout diameter	Ø2,0mm +/-0,2mm
Fanout colour	Yellow
Fanout lengths	Stepped Max 1,05m

Telenco is entitled to modify the specifications without prior notice.



## Breakout FTFA 12FO LC/UPC-LC/UPC Ø6,4mm G.657A2 Black

Ref	Length	Ref	Length
1004738	20 m	1004744	80 m
1004739	30 m	1004745	90 m
1004740	40 m	1004746	100 m
1004741	50 m	1004748	125 m
1004742	60 m	1004749	150 m
1004743	70 m	1004751	200 m

## Breakout FTFA 24FO LC/UPC-LC/UPC Ø8,0mm G.657A2 Black

Ref	Length	Ref	Length
92810	20 m	92816	80 m
92811	30 m	92817	90 m
92812	40 m	92818	100 m
92813	50 m	92819	125 m
92814	60 m	92820	150 m
92815	70 m	92821	200 m

## Logistic:

Test report	Delivered for each breakout
Marking/ identification	Identification and traceability with a marking on the cable and packaging

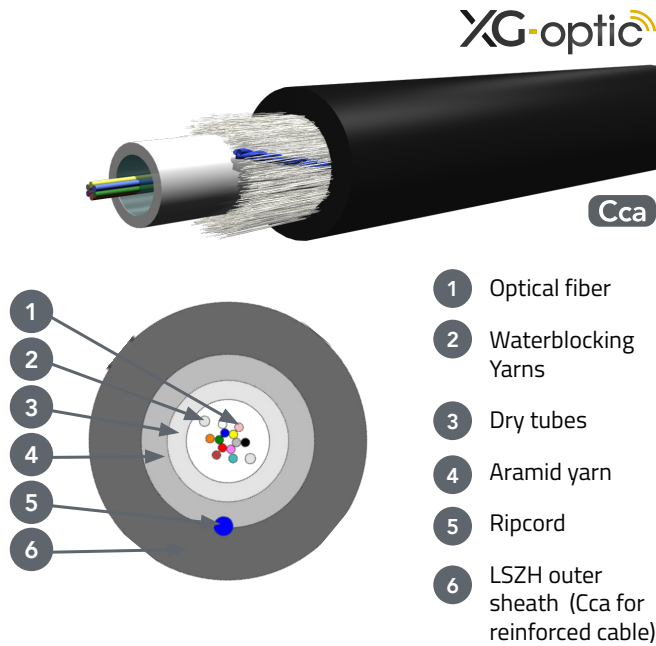




Indoor/outdoor Cca reinforced cables

The Telenco Cca reinforced indoor/outdoor cable for FTTA breakout 24FO, is a high-performance, ultra-flexible 24 FO cable, specially designed to connect the BBU to optical boxes on 4G/5G sites. It can withstand extreme climatic conditions, temperature changes and high mechanical stress. This version of Cca-reinforced flexible cable is suitable for pre-terminated outdoor or indoor/outdoor use.

- The key benefits:**
- + High environmental and mechanical resistance
  - + CPR Cca Certified
  - + High flexibility



Specifications:

Structure	Dry tube 24FO
Module colours	/
Cable reinforcement	Aramid
Waterproofing	Waterblocking Yarns
Outer sheath	24FO - Ø8,2mm +/-0,5mm
Ripcords	Yes
Cable sheath material	RoHS / LSZH / UV resistant
CPR	Cca, s1a, d0,a1
Cable colour	Black

Telenco is entitled to modify the specifications without prior notice.

Performances:

Repeated bending	IEC 60794-1-21 E11	10xØ
Impact	IEC 60794-1-21 E4	$\Delta IL \leq 0,1 \text{ dB}$ to 1550nm
Tensile strength	IEC 60794-1-21 E1	2200 N
Torsion	IEC 60794-1-2-E7	$\pm 180^\circ/\text{m}$ , L=120N, $\leq 0,1 \text{ dB/km}$
Crush	IEC 60794-1-21 E3	1500 N/10cm
Temperature range		-20°C / 70°C

XG-optic® Reinforced FTTA breakout with Push-clip fanout

The Telenco Cca reinforced FTTA breakouts are high-performance 24 FO outdoor or indoor/outdoor pre-terminated cables, specially designed to connect the BTS to the optical boxes on 4G/5G sites. They can withstand harsh climatic conditions, temperature changes and withstand temperature changes and high mechanical stress. Equipped with Telenco's patented Push-clip solution, they enable rapid, secure installation, whatever the conditions.

- The key benefits:**
- + High environmental and mechanical resistance
  - + CPR Cca Certified
  - + Patented push-Clip fanout

- Characteristics :**
- + LC/UPC duplex uniboot connectors
  - + Available with specific protection
  - + Available from 20 to 200 m in lengths



Specifications:

Connector type	LC/UPC duplex uniboot
Fanout	Telenco Push-Clip
Insertion loss	IL£0,25dB
Return Loss	RL>50dB
Mechanical test	DIL£0,2dB and RL>50dB
Environmental test	DIL£0,2dB and RL>50dB
Connectorization	2 sides
Cable Length	20m to 200m
Fanout identification	Numbered clips
Fanout diameter	Ø2,0mm +/-0,2mm
Fanout colour	Yellow
Fanout Length	Stepped 1,05m Max

Telenco is entitled to modify the specifications without prior notice.

Logistic:

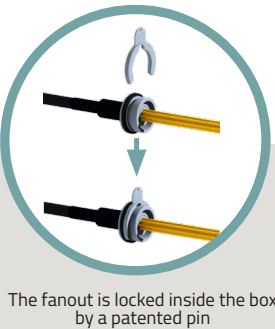
Test report	Delivered for each breakout
Marking/identification	Identification and traceability with a marking on the cable and packaging

FTTA breakout reinforced Cca Push-clip 24FO LC/UPC-LC/UPC Ø8,2mm G.657A2 Black			
Ref	Length	Ref	Length
92773	20 m	92779	80 m
92774	30 m	92780	90 m
92775	40 m	92781	100 m
92776	50 m	92782	120 m
92777	60 m	92783	150 m
92778	70 m	92784	200 m



Telenco fanout system Push-Clip

Fanout solution developed specifically by Telenco to simplify and make reliable the installation of the 24FO Breakout in the Telenco FTTA box.



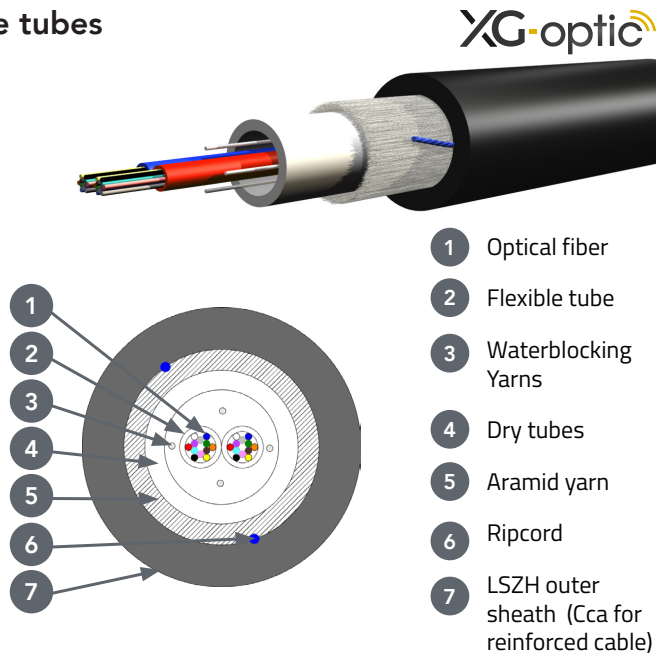
Outdoor extra-reinforced cables with flexible tubes

The Telenco FTTA breakout 24FO extra-reinforced cable is a high-performance 24 FO outdoor cable, specially designed to connect the BBU to the optical boxes on 4G/5G sites. It can withstand extreme climatic conditions, temperature changes and high mechanical stress.

This version of extra-reinforced flexible cable with flexible tubes enables pre-terminated and spliced use.

The key benefits:

- + High environmental and mechanical resistance
- + Product range adapted to each application
- + Small footprint
- + Splicing compatible



Specifications:

Structure	Dry tube + 2x Flexible tube 12FO
Module colours	Blue/Red (fiber: FR Colour code)
Cable reinforcement	Aramid yarn
Waterproofing	Waterblocking Yarns
Outer sheath	24FO - Ø9,8mm +/-0,3mm
Ripcords	Yes
Cable sheath material	RoHS / LSZH / UV resistant
CPR	Eca
Cable colour	Black

Telenco is entitled to modify the specifications without prior notice.

Performances:

Repeated bending	IEC 60794-1-21 E11	10xØ
Impact	IEC 60794-1-21 E4	$\Delta IL \leq 0,1dB$ to 1550nm
Tensile strength	IEC 60794-1-21 E1	2700 N
Torsion	IEC 60794-1-2-E7	$\pm 180^\circ/m$ , L=120N, $\leq 0,1dB/km$
Crush	IEC 60794-1-21 E3	2000 N/10cm
Temperature range		-40°C / +80°C

XG-optic® extra-reinforced FTTA Breakout with Push-clip fanout

The Telenco extra-reinforced FTTA breakouts 24FO are high-performance 24 FO outdoor pre-terminated cables, specially designed to connect BTS to optical boxes on 4G/5G sites. They can withstand harsh climatic conditions, temperature changes and high mechanical stress.

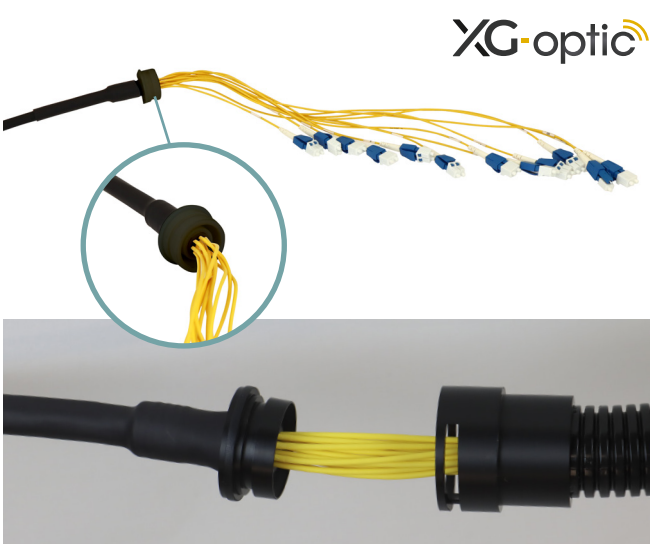
Equipped with Telenco's patented Push-clip solution, they enable rapid, safe installation, whatever the conditions. This version with extra-reinforced flexible tube cable allows easy splicing on one side of the breakout (half-terminated version).

The key benefits:

- + High environmental and mechanical resistance
- + Premium optical performances
- + Patented push-Clip fanout

Characteristics :

- + LC/UPC duplex uniboot connectors
- + Available with specific protection
- + Available from 20 to 200 m in lengths



Specifications:

Connector type	LC/UPC duplex uniboot
Fanout	Telenco Push-Clip
Insertion loss	$IL \leq 0,25dB$
Return Loss	$RL > 50dB$
Mechanical test	$\Delta IL \leq 0,2dB$ and $RL > 50dB$
Environmental test	$\Delta IL \leq 0,2dB$ and $RL > 50dB$
Connectorization	1 or 2 sides
Cable Length	20m to 200m
Fanout identification	Numbered clips
Fanout diameter	$\varnothing 2,0mm \pm 0,2mm$
Fanout colour	Yellow
Fanout Length	Stepped 1,05m Max

Telenco is entitled to modify the specifications without prior notice.

Logistic:

Test report	Delivered for each breakout
Marking/identification	Identification and traceability with a marking on the cable and packaging

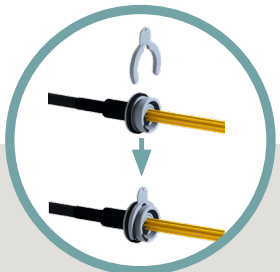
FTTA breakout extra-reinforced Push-clip  
2x12FO LC/UPC-LC/UPC Ø9,8mm G.657A2 Black

Ref	Length	Ref	Length
92761	20 m	92767	80 m
92762	30 m	92768	90 m
92763	40 m	92769	100 m
92764	50 m	92770	120 m
92765	60 m	92771	150 m
92766	70 m	92772	200 m



Telenco fanout system Push-Clip

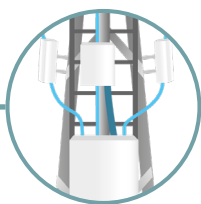
Fanout solution developed specifically by Telenco to simplify and make reliable the installation of the 24FO Breakout in the Telenco FTTA box.



The fanout is locked inside the box by a patented pin







# XG-optic® FTТА 2FO PATCHCORDS

## Cable for FTТА 2FO patchcords

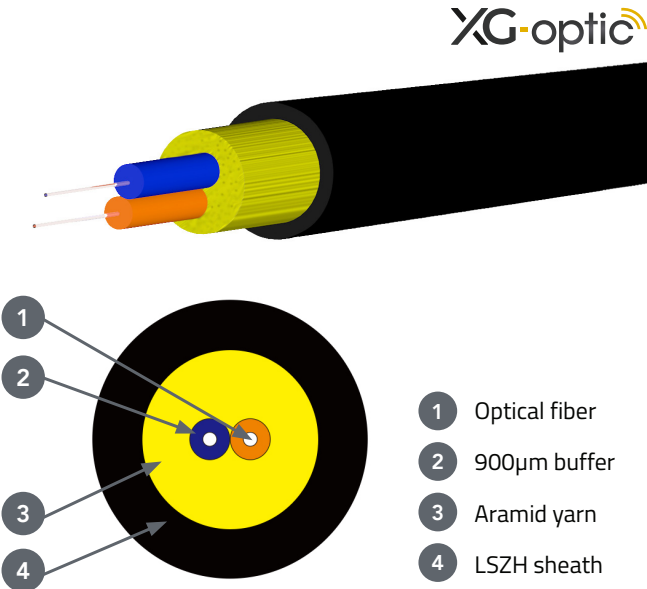
The Telenco FTТА cables for 2FO patchcords are high-performance outdoor cables, specially designed to connect the BTS/ BBU to the RRU/RRH in the 4G/5G direct cabling structure, or the junction box (FTТА or HTТА) to the RRU in the 4G/5G indirect cabling structure.

They can withstand harsh climatic conditions, temperature changes and high mechanical stress. They are available in 2FO pre-terminated versions, with different types of connectors and protection.

- The key benefits:**
- + High environmental and mechanical resistance
  - + Simple design
  - + High flexibility

### Specifications:

Module	Ø 0,9 mm
Module sheath material	PVC
Module colour	Blue / Red
Cable reinforcement	Aramid
Waterproofing	Waterblocking Yarns
Outer sheath	Ø 5 mm +/- 0,2 mm
Outer sheath material	RoHS / LSZH / UV resistant
Cable Weight	22 kg / km
Outer sheath colour	Black



### Performances:

Tensile strength	Installation	450 N
Torsion	NF EN 60794-1-2 E7	+/-180°/m, L=120N, ≤0,1dB/km
Crush	Court terme	1000 N/100mm
Temperature range	Utilisation	-40°C / +75°C
	Transport and storage	-40°C / +85°C

## XG-optic® FTТА 2 FO Patchcord

The FTТА 2 FO patchcords are specially designed to connect the BTS/ BBU to the RRU/RRH in the 4G/5G direct cabling structure, or the junction box (FTТА or HTТА) to the RRU in the 4G/5G indirect cabling structure. Thanks to its know-how and expertise in aerial cable deployment, Telenco has developed a solution that withstands harsh environments while maintaining a lightweight yet highly resistant cable structure. FTТА 2 FO patchcords have a Ø 5 mm diameter, guaranteeing flexibility and ease of installation.

- Available in various symmetrical versions:
- Connector LC/UPC duplex - LC/UPC duplex
  - Connector LC/UPC duplex with NSN protection- LC/UPC duplex with NSN protection
  - Connectique LC/UPC duplex with FullAxs protection - LC/UPC duplex with FullAxs protection

- Or asymmetrical versions:
- Connector LC/UPC duplex - SC/APC duplex
  - Connector LC/UPC duplex - SC/UPC duplex
  - Connector LC/UPC duplex - LC/UPC duplex With NSN protection
  - Connector LC/UPC duplex - LC/UPC duplex with FullAxs protection

### Specifications:

Test wavelengths (nm)	1310 and 1550 nm
Connector type	Monomode : LC/UPC duplex (blue) Multimode : LC/UPC duplex (beige)
Insertion loss	IL ≤ 0,25 dB (SM)
Return loss	RL > 50 dB (SM UPC)
Mechanical test	Δ IL ≤ 0,2 dB and RL ≥ 50 dB (SM UPC)
Environmental test	Δ IL ≤ 0,2 dB and RL ≥ 50 dB (SM UPC)
Cable lengths	1 m to 300 m
Identification	Numbered clips on each ends
Fanout	Ø 3 mm +/- 0,2 mm
Fanout colour	Yellow
Fanout lengths	To be defined
Connector	LC
Available protection	NSN - FullAXS

### Logistic:

Test report	Delivered for each breakout
Marking/ identification	Identification and traceability with a marking on the cable and packaging
Packaging	L ≤ 250m > Individual PE bag L > 250m > Individual cable drum

Telenco se réserve le droit de modifier les spécifications sans préavis



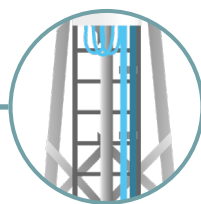
- The key benefits:**
- + Premium optical quality
  - + Excellent mechanical performance
  - + Simple installation
  - + Flexible, lightweight cable

## FTТА 2FO Patchcord LCD/UPC-LCD/UPC Ø5.0mm G.657A2 Black

Ref	Length	Ref	Length
92741	1 m	92751	40 m
92742	2 m	92752	45 m
92743	3 m	92753	50 m
92744	5 m	92754	60 m
92745	10 m	92755	70 m
92746	15 m	92756	90 m
92747	20 m	92757	100 m
92748	25 m	92758	120 m
92749	30 m	92759	150 m
92750	35 m		

## FTТА 2FO Patchcord NSN LCD/UPC-NSN LCD/UPC Ø5.0mm G.657A2 Black

Ref	Length	Ref	Length
92723	1 m	92733	40 m
92724	2 m	92735	45 m
92726	3 m	92734	50 m
92725	5 m	92736	60 m
92727	10 m	92737	70 m
92728	15 m	92738	90 m
92729	20 m	92739	100 m
92730	25 m	92740	120 m
92731	30 m	92760	150 m
92732	35 m		



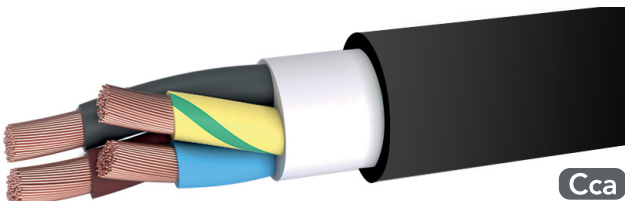
# XG-optic® POWER CABLES

## XG-optic® power cables Cca

We offer a wide range of power cables for RRUs and 4G/5G antennas. We manufacture both armored and non-armored high-performance cables in Europe.  
Our power cable solutions comply with current standards and CPR certifications, enabling them to be used in all types of environment.

- The key benefits:**
- + European manufacturing
  - + Large range of cables
  - + CPR Cca

## XG-optic® unshield power cables Cca



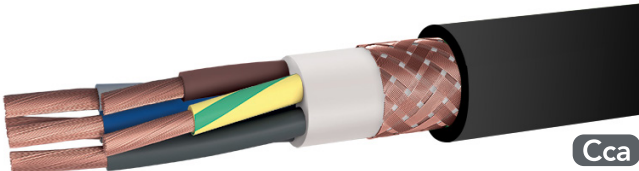
Ref	Designation
92785	Power cable unshield FTTA Cca 2x6mm² /T.500m
92786	Power cable unshield FTTA Cca 2x10mm² /T.500m
92787	Power cable unshield FTTA Cca 2x16mm² /T.500m

### Technical characteristics :

Copper	Flexible copper Class 5 EN 60228		
	2x6mm²	2x10mm²	2x16mm²
Maximum wire diameter	0,31mm	0,41mm	0,41mm
Insulation thickness	0,7mm	0,7mm	0,7mm
Sheath thickness	1,8mm	1,8mm	1,8mm
Outer diameter	12,9mm	15,0mm	16,8mm
Max electrical resistance (at 20°C)	3,3 Ω/Km	1,91 Ω/Km	1,21 Ω/Km
Sheath	Black – UV-resistant		
Operating temperature	-40°C / +90°C		
Bending radius	UNEL 35324: 4 x Ø UNEL 35324: 6 x Ø		
Nominal voltage Uo/U	0,6/1KV		
Max voltage Um	1,5KV		
Maximum temperature in case of short-circuit:	250°C for 5 seconds		
Weight	300 Kg/Km	440 Kg/Km	590 Kg/Km
CPR	Cca-s1b,d1,a1		
Norm	CEI 20-13 CEI 20-13 V.2 CEI EN 50575 CEI UNEL 35324		

Telenco is entitled to modify the specifications without prior notice

## XG-optic® shield power cables Cca



Ref	Designation
92788	Power cable shield FTTA Cca 2x6mm² /T.500m
92789	Power cable shield FTTA Cca 2x10mm² /T.500m
92790	Power cable shield FTTA Cca 2x16mm² /T.500m
92791	Power cable shield FTTA Cca 2x25mm² /T.500m

### Technical characteristics :

Copper	Flexible copper Class 5 EN 60228			
	2x6mm²	2x10mm²	2x16mm²	2x25mm²
Maximum wire diameter	0,31mm	0,41mm	0,41mm	0,41mm
Insulation thickness	0,7mm	0,7mm	0,7mm	0,9mm
Sheath thickness	1,8mm	1,8mm	1,8mm	1,8mm
Outer diameter	14,4mm	16,8mm	18,6mm	21,8mm
Max electrical resistance (at 20°C)	3,3 Ω/Km	1,91 Ω/Km	1,21 Ω/Km	0,78 Ω/Km
Shielding	Copper braided shield			
Sheath	Black – UV-resistant			
Operating temperature	-40°C / +90°C			
Bending radius	UNEL 35324: 6 x Ø			
Nominal voltage Uo/U	0,6/1KV			
Max voltage Um	1,5KV			
Maximum temperature in case of short-circuit:	250°C for 5 seconds			
Weight	380 Kg/Km	560 Kg/Km	730 Kg/Km	1030 Kg/Km
CPR	Cca-s1b,d1,a1			
Norm	CEI 20-13 CEI 20-13 V.2 CEI EN 50575 CEI UNEL 35324			

Telenco is entitled to modify the specifications without prior notice

## XG-optic® pre-terminated power cables



Telenco has added to its power cable range, dedicated connectors for 5G installations.  
This flexibility enables us to meet both standard and specific needs, and to support our customers in the technological evolution of mobile networks.

- The key benefits:**
- + European manufacturing
  - + Large range of cables
  - + CPR Cca

- Technical characteristics:**
- UNSHIELD:**
- + 1 to 4 conductors
  - + 6mm²/ 10mm²/16mm²
  - + Pushpull connector 43A & 60A
- SHIELD:**
- + 1 to 4 conductors
  - + 6mm²/10mm² /16mm²/25mm²
  - + Pushpull connector 43A & 60A





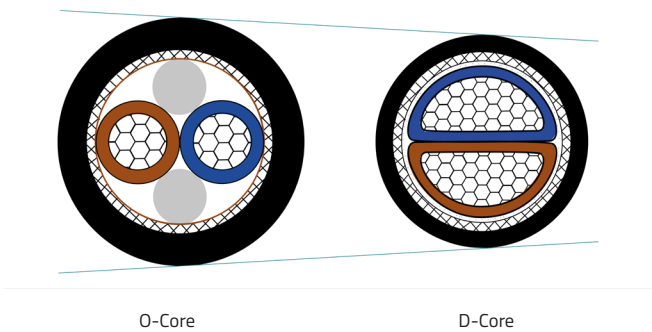
XG-optic® D-Core power cables



Ultra-flexible and compact, XG-optic® PTTA D-Core cables have been specifically developed for outdoor mobile installations. Designed for DC installation in mobile radio networks, 4G and 5G mobile radio networks. Its unique design gives it unique advantages: reduced weight, smaller diameter, improved strippability, lower installation costs, less clutter on mobile sites and an improved environmental footprint.

