

3C3[®]
PERFORMANCE
EXCELLENCE

FTTX
SOLUTIONS

FTTX

SOLUTIONS

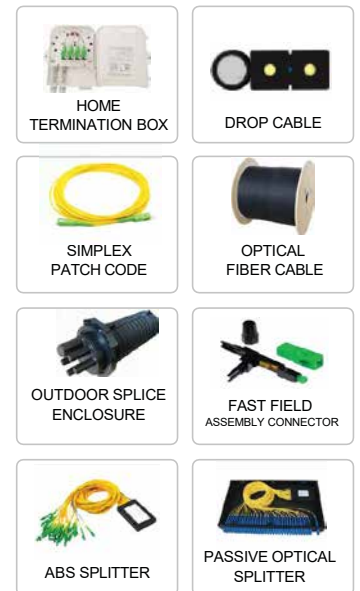
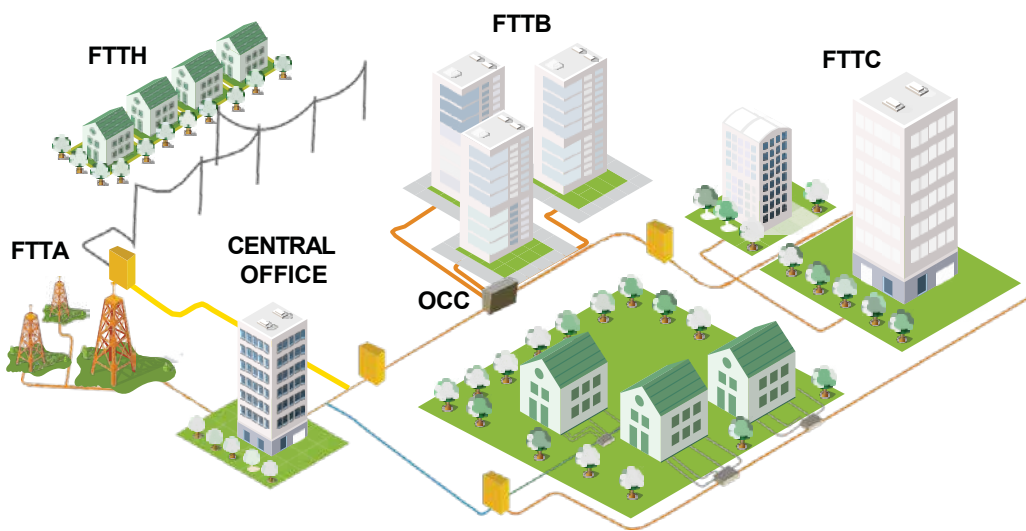


FTTx Solutions

Passive Fiber to the X (FTTx) solutions are network architectures that utilize passive optical components and fiber optic cables to deliver high-speed broadband services to various endpoints, such as homes, businesses, or other locations. FTTx encompasses a range of deployment scenarios, including Fiber to the Home (FTTH), Fiber to the Business (FTTB), and Fiber to the Antenna (FTTA). These passive solutions provide significant bandwidth, low latency, and reliable connectivity, making them a popular choice for delivering advanced services

These solutions utilize passive optical components and fiber optic cables to offer high bandwidth, low latency, and reliable connectivity. While they come with initial investment and deployment challenges, passive FTTx solutions are essential for meeting the growing demands of data-intensive applications and ensuring a seamless digital experience for residential and commercial users.

FTTx SOLUTIONS



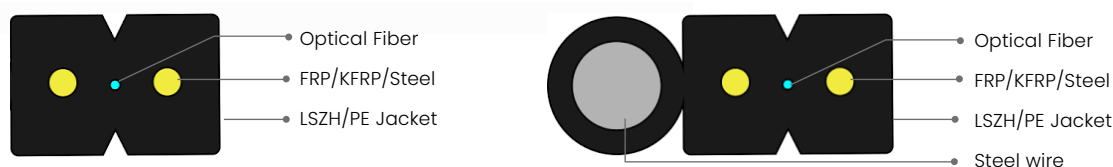
Various Types Of Pon

As per the application/site referenced, a variety of pons types possess the capability for utilization

- APON (ATM Passive Optical Networks)
- BPON (Broadband PON)
- EPON (Ethernet PON)
- GE-PON (for Gigabit Ethernet PON)
- GPON (Gigabit Ethernet PON)

