



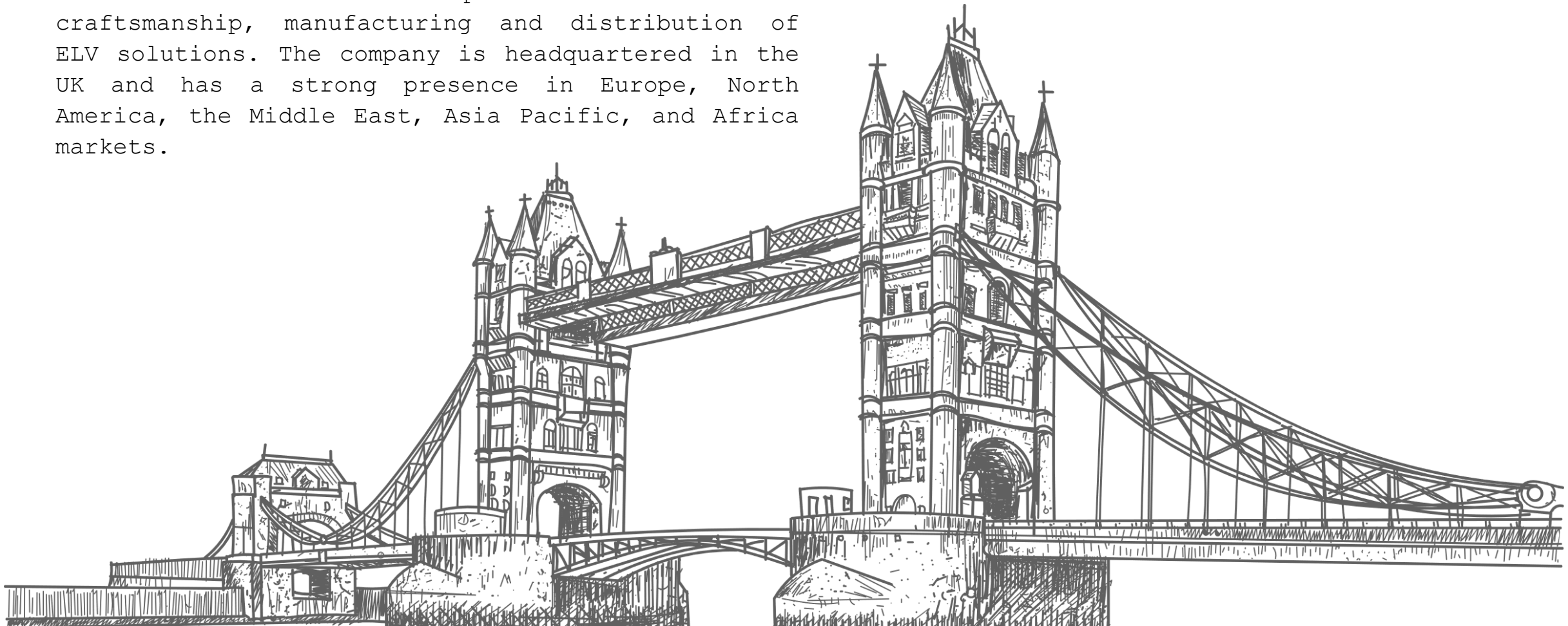
# BEHOLD YOUR TOMORROW



[www.nordencommunication.com](http://www.nordencommunication.com)

## WHO ARE WE ?

Norden Communication specialises in the craftsmanship, manufacturing and distribution of ELV solutions. The company is headquartered in the UK and has a strong presence in Europe, North America, the Middle East, Asia Pacific, and Africa markets.



# OUR STORY



Formation  
Norden  
Communication  
UK Ltd.

1998



Entry to  
European  
Market.

2002



Entry to  
Asian  
Market.

2003



Entry to  
Middle East  
Market.

2003



Formation  
Norden  
Communication  
ME Ltd.