The key benefits:

- + European manufacturing
- + Ultra-flexibles
- + Better EMC protection
- + Easier to strip
- + Up to 44% lighter
- + Up to 28% smaller diameter
- + -20% environmental impact



**Diameter:**  
-28%  
on 2x10mm<sup>2</sup>

**Weight:**  
-44%  
on 2x10mm<sup>2</sup>

**x10**  
easy to strip

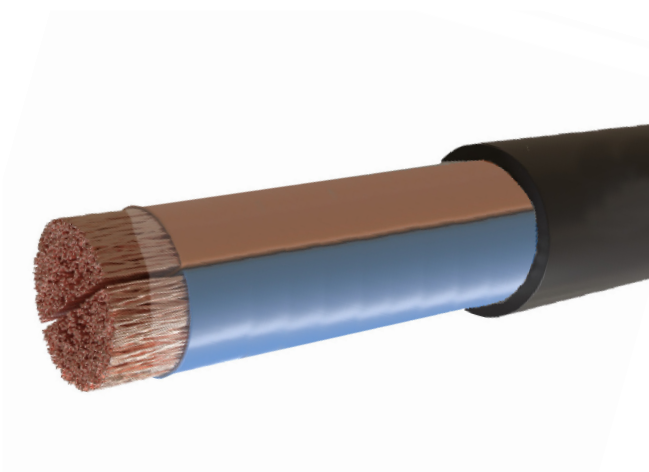
**-20%**  
environmental  
impact

Technical characteristics:

Conductor cross-section	2x 4mm <sup>2</sup>	2x 6mm <sup>2</sup>	2x 10mm <sup>2</sup>	2x 16mm <sup>2</sup>	2x 25mm <sup>2</sup>	2x 35mm <sup>2</sup>
Cable diameter (Unshield & Shield)	11.0	12.0	13.0	14.5	17.0	19.0
Nominal voltage Uo/U	0,6/1KV					
Min. Static bend	4x Ø					
Min. Installation bend	8x Ø					
Conductormaterial	Barecopperclass5					
Outersheath	LSZH (HFFR)					
Isolation	XLPE - IEC 60502-1					
Shield structure	Aluminium-Polyester tape + tinned copper braid					
Mini. insulation resistance	10MOhm.km					
Breakdown voltage Vcc, 5min.	3500V					
UV resistance	UL 1581 section 1200					
Water resistance	NF C 15-100 : IPX6 (AD6)					
Flame resistance	IEC 60332-1 / EN50575					
REACH & ROHS	(UE) 1907/2006/CE / Directive 2011/65					
Temperature range	-40°C / +90°C					

Telenco is entitled to modify the specifications without prior notice

XG-optic® unshield D-CORE power cables

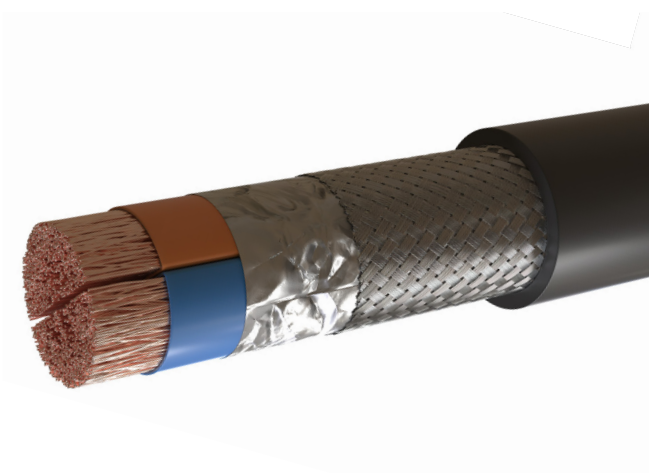


Ref	Designation
1002907	Power cable FTTA D-core unshield 2x4mm <sup>2</sup> XG-optic® /T.500m
1002908	Power cable FTTA D-core unshield 2x6mm <sup>2</sup> XG-optic® /T.500m
1002909	Power cable FTTA D-core unshield 2x10mm <sup>2</sup> XG-optic® /T.500m
1002910	Power cable FTTA D-core unshield 2x16mm <sup>2</sup> XG-optic® /T.500m
1002911	Power cable FTTA D-core unshield 2x25mm <sup>2</sup> XG-optic® /T.500m
1002912	Power cable FTTA D-core unshield 2x35mm <sup>2</sup> XG-optic® /T.500m



Available in cut lengths

XG-optic® shield D-CORE power cables



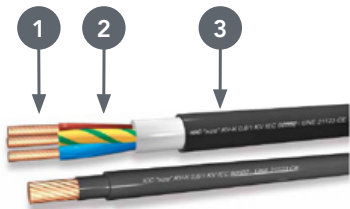
Ref	Designation
1002913	Power cable FTTA D-core shield 2x4mm <sup>2</sup> XG-optic® /T.500m
1002914	Power cable FTTA D-core shield 2x6mm <sup>2</sup> XG-optic® /T.500m
1002915	Power cable FTTA D-core shield 2x10mm <sup>2</sup> XG-optic® /T.500m
1002916	Power cable FTTA D-core shield 2x16mm <sup>2</sup> XG-optic® /T.500m
1002917	Power cable FTTA D-core shield 2x25mm <sup>2</sup> XG-optic® /T.500m
1002918	Power cable FTTA D-core shield 2x35mm <sup>2</sup> XG-optic® /T.500m

Power cables RVK



Telenco offer a wide range of power cables for RRUs and 4G/5G antennas. We manufacture both armored and non-armored high-performance cables in Europe. Our power cable solutions comply with current standards. enabling them to be used in all types of environment.

- The key benefits:**
- + European manufacturing
  - + Large range of cables



- 1 Flexible copper class 5 EN 60228
- 2 Cross-linked polyethylene (XLPE)
- 3 PVC thermoplastic compound (with extruded filler for size above 6mm<sup>2</sup>)

Ref	Designation
1004600	Power cable RVX 2x6mm <sup>2</sup> /T.500m
1004601	Power cable RVX 2x10mm <sup>2</sup> /T.500m
1004602	Power cable RVX 2x16mm <sup>2</sup> /T.500m
1004603	Power cable RVX 2x25mm <sup>2</sup> /T.500m
1004604	Power cable RVX 2x35mm <sup>2</sup> /T.500m



Available in cut lengths

Technical characteristics:

Copper	Flexible copper class 5 EN 60228				
	2x6 mm <sup>2</sup>	2x10 mm <sup>2</sup>	2x16 mm <sup>2</sup>	2x25 mm <sup>2</sup>	2x35 mm <sup>2</sup>
Maximum wire diameter	0.31mm	0.41mm	0.41mm	0.41mm	0.41mm
Insulation thickness	0.7mm	0.7mm	0.7mm	0.9mm	0.9mm
Sheath thickness	1.24mm				
Outer diameter	11.9mm	14.5mm	16.3mm	19.5mm	21.9mm
Max cond. resistance (at 20°C)	3.30 Ω/Km	1.91 Ω/Km	1.21 Ω/Km	0.780 Ω/Km	0.554 Ω/Km
Sheath	Black				
Operating temperature	-15°C / +90°C				
Bending radius	6 x Ø				
Rated voltage U <sub>o</sub> /U	0,6/1 kV				
Max voltage U <sub>m</sub>	1.2 kV				
Maximum temperature in case of short-circuit	250°C for 5 seconds				
Weight	300 Kg/Km	460 Kg/Km	635 Kg/Km	930 Kg/Km	1220 Kg/Km
CPR	Eca				
Norm	UNE 21123-2 IEC 60502 EU 305/2011 (CPR) EN 50575 + EN 50575/A1				

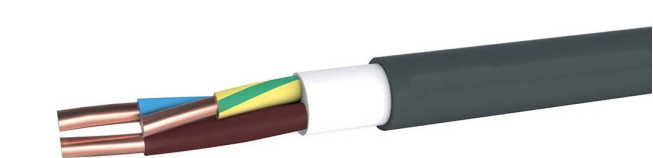
Telenco is entitled to modify the specifications without prior notice

Power cables U-1000 R2V



Telenco offer a wide range of power cables for RRUs and 4G/5G antennas. We manufacture both armored and non-armored high-performance cables in Europe. Our power cable solutions comply with current standards. enabling them to be used in all types of environment.

- The key benefits:**
- + European manufacturing
  - + Large range of cables



- 1 Rigid copper class 1 EN 60228
- 2 Rigid stranded copper class 2 EN 60228
- 3 Cross-linked Polyethylene (XLPE)
- 4 PVC

Ref	Designation
1002920	Power cable U-1000 R2V 2x10mm <sup>2</sup> /T.500m
1002921	Power cable U-1000 R2V 2x16mm <sup>2</sup> /T.500m
1002922	Power cable U-1000 R2V 2x25mm <sup>2</sup> /T.500m
1002923	Power cable U-1000 R2V 2x35mm <sup>2</sup> /T.500m
1002924	Power cable U-1000 R2V 2x50mm <sup>2</sup> /T.500m
1002925	Power cable U-1000 R2V 3x1.5mm <sup>2</sup> /T.500m
1002926	Power cable U-1000 R2V 3x2.5mm <sup>2</sup> /T.500m



Available in cut lengths

Technical characteristics:

Copper	Rigid stranded copper class 2 EN 60228					Rigid copper class 1 EN 60228	
	2x10mm <sup>2</sup>	2x16mm <sup>2</sup>	2x25mm <sup>2</sup>	2x35mm <sup>2</sup>	2x50mm <sup>2</sup>	3x1.5mm <sup>2</sup>	3x2.5mm <sup>2</sup>
Insulation thickness	0.7mm	0.7mm	0.9mm	0.9mm	1.0mm	0.7mm	0.7mm
Sheath thickness	1.8mm						
Outer diameter	14.7mm	16.6mm	19.8mm	21.6mm	24.8mm	9.9mm	10.6mm
Max electrical resistance (at 20°C)	1.83 Ω/Km	1.15 Ω/Km	0.727 Ω/Km	0.524 Ω/Km	0.387 Ω/Km	12.1 Ω/Km	7.41 Ω/Km
Sheath	Black – UV-resistant						
Operating temperature	-15°C / +90°C						
Bending radius	6 x Ø						
Rated voltage U <sub>o</sub> /U	0.6/1KV						
Max voltage U <sub>m</sub>	1.2KV						
Maximum temperature in case of short-circuit:	200°C for 5 seconds						
Weight	450 Kg/Km	620 Kg/K	915 Kg/K	1175 Kg/K	1580 Kg/K	155 Kg/K	195 Kg/K
CPR	Eca						
Norm	ENNF C 32-321 IEC 60502 EU 305/2011 (CPR) EN 50575 + EN 50575/A1						

Telenco is entitled to modify the specifications without prior notice



Power cables HO7V-K

Telenco offer a wide range of power cables for RRUs and 4G/5G antennas. We manufacture both armored and non-armored high-performance cables in Europe. Our power cable solutions comply with current standards. enabling them to be used in all types of environment.



- The key benefits:**
- + European manufacturing
  - + Large range of cables



- 1 Flexible bare copper class 5 EN 60228
- 2 PVC compound type T11

Ref	Designation
1004605	Power cable HO7V-K 1x16mm <sup>2</sup> Black /T.500m
1004606	Power cable HO7V-K 1x16mm <sup>2</sup> Yellow/Green /T.500m
1004607	Power cable HO7V-K 1x25mm <sup>2</sup> Yellow/Green /T.500m
1004608	Power cable HO7V-K 1x50mm <sup>2</sup> Yellow/Green /T.500m

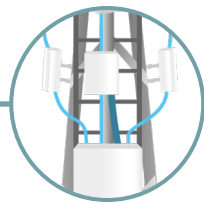


Available in cut lengths

Technical characteristics:

Copper	Flexible bare copper class 5 EN 60228		
	1x16mm²	1x25mm²	1x50mm²
Maximum wire diameter	0.41mm	0.41mm	0.41mm
Insulation thickness	1.0mm	1.2mm	1.4mm
Sheath thickness		1.24mm	
Outer diameter	6.9mm	8.7mm	11.6mm
Max cond. resistance (at 20°C)	1.21 Ω/Km	0.78 Ω/Km	0.386 Ω/Km
Sheath	Black or Yellow/Green	Yellow/Green	
Operating temperature	-5°C / +70°C		
Bending radius	4 x Ø		
Rated voltage Uo/U	450/750 V		
Max voltage Um	1 kV		
Maximum temperature in case of short-circuit	160°C for 5 seconds		
Weight	160 Kg/Km	250 Kg/Km	480 Kg/Km
Norm	EN 50525-2-31 HD21.3 EN50363 IEC EN 60332-1-2 IEC EN 60228 HD21.3		

Telenco is entitled to modify the specifications without prior notice



RF JUMPERS

Telenco offers a wide range of high-performance RF jumpers. By drawing on our mutual expertise, know-how and experience, Telenco is able to deliver reliable products with short lead times. This offer is completed by a full range of coaxial connectors for 3G and 4G mobile site deployments.

- The key benefits:**
- + High-performance jumpers made in Europe
  - + Large product range
  - + Short lead times

- Technical Characteristics :**
- + 50 Ohm
  - + De 1/4" au 1.5/8"
  - + Right/Angled – Male/Female
  - + Cellflex or Superflex
  - + Connectors IP68



Connector 7/16 male Superflex



Connector 7/8 female Low loss



Connector 1/2 female Superflex



Transition 4.3/10 male - 7/16 female

Bretelle 4.3/10 - 7/16 angular

Connector A	Connector B	Length	Ref
4.3/10	7/16 angular	1 m	40065
		1,5 m	40066
		2 m	40067
		2,5 m	40427
		3 m	40068
		4 m	40069
		5 m	40070
		6 m	40071
		7 m	40072
		8 m	40428
		9 m	40429
		10 m	40426

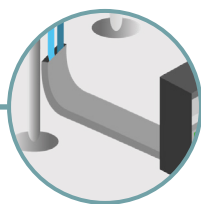
Bretelle 4.3/10 - 4.3/10 angular

Connector A	Connector B	Length	Ref
4.3/10	4.3/10 angular	1 m	40084
		1,5 m	40085
		2 m	40086
		2,5 m	40432
		3 m	40087
		4 m	40088
		5 m	40089
		6 m	40090
		7 m	40091
		8 m	40433
		9 m	40434
		10 m	40431

Bretelle 4.3/10 - 4.3/10

Connector A	Connector B	Length	Ref
4.3/10	4.3/10	1 m	40073
		1,5 m	40074
		2 m	40075
		2,5 m	40430
		3 m	40410
		4 m	40077
		5 m	40411
		6 m	40079
		7 m	40080
		8 m	40081
		9 m	40082
		10 m	40083

Other dimensions available on request



# CABLES TRAYS

Telenco's expertise in the development and manufacture of metal and stainless steel components means we can offer solutions tailored to mobile deployments on pylons or roof terraces, even in the most demanding climates. Based on an innovative European technology, ultra-galva, our cable tray solutions offer outstanding performance: 20% more resistant, twice the lifespan, but also better ecological and environmental performance. Our cable tray solutions are 100% European.



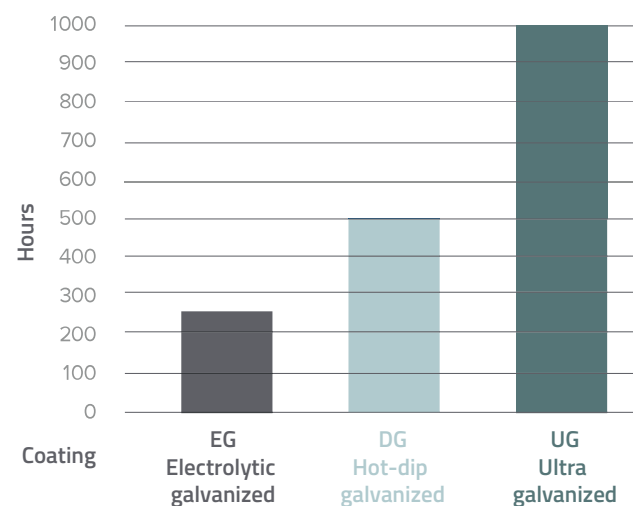
ULTRA GALVA cable trays offer a number of advantages over traditional finition (hot dipped):

## The key benefits:

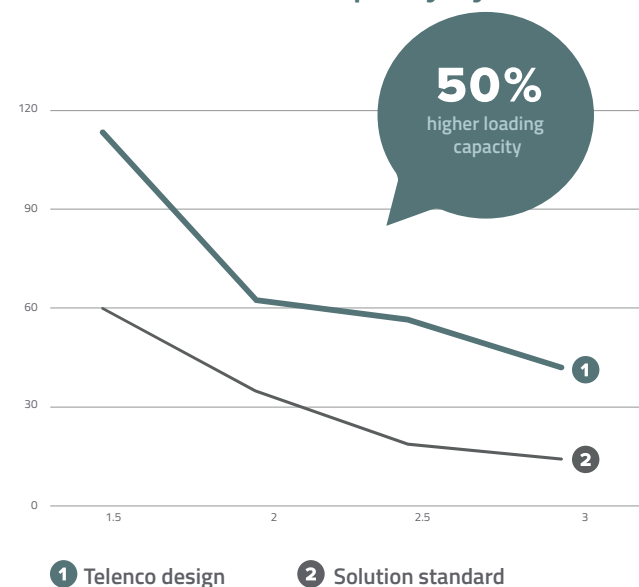
- + Durability
- + Performance
- + Economical
- + Ecological



Up to 4 times greater corrosion resistance  
Time to red rust in salt test



The unique shape of cable trays  
increases load capacity by 50%



## Cable trays, covers and accessories

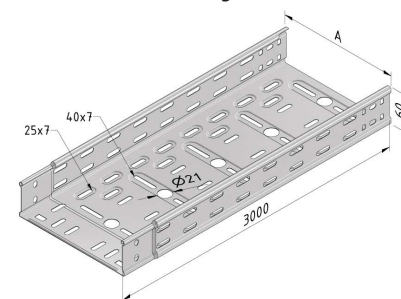
### The key benefits:

- + Safe handling thanks to rounded edges
- + Patented I-profile
- + Rapid assembly of pre-cut tiles without accessories
- + Reinforced natural ventilation (perforated slab at base)



I-profile patented

## Perforated cable tray

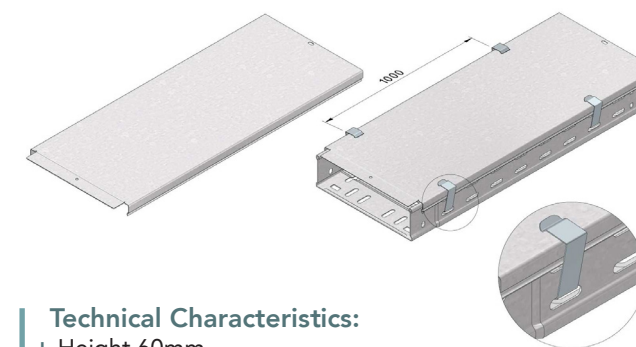


### Technical Characteristics:

- + Height: 60mm
- + Width 50mm to 300mm
- + Packaging 2 x 3m
- + Maximum load according to IEC 61537:
  - + 50mm to 200mm: 1m (100 daN/m),
  - + 2m (60 daN/m),
  - + 3m (40 daN/m)
- + UG (ultra galvanised) finish: high-performance metallic coating ideal for aggressive and demanding environments

Ref	Designation
1008213	Perforated cable tray 60x50mm ULTRA GALVA - 3m qty 2 pcs: 6m
1008214	Perforated cable tray 60x100mm ULTRA GALVA - 3m qty 2 pcs: 6m
1008215	Perforated cable tray 60x150mm ULTRA GALVA - 3m qty 2 pcs: 6m
1008216	Perforated cable tray 60x200mm ULTRA GALVA - 3m qty 2 pcs: 6m
1008217	Perforated cable tray 60x300mm ULTRA GALVA - 3m qty 2 pcs: 6m

## Cable tray cover



### Technical Characteristics:

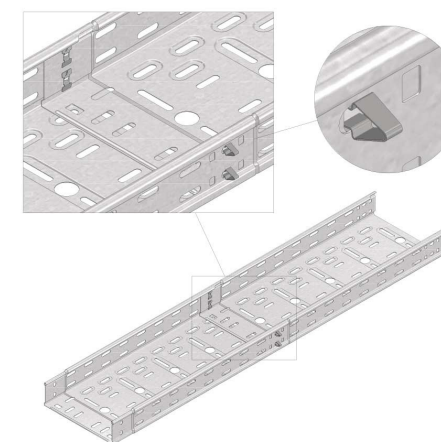
- + Height 60mm
- + Width 50mm to 300mm
- + Packaging 2 x 2m UG (ultra galvanised) finish: high-performance metallic coating ideal for aggressive and demanding environments

Ref	Designation
1008221	Cable tray cover 60x50mm ULTRA GALVA 2m qty 2 pcs: 4m
1008222	Cable tray cover 60x100mm ULTRA GALVA 2m qty 2 pcs: 4m
1008223	Cable tray cover 60x150mm ULTRA GALVA 2m qty 2 pcs: 4m
1008224	Cable tray cover 60x200mm ULTRA GALVA 2m qty 2 pcs: 4m
1008225	Cable tray cover 60x300mm ULTRA GALVA 2m qty 2 pcs: 4m

## Cable tray assembly

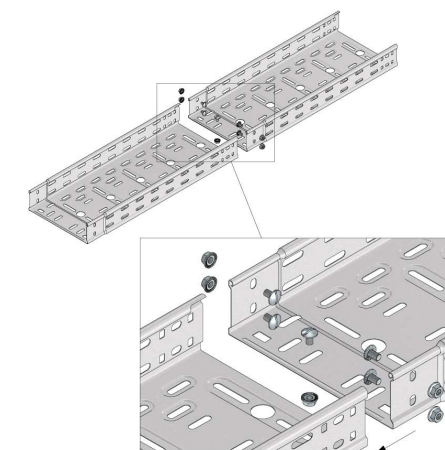
A

Rapid assembly of I-profile cable-tray with fixation clamp «push»



B

Assembly of I-profile cable tray with screws



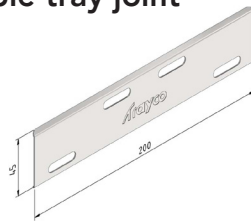


Fixation clamp «push»



Ref	Designation
1008228	Fixation clamp «push» for cable tray and joints / qty 100 pcs

Cable tray joint



Ref	Designation
1008218	Cable tray joint / qty 10 pcs

Roundheadbolt and nuts M



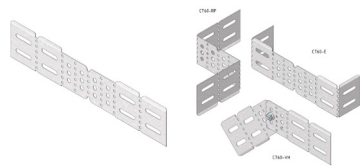
Ref	Designation
1008226	Roundheadbolt and nuts M6 for cable tray / qty 200 pcs

Protection for cable tray



Ref	Designation
1008227	Protection for cable tray finition 10m roll

Multifunction connection cable tray joint



Ref	Designation
1008220	Multifunction connection cable tray joint

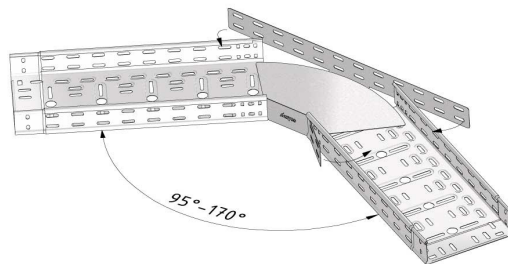
Clip-on assembly clamp



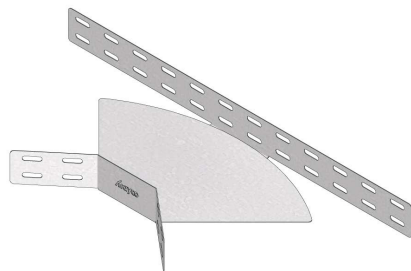
Ref	Designation
1008776	Cable tray cover clamp / qty 100 pcs

Cable tray bend

- The key benefits:**
- + Versatile and adaptive system



Cable tray bend adjustable



- Technical Characteristics:**
- + Height: 60mm
  - + Width 50mm to 300mm
  - + UG (ultra galvanised) finish: high-performance metallic coating ideal for aggressive and demanding environments

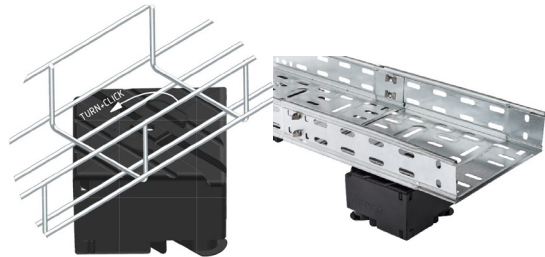
Ref	Designation
1008731	Cable tray bend 90° for perforated cable tray - 50mm
1008733	Cable tray bend 90° for perforated cable tray - 100mm
1008734	Cable tray bend 90° for perforated cable tray - 150mm
1008735	Cable tray bend 90° for perforated cable tray - 200mm
1008736	Cable tray bend 90° for perforated cable tray - 300mm

- Technical Characteristics:**
- + Height: 60mm
  - + Width 50mm to 300mm
  - + Variable angle from 95° to 170°

Ref	Designation
1008737	Cable tray bend adjustable 95° to 170° - 100mm
1008738	Cable tray bend adjustable 95° to 170° - 150mm
1008739	Cable tray bend adjustable 95° to 170° - 200mm
1008740	Cable tray bend adjustable 95° to 170° - 300mm

Fixation brackets

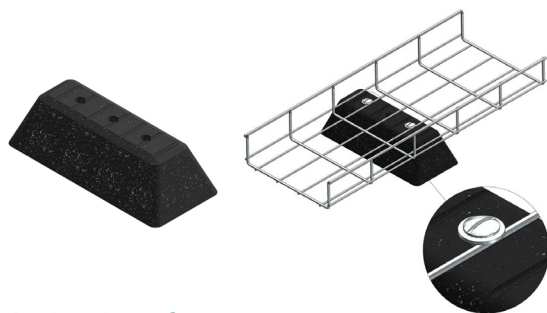
Fixation bracket clippable «THE CUBE»



- The key benefits:**
- + Versatile: for perforated trays and mesh type
  - + Quick assembly : without accessories in one click
  - + Weighted base that does not require a fixing system

Ref	Designation
1008741	Fixation bracket clippable «THE CUBE» for perforated cable tray & cablofil type / qty 15 pcs

Block rubber for rooftop



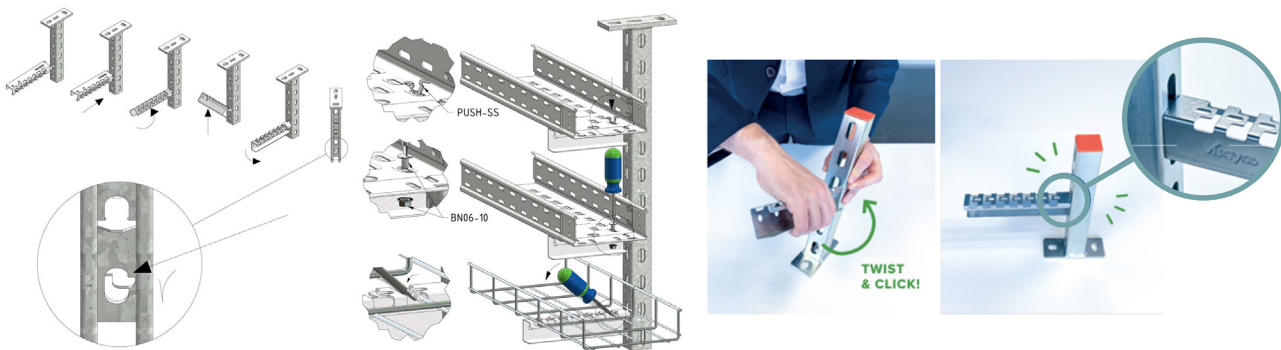
- The key benefits:**
- + Versatile: for perforated trays and Cablofil type mesh
  - + Direct installation on any type of roof covering

Ref	Designation
1008742	Block rubber for rooftop / qty 12pcs

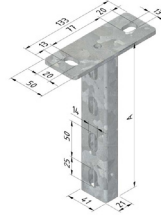
Installation brackets

- The key benefits:**
- + Fast, tool-free twist & click assembly!
  - + Multiple configurations possible with a single part number

- + Versatility with mesh type and perforated trays
- + Assembled using PUSH fasteners or bolts

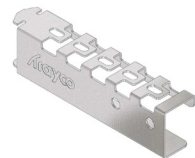


Pendant bracket system



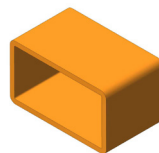
Ref	Designation
1008229	Pendant bracket system for cable trays - 200mm
1008230	Pendant bracket system for cable trays - 300mm
1008231	Pendant bracket system for cable trays - 400mm

Screwless bracket «THE TWIST» cable trays - 10 pcs

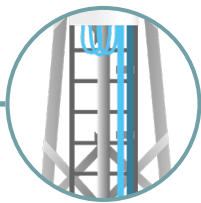


Ref	Designation
1008743	«The TWIST» for pendant system to support cable trays 100mm
1008744	«The TWIST» for pendant system to support cable trays 150mm
1008745	«The TWIST» for pendant system to support cable trays 200mm
1008746	«The TWIST» for pendant system to support cable trays 300mm

Pendant Protection Cap



Ref	Designation
1008232	Pendant Protection Cap qty 10 pcs



# CABLES CLAMPS

## Clips



EMC clips are quick-to-fit fastening systems for coaxial, power and fiber cables. They are made from high-quality stainless steel. They will retain their characteristics over time, combining firm hold and elasticity.