FTTx Indoor/ Outdoor Drop Cable

FTTH Drop Cable construction is that the optical fiber unit is positioned in the center: Two parallel strength members are placed at the two sides and the outer sheath



PARAMETER	VALUES		
No.of Fibers	1F	2F	4F
Fiber Dimensions mm	(2.0±0.1)x(3.0±0.1)	(2.0±0.1)x(3.0±0.1)	(2.0±0.1)x(4.0±0.1)
Cable Weight kg	8	8.5	10
Coating Diameter		245 ± 7 um	
Cladding Diameter		124.8 ± 1 um	
Attenuation max @ 1310nm		≤0.4db/km	≤0.4db/km ≤0.3db/km
Attenuation max @ 1550nm		≤0.3db/km	
Operating Temperature (°C)		-20°C to +70°C	

Features

- Good crush resistance ensured by parallel strength members
- Low smoke, zero halogen and flame retardant sheath
- Simple structure, light weight and high practicability

Indoor Fiber Optic Cable

Indoor Fiber Optic Cables are tight buffer design. The Aramid yarns is used to strengthen the cable structure, making it to resist high tension.

PARAMETER	SPECIFICATION
	6F/12F/24F
Construction	Tight Buffer
Strength Member	Aramid Yarns
Attenuation	Single Mode (OS2) Multi Mode (OM4)
	1310nm≤0.35dB/km 850nm≤2.3dB/km
	1550nm≤0.21 dB/km 1300nm≤0.6dB/km
Outer Sheath	FR LSZH
Sheath Color	Single Mode: Yellow, Multi Mode: Aqua
Bend Radius Operation	10 x Cable Diameter
Tensile Strength	Long Term: 500N Short Term: 660N
Crush Resistance	Long Term: 100N/100mm Short Term: 500N/100mm
Operation & Storage Temperature	-40°C to+ 70°C
Nominal Cable Diameter	6.5±0.5mm
Nominal Cable Weight	40kg/Km
Standard Length per Drum (Mtr)	2000Mtrs ± 1 0%



Features

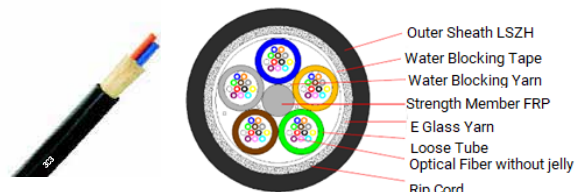
- Low smoke zero halogen Flame retardant LSZH Jacket
- Thermoplastic polyurethane

Conformance

- ANSI/TIA 568.3-D
- ITU-T G.652.D
- Telecordia GR-20
- IEC 60794-2

Indoor/ Outdoor Fiber Optic Cable

Indoor/outdoor fiber optic cables are PBT Multi loose tube with colored fiber cores. The constructions are of dry water-blocking material with Non-Metallic Central Strength member. This cable has LSZH outer Jacket makes it perfect for indoor/outdoor applications.



PARAMETER	SPECIFICATION
Fiber Count	6F/12F/24F
Construction	Multi loose Tube
Strength Member	FRP
Water Blocking Material	Yarns/Tape
Attenuation	Single Mode (OS2) Multi Mode(OM3, OM4)
	1310nm≤0.36dB/km 850nm≤2.3dB/km
	1550nm≤0.22dB/km 1300nm≤0.6dB/km
Outer Sheath	LSZH
Bend Radius Operation	20 x Cable Diameter Bend Radius : 20D Kink Radius : 10D
Crush Resistance	Long Term: 1000N/100mm Short Term : 2000N/100mm
Operation & Storage Temperature	-40°C to+ 70°C
Nominal Cable Diameter	9.5±0.5mm
Nominal Cable Weight	115 kg/km
Standard Length per Drum (Mtr)	2000Mtrs ± 10%

Features

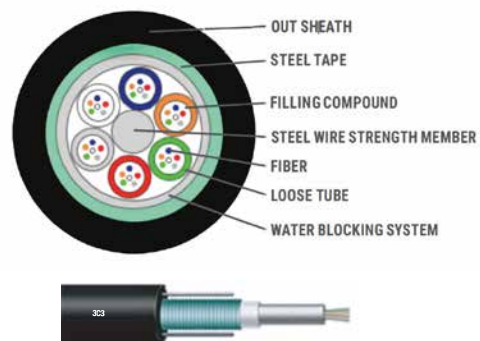
- Available upto 144F
- Low smoke zero halogen (LSZH)
- Gel free Loose tube
- Excellent consistence performance

Conformance

- ANSI/TIA 568.3-D
- ITU-T G.652.D
- Telcordia GR-20
- IEC 60794-2/60794-3-10

Single Mode Uniloose tube Outdoor Fiber Optic

Single Mode Uniloose tube, single sheath ECCS tape armored optical fiber cable is suitable for duct and aerial applications. Fiber cable is perfectly suited for both gigabit Ethernet and 10 gigabit Ethernet campus and backbone applications.