2004

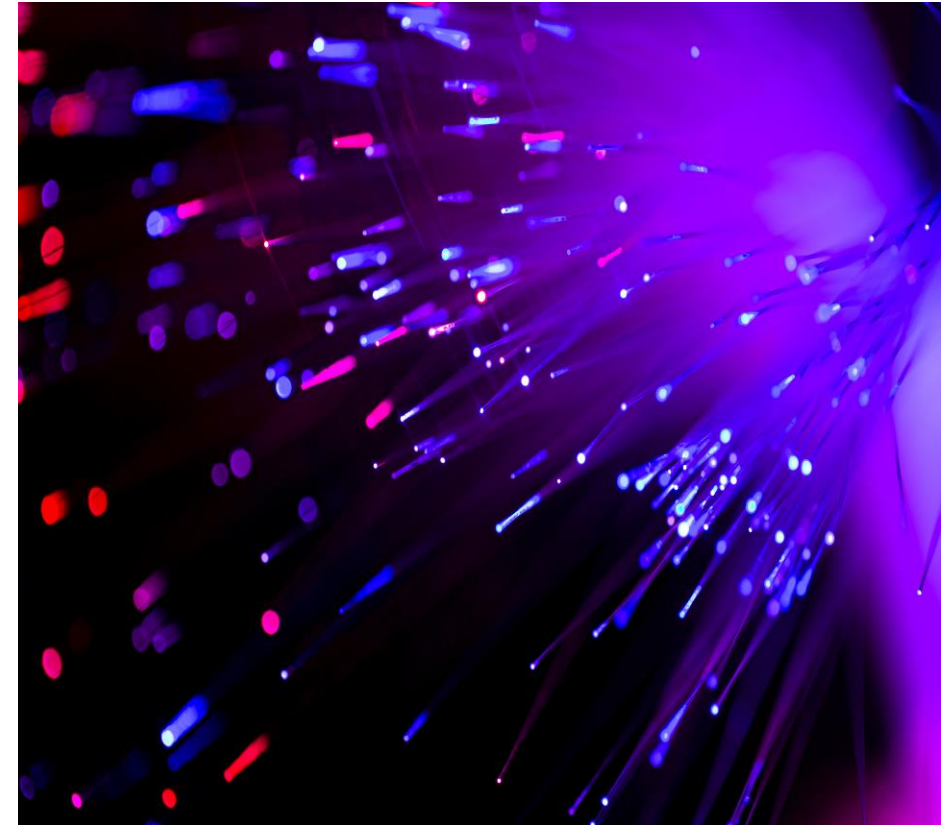


Formation  
Norden  
Communication  
Pvt Ltd.

2015

## WHAT IS FTTH ?

- Fibre to X ( FTTx ) is a collective term that is used to describe various types of broadband network architectures, depending on wherever they terminate.
- Fibre to Home ( FTTH ) is a type of architecture where fibre reaches to the subscriber's home living space.
- There are two main FTTH network architectures that can be implemented when deploying an optical fibre network.
  - **Active optical network ( AON )** : A point-to-point (P2P) network structure covering powered switching equipment.
  - **Passive optical network ( PON )** : A point-to-multipoint (P2MP) network structure that one fibre feeds multiple users, without powered electrical devices.



## PASSIVE OPTICAL NETWORK (PON)

- A Fibre-optic network utilizing a point-to-multipoint topology and Fibre optical splitters to deliver data from a single transmission point to multiple user endpoints.
- GPON (Gigabit-capable Passive Optical Network) is a specific type of FTTH that uses Fibre-optic cables to provide high-speed internet access.
- GPON is standardized by the International Telecommunication Union (ITU) as part of the ITU-T G.984 series of standards.



# PASSIVE OPTICAL NETWORK (PON)

- Components in PON Structure :
  - **Optical Line Terminal ( OLT ) :**

It is the starting point for the PON. OLT device is an important central office device in EPON having two flow directions : upstream and downstream.
  - **Optical Network Unit ( ONU ) / Optical Network Terminal ( ONT ) :**

ONU converts optical signals transmitted via Fibres to electrical signals. End-user devices located on subscriber premises may also be referred to as the optical network terminal (ONT).
  - **Optical Distribution Network (ODN) :**

ODN provides the optical transmission medium for the physical connection of the ONUs to the OLTs with 20 km or farther reach. Fibre optic cables, Fibre optic connectors, passive optical splitters, and auxiliary components collaborate with each other in ODN.



## FTTH VS 5G (Fixed wireless) Internet

Features	FTTH	5G ( Fixed Wireless Access )
Data Transmission Technology	Uses light for data transmission.	Use radio waves for data transmission.
Type of Service	Wired	Wireless
Speed	Fibre has unlimited speed and depends on technology.	20Gbps downlink and 10Gbps uplink. (depends on the frequency band and no .of users sharing ).
Reach	Signal over Fibre can travel several kilometers.	Up to few 100 meters.
Delay	Lower	Higher than Fibre .
Vulnerable to interference	No	Yes
Technical malfunctions / Slowdowns	Less	Higher compared to Fibre.
Security	Higher	Lower compared to Fibre.
Operational Cost	Lower	Higher than Fibre.
Installation Cost	Higher than 5G	Lower