Double EMC 5 - 7 mm



EMC 7/8"



### EMC Clip for fixing on angle profile

Ref	Capacity
40185	5 - 7 mm
40186	8 - 12 mm (1/4")
40187	1/2"
40188	7/8"
40189	1.1/4" ou 1.5/8"

### Fixing clip

Ref	Capacity
40184	Fixing clip

### EMC Clip stainless steel fixing, adjustable

Ref	Capacity
40190	5 - 7 mm
40191	8 - 12 mm (1/4")
40192	1/2"
40193	7/8"
40194	1.1/4" ou 1.5/8"

### EMC Clip for fixing stainless steel fixing, non adjustable

Ref	Capacity
40195	5 - 7 mm
40196	8 - 12 mm (1/4")
40197	1/2"
40198	7/8"
40199	1.1/4" ou 1.5/8"

### EMC Clip for double fixing on angle profile

Ref	Capacity
40200	5 - 7 mm + 5 - 7 mm
40201	5 - 7 mm + 8 - 12 mm (1/4")
40202	5 - 7 mm + 1/2"
40203	5 - 7 mm + 7/8"
40204	8 - 12 mm (1/4") + 8 - 1 mm (1/4")
40205	8 - 12 mm (1/4") + 1/2"
40206	8 - 12 mm (1/4") + 7/8"
40207	1/2" + 1/2"
40208	1/2" + 7/8"

### EMC Clip for double fixing back-to-back

Ref	Capacity
40209	5 - 7 mm + 8 - 12 mm (1/4")
40210	5 - 7 mm + 1/2"
40211	5 - 7 mm + 7/8"
40212	8 - 12 mm (1/4") + 8 - 12 mm (1/4")
40213	8 - 12 mm (1/4") + 1/2"
40214	8 - 12 mm (1/4") + 7/8"
40215	8 - 12 mm (1/4") + 1.1/4" ou 1.5/8"
40216	1/2" + 1/2"
40217	1/2" + 7/8"
40218	1/2" + 1.1/4" ou 1.5/8"
40219	7/8" + 7/8"
40220	7/8" + 1.1/4" ou 1.5/8"
40221	1.1/4" ou 1.5/8" + 1.1/4" ou 1.5/8"

## Clamps



Cable clamps are 2-part (plastic and stainless steel) fastening systems for coaxial, power and fiber cables, which secure the cable with a screw clamp.



Clamp power + FO



Coaxial clamp

### Coaxial cable clamp

Ref	Capacity
40240	1 x 6 mm
40241	1 x 7 mm
40242	1 x 8 mm
40243	1 x 9 mm
40244	1 x 9 M
40245	1 x 10 mm
40246	1 x 11 mm
40247	1 x 12 mm
40248	1 x 13 mm
40249	1 x 1/2" S (14 mm)
40250	1 x 3/8" (16 mm)
40251	1 x 1/2" ( 17 mm)
40252	1 x 5/8" ( 23 mm)
40253	1 x 7/8" S (27 mm)
40254	1 x 7/8" ( 28 mm)
40255	1 x 7/8" M (30 mm)
40256	1 x 1.1/8" (38 mm)
40257	1 x 1.1/4" (40 mm)
40258	1 x 1.5/8"S (49 mm)
40259	1 x 1.5/8" (52 mm)
40260	1 x 2.1/4" (60 mm)
40261	1 x 62 mm
40262	1x3" (72 mm)
40263	1x3" M (76 mm)
40264	2 x 6 mm
40265	2 x 7 mm
40266	2 x 8 mm
40267	2 x 9 mm
40268	2x9M
40269	2 x 10 mm

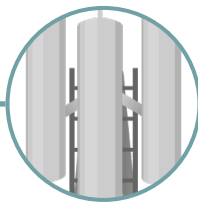
Ref	Capacity
40270	2 x 11 mm
40271	2 x 12 mm
40272	2 x 13 mm
40273	2 x 1/2"S (14 mm)
40274	2 x 3/8"S (16 mm)
40275	2 x 1/2" (17 mm)
40276	2 x 5/8" (23 mm)
40277	2 x 7/8"S (27 mm)
40278	2 x 7/8" (28 mm)
40279	2 x 7/8"M (30 mm)
40280	2 x 1.1/8" (38 mm)
40281	2 x 1.1/4" (40 mm)
40282	2 x 1.5/8"S (49 mm)
40283	2 x 1.5/8" (52 mm)
40284	2 x 2.1/4" (60 mm)
40285	2 x 62 mm
40286	3 x 6 mm
40287	3 x 7 mm
40288	3 x 8 mm
40289	3 x 9 mm
40290	3 x 9 M (9-10 mm)
40291	3 x 10 mm
40292	3 x 11 mm
40293	3 x 12 mm
40294	3 x 13 mm
40295	3 x 1/2" S (14 mm)
40296	3 x 3/8" (16 mm)
40297	3 x 1/2" (17 mm)
40298	3 x 5/8" (23 mm)
40299	3 x 7/8" S (27 mm)

## Power clamp and Optical fiber

Ref	Capacity
40222	2 x 7 mm
40223	2 x 9 mm
40224	2 x 11 mm
40225	2 x 14 mm
40226	2 x 19 mm
40227	2 x 24 mm
40228	4 x 7 mm
40229	4 x 9 mm
40230	4 x 11 mm
40231	4 x 14 mm
40232	4 x 19 mm
40233	4 x 24 mm
40234	6 x 7 mm
40235	6 x 9 mm
40236	6 x 11 mm
40237	6 x 14 mm
40238	6 x 19 mm
40239	6 x 24 mm

Ref	Capacity
40300	3 x 7/8" (28 mm)
40301	3 x 7/8" M (30 mm)
40302	3 x 1.1/8" (38 mm)
40303	3 x 1.1/4" (40 mm)
40304	3 x 1.5/8" S (49 mm)
40305	3 x 1.5/8" (52 mm)
40306	4 x 11 mm
40307	4 x 1/2" (17 mm)
40308	4x7/8" (28 mm)
40309	5 x 11 mm
40310	5 x 1/2" (17 mm)
40311	5 x 7/8" (28 mm)
40312	(2+2) 4 x 6 mm
40313	(2+2) 4 x 8 mm
40314	(2+2) 4 x 9 mm
40315	(2+2) 4 x 11 mm
40316	(2 + 2) 4 x 1/2" (17 mm)
40317	(2 + 2) 4 x 7/8" (28 mm)
40318	(2 + 2 + 2) 6 x 11 mm
40319	(2 + 2 + 2) 6 x 1/2" (17 mm)
40320	(2 + 2 + 2) 6 x 7/8" (28 mm)
40321	(2 + 2 + 2 + 2) 8 x 6 mm
40322	(2 + 2 + 2 + 2) 8 x 8 mm
40323	(2 + 2 + 2 + 2) 8 x 9 mm
40324	(2 + 2 + 2 + 2) 8 x 11 mm
40325	(2 + 2 + 2 + 2) 8 x 1/2" (17 mm)
40326	(2 + 2 + 2 + 2) 8 x 7/8" (28 mm)
40327	12 x 11 mm
40328	12 x 1/2" (17 mm)

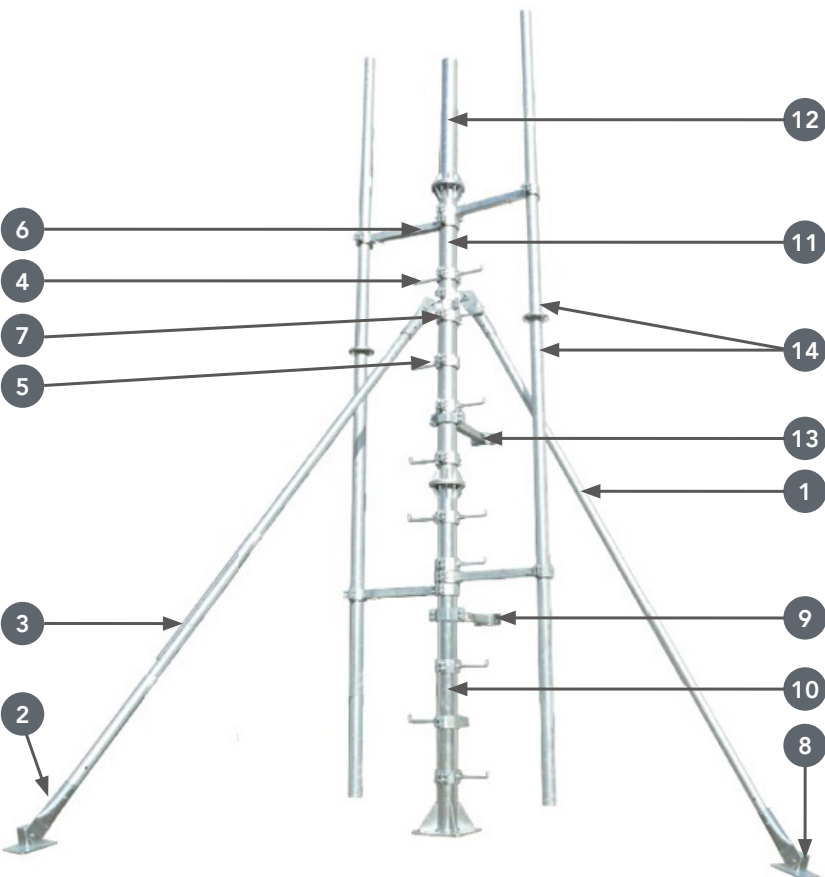




# ANTENNA MASTS

Telenco has a steel structure design and manufacturing unit, offering galvanised steel solutions for mobile sites such as towers and rooftop. The range includes masts, supports for RRUs, step clamps, interfaces, platforms, etc. Each element in the range can be adapted to suit each project, and every need.

- The key benefits:**
  - + Wide range
  - + Customizable products
  - + Robust design
- Technical characteristics :**
  - + Galvanised steel
  - + Designed and manufactured in our factories



- 1 Circular section metal prop
- 2 Strut Terminal
- 3 Strut union in 70 mm tube
- 4 Double step clamp for circular tubes
- 5 Metal clamp with single step for tubes of circular section
- 6 Square tube spacer arm
- 7 Bracing clamp
- 8 Base for fixing strut to floor/wall
- 9 Spacer arms
- 10 Mast base with flange
- 11 Flanged mast at both ends
- 12 End mast flanged at one end
- 13 Bracket for fixing mast to wall/ceiling
- 14 2x Galvanised metal interface with circular cross-section flanged

**Technical characteristics:**

- + Material S235
- + Galvanisation (M) 80.00 µ | hot according to ISO 1461 standard
- + Various dimensions on request

## Circular section metal prop

- Dimensions 2500mm | 60.3x3.2mm
- 1
- 

Ref	Designation
92799	Circular section metal prop

## Strut Terminal

- Dimensions 300x70x3mm
- 2
- 

Ref	Designation
92800	Strut Terminal

## Strut union in 70 mm tube

- Dimensions 350mm long
- 3
- 

Ref	Designation
92801	Strut union in 70 mm tube

## Double step clamp for circular tubes

- Dimensions 220 x 8mm with 200mm step
- 4
- 

Ref	Designation
92802	Double step clamp for circular tubes

## Metal clamp with single step for tubes of circular section

- Dimensions 220 x 8mm with 200mm step
- 5
- 

Ref	Designation
92803	Metal clamp with single step for tubes of circular section

## Square tube spacer arm

- Dimensions 50x50x3mm
- 6
- 

Ref	Designation
92804	Square tube spacer arm

## Bracing clamp

- Dimensions Tube 220x8mm
- 7
- 

Ref	Designation
92805	Bracing clamp

## Base for fixing strut to floor/wall

- Dimensions Sheet 200x200x8mm  
Corner L80x80x8
- 8
- 

Ref	Designation
92806	Base for fixing strut to floor/wall

## Spacer arms

- Dimensions 100 ou 150mm
- 9
- 

Ref	Designation
92807	Spacer arms

## Mast base with flange

- Dimensions 2000mm long  
Ø114.3x4.5mm
- 10
- 

Ref	Designation
92808	Mast base with flange

## Flanged mast at both ends

- Dimensions 2000mm long  
Ø114.3x4.5mm
- 11
- 

Ref	Designation
92809	Flanged mast at both ends

## End mast flanged at one end

- Dimensions 1000mm long  
Ø114.3x4.5mm
- 12
- 

Ref	Designation
92844	End mast flanged at one end

## Bracket for fixing mast to wall/ceiling

- Dimensions Variable clearance for  
114.3x4.5mm tube
- 13
- 

Ref	Designation
92845	Bracket for fixing mast to wall/ceiling

## 2x galvanised metal interface with circular cross-section flanged

- Dimensions 4500mm long | 76x3.2mm
- 14
- 

Ref	Designation
92846	2x galvanised metal interface with circular cross-section flanged

Complementary products

Top cover

- Dimensions Ø220x3 mm



Ref	Designation
92847	Top cover

Metal plate for cable support

- Dimensions 250x60x5mm



Ref	Designation
92848	Metal plate for cable support

Fixing slabs

- Dimensions 350:350mmx350mmx100mm
- Dimensions 500:500mmx500mmx100mm



Ref	Designation
92849	Fixing slabs 350
92850	Fixing slabs 500

Platform



Ref	Designation
92869	Platform

Top ring



Ref	Designation
93051	Top ring

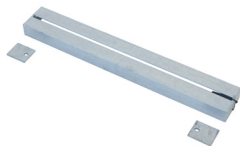
Top ring for tower addition



Ref	Designation
93052	Top ring for tower addition

Equipment support crane

- Dimensions 45x45x5mm



Ref	Designation
92851	Equipment support crane

Support beam for stringer and equipment

- Dimensions 2000mm



Ref	Designation
92852	Support beam for stringer and equipment

Metal ground support base for mast

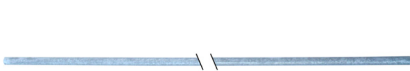
- Dimensions 300x300x10mm



Ref	Designation
92859	Metal ground support base for mast

Galvanised metal interface with circular cross-section

- Dimensions 4000mm



Ref	Designation
92860	Galvanised metal interface with circular cross-section

Postcabinet for RRU's

- Dimensions 1500mm | Base Ø 76.1x3.2mm



Ref	Designation
92861	Postcabinet for RRU's

Postal for Ø88.9 pipes

- Dimensions 2000mm



Ref	Designation
92862	Postal for Ø88.9 pipes

Tower additions

- Customisable base according to the type of tower



Ref	Designation
92863	Tower additions

Interface wall brackets

- Dimensions 60x60x6mm



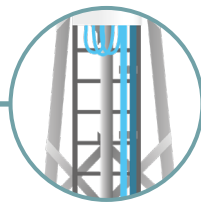
Ref	Designation
92864	Interface wall brackets

Clamp Safety ring



Ref	Designation
92867	Clamp Safety ring

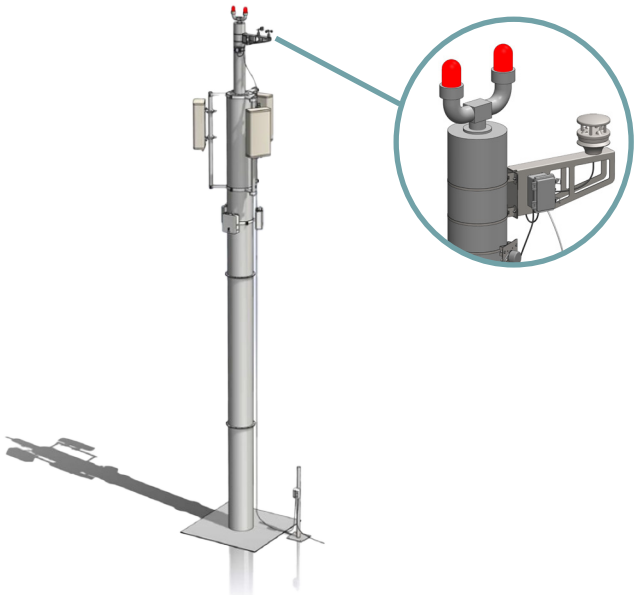




# STRUCTURE SENSORS

## FIMO Structural sensor solution

To check the structural conditions of each mobile site, we have designed and implemented a structural efficiency monitoring system. This system makes it possible to detect potential critical situations in terms of structural strength at an early stage. This early detection reduces the CAPEX risk thanks to a low investment cost. In addition, this solution optimises the cost of overall maintenance, thereby reducing operating costs, as well as insurance costs.



### The key benefits:

- + Structural control of mobile sites
- + Risk mitigation
- + Centralization of data on a cloud platform
- + Low investment cost
- + Maintenance optimization (CAPEX / OPEX reduction)
- + Insurance cost reduction
- + Adaptable & easy to install

### Characteristics:

- + Monitoring the position of the top of the installation through specific sensors
- + Registering data and send them to a remote platform through an IoT gateway
- + Showing the trend over the time in a dashboard
- + Comparing the trend with the limits identified by the end-user

### General specifications:

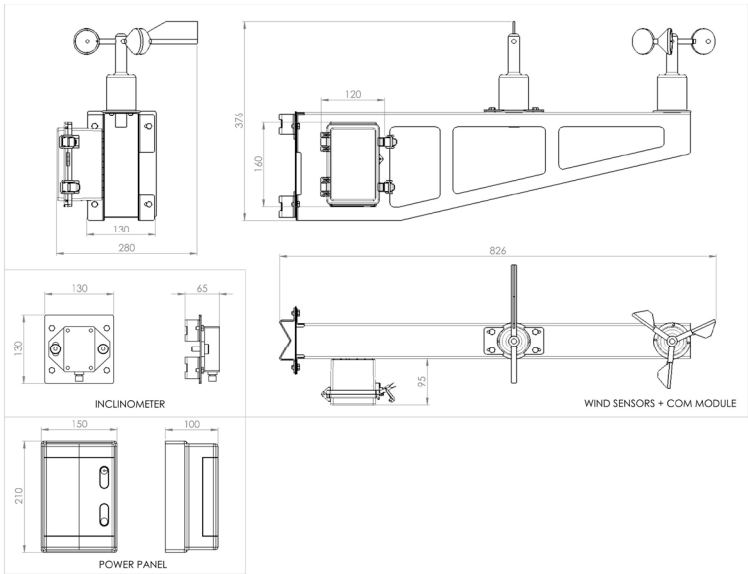
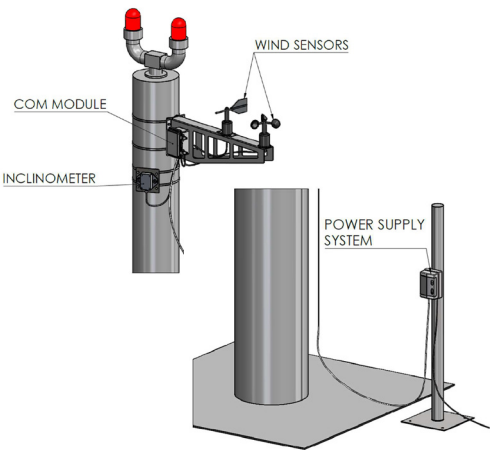
Universal kit for multipurpose poles (monotube, trellis, rooftop mast)
Transmission protocol: Global-Band IoT Narrow Band 2 LTE, adaptable to any other transmission protocol
Additional sensors for any kind of measurement through an open IoT platform

### Data & Platform:

Data acquired every second about: <ul style="list-style-type: none"><li>- Inclinometer degree</li><li>- Wind speed</li><li>- Wind direction</li><li>- Temperature</li></ul>
All the data are stored in the microprocessor memory
The maximum values detected are then sent to the dashboard according to the user set-up of sampling time
Data managed into a FIMO dashboard (with profiled access) and/or customer dashboard: <ul style="list-style-type: none"><li>- Different levels of administration access are granted to customers to change the pulling set-up directly</li><li>- Remote firmware update function</li></ul>
Allowing autonomous temporal scan set-up and control limit threshold

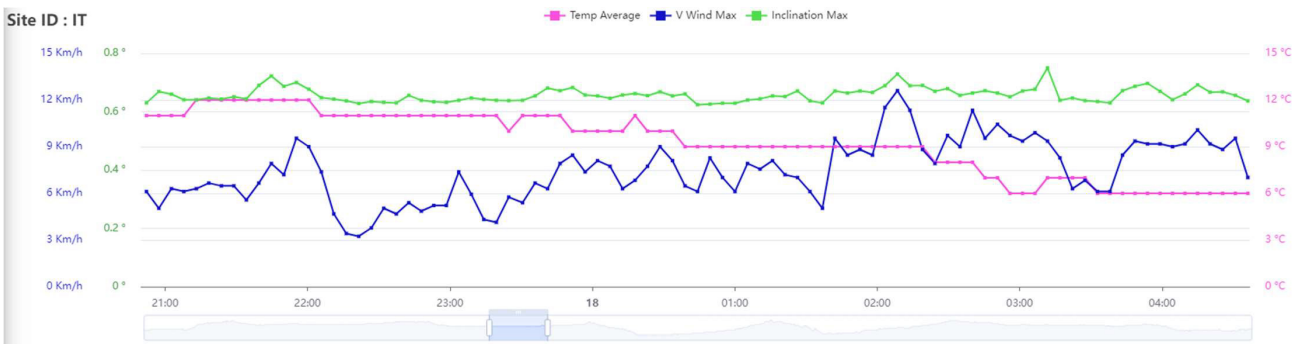
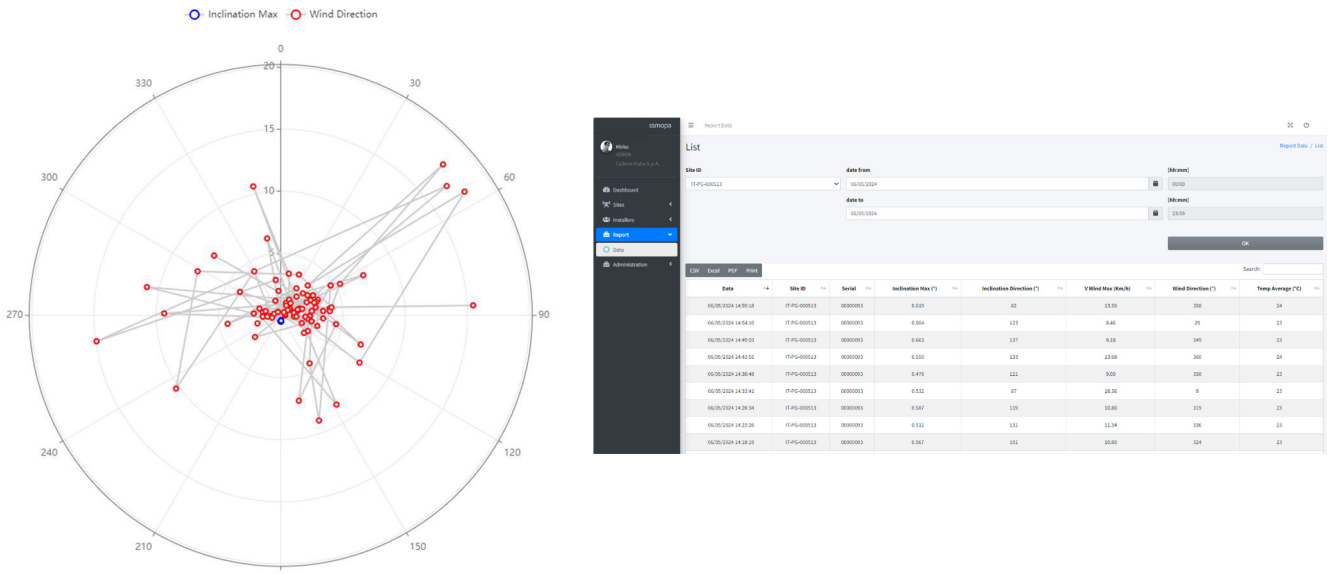


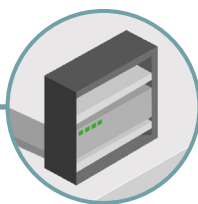
### Technical specifications:



Supply voltage	12VDC (9 ~ 16VDC)
Current	Operating 50mA, transmission 150mA, peak 400mA
Withstand voltage	1,5 kV
Operating temperature	-20°C ~ +65°C
COM Module dimensions WxHxD	120x160x95mm
COM Module protection degree	IP 65
Power Panel protection degree	IP 65
SIM Card	IoT Micro SIM (3FF)
Micro Controller	32bit, 170MHz, Flash memory 512Kb, Ram 128Kb

### Dashboard view:





# OUTDOOR CABINETS

Telenco possesses expertise in the development and manufacture of outdoor cabinets, enabling us to produce solutions tailored to the constraints of mobile deployments.

Our UK-based factory, Rainford Solutions, draws on its 40 years of experience in the telecom market and in the design of **active and passive cabinet solutions**.

Our solutions help to ensure network availability and reduce total lifetime costs, thanks to the reliability, security and quality of our products.

The Rainford line of outdoor cabinets offers solutions perfectly adapted to the constraints of mobile networks. The smart Vanguard® thermal management system minimizes the cabinet’s maintenance frequency while extending the life of the air filter, thus reducing the overall cost of cabinet life. Three levels of thermal management are available and can be interchanged, allowing the cabinet to be upgraded to meet changing needs. Our cabinets are delivered fully assembled and ready for deployment.