ITEM	DESCRIPTION
Fiber Count	6/12F
Fiber Count	1
Fiber colors	Blue, Orange, Green, Brown, Grey, White, Red, Black, Yellow, Purple, Pink, Aqua
Embedded Strength Member	2x1.0mm Steel wire embedded in sheath
Water Blocking Material	WS tape
Outer Sheath	HDPE UV Resistance
Sheath Color	Black
Rip Cord	Yes, Polyester based yarns below armoring
Nominal Cable diameter	9 ±0.5mm
Nominal Cable diameter	86kg/km ±10%
Drum Length	2 Km ± 5 %

Features

- Available upto 144F
- Central core tube design
- Excellent water proof layer
- Suitable for outdoor applications
- Excellent consistence performance

Conformance

- ANSI/TIA 568.3-D
- ITU-T G.652.D
- Telecordia GR-20
- IEC 60794-2

FTTx Patching Solutions

Fiber Optic Patch Cords

Fiber optic patch cord comprises tight buffer fibers housed within outer jacket in OS2 Single Mode variants. Both ends are terminated with high performance hybrid or single type connector comprising of SC, FC and LC connectors in simplex and duplex.



PARAMETER	SPECIFICATION
Fiber Mode	SM, OS2 9/125 μm
Colored Coating Diameter	250±15μm
Tight Buffer Diameter	700±50μm
Strength Member	Aramid yarns
Insertion Loss	≤0.3dB
Return Loss -APC	≥60dB
Return Loss- UPC	≥50dB
Temperature Rating	-40°C~+85°C
Repeatability	≤0.1
Durability	≤0.2 (1000 mattings)

Features

- All Assemblies Comes with Factory Test Reports
- Bend Insensitive Fibers.
- LSZH jacket, meets IEC-60332 (LSZH) flame rating for standard safety compliant.
- Available in APC and UPC Connectors
- Duplex and Simplex versions, Uniform and hybrid patch cord versions available.

Conformance

- IANSI/TIA-568.3-D,
- ITU-T G.657.A1 (Compatible with G.652.D),
- IEC 61300-3-4,
- IEC 61300-3-6,
- IEC 60874-1,
- Telcordia GR-326
- EC-60332

Fiber Optic Pigtails

Fiber Optic Pigtails are used in permanent connection between patch panel and incoming cables. Pigtails are pre constructed with connectors. Connector options include SC, FC, ST, LC, MTRJ, E2000. These are based on 900micron tight buffered cores and suitable for internal use only



PARAMETER	SPECIFICATION
Type	Single Mode
Insertion Loss	≤0.2dB
Return Loss	≥50dB(UPC)
Repeatability	≤0.1dB
Durability	≤0.2dB, 1000matting
Ferrule Material	Zirconia Ceramic
Operating Temperature	-40°C~+85°C

Features

- All Assemblies are machine polished providing highest quality
- Available in PC, UPC, APC

Conformance

- ITU G.657.A1, G652D
- ISO/IEC 11801
- TIA/EIA-568.3-D
- IEC 61300-3-4, IEC 61300-3-6, IEC 60874-1

FTTx Panel Solutions

Fiber Optic Panels

The Fiber Optic Patch Panels are designed with single fixed adapter plate which can take an array of adapters, this panel offers a flexible solution to the end user, enabling them to incorporate a multi-functional chassis that allows easy access during installation or rework with no disturbance of the existing cable or fibers. In addition, the panel offers multiple cable entry solutions.