# NORDEN PRODUCT LINE

- Data Cables
- Networking Accessories
- Fibre Cables
- Fibre Accessories

- Telephone Cables
- Telecom
- Coaxial Cables
- Instrumentation & Audio Cables

- Fire Resistant Cables
- Cabinet & Accessories
- Data Centre Cabinets
- MPO/MTP Solutions

- Public Address System
- Surveillance System
- Access Control System
- Exit Sign Lights
- UPS

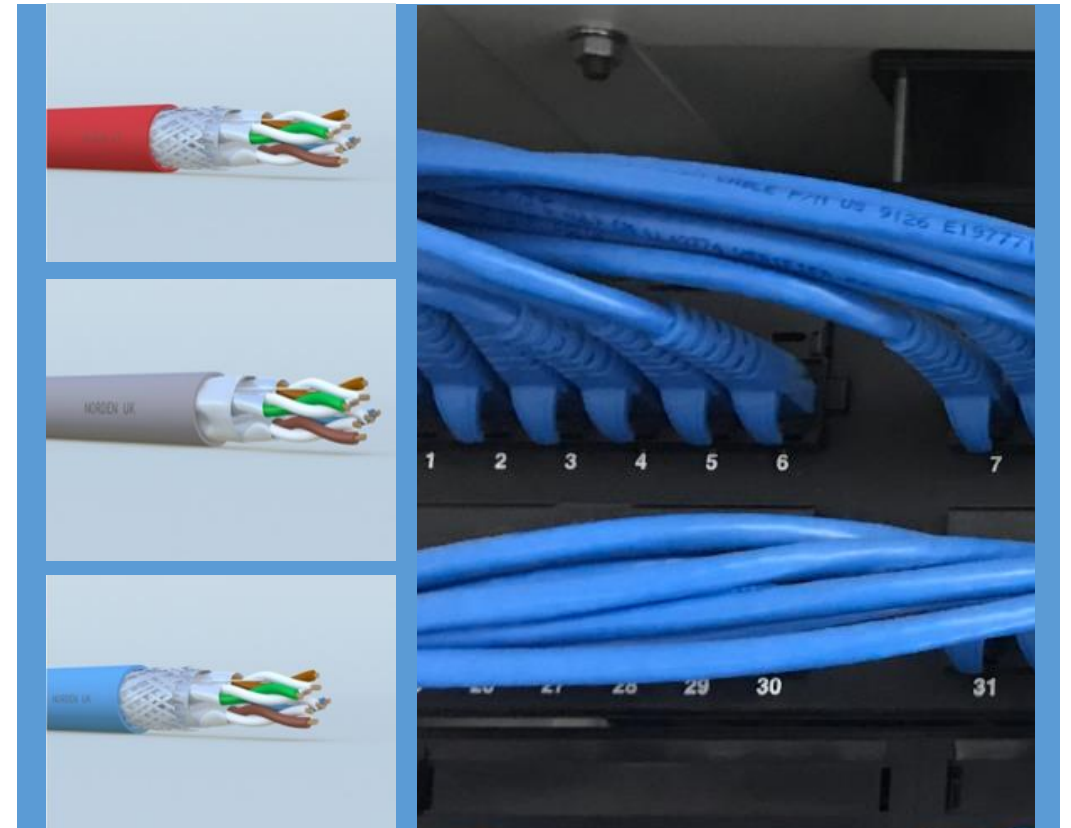




# DATA CABLES

## Norden Internal & External Data Cables

- Cat 8, Cat 7a, Cat 7 S/FTP Cable
- Cat 6a, Cat 6, Cat 5E U/UTP, F/UTP Cable
- Cat 6a, Cat 6 F/FTP, S/FTP, F/FTP, U/FTP Cable
- Cat 5<sup>E</sup> /6/6A U/UTP, S/FTP 4 Pair Outdoor Cable
- Cat 5<sup>E</sup> /6/6A U/UTP, S/FTP 4 Pair Industrial grade Cable
- Cat 6/6A/7 S/FTP Flat Elevator Cables