**The key benefits:**

- + Developed and manufactured in our factory
- + Configurable
- + High environmental resistance

## Outdoor Modular Cabin



Active outdoor modular cabin

**Technical characteristics:**

Standard dimensions up to:

- + Height: 3500mm
- + Length: 12000mm
- + Width: 2900mm

Note: Beyond these dimensions, special handling and logistical requirements will have to be put in place.

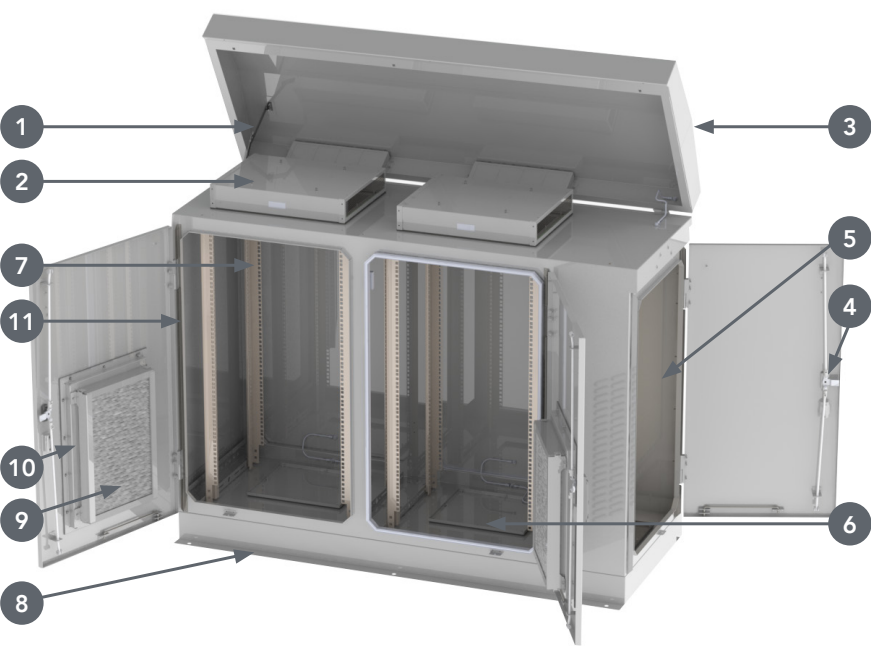
**Spécifications:**

Structure:	Insulated tray panels
Design:	Modular - Available pre-built or flatpack
Material:	Stainless steel grade 1.4003 / Mild Steel / Galvanised Steel
Insulation:	70mm polystyrene insulation
Finish:	Polyester powder coat available in two standard colours: RAL7035 (Light Grey) or RAL9003 (Signal White)
Watertightness:	Designed to meet IP55 (EN60529)
Security:	Designed to meet LPS1175 SR1
Openings:	5-point locking door modules, position and qty of entryways configurable
Cable Entries:	110mm base cable entry duct positions and configurable panel mounted interface gland plates
Earthing:	Structure mounted
Cooling:	Passive as standard with options to integrate available cooling systems per your requirements: <ul style="list-style-type: none"><li>- Forced air cooling fan &amp; filter systems</li><li>- Temperature control air conditioning systems</li><li>- Heat exchanger systems</li><li>- Free air-cooling systems</li></ul>

Roof	Gable roof design with external roof & internal secondary insulated ceiling, thermal barrier void for hot/cold air plenum designs where required.
Drainage:	integrated cowl and guttering for drainage management
Floor:	Anti-slip, anti-static 600 x 600mm floor tile floor design alternate option for washdown, anti-slip, anti-static full floor overlay.
Base:	Structural base – modular base beam to aid sizing flexibility
Lifting:	Base mounted lifting eyes and ground mounting points
Integration:	Assembled to your requirements with options for integration of: <ul style="list-style-type: none"><li>- Internal/External Lighting</li><li>- Internal Cable Management systems</li><li>- Communication equipments</li><li>- Cooling Systems</li><li>- Power distribution</li><li>- Alarm systems</li></ul>



Passive outdoor cabinet single-skin



Passive outdoor cabinet Single-skin 2 compartments+Module 25U



- 1 Stainless steel lift off hinges
- 2 Intelligently controlled fan try
- 3 Pitched roof
- 4 3-point locking system with the option of vandal resistant locking handle
- 5 Option: wooden back board offering mounting for power distribution.
- 6 Removable gland plate for cable entry
- 7 19 inch, ETSI or DIN rail mounting options
- 8 Steel extension base with cables managment
- 9 High efficiency, long-life, low-maintenance filter
- 10 Louvered door design to optimise air flow
- 11 Balloon seals for high IP rating

Passive outdoor cabinet single-skin

Specifications:

Material	Stainless steel grade 1.4003
Finish	"Polyester powder coating, available in 2 standard colours: Green (RAL 6005) or Grey (RAL 7035)"
Watertightness	IP55 (EN60529)
Intergration size	19" ou ETSI, depth-adjustable
Openings	Stainless steel hinged doors with die cast swivel handle(s), 3-point locking systems
Cable entries	Gland plate in each bay with 2x PG29 and 4xPG21
Lifting	Removable lifting brackets
Eathing	Structure-mounted

Thermal management options:

- + Convection cooling: 100W per bay, ΔT 15°C
- + Thermostatically controlled roof fans:-
- + Intensive use: 1.0 kW per bay, ΔT 10 ° C
- + Light duty: 1.0 kW per bay, ΔT 20°C
- + Anti-condensation heating
- + Long-life filters

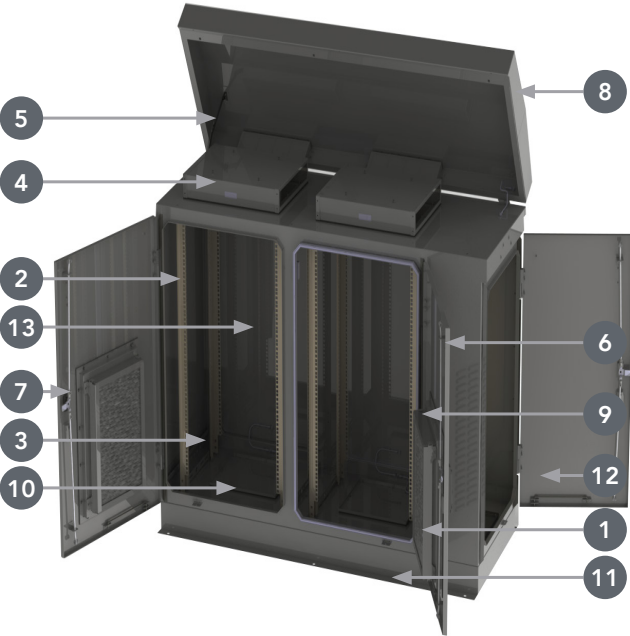
Accessories:

- + Various lock and handle options
- + Equipment mounted on ETSI or DIN rail
- + Rear panel for equipment mounting
- + Sensors and alarms for door opening, overheating and fan failure
- + AC/DC power distribution
- + Battery shelves and cable trays

Ref	Designation	Cabinet format	Cooling	Width	Depth	Height
92792	Passive outdoor cabinet Single-skin 1 compartment 25U	Single bay	650 mm	600 mm	1494 mm	25U
92793	Passive outdoor cabinet Single-skin 1 compartments+Module 25U	Single bay + end pod	950 mm	600 mm	1494 mm	25U
92794	Passive outdoor cabinet Single-skin 2 compartments 25U	Double bay	1335 mm	600 mm	1494 mm	25U
92795	Passive outdoor cabinet Single-skin 2 compartments+Module 25U	Double bay +end pod	1610 mm	600 mm	1494 mm	25U

All cabinets have the option of being fitted with a heat management system as an option.

Active outdoor cabinet double-skin



Active outdoor cabinet double-skin 3 compartments 30U



- 1 High efficiency, long-life, low-maintenance filter
- 2 Balloon seals for high IP rating
- 3 19 inch, ETSI or DIN rail mounting options
- 4 Intelligently controlled fan tray
- 5 Stainless steel lift off hinges
- 6 Louvered door design to optimise air flow
- 7 3-point locking system with the option of vandal resistant locking handle
- 8 Pitched roof
- 9 Anti-pry protection strips
- 10 Removable gland plate for cable entry
- 11 Steel extension base with cables managment
- 12 Simple wall Stainless steel or double wall stainless steel/ aluminium
- 13 Option: wooden back board offering mounting for power distribution.

Specifications:

Structure	Double skinned
Material	External: stainless steel grade 1.4003 Internal: aluminium
Finish	External: Polyester powder coating, available in 2 standard colours: Green (RAL 6005) or Grey (RAL 7035) Internal: White RAL 9003
Watertightness	IP45 (EN60529)
Openings	Stainless steel hinged doors with diecast swivel handle(s), 3-point locking systems
Cable entries	Open base
Lifting	Removable lifting brackets
Earthing	Structure-mounted

Cooling	Active by thermostatically speed-controlled roof-mounted 48V DC fans, capable of maintaining: - 2 compartments: 1.0kW heat output (3,412 BTU/hr) total to within 20°C of ambient air temp - 3 compartments: 4.5kW heat output (15,350 BTU/hr) total to within 20°C of ambient air temp - 4 compartments: 7.5kW heat output (25,600 BTU/hr) total to within 20°C of ambient air temp
Alarm	Sensors and alarms for door opening, overheating and fan failure

Ref	Designation	Cabinet format	Cooling	Width	Depth	Height	Equipment height
92796	Active outdoor cabinet double-skin 2 compartments 30U	Single bay	1.0 kW, ΔT 20°C	520 mm	860 mm	1696 mm	30U
92797	Active outdoor cabinet double-skin 3 compartments 30U	Single bay + end pod	4.5 kW, ΔT 20°C	1300 mm	860 mm	1696 mm	30U
92798	Active outdoor cabinet double-skin 4 compartments 30U	Double bay	7.5 kW, ΔT 20°C	1940 mm	860 mm	1696 mm	30U



OUTDOOR CABINETS

Low Consuption outdoor cabinet ECOBAB

Complete solution for replacing shelters: ECOBAB. The ECOBAB is a low-consumption cabinet with an autonomously controlled thermoregulation system (patented solution). The design and construction of the entire enclosure are based on the principles of eco-sustainability with minimal environmental impact to minimise CO<sub>2</sub> emissions and energy consumption during operation. ROHS compliant. Materials and components are 99% recyclable.

The key benefits:

- + Low power consumption (no air conditioning)
- + Smaller footprint
- + ESG
- + Maintenance-free
- + Solar panel compatible
- + Easily expandable



CUSTOMIZABLE



ECOCAB Eco-sustainability

The design and construction of the entire enclosure is based on the principles of eco-sustainability, with minimal environmental impact to minimise CO<sub>2</sub> emissions and energy consumption during operation. ROHS compliant.

Materials and components can be recycled up to 99%. The following principles have been applied:

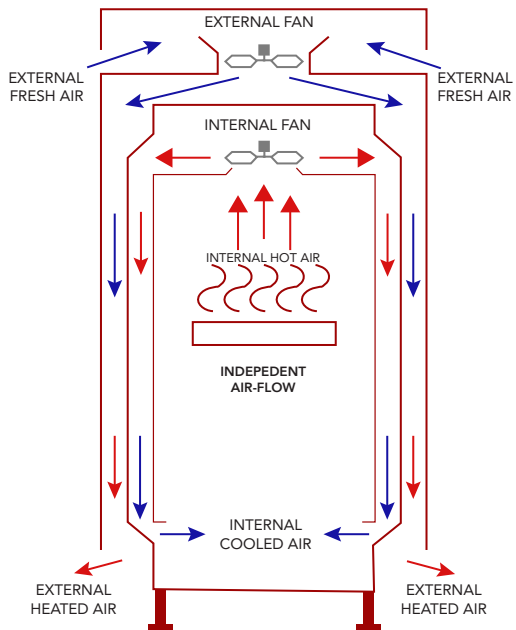
- + External panels pre-painted in white aluminium sheet RAL 9016 to reduce thermal transitions due to direct solar radiation
- + Reduction in the use of paints and solvents
- + Reduction in the energy required for production processes
- + Total elimination of welding processes
- + Total elimination of flame cutting. Total elimination of laser cutting of sheet metal
- + Sheet metal produced only by punching and shearing
- + Load-bearing structure, panels, air ducts, internal modular structure, assembled only with rivets and bolts
- + Reduction in the energy required for the thermoregulation process (maximum fan consumption = 300 watts)



ECOCAB Concept

Airtight partitions fitted with passive heat exchangers.

1. The heat from the equipment is transferred to the internal partitions by a single fan.
2. The heat is exchanged with the external partitions, where it is evacuated by a simple fan.
  - + No air conditioning, low consumption
  - + No fluid
  - + No filters
  - + No maintenance
  - + Perfect seal between inside and outside (IP55)



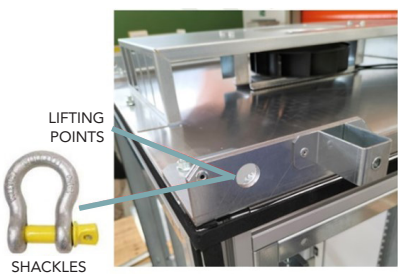
ECOCAB Security equipment

Electrical protection and isolation
Control system malfunction alarm (voltage-free contact)
Smoke detector alarm (volt-free contact)
Over temperature alarm with mechanical thermostat
2 temperature sensors inside and outside the cabinet for transmission to the external detection system
Alarm terminal block for connection to external remote control systems

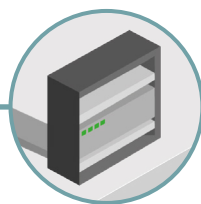


ECOCAB Handing and installation

Delivered fully equipped on pallet
4 attachment points for lifting
4 self-levelling feet for concrete slab
In opion system for metal structure
Levelled once installed, by the 4 feet





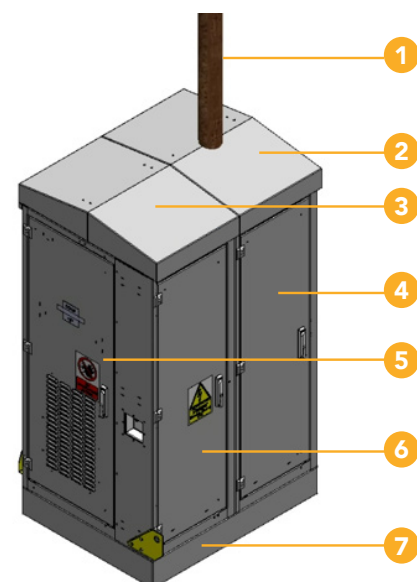


# SMALLCELLS INFRASTRUCTURES

## SmallCells infrastructure

SmallCells are short-range, low-transmit power access points to a mobile telecommunications network. The deployment of SmallCells over the coming years will fulfill the need to increase the density of the network. They are to supplement the current mobile infrastructure, relying in particular on macrocells. Their aim is to improve network coverage and capacity so as to deal with the increase in mobile data traffic and to the rise of 5G and futur technologies. SmallCells networks have several benefits. Firstly, a reduction in the number of antennas connected to each antenna, due to the multiplication of antennas, makes it possible to offer higher data rates and thus better quality of service. This also helps to avoid network congestion. What's more, it is possible to configure these networks dynamically according to the number of users, for example switching off underused cells at certain times of the day, thus saving energy. Finally, they can be used to create a mobile network in areas where there is no coverage and no need to deploy macrocells.

These characteristics mean that SmallCells are an interesting technology for 5G and improved mobile broadband in densely populated urban areas, but not exclusively. The support of critical services requiring an ultra-reliable network with very low latency, as well as the industrial IoT, healthcare, or the smart city, are all part of the expected applications. Drawing on its recognised expertise in the design and manufacture of telecoms and energy networks, outdoor cabinets and poles, and its mastery of environmental constraints, Telenco offers integrated innovative solutions with added value. It is in this spirit of innovation that Telenco has combined its skills to design compact, discreet and secure SmallCells solutions.



### Legend

- 1 Composite pole
- 2 ½ Fixed Roof for SmallCells Pole
- 3 ½ Hinged Roof for cooling system
- 4 Pole fixation enclosure
- 5 Metering/Power distribution Pod
- 6 Plinth & cables entry
- 7 RRU, 19" Equipment bay & batteries

## Outdoor streetworks cabinets

Telenco possesses expertise in the development and manufacture of outdoor cabinets, enabling us to produce solutions tailored to the constraints of mobile deployments. Our UK-based factory, Rainford Solutions, draws on its 40 years of experience in the telecom market and in the design of active and passive cabinet solutions. Our solutions help to ensure network availability and reduce total lifetime costs, thanks to the reliability, security and quality of our products.

The Rainford line of outdoor cabinets offers solutions perfectly adapted to the constraints of mobile networks. The smart Vanguard® thermal management system minimizes the cabinet's maintenance frequency while extending the life of the air filter, thus reducing the overall cost of cabinet life. Three levels of thermal management are available and can be interchanged, allowing the cabinet to be upgraded to meet changing needs. Our cabinets are delivered fully assembled and ready for deployment.

### The key benefits:

- + Developed and manufactured in our factory
- + Configurable
- + High environmental resistance
- + Smaller footprint
- + Easily expandable



## Composite poles

Telenco® composite poles are manufactured in France using a centrifugation process to ensure even distribution of the fibres and resin. This technology strengthens the structure of thematerial and makes it particularly resistant to all climatic conditions over a long period of time, while offering a lightweight, easy-to-install solution. Telenco® composite telecom poles can be installed in any type of environment. Their wood-effect design guarantees perfect, discreet integration.

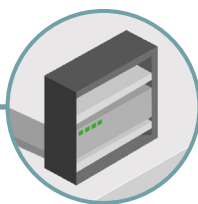
### The key benefits:

- + Developed and manufactured in our factory
- + Heights available up to 10m
- + Lightweight
- + High environmental resistance
- + Corrosion-resistant
- + Life of more than 50 years
- + Aesthetic and discreet thanks to wood decoration



- + Additional services, covering & integration
  - >> Customer equipment
  - >> Batteries
  - >> Power conversion
  - >> Radio





# TRANSCEIVERS

## Transceivers

The product line of XG-BASE-compatible transceivers is available in a wide range of form factors: SFP, SFP+, QSFP+, QSFP28, etc., standardized by industry agreements known as Multi-Source Agreements (MSA). Telenco draws on its experience and expertise to offer transceivers that are compatible with all equipment on the market, reducing network costs and the number of references to be stocked.



### Specifications:

Available compatibility	Cisco ; Juniper ; Huawei ; ZTE ; Nokia...		
Form factor	SFP	SFP+	QSFP28
Data rate	1G	10G	100G
Dimensions (mm)	13 x 8,5 x 57	13 x 8,5 x 57	18 x 8,5 x 78+44
Transmission distance	300m up to 80km		
Wavelengths	850 to 1610 nm		
Connector	LC simplex ; LC duplex ; MTP/MPO		
Fiber type	Singlemode or Multimode		
Norm	Bidirectional or Monodirectional		
Certification	RoHS compliant		
Temperature	0°C à 70°C (-40°C à 85°C possible upon request)		
Humidity	0% à 85%		

### The key benefits:

- + Wide range of form factor and data rates
- + Compatibility with all market equipment
- + Dedicated technical team

## i-CODE Box

The i-CODE box is a device for switching transceiver compatibility. The i-CODE box enables the transceiver to adapt to all types of manufacturer's devices (Cisco, Nokia, Huawei ...). It is compact, portable and supports a wide range of form factors (SFP, SFP+, QSFP+, QSFP28...).



### Specifications:

Available compatibility	Cisco ; Juniper ; Huawei ; ZTE ; Nokia ...
Accepted form factor	SFP ; SFP+ ; XFP ; SFP28 ; SFP56 ; QSFP+ ; QSFP28 ; QSFP
Dimensions	30 x 100 x 160 mm
Power	5V
Software	Windows 10
Connector	USB
Temperature	10°C à 60°C

### The key benefits:

- + The i-Code Box provides autonomous coding

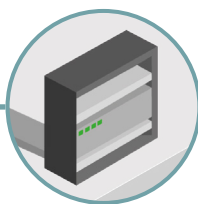
Ref	Designation
1002005	i-CODE box

Newtwork	Form factor	Data rate	Wavelengths	Transmission distance	Connector	Compatibility
Backbone	SFP	1G	1310nm	10km	LC Duplex	Nokia, Ericsson, Huawei, Cisco... etc
			1310nm	40Km	LC Duplex	
			1550nm	40km	LC Duplex	
			1550nm	80km	LC Duplex	
	SFP+	10G	1310nm	10km	LC Duplex	
			1310nm	40km	LC Duplex	
			1550nm	40km	LC Duplex	
			1550nm	80km	LC Duplex	
4G	SFP+	10G	TX1270/RX1330nm	20km	LC Simplex	
			TX1330/RX1270nm	20km	LC Simplex	
			1310nm	2km	LC Duplex	
			CWDM	10km/40km/80km	LC Duplex	
5G	SFP28	25G	DWDM	80km	LC Duplex	
			Bidi	10km/20km/40km /60km/80km	LC Duplex	
			1310nm	2km	LC Duplex	
			1xxxnm	10km	LC Duplex	
			1xxxnm	15km	LC Duplex	
			TX1xx0/RX1xx0	10km	LC Simplex	

Other versions available on request







# PATCH PANELS

## Patch panels

Developed and manufactured in our factory in Portugal, The FTTA optical patch panel feature premium optical connectivity and are perfectly compatible with FTTA 4G/5G installations. Our Patch panels are 100% configurable to suit all types of installation. Their design in corrosion-resistant steel makes them robust and perfectly suited to harsh environments.

- The key benefits:**
- + Simple, robust design
  - + High optical performance
  - + Flexible integration to suit requirements
  - + Manufactured and integrated in our factory

### Specifications:

Dimensions	1U 19"- L 482 mm x H 44 mm x D 220 mm 2U 19"- L 482 mm x H 88 mm x D 220 mm
Material	Corrosion-resistant steel - Coated
Capacity	48 FO / U
Colour	Grey RAL7035
Equipment	« Trunk » version : Adaptors « Splice » version : Adaptors - Pigtails - Splice cassette
Connectors	LC/UPC Duplex - LC/APC Duplex SC/UPC - SC/APC
Fiber type	Singlemode : G.652 - G.657A2 (Multimode available upon request)
Splice cassette	24 splices/cassette
Temperature	-40°C / +75°C
Included accessories	4 x cage nuts + Screws – 4 x plastic ties « For Splicing » version: smoooves

## 19" sliding patch panel – Trunk version



19" sliding patch panel 1U 36FO LC/UPC DX – Trunk version

Ref	Height	Fiber count	Fiber type	Connector type
92169	1U	24	Singlemode	SC/APC
92034	1U	36		
92036	1U	48		
1004432	2U	72		
1004435	2U	96	Singlemode	LC/UPC
50064	1U	24		
92033	1U	36		
50076	1U	48		
1004438	2U	72		
1004439	2U	96		



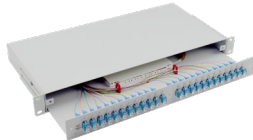
- Characteristics:**
- All breakout connectors are available : SC/UPC, SC/APC, LC/UPC, LC/APC.

### Performances:

IEC-61300	100% compliant
Insertion Loss (IL)	Singlemode ≤ 0,15 dB
Return Loss (RL)	Singlemode ≥ 60 dB

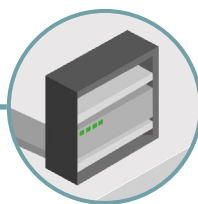
Telenco reserves the right to change these specifications without further notice

## 19" sliding patch panel – Splicing version



19" sliding patch panel 1U 48FO LC/UPC DX – Splicing version

Ref	Height	Fiber count	Fiber type	Connector type
15411	1U	24	G.657A2	SC/APC
92004	1U	36		
91874	1U	48		
92588	2U	72		
92589	2U	96		
91998	1U	24		
92002	1U	36	G.657A2	LC/UPC
92008	1U	48		
92585	2U	72		
92586	2U	96		



# WDM SOLUTIONS

## WDM solutions

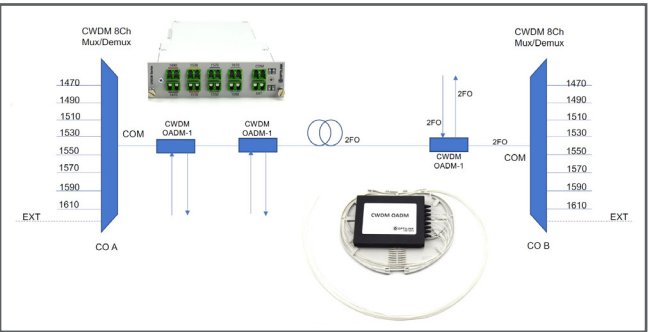
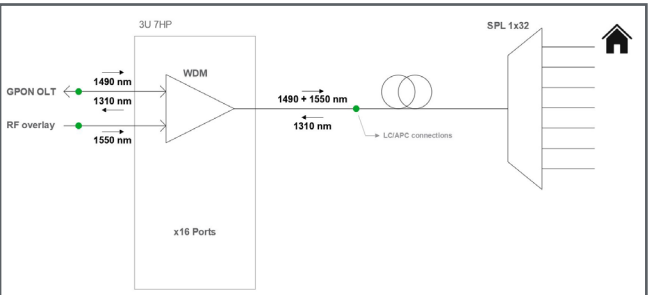
Wavelength Division Multiplexing or WDM enables multiple circuits to be transmitted over a single fibre or a pair of fibre, optimizing thus the use of leased fibres or cables in a similar situation. Passive multiplexers accept at their input a certain number of «coloured» optical signals, i.e. emitted at a specific wavelength. They combine them passively and purely optically, while also ensuring isolation between adjacent channels. These same signals then come out multiplexed over a single fibre. The reverse operation is called demultiplexing.

A distinction is often made between the «CWDM» (up to 18 circuits over a fibre pair) and the «DWDM» (up to 18 circuits over a fibre pair). In combination with the coloured optical modules described above, passive multiplexers/demultiplexers enable the transmission of very high data rates over a single fibre or a pair of fibres, from 1Gbit/s to several Tbit/s, at very attractive costs over distances from a few dozen to more than a hundred of kilometers.

Numerous operators and companies use this technique to interconnect two datacenters, to collect traffic from network access equipment (DSLAMs, OLTs or radio sites), or to build a very high speed backbone between core network routers

To optimize optical networks for mobile sites, Telenco draws on its experience to develop solutions based on WDM (wavelength division multiplexing), optical filters and splitters. Our solutions have enabled us to implement optimized 10Gb service networks on just 2 optical fibers, while guaranteeing redundancy.