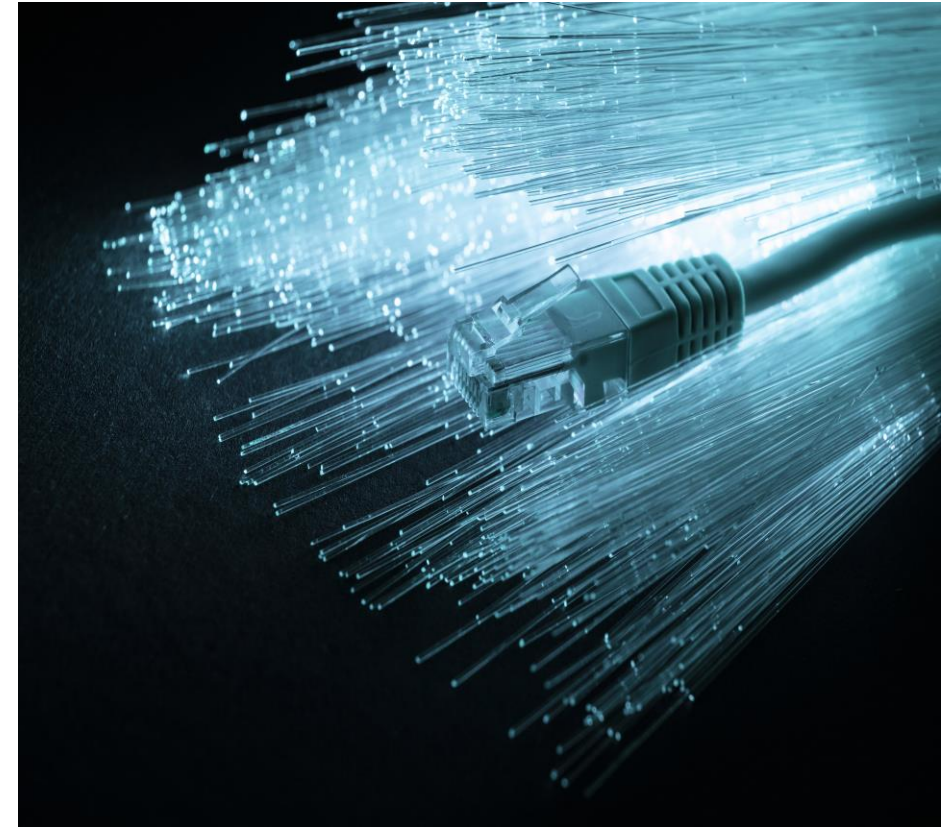
# NETWORKING ACCESSORIES

- Cat 8, 6a, 5E & 6 Keystone Jack
- Copper Patch panels
- Face Plates
- Connectors
- Cat 8 S/FTP Patch cord
- Cat 6a, Cat6 U/UTP, F/UTP, S/FTP Patch cord
- Cat 5E U/UTP, F/UTP, S/FTP Patch Cord



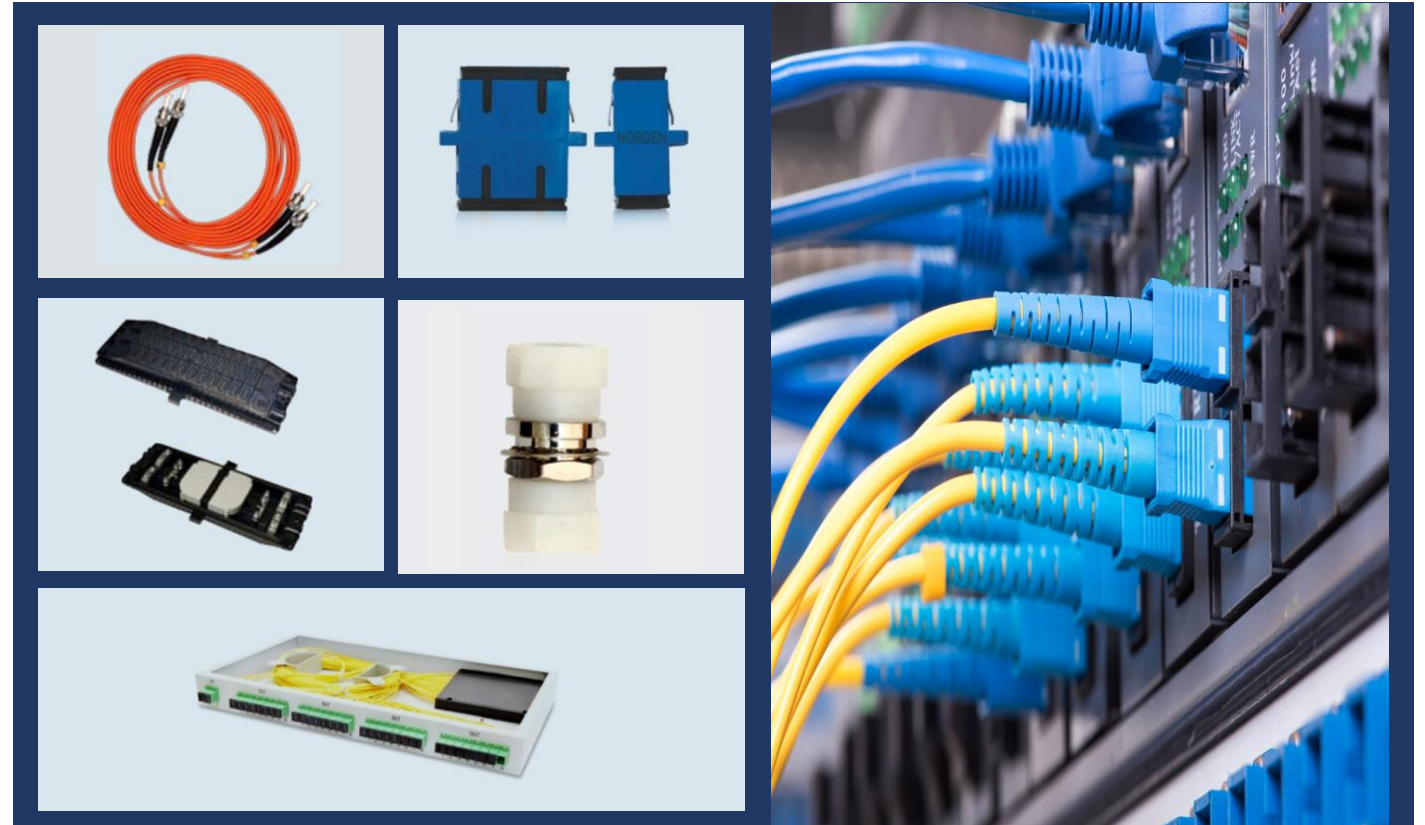
# OPTICAL FIBRE CABLES

- Distribution Tight Buffer Optical Cable
- E-Glass Strength Central Loose Tube In/Out Optical Cable
- Dielectric Loose Tube Unarmoured In/Out Optical Cable
- Central Loose Tube Armored Outdoor Cable
- Central Loose Tube Double Steel Tape Armoured Cable
- Multi Loose Tube Steel Wire Armoured Cable
- Fibre Optic Drop Cable
- OPGW Composite Optical Cable
- Dielectric Self Supporting Figure - 8 Aerial Cable
- Armoured Self Supporting Figure - 8 Aerial Cable
- FTTX Products



# FIBRE ACCESSORIES

- Fibre Connectors
- Fibre Adaptors
- Fibre Patch Cords
- Fibre Pigtails
- Fibre Optic Patch Panels
- Fusion Splice Protector Sleeve
- Fibre Optic Splice Tray
- Fibre Optic Splice Closure
- Fibre Termination Shelf



A photograph of network equipment in a server room. In the foreground, several yellow fiber optic cables with white connectors are plugged into a device. The background shows rows of server racks with glowing blue and green lights, creating a bokeh effect.

**NORDEN SPECIALIZED  
PRODUCTS RANGE**

# FIBRE CABLES



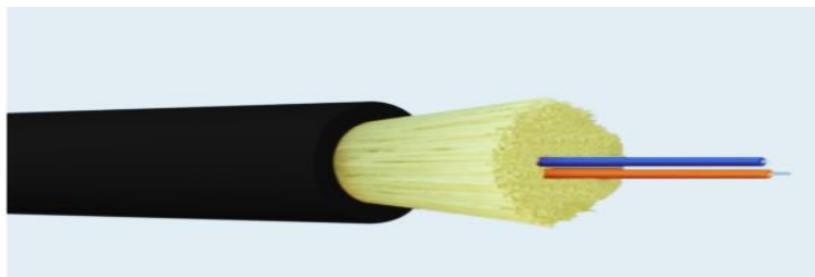
# FIBRE CABLES

Micro Module Indoor Distribution  
Fibre Optic Cable



- Specially designed for indoor distribution applications which require low to higher core-counts.
- Single-mode fibre cable comes with G.657A2 specification provides good bend-insensitivity and sturdiness.
- Ideal for mainly indoor deployments which have limited riser / containment space.

E-glass Strength Tight Buffer Bend  
Insensitive Fibre Optic Cable

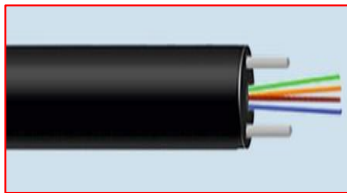


- Used as internal distribution cables due to ease of their termination and connection.
- Each fibre is mechanically reinforced with two successive sheaths of 400µm and 900µm which enables direct termination of connectors.
- Excellent strip force stability, fibre geometrical dimension and transmission performance meets the customer demand.
- Specially designed for internal applications like floor distribution, interconnection and equipment connection.