- The key benefits:**
- + Developed and manufactured in our factory
  - + Adaptable to all network structures
  - + Modular, scalable solutions





# Indoor wireless & Private wireless



New mobile technologies are greatly improving the performance of wireless networks. But they also lead to contradictory phenomena:

- access to a high-quality mobile network everywhere, all the time
- deploying large-scale connected solutions, as in industry.

But also :

- the difficulty of new-generation mobile networks to guarantee a quality network in buildings, and even more so in underground spaces such as tunnels.
- the difficulty of securing public networks for sensitive use.

This is why Telenor is committed to the development of Indoor Wireless and Private Wireless networks, through its specialist subsidiary NGIS, and through the development of dedicated and innovative solutions: XG-optic®, XG-RF & XG-RAN.

When the configuration of buildings or tunnels does not allow for homogeneous mobile coverage, the deployment of an ADAS (Active Distributed Antenna System) solutions or OFFAIR repeater solutions is the ideal answer. These distributed antenna arrays can accommodate several operators and enable the deployment of a high-performance 2G, 3G+, 4G+ and 5G mobile network.



## Wireless indoor solutions

ACTIVE DAS XG-optic® SOLUTION	66
SB-ICE XG-RF SOLUTION	80
PRIVATE 5G XG-RAN SOLUTION	106





# Active DAS XG-optic® Solution

Powered by PROSE Technologies

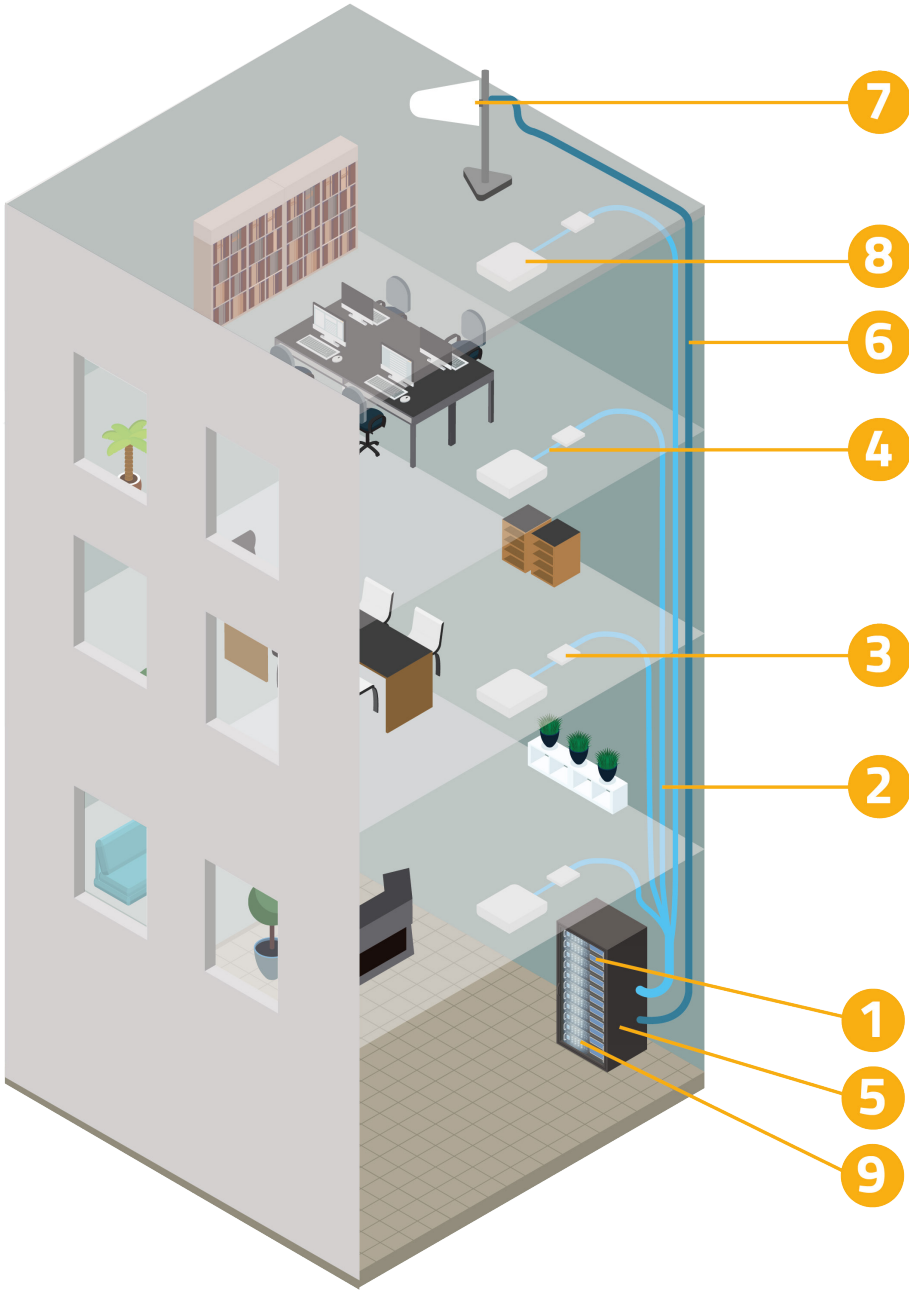
ADAS XG-optic® ARCHITECTURE	67
ADAS REMOTE LOW POWER MASTER UNIT	68
XG-optic® HYBRID PATCHPANEL	70
XG-optic® HYBRID CABLES B2ca	72
XG-optic® HYBRID BOXES	73
XG-optic® HYBRID PATCHCORDS	75
SERVER CABINETS	78



Telenco offers the first complete hybrid passive solution, XG-optic®, to connect easily and fiaiability our Active DAS (Distributed Antenna System) solutions to ensure seamless mobile coverage in big and complex buildings, and tunnels. Using a fiber-optic-based architecture, Active DAS amplifies and distributes mobile signals, delivering reliable 2G, 3G+, 4G+, and 5G connectivity.

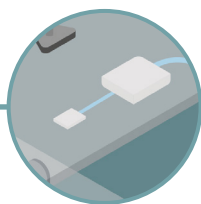
### Why Choose Our Solution?

- Seamless Coverage: Eliminates dead zones, even in challenging environments
- Multi-Operator Support: Ensures uninterrupted connectivity across multiple networks
- Scalable & 5G/6G-Ready: Adapts to future needs and new technologies



### Legend

- |                               |  |
|-------------------------------|--|
| 1 XG-optic® hybrid patchpanel | 6 Coaxial cables                           |
| 2 XG-optic® hybrid cable B2ca | 7 Receiving antenna                        |
| 3 XG-optic® hybrid Boxes      | 8 PROSE Technologies ADAS remote low power |
| 4 XG-optic® hybrid patchcords | 9 PROSE Technologies master unit           |
| 5 Server cabinets             |  |



# ADAS REMOTE LOW POWER

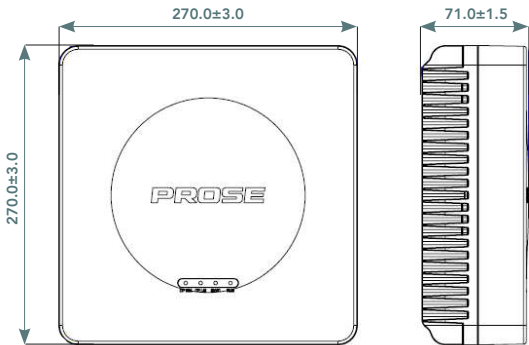
## PROSE Technologies ADAS Remote low power

PROSE Technologies is a German-American company that seamlessly merges the innovative spirit of American entrepreneurship with the precision and technical excellence of German culture. Specialising in wireless communication systems, PROSE Technologies provides the most innovative and advanced wireless communication solutions on the market. Combined with the Telenco group’s know-how and XG-optic® network solutions, it offers the best and most reliable ADAS indoor mobile network.



### The key benefits:

- + Support 2x2 MIMO for band1/3/7/8/20/28, and 4x4 MIMO for n78
- + PBMU has 32 inputs, 4 ports per set, each set support one frequency band, independent ATT per each port
- + Support 2G, 3G, 4G and 5G technologies
- + Automatically balance the input power from difference operator’s RRU and combine the same band signal in single output
- + Power detection for each operator and technology
- + Support up to 16/8(4G/5G) NEU from one single PBMU
- + Management via OMT or NMS management software



### Mechanical specifications:

Dimensions	270 x 270 x 71mm
Net weight	≤ 4kg
Optical connector	2 x SC/APC (2x2 MIMO port)
Installation	Celling, wall or pole mounted
Antenna	Omni antenna Integrated

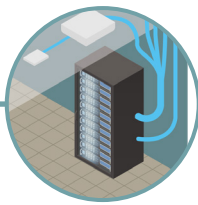
### Environmental specifications:

Operating temperature range	-10 °C to +45 °C
Storage temperature range	-40°C to +85°C
Relative humidity	10% - 95%
Ingress protection	IP50
Monitoring and control	Remote control via IM2U/PBMU

### Electrical specifications:

	Uplink		Downlink
Frequency	Band 1	1920 - 1980MHz	2110 - 2170MHz
	Band 3 (2x2 MIMO)	1710 - 1785MHz	1805 - 1880MHz
	Band 7 (2x2 MIMO)	2500 - 2570MHz	2620 - 2690MHz
	Band 8	880 - 915MHz	925 - 960MHz
	n78 (2x2 MIMO)	3420 - 3800MHz	3420 - 3800MHz
Gain	Band 8	28 ± 2dB	28 ± 2dB
	Band 1/3/7	31 ± 2dB	31 ± 2dB
	n78	34 ± 2dB	34 ± 2dB
RF output power	Band 8	---	18 ± 1dBm (RF per band per port)
	Band 1/3/7	---	21 ± 1dBm (RF per band per port)
	n78	---	24 ± 1dBm (RF per band per port)
Antenna gain		0dBi @ ≤ 1GHz	0dBi @ ≤ 1GHz
		3dBi @ 1.7-2.7GHz	3dBi @ 1.7-2.7GHz
		5dBi @ 3.3-3.8GHz	5dBi @ 3.3-3.8GH
Ripple in band (1x RU: NEU: MU)		± 4dB	± 4dB
Optical output power		9 ± 2dBm	---
Optical wavelength		1310 nm	1550nm
Gain control range		15dB / 1dB step	15dB / 1dB step
ALC control		10dB overdrive protection	10dB overdrive protection
EVM		≤ 3%	≤ 3%
Intermodulation & Spurious Emission Mask		Meets 3GPP TS 36.106 for LTE 3GPP TS 38.106 for NR	
Spurious emissions	n78	---	≤ -58dBm/MHz @3-3400MHz
		---	≤ -22dBm/5MHz @3800-3805MHz
		---	≤ -25dBm/5MHz @3805-3840MHz
		---	≤ -25dBm/5MHz @3.84-12.75GHz
Spurious emissions (Out of band)		≤ -36dBm/9KHz ~ 1GHz	≤ -36dBm/9KHz ~ 1GHz
		≤ -30dBm/1GHz ~ 12.75GHz	≤ -30dBm/1GHz ~ 12.75GHz
System noise figure (1x RU: NEU: MU)		≤ 8dB	
Transmission delay		≤ 1 μS	≤ 1 μS
Max. non-destructive input power		-10dBm	---
Impedance		50Ω	50Ω
Power supply		40 - 57 VDC	
Power consumption		≤ 90W	

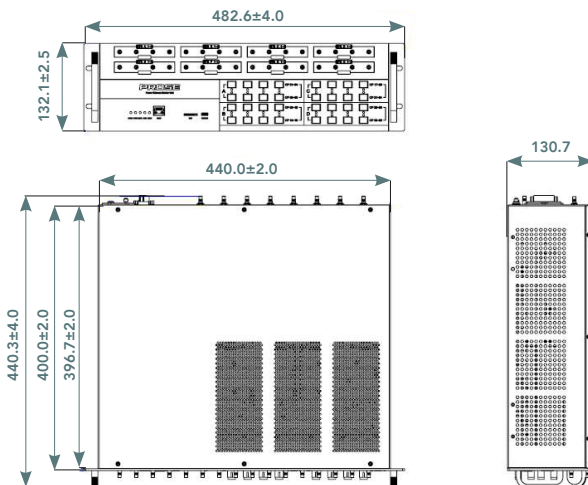
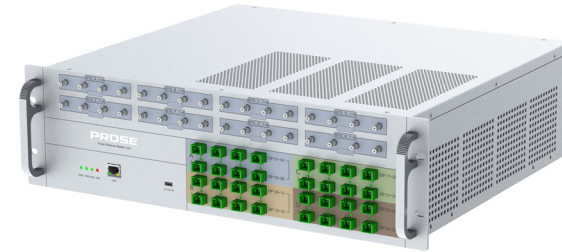




# MASTER UNIT

## PROSE Technologies ADAS master unit

PROSE Technologies is a German-American company that seamlessly merges the innovative spirit of American entrepreneurship with the precision and technical excellence of German culture. Specialising in wireless communication systems, PROSE Technologies provides the most innovative and advanced wireless communication solutions on the market. Combined with the Telenco group's know-how and XG-optic® network solutions, it offers the best and most reliable ADAS indoor mobile network.



### The key benefits:

- + Support 2x2 MIMO for band 1/3/7/8/20/28, and 4x4 MIMO for n78
- + PBMU has 32 inputs, 4 ports per set, each set support one frequency band, independent ATT per each port
- + Support 2G, 3G, 4G and 5G technologies
- + Automatically balance the input power from difference operator's RRU and combine the same band signal in single output
- + Power detection for each operator and technology
- + Support up to 16/8(4G/5G) NEU from one single PBMU
- + Management via OMT or NMS management software

### Mechanical specifications:

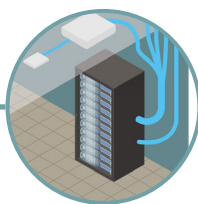
Dimensions	483 x 400 x 132mm (3U 19" Rack)	
Weight	≤ 13kg	
Optical connector	n78 4x4 MIMO	8 sets x SC/APC @ A/B/C/D required 4pcs fibers per set
	n78 2x2 MIMO	8 sets x SC/APC @ A/B required 2pcs fibers per set
	Band 1/3/7/8/20/28 2x2 MIMO	16 sets x SC/APC @A/B or C/D required 2pcs fibers per set
RF connector	IM2U: 16 x QMA-Female (6 ports for band 1/3/7/8/20/28 SISO and 6 ports for band 1/3/7/8/20/28 MIMO, and 4 ports for n78 4x4 MIMO) PBU: 32 x QMA-Female (8 sets of Tx/RX ports, 4 ports per each set, and each set support one frequency band)	
Installation	19" Rack Mounting	

### Environmental specifications:

Operating temperature range	-10°C to +45°C
Storage temperature range	-40°C to +85°C
Relative humidity	10% - 95%
Ingress protection	IP40 for indoor
Monitoring and control	LAN-RJ45 (local) 3G&4G wireless modem/Ethernet (remote)
Cooling	Nature cooling

### Electrical specifications:

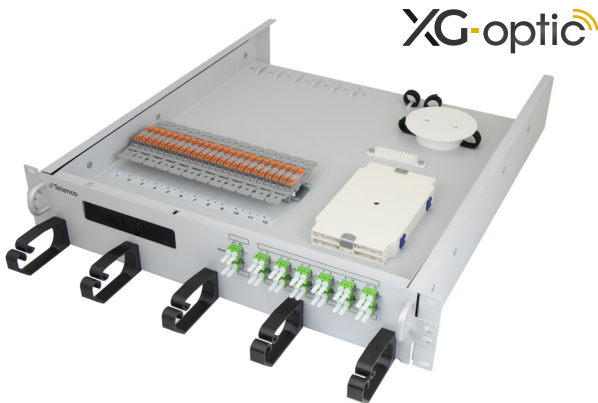
		Uplink	Downlink
Frequency	Band 1 (2x2 MIMO)	1920 - 1980MHz	2110 - 2170MHz
	Band 3 (2x2 MIMO)	1710 - 1785MHz	1805 - 1880MHz
	Band 7 (2x2 MIMO)	2500 - 2570MHz	2620 - 2690MHz
	Band 8 (2x2 MIMO)	880 - 915MHz	925 - 960MHz
	Band 20 (2x2 MIMO)	832 - 862MHz	791 - 821MHz
	Band 28 (2x2 MIMO)	703 - 748MHz	758 - 803MHz
	n78 (4x4 MIMO)	3300 - 3800MHz	3300 - 3800MHz
Gain		-20 ± 2dB	-20 ± 2dB
RF Output Power		-30 ± 2dBm (RF)	---
Optical Power		---	0 ± 2dBm (O/P)
Optical Wavelength		1310nm	1550nm
Gain Control Range (per operator)		25 dB / 0.1dB step	25 dB / 0.1dB step
Gain Control Range (per band)		15 dB / 1dB step	15 dB / 1dB step
VSWR		≤ 2.0:1	≤ 2.0:1
Max. operation Input Power		---	≤ 20dBm
Impedance		50Ω	50Ω
Power Supply		DC-48V ± 10%	---
Power Consumption		≤ 70W	---



# XG-optic® HYBRID PATCHPANEL

## Hybrid patch panel

The hybrid patchpanel Telenco has been specially designed to manage 12 hybrid cables including 24 copper wires and up to 48 fibers. It makes it easy the connections in 2 stages, copper then fibers, guaranteeing the protection of the optical fibers. It has a great ease of access, yet is very compact, enabling it to be installed in a crowded rack without interacting negatively with the rest of the equipment.



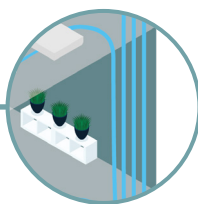
- The key benefits:**
- + Wide and easy access
  - + Hybrid cable compatible
  - + Easy & secured copper/fibers management
  - + Solution all integrated

- Characteristics:**
- + FO connectors LC/APC
  - + Fast copper connectors
  - + Up to 48FO splices
  - + 12 Hybrid cables (24 copper wires)

Ref	Designation
1000494	Hybrid patchpanel 19" 1U - 24FO LCA - 24x Copper wires

### Specifications:

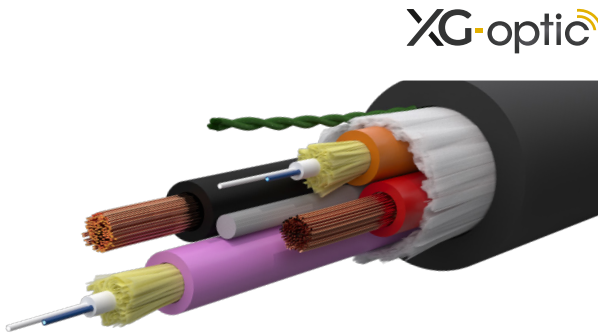
Raw material	Painted metal / Plastic
Installation	19" rack with standard cage nuts/screws
Size	L482.6mm x H88.0mm x D515.0mm (D592.00mm with cable guide in front)
Capacity of cables	12x hybrid cables (4FO/2copper wires)
Optical connectors	14x LC/APC Duplex (24FO+4FO)
Optical fiber type	G.657A2
Pigtail qty/colors	24x pigtails LC/APC (blue/white)
Splice capacity	48FO (2 cassettes with 24 splices each)
Copper wires capacity	24x wires
Copper connectors section	Up to 4mm²
Copper connections	Wago connectors (without tools)



# XG-optic® HYBRID CABLE B2ca

## Hybrid cable B2ca 2x1,5mm² 4FO

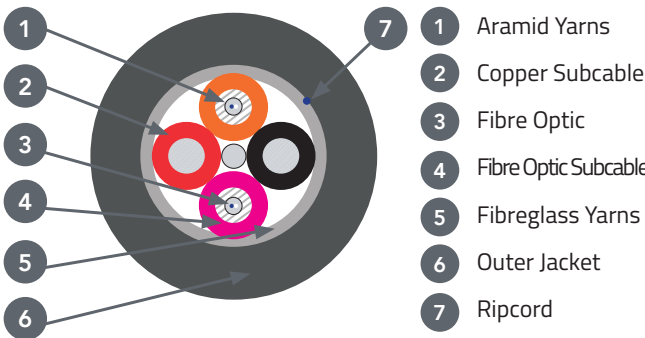
Telenco's hybrid cable is specially developed for indoor deployment. It's strong and flexible for an easy installation. Hybrid cable Telenco is certified B2ca, compliant with the deployment in all the building with public. It's composed of 2 copper wires and 4 optical fibers, the fibers are 2 by 2 in flexible buffer 900µm for a easy and secured management.



- The key benefits:**
- + Quick & simple installation
  - + Small diameter strong & flexible
  - + Fibers in flexible tube
  - + Color identification to avoid wiring errors

- Characteristics:**
- + 2x 2FO G.657A2
  - + Fibers in flexible tubes
  - + 2x Copper wires 1.5mm²
  - + CPR: B2ca

B2ca



Ref	Designation
1002024	Hybrid cable 4FO G.657A2 - 2x1.5mm²/m

### Specifications:

Cable type	In/Outdoor
Outer sheath material	LSZH XtremFire B2ca
Outer sheath colour	Black
Outer diameter	9.7mm +/-0.5mm
Ripcord	Yes (x2)
Copper cables diameter	2.5mm
Copper sheath colour	Red / Black
Copper wire section	2x1.5mm²
Fibre cable diameter	2.5mm +/-0.3mm
Fibers sheath colour	Orange / Purple
Fibers by fiber cable	2FO
Colour of the 900µm fibers	Blue / Write
Strength members	Fiber glass Yarns + Aramid yarns + FRP (Ø1.2mm)
Max. tensile	1500N
Max. crush	1000N/dm
Min. bending radius	20 x Ø
Max. Operating Voltage	300V
Conductor Resistance	≤ 13.3Ω Km. At 20°C
Temperature range	-20°C / +70°C
CPR	B2ca





Hybrid cable B2ca 2x2.5mm<sup>2</sup> 4FO

Telenco's hybrid cable is specially developed for indoor deployment. It is strong and flexible for an easy installation. Telenco hybrid cable is certified B2ca, compliant with the deployment in all buildings welcoming people. It is composed of 2 copper wires and 4 optical fibers, the fibers are 2 by 2 in flexible buffer 900µm for a easy and secured management.

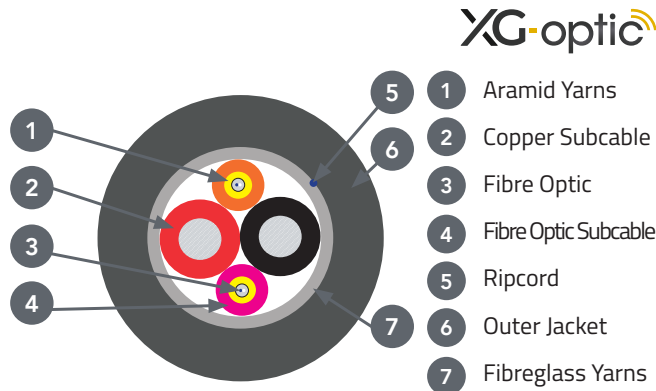
The key benefits:

- + Quick & simple installation
- + Small diameter - strong & flexible
- + Fibers in flexible tubes
- + Color identification to avoid wiring errors
- + ADAS certified

Characteristics:

- + 2x 2FO G.657A2
- + Fibers in flexible tubes
- + 2x Copper wires 2.5mm<sup>2</sup>
- + CPR: B2ca

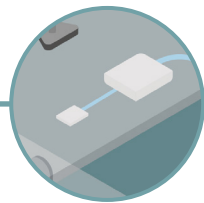
B2ca



Ref	Designation
1002927	Hybrid cable 4FO G.657A2 - 2x2.5mm <sup>2</sup> /m

Specifications:

Cable type	In/Outdoor
Outer sheath material	LSZH XtremFire B2ca
Outer sheath colour	Black
Outer diameter	9.7mm +/-0.5mm
Ripcord	Yes
Copper wire diameter	3.15mm
Copper sheath colour	Red / Black
Copper wires section	2x2.5mm <sup>2</sup>
Fibre cable diameter	2.1mm +/-0.3mm
Fibers sheath colour	Orange / Purple
Fibers by fiber cable	2FO > 2FO (Total 4FO)
Colour of the fibers	Blue / Write
Strength members	Fiber glass Yarns + Aramid yarns
Max. tensile	1500N
Max. crush	1000N/dm
Min. bending radius	20 x Ø
Max. Operating Voltage	300V
Conductor Resistance	≤ 7,98Ω Km. At 20°C
Temperature range	-20°C / +70°C
CPR	B2ca-s1, d0, a1



Hybrid boxes

Telenco's hybrid boxes are specially developed for indoor mobile deployment to be close to the antennas and simplify their installation. Their small footprint and baseplate make it easy to install on walls or false ceilings, while allowing comfortable copper and fibre connections in all conditions. Their steel structure gives it great strength and enables it to manage very rigid hybrid cables. Telenco's hybrid boxe unique design means it can be handled without tools.

The key benefits:

- + Quick & simple installation
- + No tools required
- + Easy to connect
- + Small & strong

Characteristics:

- + FO connectors LC/APC
- + Fast copper connectors
- + 2FO or 4FO / 2 copper wires
- + Pigtails colors: Blue/White



Ref	Designation
1000495	Hybrid box - 2FO LCA - 2x copper wires
1002028	Hybrid box - 4FO LCA - 2x copper wires

Specifications:

Installation	Ceiling / Wall / Cable tray
Raw material	Painted metal / Plastic
Size	L155.0mm x H36.0mm x D156.0mm
Optical connectors	1 or 2 LC/APC Duplex
Optical fiber type	G.657A2
Splice capacity	4FO
Pigtails/Fibers colors	Blue/White
Copper wires capacity	2 wires
Copper connections	Wago connectors (without tools)
Copper connectors capacity	Up to 4mm <sup>2</sup>



Hybrid boxes compact

XG-optic® hybrid boxes are specially develop for indoor mobile deployment to be close of the antennas and simplify their installation.  
Its small footprint and baseplate make it easy to install on cable trays, walls, pole or false ceilings, while allowing comfortable copper and fibres connections in all conditions.  
Its ligh but strong structure gives it great strength and enables it to manage very rigid hybrid cables.  
Its unique design means it can be handled without tools.