## DROP CABLE

- Used for fibre to the Home (FTTH) application.
- It is very light in construction and easy to install.
- Used for connecting the Main distribution frame to consolidation point at home , apartment, or offices.
- Industry standard connectors can be used for direct termination because of standard 250µm fibre size.
- Round , Flat , Self-Supporting Drop cables are available in Norden product range.
- Invisible fibre drop cable made up of nylon material is much less obtrusive when installed in indoor locations.
- Since it is thin and clear, it can be installed along the edges of rooms in an aesthetically pleasing manner.

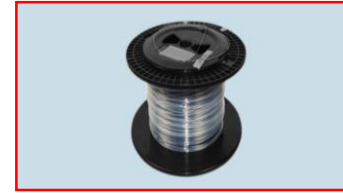
**Round Drop Cable**



**Flat Drop Cable**



**Invisible Drop  
Cable**



**Self-Supporting Drop  
Cable**





## PATCH PANELS & PATCHCORDS

Hybrid High Density Patch Panel & Pre-terminated Solution



### Features

- Copper Cassette available in Category 5E, Category 6, Category 6A – Screened (STP) or Unscreened (UTP) solution
- Fibre Cassette available in 24/12 port LC or SC Type & MPO/MTP Solution.
- Patch Panel can accommodate 4 Nos. cassettes.
- Customized cable type & cable length for pre-terminated solution

Rotatable Transparent Module Copper Patch Panel



### Features

- 24 port Unshielded and Shielded patch panel available.
- Comes with earth cable for functioning of the shielded system.
- Panel has rotatable modules which allows cable routing easily and accept all High-Density Keystone Jacks.

## PATCH PANELS & PATCHCORDS

Din Rail Patch Panel



### Features

- 8 port Unshielded and Unshielded patch panel available.
- For mounting on Din rail TH35 and has rotatable modules which allows cables routing to top or bottom.

Category 6 Utp 360° Swivel Slim Patch Cord



### Features

- It is designed with a swiveling connector that allows 360° swivel mechanism and provides longevity.
- Fully backward compatible with Category 5e (Class D) products

# FIBRE PATCH PANELS

High-density Modular Fibre Optic Panel



## Features

- Provides an inter-connect, cross-connect between backbone cabling and active equipment.
- Ultra high density 1 U patch panel with 144 core capacity.
- Support LC, SC, MTP, Splice Cassettes.
- Equipped with 3 sliding drawers.
- Each Drawer can load 4 PCS of modular Cassettes

Mtp/Mpo High Density Patch Panel

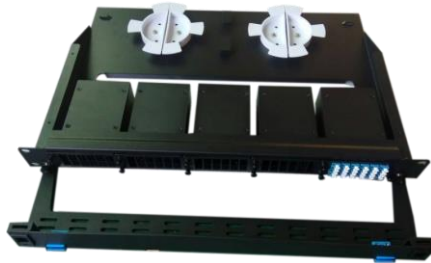


## Features

- Ideal equipment for supporting the Fibre distribution in high density capacity areas.
- High density 1 U patch panel with 96 core capacity.
- Support LC ( Quad ) , SC ( Duplex ) Cassettes.
- Drawer type panel .
- Equipped with front transparent cover making it convenient for observation and maintenance.

# FIBRE PATCH PANELS

Hybrid High-density Modular Fixed Panel



## Features

- Panel suitable for multi-application with MTP/MPO System, Pre-terminated cables, or conventional splicing.
- 1U patch panel accepts up to 4 HD Modules or HD Pass Through adapter plates.
- Support up to 96F in LC and 48F in SC.

High-density Rack Mount Fibre Patch Panel



## Features

- 1U patch panel provides Splicing ( LC,SC ) / Pass-Through ( LC,SC,MTP-MPO ) space for backbone & Fibre to desk.
- 4 snap-in modules can be accommodated.

# FIBRE PATCH PANELS

HIGH-DENSITY MTP/MPO Fibre PATCH  
PANEL

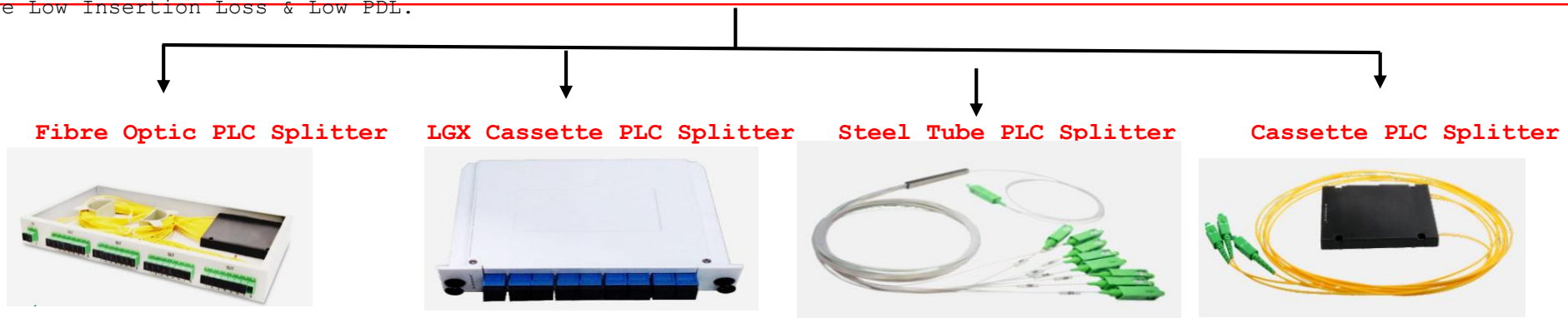


## Features

- Rack mount patch panel with size from 1U to 4U.
- Cassette modules can support LC ( Quad ) & SC ( Duplex ) Adaptors
- Max. Fibre capacity of 144F ( LC ) and 576 ( LC ) in 4U .

# PLC SPLITTERS

- PLC (Planar Lightwave Circuit) splitters are used to distribute or combine optical signals providing a low-cost light distribution solution with small form factor and high reliability .
- PLC Splitters are installed in each optical network between the PON Optical Line Terminal (OLT) and the Optical Network Terminals (ONTs) .
- Rack Mount Splitter available in 1U and 2U size with 1 x N and 2 x N split ratio. ( Max cable Port , N = 64 ) .
- LGX Splitter can be used alone or easily installed in a standard Fibre optic patch panel or Fibre optic chassis without archival splicing or skilled personnel during deployment. Available in 1 x N and 2 x N split ratio. ( Max cable Port , N = 16 ) .
- LGX splitter enclosure provides a plug-and-play approach to integration in the network, which eliminates risk during installation.
- Steel Tube PLC Splitter ( with / without connector ) , Cassette PLC Splitter with configuration type 1 x N and 2 x N ( Max cable Port , N = 64 ) is available in Norden product range.
- Have Low Insertion Loss & Low PDL.



## DISTRIBUTION & ACCESS POINT UNITS

Fibre Optic Metal Distribution Box



- Act as an interface device for connecting the feeder cable and the distribution cable.
- Fast, secure and time saving installation and fibre routing.
- Have 960 F capacity.
- Can accommodate 40 splice tray with each tray of 24F capacity.

FTTH - Fibre Distribution Box



- Suitable for optical fibre splicing, distribution, and protection.
- Suitable for outdoor wall-mounted and pole-mounted applications (IP65 level of protection).
- Can load PLC splitters.( 1:8 and 1:16 ).

## DISTRIBUTION & ACCESS POINT UNITS

DIN Rail Fibre Optic Terminal Box



- DIN rail mounted terminal box is suitable for mini-network terminal distribution, in which the optical cables, patch cords or pigtails are connected.
- Support SC, LC, ST & FC Adaptors, with max. splice port up to 24.
- Cable splice tray can be overturn, easy to manage.



# DISTRIBUTION & ACCESS POINT UNITS

High Density Fibre Optic  
Distribution Frame



- Provides flexible cabling access, integrated cable management, with highest termination capacity possible.
- Designed to fit a variety of termination, splice, and storage applications.
- Maximum fibre density of 2016 ports (splice & patch) and superior cable management.