Ref	Designation
93150	Hybrid box - 2FO LCA - 2x Cu XG-optic®
1002928	Hybrid box - 4FO LCA - 2x Cu XG-optic®

- The key benefits:**
- + Quick & simple installation
  - + No tools required
  - + Easy to connect
  - + Small & strong

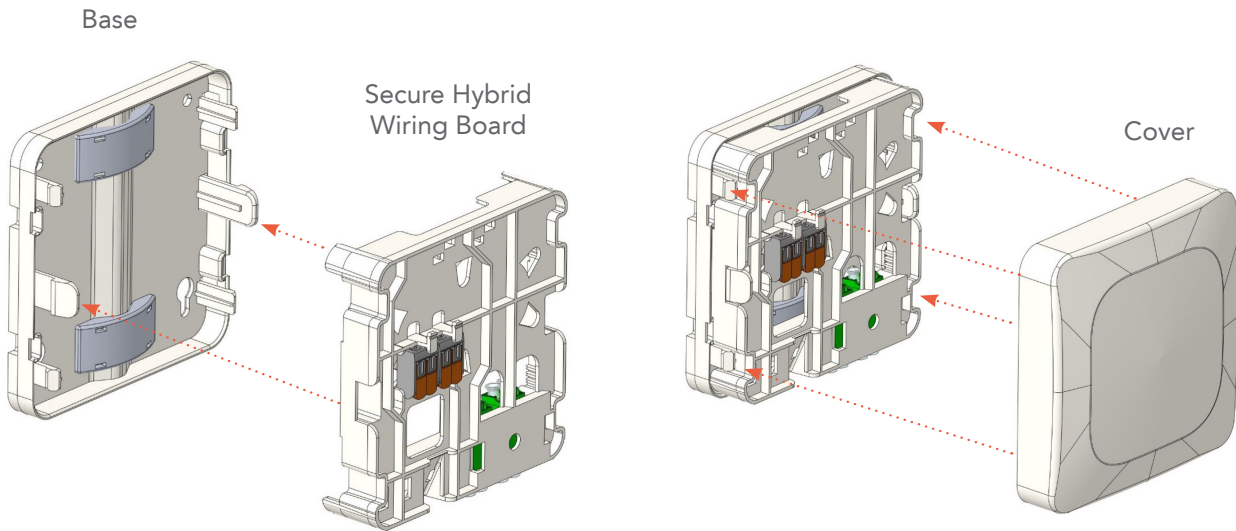
- Characteristics:**
- + FO connectors LC/APC
  - + Fast copper connectors
  - + 2FO or 4FO / 2 copper wires
  - + Pigtails colors: Blue/White

Specifications:

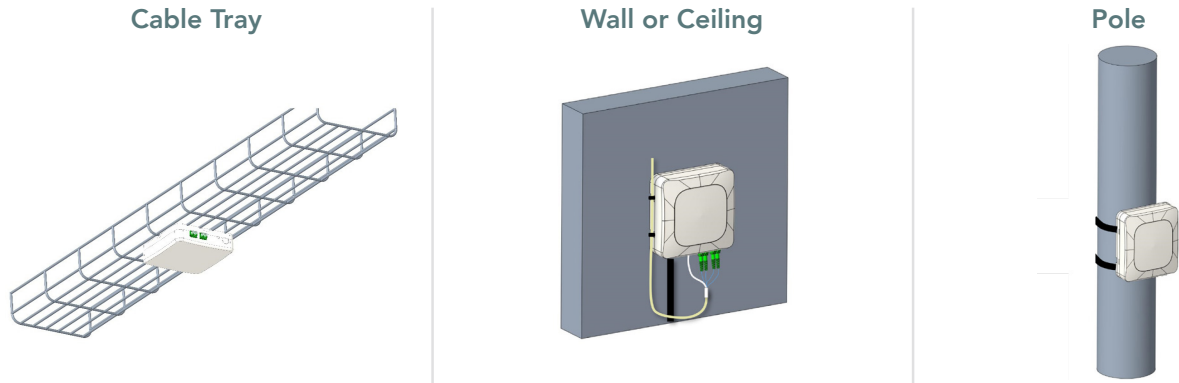
Fixation	Ceiling / Wall / Cable tray / Pole
Dimensions H x W x D	38mm x 110mm x 110mm
Material composition	Plastic UL94 V0
Color	White
Fibre type	G.657A2
Optical performances	IEC-61300 : 100% compliant
Configurations available	2FO or 4FO
Capacity of fiber	2FO ( 2 pigtails / 1 adaptor ) ; 4FO (2x 2 pigtails / 2 adaptors)
Type of optical connector	LC/APC Duplex
Pigtails color	Blue/White
Copper connectors capacity	2 copper wires link up to 4mm²
Copper wires capacity	2 copper links
Copper connections	2x Wago connectors (without tools)



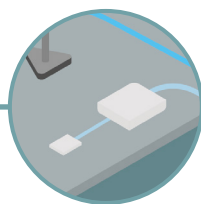
Boxes structure:



Installation:







# XG-optic® HYBRID PATCHCORDS

## Hybrid patchcords

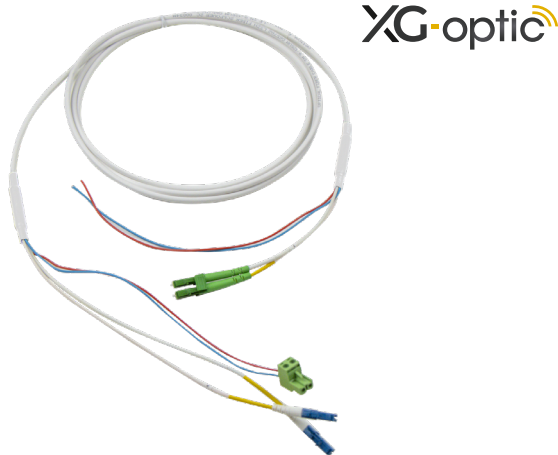
Telenco's XG-optic® hybrid patchcords have been developed to connect easily and without error the active equipment to the hybrid patchpanel or the hybrid box to the antenna. Its design and very small diameter make a very discrete solution when the antennas are visible. Its great flexibility make installation easier and faster.

### The key benefits:

- + Small diameter
- + Flexible & strong
- + Prevents wiring errors
- + Discrete Installation

### Characteristics:

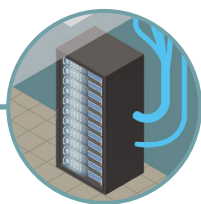
- + FO Simplex or Duplex
- + Connectors LC/UPC and/or LC/APC
- + 2x copper wires 0.5mm²
- + Copper wires with or without connector



Ref	Designation
1001183	Hybrid patchcord DX LC/APC-LC/UPC G.657A2 2x0.5mm² Ø4.2mm White Lg 3m
1001184	Hybrid patchcord SX LC/APC-LC/UPC G.657A2 2x0.5mm² Ø4.2mm White Lg 3m
1004003	Hybrid patchcord DX LC/APC-SC/APC G.657A2 2x0.5mm² Ø4.2mm White Lg 3m

### Specifications:

Cable type	Indoor
Outer sheath material	LSZH
Outer sheath colour	White
Outer diameter	4.2mm +/-0.2mm
Copper wire diameter	1.5mm
Copper sheath colour	Red / Black
Copper wires section	2x0.5mm²
Fibre capacity	1FO or 2FO
Fibre type	G.657A2
Fibre cable diameter	2mm
Fiber sheath colour	White
Strength members	Aramid yarns
Fibre connectors type	LC/APC - LC/UPC - SC/APC
Copper connector	With or without
Max. tensile	200N
Max. crush	100N/dm
Min. bending radius	15 x Ø
Max. Operating Voltage	300V
Conductor Resistance	≤ 38Ω Km. At 20°C
Temperature range	-40°C / +70°C



# SERVER CABINETS

## Server cabinets

Our range of flexible and modular 19" free-standing server cabinets have been designed for mission critical operations such as data storage, server housing and infrastructural cabling. They can also offer solutions for hot/cold corridor data centre architecture.

### Technical Specifications:

- + Height options: 27U, 36U, 42U, 52U, 54U, 60U
- + Depth options: 1000mm, 1100mm, 1200mm
- + Width options: 600mm, 800mm
- + Load capacity up to 2000kg
- + Standard finishes:
  - Jet Black RAL 9005
  - Light Grey RAL 7035
- + 2 pairs of fully adjustable 19", ETSI or ANSI mounting profiles
- + Front & rear mesh doors – 80% open area
- + 3-point door locking for security
- + Removable doors, hinged left or right
- + 2 pairs of horizontally divided side panels with locks
- + Large cable aperture in base
- + 2 vertical cable trays fitted at rear (1 per side)
- + Brushed cable entry in roof
- + 10 way x 80 A earth bar fitted in base at the rear
- + Fully earth bonded
- + Conforms to IEC 60297-3, EIA 310-D and BS 3192
- + Cabinet supplied fully assembled

### Optional Features:

- + Wide range of accessories
- + Double (wardrobe style) rear doors for easy handling
- + Active airflow management multiple fan tray options and features



### Specifications:

Material	Steel
Colour	RAL 7035 light grey or RAL 9005 black
Compliance	RoHS, UL Certified
Packaging	Assembled with option of flat packed (unassembled)
Maximum static load	Up to 1500kg
Finish	Frame, doors, side panels, top and bottom panels powder coated
19" mounting rails	Zinc-plated

### Standard Configuration Include:

- + Perforated front and rear doors.
- + Front & rear doors with swing handle Multi point locking
- + Solid Side Panels with cylinder locks and latches
- + Roof with 3 cable entries for 800 width, 1 cable entry for 600 width racks and additional multi-purpose cut-outs
- + 2 Pairs of depth adjustable heavy duty 19" Mounting Rails
- + 2 Pairs of Adjustable Feet
- + Bottom cover with 3 cable entries for 800 width, 1 cable entry for 600 width racks

Width	600	800
Height	42U	47U
Depth	1000	1200
Colour	RAL 7035 Grey RAL 9005 Black	

Options: A wide range of options for locking, door styles and accessories are available upon request.

# SB-ICE XG-RF Solution

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The SB-ICE SYSTEM XG-RF (Signal Booster repeater with Interference Cancellation Equalizer System) is a solution based on innovating range of OFF-AIR Repeater and fiable antennas offering top-of-the-range performance and ease installation.



EU based Cloud  
management  
or Private Cloud

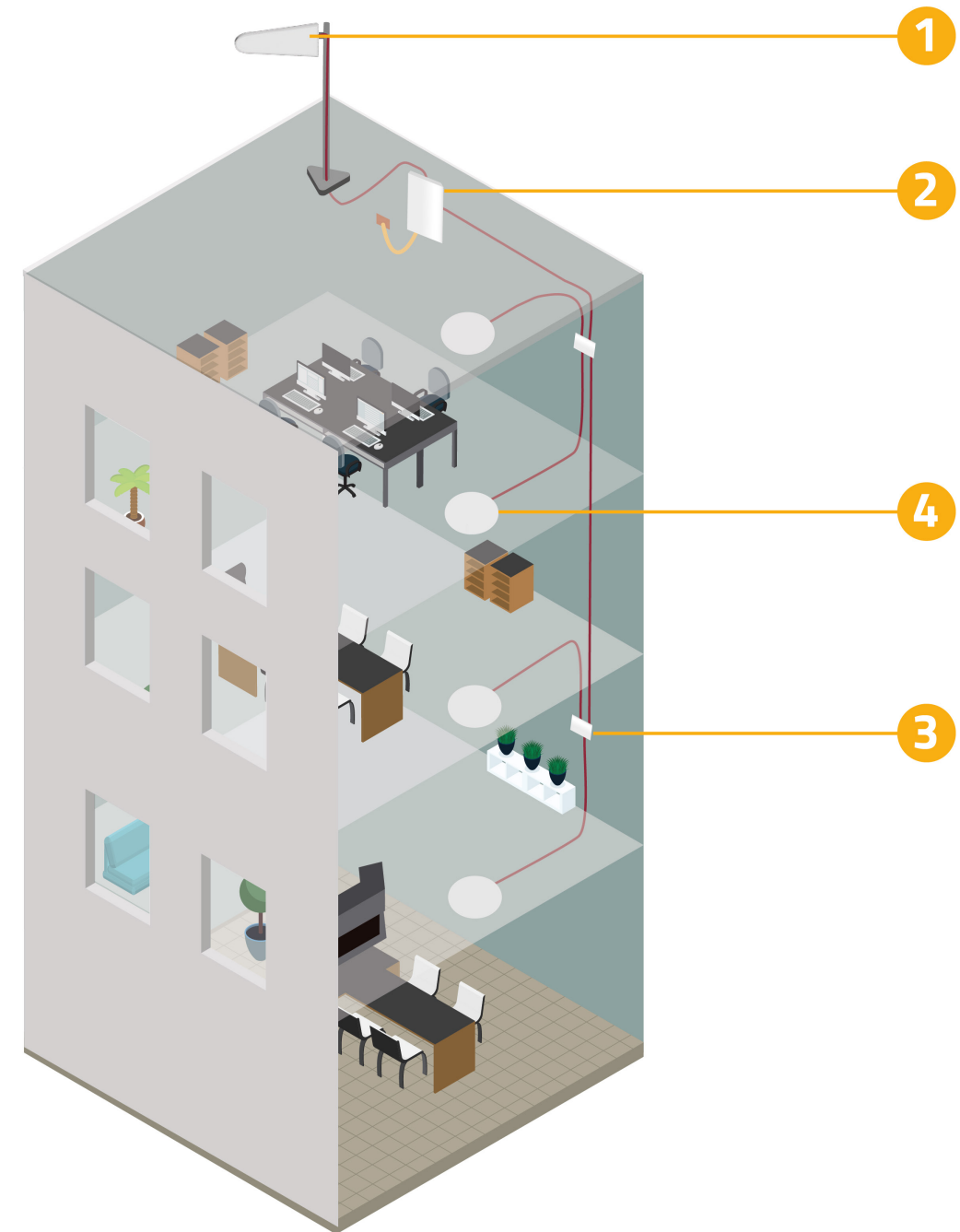


Digital repeater with ICE algorithm  
Up to 20dB interference  
cancelation



Uplink muting and  
interference protection  
Automatic Shutdown function

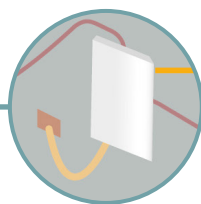
## SB-ICE XG-RF ARCHITECTURE



### Legend

- 1 Receiving Antenna
- 2 OFF-AIR Repeater SB-ICE
- 3 Indoor Omnidirectionnall Antenna
- 4 Coaxial passive components
- Coaxial link
- Electric power supply





# XG-RF OFFAIR REPEATERS SB-ICE



## OFFAIR repeater SB-ICE SBI2FT.2.LP 4G/5G XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of solutions to Indoor Wireless Networks. The XG-RAN, XG-RF & XG-optic® solutions meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

The SB-ICE XG-RF (Signal Booster repeater with Interference Cancellation Equalizer) solution integrate the OFFAIR Repeaters XG-RF offering top-of-the-range performance and ease of use.

Ref	N/R	Designation
1002931	SBI2FT.2.LP	OFFAIR repeater SB-ICE SBI2FT.2.LP 4G/5G XG-RF

**The key benefits:**

- + Supports Dual band operation - 5G NR TDD with 4G FDD
- + Full digital software and hardware platform with echo Interference Cancellation Equalizer (ICE)
- + Programmable sub-block bandwidth
- + 80dB gain with 23dBm per band output power

- + Mobile Network Operator (MNO) profile selection enabling smooth installation
- + Bluetooth and LAN connection with optional WiFi for remote management
- + EU based cloud platform addressing the EU 5G security toolbox



**Specifications:**

System	LTE FDD + 5G NR TDD		
Frequency Band	3GPP B3		3GPP n78
Frequency Range UL/DL	MHz	1710~1785 / 1805~1880	CEPT: 3400~3800 / 3400~3800
Number of Sub-block per Bend		1	1
Programmable Sub-block Bandwidth	MHz	5~20 @ 0.2/Step	30/40/50/60/80/90/100
Max. Output Power UL/DL	dBm	23±1/ 23±1	
Max. Gain UL/DL	dB	80±2/ 80±2	
UL Noise Figure	dB	≤6 (at Max. Gain)	
3GPP Compliance		TS36.106	TS38.106
ICS Capability	dB	≥25 (EVM ≤8% at Max. Gain)	
RF Connector		SMA Female, Donor Port x1, Service Port x1	
Impedance	Ω	50	
Power Supply (Input)	VAC	100~240V, 50/60Hz	
Power Consumption	W	≤35	
Dimensions	mm	205 x 155 x 49.1	
Weight	kg	≤2.0	
IP Rating		IP30	
Operation Temperature	°C	0~+55	
Local Control		OMT over USB Type-C / BT	
Remote Control		Via Wireless Modem	

## OFFAIR repeater SB-ICE SBI4F.2.LP 3G/4G/5G XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of solutions to Indoor Wireless Networks. The XG-RAN, XG-RF & XG-optic® solutions meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks. The SB-ICE XG-RF (Signal Booster repeater with Interference Cancellation Equalizer) solution integrate the OFFAIR Repeaters XG-RF offering top-of-the-range performance and ease of use.

Ref	N/R	Designation
1005671	SBI4F.2.LP	OFFAIR repeater SB-ICE SBI2FT.2.LP 3G/4G/5G XG-RF

**The key benefits:**

- + 3G/4G and 5G NR FDD repeater with 4 bands (B8, B3, B1 and B20)
- + Relays up to 2 bands simultaneous
- + Full digital software and hardware platform with echo Interference Cancellation Equalizer (ICE)
- + Programmable sub-block bandwidth

- + 80dB gain up to 22dBm per band output power
- + Mobile Network Operator (MNO) profile selection enabling smooth installation
- + Bluetooth and LAN connection with optional WiFi for remote management
- + EU based cloud platform addressing the EU 5G security toolbox



**Specifications:**

System	3G/4G/5G NR FDD
Frequency Band Support	3GPP Band 1/3/8/20 (Customizable) Relay Up to Two Bands Simultaneously
Relay Band Selection	Manual Band Lock (MBL): Manually Selected and Locked via Android APP*
Frequency Range UL/DL	B1: 1920~1980 MHz / 2110~2170MHz B3: 1710~1785 MHz / 1805~1880MHz B8: 880~915 MHz / 925~960MHz B20: 791 - 821 MHz / 832 - 862MHz
Number of Sub-block per Selected Band	1
Sub-block Bandwidth Support	5/10/15/20MHz
Sub-block Configuration	Manual Sub-block Configuration (MSC): Manually Set SB's Center Frequency and Bandwidth via Android APP**
Max. Output Power UL/DL	B1/3/20: 22dBm ± 1 dB / 20dBm ± 1dB B8: 20dBm ± 1 dB / 20dBm ± 1dB
Max. Gain UL/DL	80/80dB
Noise Figure	≤ 7dB (at Max. Gain)
Out of Band Gain	Compliant to ETSI TS 136.106 / 3GPP TS 36.106
Frequency Stability	
Spurious Emission	
Unwanted Emission (Emission Mask)	
Input Intermodulation	
Output Intermodulation	
Adjacent Channel Rejection Ratio	50 Ω SMA Female, Donor Port × 1, Service Port × 1
RF Connector	
Power Consumption	≤ 33W
Dimensions	210mm × 155mm × 50mm
Weight	2.0kgw
IP Rating	IP30
Operating Temperature	0°C ~ +55°C, Natural convection cooling
CE	Compliant RED 2014/53/EU



OFFAIR repeater SB-ICE SBI4F.3.LP  
2G/3G/4G/5G XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of solutions to Indoor Wireless Networks. The XG-RAN, XG-RF & XG-optic® solutions meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks. The SB-ICE XG-RF (Signal Booster repeater with Interference Cancellation Equalizer) solution integrate the OFFAIR Repeaters XG-RF offering top-of-the-range performance and ease of use.

Ref	N/R	Designation
92855	SBI4F.3.LP	OFFAIR repeater SB-ICE SBI4F.3.LP 2G/3G/4G/5G XG-RF

The key benefits:

- + 2G/3G/4G and 5G NR FDD repeater with 4 bands (B8, B3, B1 and B20)
- + Relays up to 3 bands simultaneous
- + Full digital software and hardware platform with echo Interference Cancellation Equalizer (ICE)

- + Programmable sub-block bandwidth
- + 80dB gain up to 22dBm per band output power
- + MNO network profile selection enabling smooth installation
- + Bluetooth and LAN connection with optional WiFi for remote management
- + EU based cloud platform addressing the EU 5G security toolbox



Specifications:

System	3G/4G/5G NR FDD
Frequency Band Support	3GPP Band 1/3/8/20 (Customizable) Relay Up to Two Bands Simultaneously
Relay Band Selection	Manual Band Lock (MBL): Manually Selected and Locked via Android APP*
Frequency Range UL/DL	B1: 1920~1980 MHz / 2110~2170MHz B3: 1710~1785 MHz / 1805~1880MHz B8: 880~915 MHz / 925~960MHz B20: 791~821 MHz / 832~862MHz
Number of Sub-block per Selected Band	1
Sub-block Bandwidth Support	5/10/15/20MHz
Sub-block Configuration	Manual Sub-block Configuration (MSC): Manually Set SB's Center Frequency and Bandwidth via Android APP**
Max. Output Power UL/DL	B1/3/20: 22dBm ± 1dB / 20dBm ± 1dB B8/B20: 20dBm ± 1dB / 20dBm ± 1dB
Max. Gain UL/DL	80/80dB
Noise Figure	≤ 7dB (at Max. Gain)
Out of Band Gain	Compliant to ETSI TS 136.106 / 3GPP TS 36.106
Frequency Stability	
Spurious Emission	
Unwanted Emission (Emission Mask)	
Input Intermodulation	
Output Intermodulation	
Adjacent Channel Rejection Ratio	
RF Connector	50 Ω SMA Female, Donor Port × 1, Service Port × 1
Power Consumption	≤ 33W
Dimensions	210mm × 155mm × 50mm
Weight	2.0 kgw
IP Rating	IP30
Operating Temperature	0°C ~ +55°C, Convection Cooling
CE	Compliant RED 2014/53/EU

OFFAIR repeater SB-ICS SBI2FT.2.MPM  
4G/5G XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of solutions to Indoor Wireless Networks. The XG-RAN, XG-RF & XG-optic® solutions meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks. The SB-ICE XG-RF (Signal Booster repeater with Interference Cancellation Equalizer) solution integrate the OFFAIR Repeaters XG-RF offering top-of-the-range performance and ease of use.

Ref	N/R	Designation
93165	SBI2FT.2.MPM	OFFAIR repeater 2W SB-ICE 2FT.2.MPM 4G/5G XG-RF
93166	SBI2FT.2.MPM	OFFAIR repeater 5W SB-ICE 2FT.2.MPM 4G/5G XG-RF
93167	SBI2FT.2.MPM	OFFAIR repeater 10W SB-ICE 2FT.2.MPM 4G/5G XG-RF
93168	SBI2FT.2.MPM	OFFAIR repeater 20W SB-ICE 2FT.2.MPM 4G/5G XG-RF

The key benefits:

- + Supports MiMo 2x2 5G NR and 4G SISO
- + Relays up to 2 bands simultaneous
- + Full digital software and hardware platform with Echo Interference Cancellation
- + Programmable sub-block bandwidth

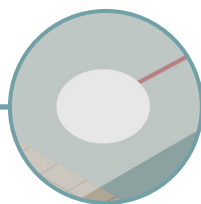
- + 80dB gain with 27dBm on FDD and 33dBm on n78 TDD
- + MNO network profile selection enabling smooth installation
- + Bluetooth and LAN connection for remote management
- + EU based cloud platform addressing the EU 5G security toolbox



Specifications:

System	LTE
Frequency Band	3GPP Band 3 + Band 1 + Band 8
Number of Sub-block per Selected Band	1 or 2 Sub-blocks
Programmable BW per Sub-block	10MHz ~ 20MHz / Step 0.2MHz
Max. Output Power	UL: 30dBm ± 1dB DL: 33dBm ± 1dB
Max. Gain UL/DL	90/90 dB
Manual Gain Control	25dB@1dB/Step
Automatic Gain Control	25dB
Gain Flatness	3dBpp, Typically / 4dBpp at Band Edge
Group Delay	7μs
UL/DL EVM	≤ 8% (at Max. Output Power)
UL Noise Figure	8dB (at Max. Gain)
Frequency Stability	Compliant to 3GPP TS 36.106
Out of Band Gain	
Spurious Emission	
Unwanted Emission (Emission Mask)	
RF Connector	N-Type Female
Power Consumption	250W
Dimensions	447mm x 357mm x 168mm
Weight	23kgw
Operating Temperature	0°C ~ +55°C
CE	Compliant RED 2014/53/EU





# XG-RF PASSIVE ANTENNAS

## Indoor Omnidirectional Antenna SISO 4.3-10(f) 617-6000MHz XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

Ref	N/R	Designation
1002919	OD0460-S-2/5dBi-43f-153	Indoor Omnidirectional Antenna SISO 4.3-10(f) 617-6000MHz XG-RF



### The key benefits:

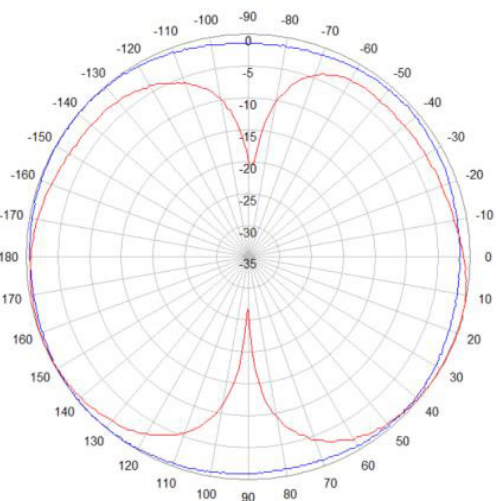
- + Frequency range: 617-6000MHz
- + Wideband frequency range
- + Excellent PIM
- + Discreet design
- + Connector 4.3-10(f) (In option: N(f))

### Specifications:

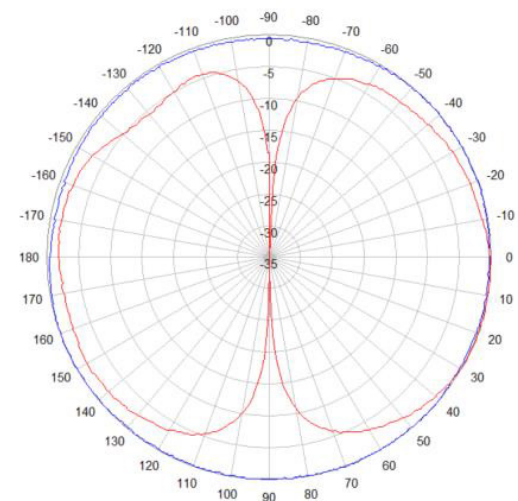
Frequency Band, MHz	617-960	1400-1600	1695-2700	3300-4200	4800-6000
Horizontal Beamwidth, degrees			360		
Gain, dBi	1.3	2	3	3.5	5
VSWR	1.7	1.6	1.6	1.6	1.6
3 <sup>rd</sup> PIM, @ 2*20W, dBc		-153, tested @ 900MHz/1800MHz and 3500MHz			
Impedance		50ohm			
Maximum Input Power, W		50			
Polarization		Vertical			
Mounting Type		Through-hole ceiling mount			
Number of Ports, all types		1 x 4.3-10 Female			
Radome Color		White			
Radome Material		ABS			
Net size, Diameter*Height		206mm * 89mm			
Net weight, Kg		0.45			
Operating Temperature		-40°C to +60°C			
RoHS		Compliant			

### Horizontal / vertical patterns:

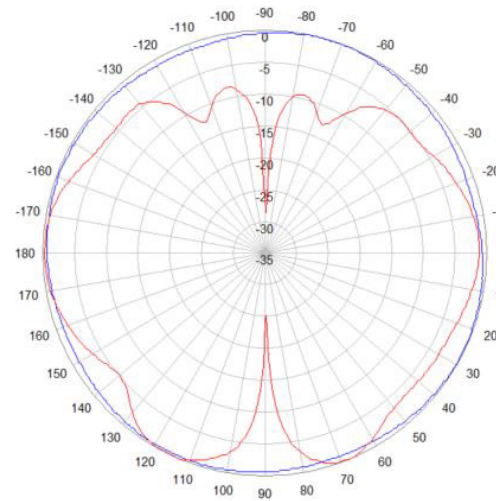
- Horizontal
- Vertical



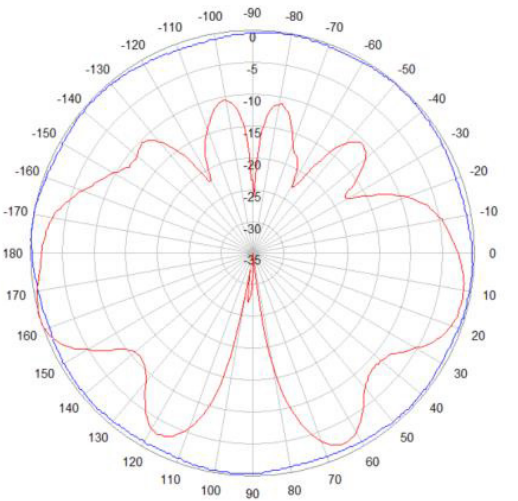
900MHz



2100MHz



3500MHz



5500MHz

Indoor Slimline Omnidirectional Antenna  
SISO XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

Ref	N/R	Designation
1002930	OS0742-S-1.2/4dBi-43f-153	Indoor SlimLine Omnidirectional Antenna SISO 4.3-10(f) 698-4200MHz XG-RF

- The key benefits:**
- + Frequency range: 698-4200MHz
  - + True-omnidirectional
  - + Excellent PIM
  - + Ultrathin, low visual impact
  - + Connector 4.3-10(f) (In option: N(f))

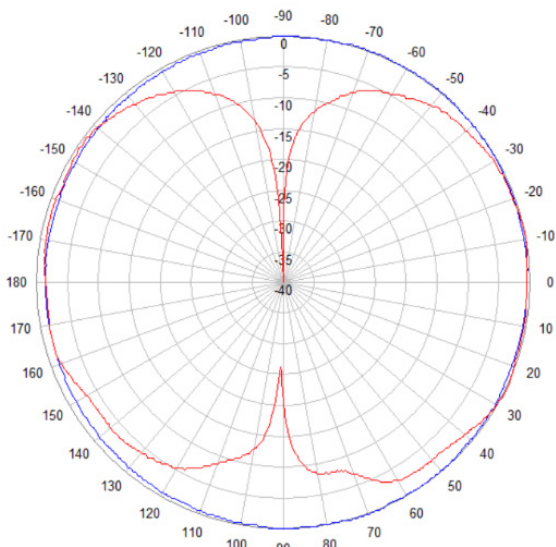
Specifications:

Frequency Band, MHz	698-960	1695-2700	3300-4200
Horizontal Beamwidth, degrees	360		
Gain, Ave., dBi	1.2	3.5	4.0
VSWR	≤1.8		
PIM 3 <sup>rd</sup> @ 2×43dBm, dBc	-153, tested @ 900M and 1800MHz		
Impedance	50ohm		
Maximum Input Power, W	50		
Polarization	Linear, H		
Mounting Type	Ceiling-mount		
Number of Ports, all types	1 * 4.3-10 Female with 300mm pigtail		
Radome Color	White		
Radome Material	ABS		
Net size, Diameter*Height	307 * 18mm		
Operating Temperature	-40°C to +60°C		
Application	Indoor		

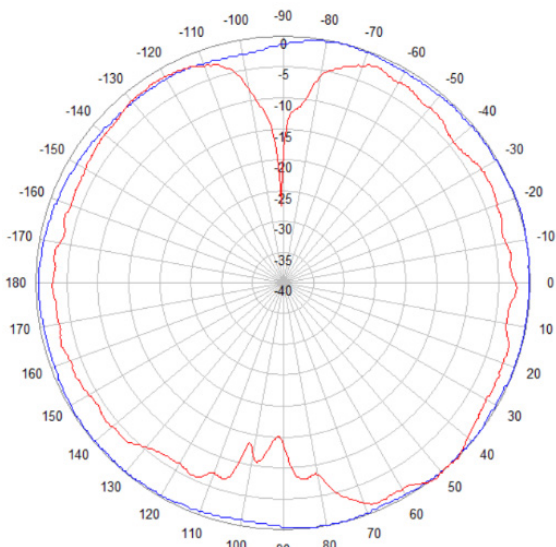


Horizontal / vertical patterns:

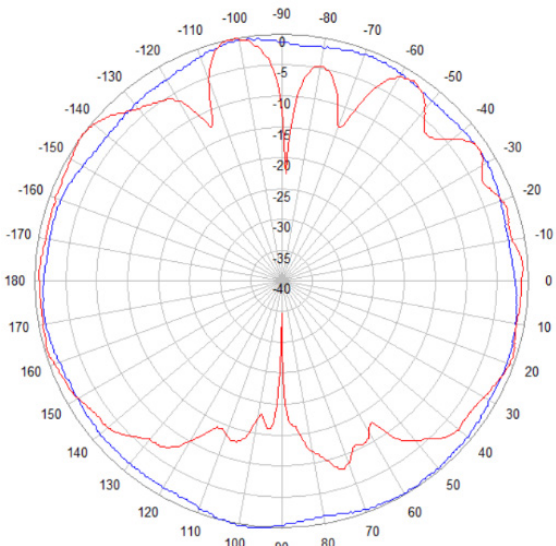
- Horizontal
- Vertical



800MHz



1800MHz



3500MHz



Indoor Omnidirectional Antenna  
TETRA SISO XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

Ref	N/R	Designation
93164	OD0460-S-2/5dBi-43f-153	Indoor Omnidirectional antenna TETRA SISO 4.3-10(f) 380-6000MHz XG-RF

- The key benefits:**
- + Frequency range: 380-6000MHz
  - + Wideband frequency range
  - + Excellent PIM
  - + Discreet design
  - + Connector 4.3-10(f) (In option: N(f))

Specifications:

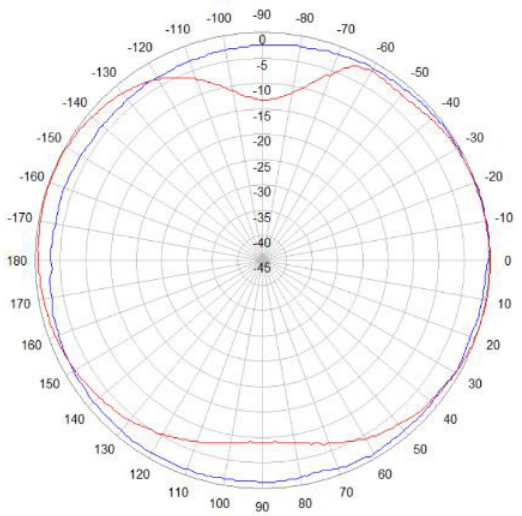
Frequency Band, MHz	380-520	617-960	1420-1520	1695-2700	3300-4200	4800-6000
Horizontal Beamwidth, degrees	360					
Gain, dBi	1.0	2.0	2.8	4.0	5.0	6.0
VSWR	≤1.9			≤1.8		
3 <sup>rd</sup> PIM, @ 2*20W, dBc	-153, tested @ 900MHz/1800MHz and 3500MHz					
Impedance	50ohm					
Maximum Input Power, W	50					
Polarization	Vertical					
Mounting Type	Through-hole ceiling mount					
Number of Ports, all types	1 x 4.3-10 Female					
Radome Color	White					
Radome Material	ABS					
Net size, Diameter*Height	Ø 298 mm x H 151mm					
Net weight, Kg	0.82					
Operating Temperature	-40°C to +60°C					
RoHS	Compliant					



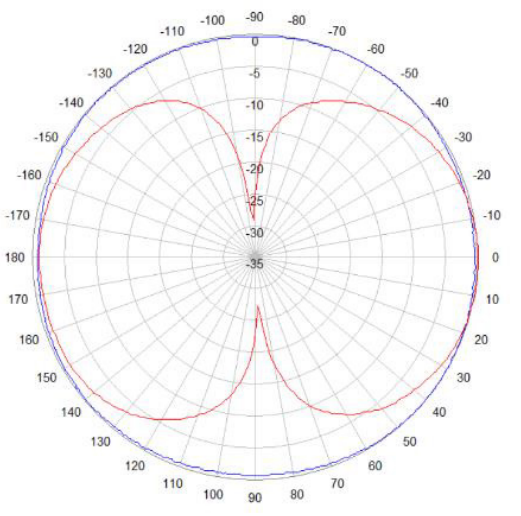
XG-RF

Horizontal / vertical patterns:

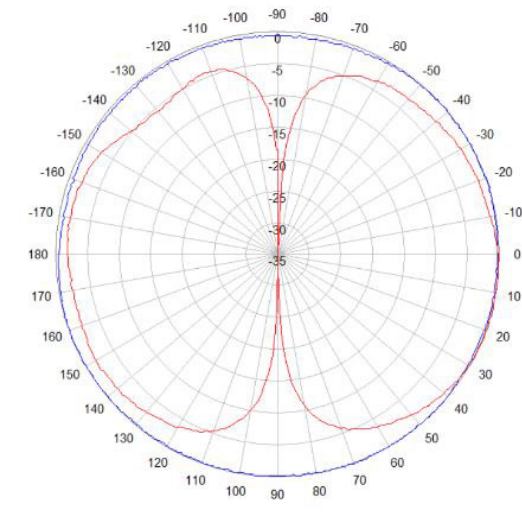
- Horizontal
- Vertical



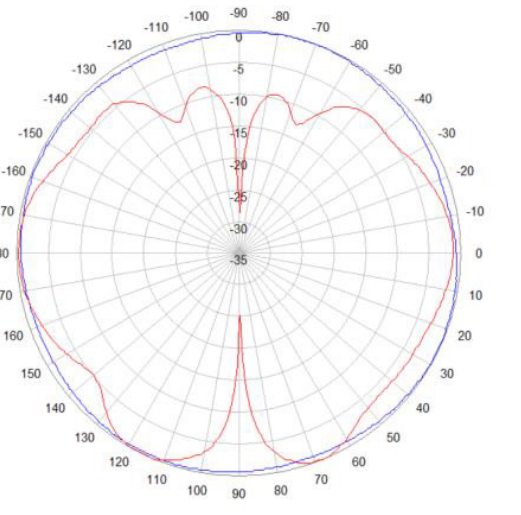
400MHz



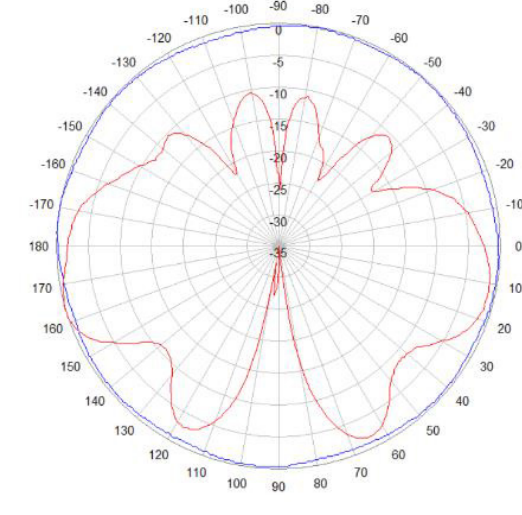
800MHz



2100MHz



3500MHz



5500MHz

Indoor Directional Antenna  
SISO XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

Ref	N/R	Designation
1008748	DP0738-S-43f-153	Indoor Directional Antenna SISO 4.3-10(f) 698-4000MHz XG-RF

The key benefits:

- + Frequency range: 698-4000MHz
- + Wideband frequency range
- + Excellent PIM
- + Discreet design
- + Connector 4.3-10(f) (In option: N(f))

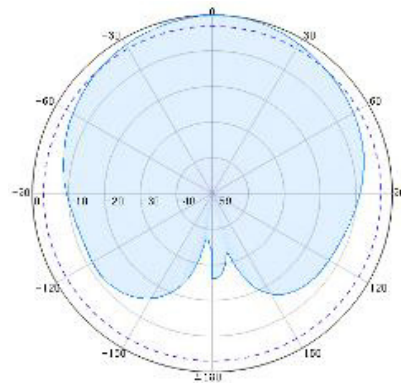
Specifications:

Frequency Band, MHz	698-806	806-960	1710-2700	3300-4000
Vertical Beamwidth, degrees	90°	82°	60°	45°
Horizontal Beamwidth, degrees	100°	85°	65°	50°
Gain, dBi	5.5	6.5	8.0	7.0
VSWR	≤2.0	≤2.0	≤1.8	≤1.8
3 <sup>rd</sup> PIM, @ 2*43dBm, dBc	-153			
Impedance	50ohm			
Maximum Input Power, W	50			
Polarization	Vertical			
Number of Ports, all types	1 x 4.3-10 Female			
Radome Color	White			
Radome Material	ABS			
Dimensions	H180*L158*D60mm			
Net weight, Kg	0.40			
Operating Temperature	-35°C to +65°C			
RoHS	Compliant			

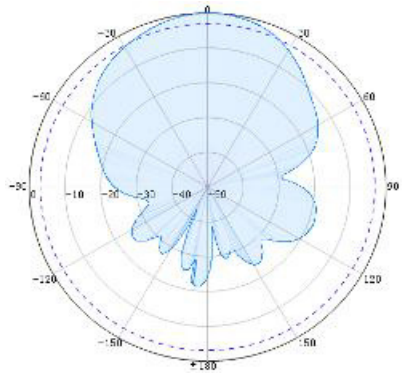


Radiation patterns

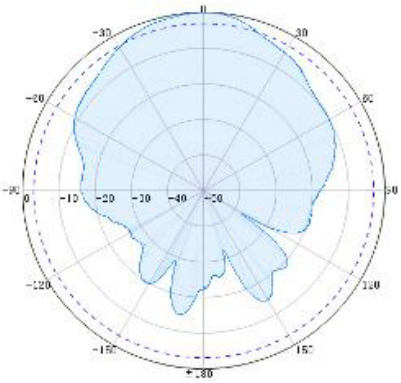
Horizontal



750MHz

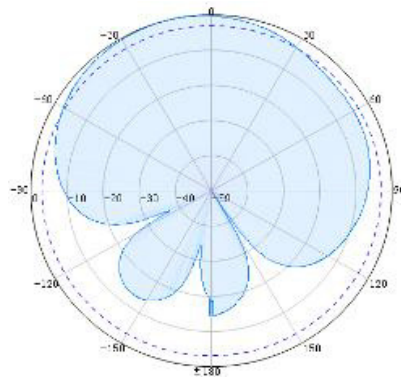


2170MHz

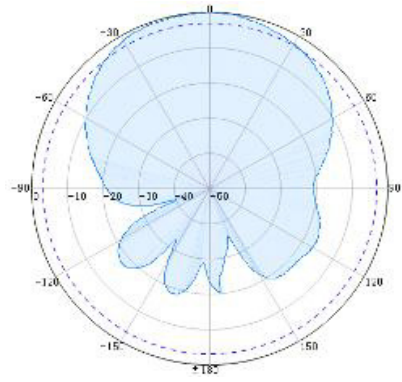


3800MHz

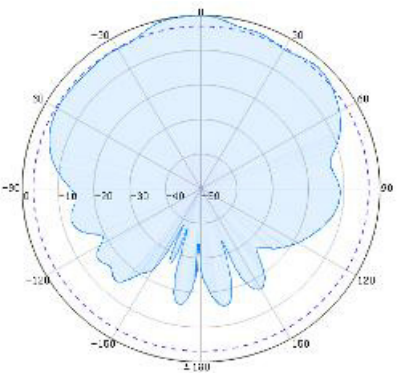
Vertical



750MHz



2170MHz



3800MHz



Indoor Stick Omnidirectional Antenna  
SISO XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.



Ref	N/R	Designation
1008750	OS0742-S- 2/3.5dBi- 43f-15	Indoor Stick Omnidirectionnal Antenna SISO 4.3-10(f) 690-4200MHz XG-RF

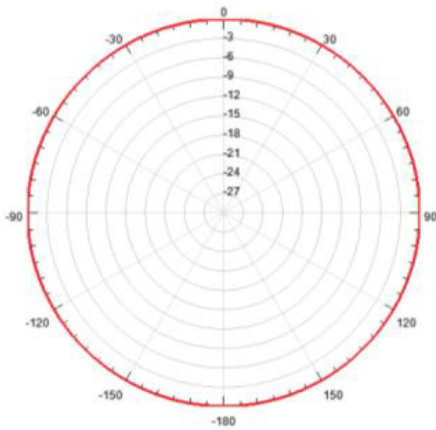
The key benefits:

- + Frequency range: 690-4200MHz
- + Wideband frequency range
- + Excellent PIM
- + Discreet design
- + Connector 4.3-10(f) (In option: N(f))

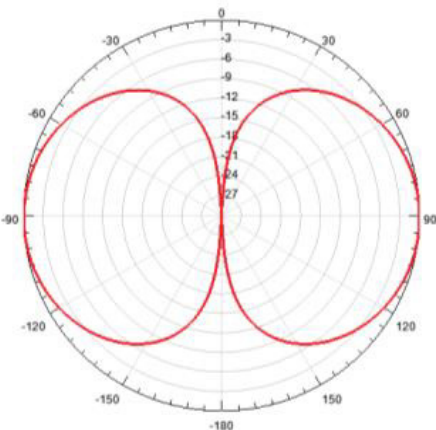
Specifications:

Frequency Band, MHz	690-960	1420-1520	1695-2700	3300-4200
Vertical Beamwidth, degrees	75°	51°	42°	33°
Horizontal Beamwidth, degrees	360°			
Gain, dBi	2.0	2.5	3.0	3.5
VSWR	≤2.2	≤2.5	≤2.0	≤1.7
3 <sup>rd</sup> PIM, @ 2*43dBm, dBc	-150, tested at 900MHz, 1800 and 3500MHz			
Impedance	50ohm			
Maximum Input Power, W	100			
Polarization	Vertical			
Number of Ports, all types	1 x 4.3-10 Female			
Radome Color	White			
Radome Material	Fiberglass			
Dimensions	L241*D40mm (Including connector)			
Net weight, Kg	0.25			
Operating Temperature	-30°C to +65°C			
RoHS	Compliant			

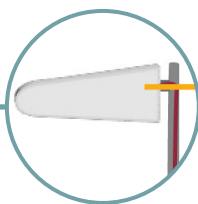
Radiation patterns



Horizontal



Vertical



# XG-RF LOG PERIODIC ANTENNAS

## Log periodic antenna XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

Ref	N/R	Designation
93181	YLP0738-S-8/11dBi-4.3f-150	Log periodic antenna SISO 4.3-10(f) 698-3800MHz XG-RF
93182	YLP0738-S-8/11dBi-4.3f-150	Log periodic antenna SISO N(f) 698-3800MHz XG-RF

**The key benefits:**

- + Frequency range: 698-3800MHz
- + Wideband frequency range
- + Low PIM
- + IP25 for both indoor and outdoor application
- + Connector 4.3-10(f) (In option: N(f))

**Specifications:**

Frequency Band, MHz	698–960	961-1700	1701–2700	2701-3800
Horizontal Beam Width, degrees	79	78	88	85
Vertical Beam Width, degrees	59	57	58	59
Gain, dBi	9.5	9.7	9.4	8.5
VSWR	1.7			
F/B Ratio, dB	16	20		
PIM 3 <sup>rd</sup> , dBc @ 2*43dBm	-150			
Impedance	50ohm			
Polarization	Vertical			
Maximum input power, W	200W			
Mounting Type	Pole Mount			
Number of Ports, all types	1 x 4.3-10 Female (N(f) in option)			
Radome Color	White			
Radome Material	ABS			
Net size, Length*Width*Depth	500 * 210 * 65mm			
Net weight, Kg	0.75			
Ingress Protection	IP25			
Operating Temperature	-40°C to +60°C			



## Log periodic antenna high gain XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

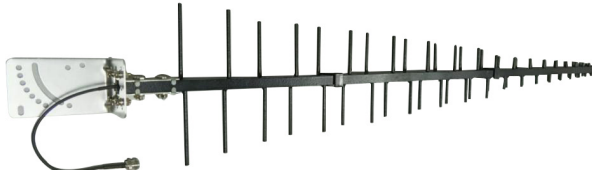
Ref	N/R	Designation
1008212	YLP0640-S-9/11dBi-Nf-140	Log periodic antenna SISO N(f) 617-2700MHz high-gain XG-RF

**The key benefits:**

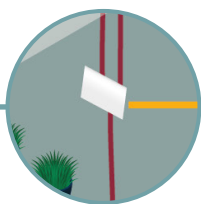
- + Frequency range: 617-2700MHz
- + Wideband frequency range
- + Low PIM
- + High Gain 12-14dBi
- + Connector N(f)

**Specifications:**

Frequency Band (MHz)	617-960	1710-2700
Polarization	Vertical	
Horizontal Beamwidth	55±5°	
Vertical Beamwidth	50±5°	
Gain (dBi)	12	14
VSWR	≤2.5	≤2.0
Front-to-back ratio	≥20dB	
Total Input Power (W)	50	
Impedance (ohm)	50	
Connector	N(f)	
Light Protection	DC-Ground	
Working Temp (deg)	-40~+55	
Radome Material	Aluminum	
Rated Wind Velocity (km/h)	160	
Dimensions (mm)	1280x200x47	







# XG-RF HYBRID COMBINERS

## Hybrid combiner 4x4 698-2700MHz -155dBc 100W/port XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

Ref	N/R	Designation
1008205	HB0727- H44-6dB- Nf-155	HYBRID COMBINER 4x4 698-2700MHz -155dBc 100W/port XG-RF

- The key benefits:**
- + Wide Frequency Band 698-2700MHz
  - + 2G/3G/4G/LTE Coverage
  - + Low Passive Inter-modulation
  - + Low VSWR & Insertion Loss
  - + High Isolation, Indoor & Outdoor, IP65
  - + Widely used for In-building Solutions

### Specifications:

Freq (MHz)	698-2700
Coupling (dB)	6dB
Coupling accuracy (dB)	1dB
Insertion Loss (dB)	7.5 max
Isolation (dB)	≥23
VSWR	≤1.25
3 <sup>rd</sup> PIM (dBc)	≤-155
Average Power (W)	@2*43dBm - 100W per port
Impedance	50 ohm
Connector	N-female
Color	Black
Temp (deg)	-30~+65
Relative Humidity	5%-95%
Application	Indoor & Outdoor, IP65
Dimensions L x H x W (mm)	250*116*51



## Hybrid combiner 4x4 350-3800MHz -160dBc 200W XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

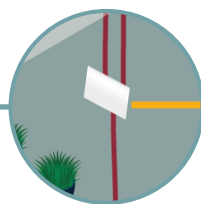
Ref	N/R	Designation
1008204	HB0338- H44-6dB- 4.3f-160	Hybrid combiner 4x4 350-3800MHz -160dBc 200W XG-RF

- The key benefits:**
- + Wide Frequency Band 350-3800MHz
  - + Tetra/2G/3G/4G/LTE/5G Coverage
  - + Low Passive Inter-modulation
  - + Low VSWR & Insertion Loss
  - + High Isolation, Indoor & Outdoor, IP65
  - + Widely used for In-building Solutions

### Specifications:

Freq (MHz)	350-3800
Coupling (dB)	6.2
Coupling Accuracy (dB)	2.5
Port Isolations (dB)	≥20
VSWR	≤1.35
PIM (dBc)	≤-160dBc@2*43dBm (700/850/1900MHz)
Total Input Power (W)	200
Impedance	50 ohm
Connector	4.3-10-female
Temp (deg)	-40 till +60
Relative Humidity	Up to 95%
Color	Light Grey
Application	Indoor & Outdoor, IP65
Dimensions (mm)	402*135*65





# XG-RF DIRECTIONAL COUPLER

## Directional coupler 340-3800MHz 160dBc 4.3-10(f) 300W XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

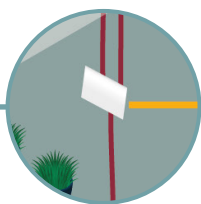
Ref	N/R	Designation
1006308	CP0438-1,8-6dB-4.3f-160	Directional coupler 6dB 340-3800MHz 160dBc 4.3-10(f) 300W XG-RF
1006309	CP0438-1,2-8dB-4.3f-160	Directional coupler 8dB 340-3800MHz 160dBc 4.3-10(f) 300W XG-RF
1006310	CP0438-1,1-10dB-4.3f-160	Directional coupler 10dB 340-3800MHz 160dBc 4.3-10(f) 300W XG-RF
1006311	CP0438-0,7-15dB-4.3f-160	Directional coupler 15dB 340-3800MHz 160dBc 4.3-10(f) 300W XG-RF
1006312	CP0438-0,3-30dB-4.3f-160	Directional coupler 30dB 340-3800MHz 160dBc 4.3-10(f) 300W XG-RF