# DISTRIBUTION & ACCESS POINT UNITS

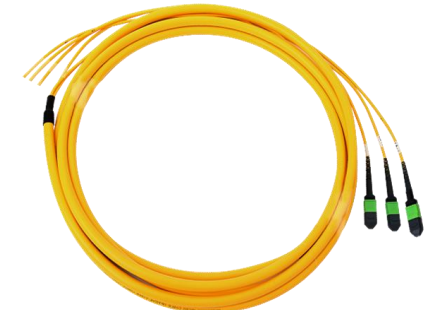
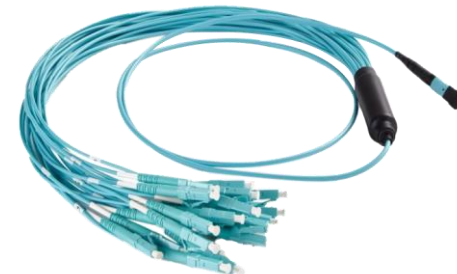
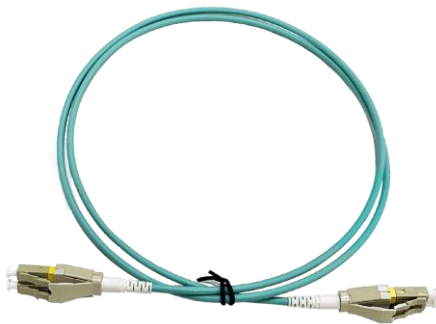
Ribbon Fibre Distribution Frame



- It is a high-capacity high density distribution frame having anti-corrosion property.
- Max Splice Capacity of 10368F.
- Around 216 round Fibre splice tray is present inside it.
- Round Fibre Splice Tray provide splicing protection and provide Fibre / pigtail storage.
- It can hold 24 Non - Ribbon Fibre splice tray & 48 Ribbon Fibre splice tray.

# PRE-TERMINATED FIBRE OPTIC CABLES

- MTP/MPO TRUNK & FAN - OUT HYDRA CABLE
- MTP/MPO RIBBON TRUNK CABLE - BLUNT END TYPES
- PRE-TERMINATED FIBRE CABLES MULTI CORE LC/SC CONNECTORS
- UNIBOOT LC - LC / SC FIBRE PATCH CORD



# Fibre Internet or 5G (FWA) Internet is

**better?** The choice between 5G (FWA) and Fibre internet ultimately depends on the user's needs such as :

- Average internet use
  - Speed required
  - No.of devices connected at the same time
  - Range and coverage
  - Location
  - Budget
  - Security
- For users who need a reliable connection with fast speeds at home, Fibre internet may be the better option.
  - For users who don't need the most reliable connection or For users who are accessing the internet via their smartphone while away from home or their office, 5G can provide faster speeds and easier setups on the go.

## Will 5G (FWA) replace fibre optic internet

No. 5G internet is an excellent alternative for the last mile, with faster internet speeds. Fibre will play an integral role in connecting the antennas providing the 5G. So in general we can say they both co-exist.



# THANK YOU

## EUROPE & USA

Norden Communication UK Ltd.  
Unit 10 Baker Close, Oakwood Business park,  
Clacton-On-Sea, Essex CO15 4BD, United Kingdom  
Tel : +44 (0) 1255 474063  
E-mail : [salesuk@norden.co.uk](mailto:salesuk@norden.co.uk)

## MIDDLE EAST & NORTH AFRICA

Norden Communication Middle East FZE  
P.O. Box. 341072, Dubai Silicon Oasis, Dubai, UAE  
Tel: +971 4 3926391. Fax : +971 4 3926395  
E-mail: [sales@nordencommunication.ae](mailto:sales@nordencommunication.ae)

## AFRICA

Tel: +234 813 734 6465. +91 9633775579  
E-mail: [sales.africa@nordencommunication.com](mailto:sales.africa@nordencommunication.com)

## ASIA-PACIFIC

Norden Singapore PTE Ltd.  
7 Temasek Boulevard, #12-07  
Suntec Tower One, Singapore 038987  
Tel : +65 6589 8449. Fax : +65 6917 8977  
E-mail : [sales@norden.com.sg](mailto:sales@norden.com.sg)

Norden Communication Pvt. Ltd.  
Office # 44, Novel Office Central,  
# 8/2, Yellappa Shetty Layout,  
Ulsoor Road, Bangalore-560042, INDIA  
Tel : +91 80 67431217  
E-mail : [sales@norden.in](mailto:sales@norden.in)

Norden Vietnam, 6th floor, Room 602,  
Halo building, 39 Dinh Cong Trang street,  
Tan Dinh Ward, District 1, Ho Chi Minh city, Vietnam.  
Mob: +84 903 88 69 92.  
E-mail: [sales@norden.com.sg](mailto:sales@norden.com.sg)

## HEAD QUARTERS

Norden Communication UK Ltd.  
Unit 10 Baker Close, Oakwood Business park,  
Clacton-On-Sea, Essex CO15 4BD, United Kingdom  
Tel : +44 (0) 1255 474063  
E-mail : [salesuk@norden.co.uk](mailto:salesuk@norden.co.uk)  
[www.nordencommunication.com](http://www.nordencommunication.com)