- The key benefits:**
- + Wide Frequency Band 380-3800MHz
  - + Tetra/2G/3G/4G/5G Coverage
  - + Low Passive Intermodulation
  - + Low VSWR & Insertion Loss
  - + Indoor & Outdoor Application IP65
  - + Widely used for In-building Solutions

### Specifications:

Freq (MHz)	340-3800				
PIM (dBc)	≤-160dBc@2*43dBm				
Total Input Power (W)	300W				
Impedance	50 Ω				
Connector	4.3-10-female				
Color	Black				
Temp (deg)	-30~+65				
Application	Indoor or Outdoor, IP65				
VSWR	≤1.30				
Product reference	C06-0338-43F-160	C08-0338-43F-160	C10-0338-43F-160	C15-0338-43F-160	C30-0338-43F-160
Coupling (dB)	6	8	10	15	30
Insertion Loss (dB)	1.8	1.2	1.1	0.7	0.3
Isolation (dB)	≥24	≥26	≥28	≥32	≥45



# XG-RF SPLITTERS

## Splitters 380-3800MHz 160dBc 4.3-10(f) 200W XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

Ref	N/R	Designation
1006305	SP0438-3dB-4.3f-160	Splitter 2 way 380-3800MHz 160dBc 4.3-10(f) 200W XG-RF
1006306	SP0438-4,8dB-4.3f-160	Splitter 3 way 380-3800MHz 160dBc 4.3-10(f) 200W XG-RF
1006307	SP0438-6dB-4.3f-160	Splitter 4 way 380-3800MHz 160dBc 4.3-10(f) 200W XG-RF

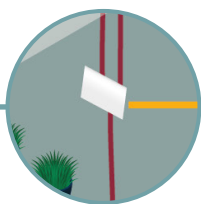
- The key benefits:**
- + Wide Frequency Band 380-3800MHz
  - + Tetra/2G/3G/4G/5G Coverage
  - + Low Passive Intermodulation
  - + Low VSWR & Insertion Loss
  - + Indoor & Outdoor Application IP65
  - + Widely used for In-building Solutions

### Specifications:

Frequency Band, MHz	380-3800		
PIM (dBc)	≤-160dBc @ 2*43dBm		
Total Input Power (W)	200W		
Impedance	50Ω		
Connector	4.3-10-female		
Color	Black		
Temp (deg)	-30~+70		
Application	Indoor or Outdoor, IP65		
Item number	SP2-0338-43F-160	SP3-0338-43F-160	SP4-0338-43F-160
Split Loss (dB)	3.0	4.8	6
Insertion Loss (dB)	≤0.4	≤0.8	≤0.8
VSWR	≤1.3	≤1.35	≤1.35







# XG-RF LOADS

## Load Low Pim 698-3800MHz 4.3-10(m) 25W XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

Ref	N/R	Designation
1006313	LOAD-0738-25W-4.3m-155	Load Low Pim 698-3800MHz 4.3-10(m) 25W XG-RF

- The key benefits:**
- + Wide Frequency Band 698-3800MHz
  - + For 2G/3G/4G/LTE/5G Coverage
  - + Low Passive Intermodulation
  - + Low VSWR
  - + Indoor & Outdoor Application IP65
  - + Widely used for In-building Solutions

### Specifications:

Freq (MHz)	698 - 3800
PIM (dBc)	<-155dBc @ 2*43dBm
Total Input Power (W)	25W average
VSWR	<= 1,25
Impedance	50Ω
Connector	4.3-10m
Color	Black
Temp (deg)	-35/+65
Application	Indoor
Dimensions (mm)	50/156



## Load DC-3GHz 4.3-10(m) 2W XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

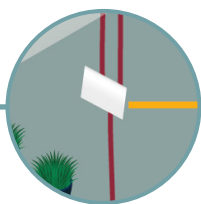
Ref	N/R	Designation
1006314	LOAD-DC30-2W-4.3m	Load DC-3GHz 4.3-10(m) 2W XG-RF

- The key benefits:**
- + Wide Frequency Band DC-3GHz
  - + Low VSWR
  - + Excellent performance in anti-burn
  - + Widely used for In-building Solutions

### Specifications:

Freq (MHz)	DC – 3G
Total Input Power (W)	2W
VSWR	<= 1,25
Impedance	50Ω
Connector	4.3-10m
Dimensions (mm)	20/36.5





# XG-RF LOW PIM ADAPTATORS

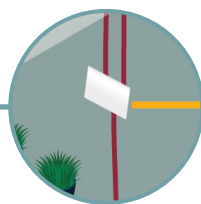
## Low PIM adaptators XG-RF

Drawing on its strong experience of indoor 2G/3G/4G/5G networks, Telenco offers a wide range of indoor passive antennas. The XG-RF range of antennas meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.



Ref	N/R	Designation	Ref	N/R	Designation
1006315	AD-DC60-4.3m-4.3f90-165dBc	Low PIM adaptor 4.3.10M-4.3.10F 90	1006328	AD-DC30-Nf-SMAf	Low PIM adaptor NF-SMAF
1006316	AD-DC60-4.3f-4.3f-165dBc	Low PIM adaptor 4.3.10F-4.3.10F	1006329	AD-DC60-Nm-4.3f-160dBc	Low PIM adaptor NM-4.3.10F
1006317	AD-DC60-DINm-4.3f-160dBc	Low PIM adaptor 4.3.10F-DINM	1006330	AD-DC60-4.3m-Nm-160dBc	Low PIM adaptor NM-4.3.10M
1006318	AD-DC60-4.3m-4.3m-165dBc	Low PIM adaptor 4.3.10M-4.3.10M	1006331	AD-DC30-Nm-DINF-160dBc	Low PIM adaptor NM-DINF
1006319	AD-DC60-4.3m-DINF-160dBc	Low PIM adaptor 4.3.10M-DINF	1006332	AD-DC60-Nm-4.3f-160dBc	Low PIM adaptor NM-NEX10F
1006320	AD-DC60-4.3m-DINm-160dBc	Low PIM adaptor 4.3.10M-DINM	1006333	AD-DC30-Nm-Nm-160dBc	Low PIM adaptor NM-NM
1006321	AD-DC60-4.3m-NEX10f-165dBc	Low PIM adaptor 4.3.10M-NEX10F	1006334	AD-DC30-Nm-QMAf	Low PIM adaptor NM-QMAF
1006322	AD-DC60-225m-4.3f-160dBc	Low PIM adaptor 2.2-5M-4.3.10F	1008044	AD-DC30-Nm-SMAf-155dBc	Low PIM adaptor NM-SMAF
1006323	AD-DC75-4.3m-SMAf-155dBc	Low PIM adaptor 4.3.10M-SMAF	93183	AD-DC30-QMAM-SMAf	Low PIM adaptor QMAM-SMAF
1006324	AD-DC30-Nm-Nf90-160dBc	Low PIM adaptor NM-NF	93184	AD-DC60-SMAf-SMAf-155dBc	Low PIM adaptor SMAF-SMAF
1006325	AD-DC60-4.3f-4.3f-165dBc	Low PIM adaptor NF-4.3.10F	1008203	AD-DC75-SMAM-4.3f-155dBc	Low PIM adaptor SMAM-4.3.10F
1006326	AD-DC60-4.3m-Nf-160dBc	Low PIM adaptor NF-4.3.10M	1008211	AD-DC60-NEX10m-4.3f-160dBc	Low PIM adaptor NEX10M-4.3.10F
1006327	AD-DC30-Nf-Nf-160dBc	Low PIM adaptor NF-NF	1008747	AD-DC60-SMAM-SMAM-155dBc	Low PIM adaptor SMAM-SMAM

Ref	Connector A	Connector B	Frequency range	VSWR, max	PIM @2*43	Insertion Loss	Impedance	Temp	
4.3.10-90	4.3-10M	4.3-10F	DC-6G	1.2	<-165dBc	<0.5dB	50ohm	-40 + 85	
4.3.10F-4.3.10F	4.3-10F								
4.3.10F-DINM	DINM			1.1	-160dBc				
4.3.10M-4.3.10M	4.3-10M			1.2	<-165dBc				
4.3.10M-DINF	DINF			1.1	-160dBc				
4.3.10M-DINM	DINM								
4.3.10M-NEX10F	NEX10F								
2.2-5M-4.3.10F	4.3-10F	2.2-5M		-160dBc					
4.3.10M-SMAF	4.3-10M	SMAF	DC-7,5G	1.15	<-155dBc				
N90	NM		DC-3G		NA				
NF-4.3.10F	4.3-10F	NF	DC-6G	1.1	-160dBc				
NF-4.3.10M	4.3-10M								
NF-NF	NF								-160dBc
NF-SMAF	NF	SMAF	DC-3G	1.25	NA				
NM-4.3.10F	4.3-10F	NM	DC-6G	1.1					
NM-4.3.10M	4.3-10M								
NM-DINF	NM	DINF	DC-3G	1.15	-160dBc				
NM-NEX10F		NEX10F							
NM-NM		NM							
NM-QMAF		QMAF							
NM-SMAF									
QMAM-SMAF		QMAM			SMAF				1.25
SMAF-SMAF	SMAF		DC-6G						
SMAM-4.3.10F	4.3-10F	SMAM	DC-7.5G	1.15	-155dBc				
NEX10M-4.3.10F	NEX10M	4.3-10F			-160dBc				
SMAM-SMAM	SMAM	SMAM	DC-6G		-155dBc				



# XG-RF LIGHTNING ARRESTOR

## DC-3GHz Lightning Arrestor with N male to N Female connector XG-RF

Drawing on its strong experience of wireless networks, Telenco offers a wide range of dedicated passive components. The XG-RF range of passive components meets the most demanding requirements for guaranteeing reliable, high-quality wireless networks.

The surge Protector XG-RF which is designed for antenna coaxial device and receive/transmit system not to be spoiled by lightning over-voltage, induced over-voltage and static discharge.

It's in wide frequency and it can be customized according to customers' requirements.

Ref	N/R	Designation
93180	LP-D30-0dB-N	DC-3GHz Lightning Arrestor with N male to N Female connector XG-RF

### The key benefits:

- + High Quality
- + Wide Frequency Band
- + Low VSWR
- + Internal gas tube element
- + Multi-Strike Capability



### Specifications:

Frequency	DC-3GHz
VSWR	≤1.2
Transmission Power	400W
Dielectric Withstanding Voltage	≥2500V RMS, 50Hz at sea level
Working Voltage	≤1000V RMS, 50Hz at sea level
Rated DC Voltage	≤230V
Impedance	50Ω
Connector	N-M to N-F



# Private 5G XG-RAN Solution

| PRIVATE 5G XG-RAN ARCHITECTURE 107



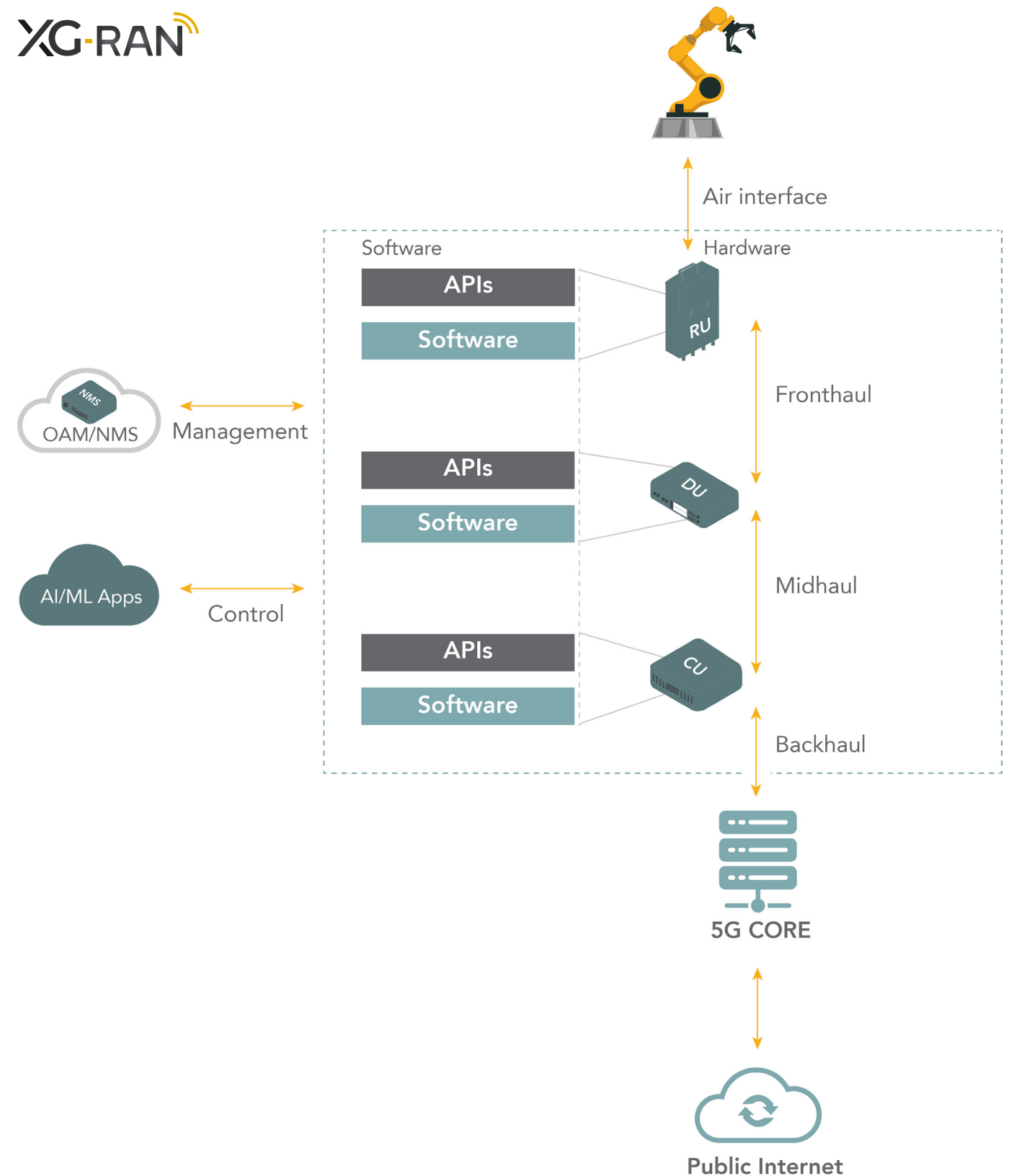
Our private 5G and Private Mobile Networks solutions XG-RAN provide secure, customized, and high-performance communication infrastructures. Leveraging cutting-edge 5G technology, these solutions offer low-latency connectivity, enhanced security, and tailored coverage to meet the specific needs of industries such as industrial automation, healthcare, and transportation.

By enabling ultra-reliable, high-speed, and scalable connectivity, Private 5G networks drive efficiency, innovation, and digital transformation across critical sectors. Whether ensuring seamless industrial operations, supporting real-time medical applications, or optimizing smart transportation systems, our solutions empower businesses with the next-generation connectivity they need to thrive.

Discover how our Private 5G can revolutionize your operations with secure, high-speed, and future-ready networking solutions.

## PRIVATE 5G XG-RAN ARCHITECTURE

XG-RAN





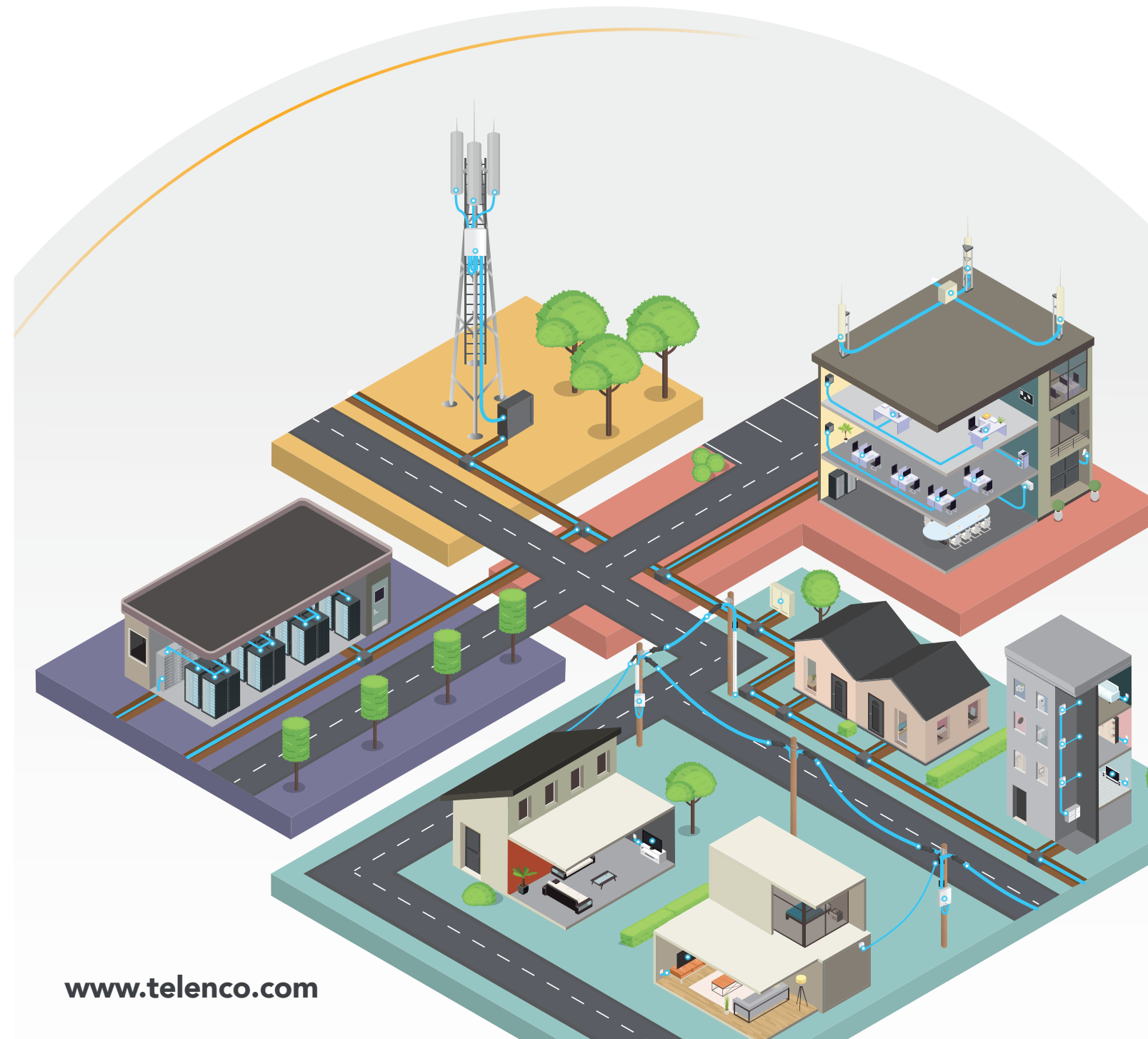
## Technical focus

### Glossary

- **DAS** = Distributed Antenna System
- **ADAS** = Active Distributed Antenna System
- **Hi-Dense WiFi** = Advanced wireless networking solution engineered to address high-density areas
- **TETRA** = Terrestrial Trunked Radio, is a digital radio standard specifically designed for public safety agencies and other mission-critical organizations
- **Indoor Wireless Network** = Public Wireless Networks such as WiFi or 3G/4G/5G deployed in a building, stadium or tunnel
- **Private Wireless Network** = Private and secure wireless networks such as WiFi or 3G/4G/5G deployed in a company or industrial building
- **MPN** = Mobile Private Networks
- **MNO** = Mobile Network Operator
- **Hybrid** = Designed to manage the optical data network and the power network
- **Passive Network** = Link for data and power to interconnect the active equipments and antennas
- **DAS / ADAS** = Defining Distributed Antenna System (DAS) & Active DAS: Distributed Antenna System (DAS) and Active DAS are innovative wireless communication solutions designed to expand wireless coverage and capacity in challenging environments. DAS involves a network of antennas strategically placed to distribute cellular signals, while Active DAS integrates signal amplification to enhance performance and overcome signal degradation.

# A global offer for telecom networks

**FIXED - MOBILE - PRIVATE - DATA CENTRE**





# TELENCO: INNOVATION AT THE SERVICE OF WORLDWIDE NETWORKS

Telenco is a group of entities specialised in the design, manufacture and global marketing of future-proof solutions for telecom and connectivity infrastructures. Since 1999, the Group has organised its business activity on offering innovative solutions meeting the field challenges of each specific market.

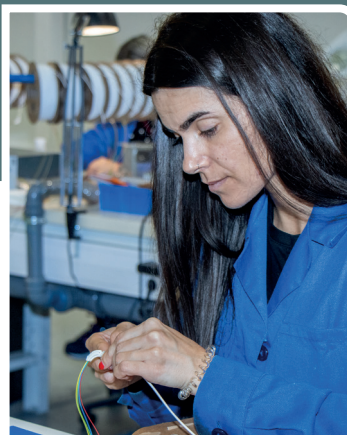
## A PROVEN EXPERTISE

### DESIGN



Over **25 years**  
of R&D expertise and  
an integrated test laboratory

### MANUFACTURE



**18 000 m²**  
of production units  
in Europe and Tunisia

### LOGISTICS



**27 000 m²**  
of storage area  
in the world

## OUR INDUSTRIAL KNOW-HOW AT THE HEART OF EXPERT TELECOM ORGANISATIONS

Member of ARCEP  
expert committee



## AN OFFER ADAPTED TO WOLDWIDE NETWORKS AND LOCAL TECHNICAL SUPPORT



## A RESPONSIBLE & SUSTAINABLE GROUP

Design, produce, and act responsibly



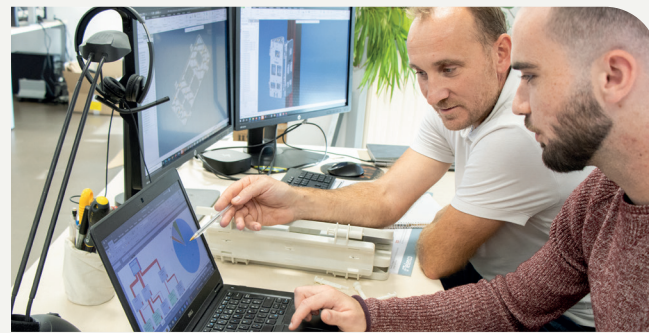


# DESIGNER OF FUTURE-PROOF AND RELIABLE SOLUTIONS FOR TELECOMMUNICATIONS NETWORKS

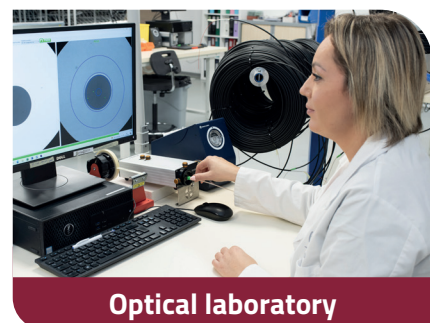
The Telenco Group has an integrated value chain with the design, production, qualification and distribution of its products. Telenco's expertise and investment in Research and Development have been proven, with the design of innovations that are recognised in the telecommunications market. The Group has its own production units in production units in France, Portugal, Tunisia, Germany and the United Kingdom.

## 4 RESEARCH & DEVELOPMENT CENTRES

Based in France (Moirans, Evreux), Belgium (Bruxelles) and in the United Kingdom (St Helens), our design offices, which are experts in the fields of metallurgy, plastics processings, mechanical engineering, optics and design, develop products with a pragmatic approach that enables us to meet the challenges of the most diverse fields.



## INTEGRATED TEST LABORATORIES FOR SYSTEMATIC PRODUCT QUALIFICATION



Optical laboratory



Mechanical laboratory



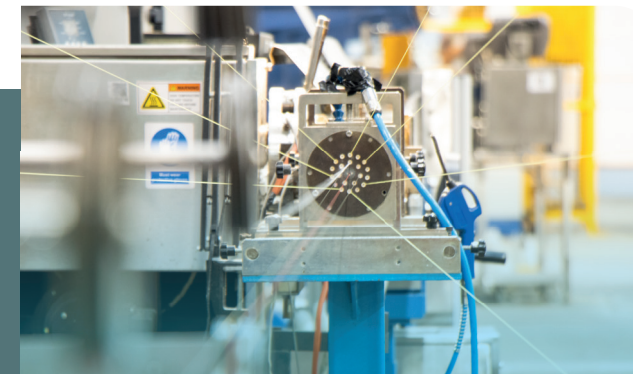
Climatic chamber

The integrated test laboratories enable product qualification and testing to be carried out in-house. The Group is equipped with the latest technology (wind vibration bench, high-frequency 4kHz power meter for vibration tests, extensometer, etc.) for accurate results, guaranteeing the efficiency and durability of the product on the network.

Telenco also works with a network of accredited external laboratories if it is necessary to carry out specific tests (salt spray, for example) or to obtain CPR accreditation.

## EXPERTISE IN MANUFACTURING PROCESSES AT OUR 6 PLANTS

The Group Operations Department ensures that all the products leaving our production units meet the same quality and performance requirements, whatever their speciality:



CABLE EXTRUSION



OPTICAL CONNECTORISATION



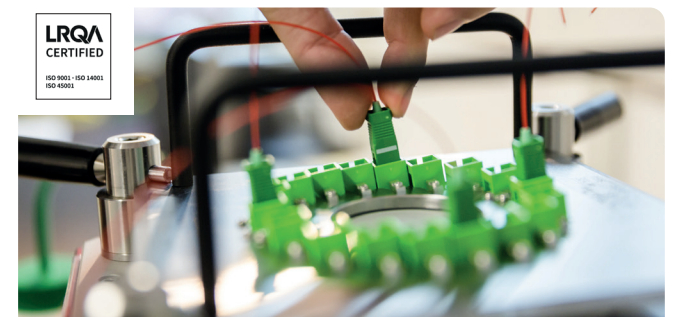
METAL WORK  
(laser cutting, forming, welding, painting)



MECHANICAL AND OPTICAL ASSEMBLY

## A CERTIFIED MANUFACTURER

In our constant quest for quality, we ensure to offer you products that meet your expectations, tested and validated in our laboratories. (ici il manque le point en version FR) The CE marking of a product is the guarantee that it meets the requirements defined by the European Union and can circulate freely on the market.





## NOTES

[illegible]

## NOTES

This image shows a single sheet of white paper with horizontal blue or grey ruling lines. The lines are evenly spaced and run across the width of the page. There are approximately 20 lines visible. The paper has a slight shadow on the right side, suggesting it's resting on a surface.

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