PARAMETER	SPECIFICATION
Fiber Capacity Maximum	48F, 1U
Adapter Types	LC (48F),SC(24F)
Insertion Loss	≤0.1dB
Durability	≤0.1dB, 1000 times
Operating Temperature	-25°C ~ +70°C
Material	SPCC (cold rolled steel sheet)
Color	Black



Features

- Conformance to ANSI/TIA-568.3-D, Telcordia GR-326-CORE, Telcordia GR-1221-CORE, ISO/IEC 11801, IEC 61754 & IEC 61300 series
- Pigtails conformance to ITU-T G657 A2 (Compatible with G.652.D) Single Mode
- Standard 19 Inches Installation
- 4 ø 20mm Cable access holes for easy installation and maintenance
- Splice tray capacity 24 fibers (Maximum 2Nos)

Fiber Distribution Box

The Fiber Distribution Box allows easy and quick installation of cables. The fiber splicing, splitting, distribution can be done in this box and it provides solid protection and management for the FTTx network building. Suitable for both Indoor and outdoor applications



PARAMETER	SPECIFICATION
Material	PC+ABS
Fiber Capacity Maximum	8F
Adapter Types	SC/LC
Job stress	70kpa to 108 kpa
Operating Temperature	-40°C ~ +60°C
Ports	2 Inlet 8 outlet ports
Relative Humidity	≤ 95%
Protection	IP55
Dimension (W xH xD)	200 X 215 X 54mm

Features

- Support both wall and Pole mounting
- IP 55 rated
- Accommodate 1x4 and 1x8 PLC Split-
ters
- Industry Standard User interface and
made of high impact plastic
- Anti-UV, Ultra violet resistant and
rainfall resistance
- Support upto 8F
- Covered under 3C3® Performance
Warranty

Customer Outlet Box

Termination Box available for the distribution and terminal connection for various kinds of optical fiber system,used for indoor cabling use.



Features

- Spring shutter cover design for laser protection dust-proof
- Self-clip design for easy operation
- Optional assembled with SC or LC shutter adaptor
- Store surplus fiber inside, rear and bottom cable entry
- Integrated heat shrink splice and mechanical splice holde

FTTx Splitter Solutions

PLC Splitter

Wall Mount Planar Light Wave Circuit (PLC) Splitters comes in PC + ABS Material enclosure with blockless splitter assembly. It supports a variety of spectra 1:2, 1:4, 1:8, 2:2, 2:4, 2:8. PLC Splitter is type of optical power management device that is fabricated using silica optical waveguide technology. It is small size, high reliability, wide operating wavelength range and good channel uniformity.



PARAMETER	SPECIFICATION
Storage & Operating Temperature	-40°C~+80°C
Relative Humidity	≤85% (+300C)
Atmospheric pressure	70KPa~106 Kpa.
Color	White
Inlet/Outlet	3 Inlet/8 Outlet
Dimension for (WxHxD)	200 x215 x54 mm

Features

- Compact design for space saving
- Uniform power splitting
- High reliability and environmental stability
- Proper Fixing/Mounting Provisions.
- PC + ABS Material
Covered under 3C3® Performance Warranty

PLC Splitter - Rack Mountable

Planar Light Wave Circuit (PLC) Splitters is a type of optical power management device that is fabricated using silica optical waveguide technology. It is small size, high reliability, wide operating wavelength range and good channel uniformity.



PARAMETER	SPECIFICATION
1U Dimension (L x W x H)	483 x 252 x 44.5mm
2U Dimension (L x W x H)	483 x 252 x 89mm
Operating Temperature	-20°C ~ +60°C
Storage Temperature	-20°C ~ +60°C
Relative Humidity	≤85% (+30°C)
Color	Black

Features

- Standard 19-inch Rack Mountable
- Easy for management and operation. Low Insertion loss and Low PDL.
- Uniform power splitting.
- High reliability.
- Excellent environmental stability
- SPCC- Cold Rolled Steel Sheet Material
- SC Connector available in UPC, APC
Covered under 3C3® Performance Warranty

FTTx Splitter Solutions

PLC Splitter-ABS

Planar Light Wave Circuit (PLC) Splitters is a type of optical power management device that is fabricated using silica optical waveguide technology. It is small size, high reliability, wide operating wavelength range and good channel uniformity.

PARAMETER		SPECIFICATION			
Type		1:2	1:4	1:8	
Fiber Type		SM 9/125 , G657.A1			
Operating Wavelength		1260 ~ 1650nm			
Insertion Loss (dB)	Max	3.8	7.1	10.2	
Loss uniformity(dB)	Max	0.6	0.6	0.8	
Polarization	Max	0.15	0.15	0.2	
Dependent Loss (dB)					
Directivity(dB)	Min	55dB			
Return Loss	Min	UPC 50dB, APC 60dB			
Operating Temperature		-40°C ~ + 85°C			
Storage Temperature		-400C ~ + 850C			



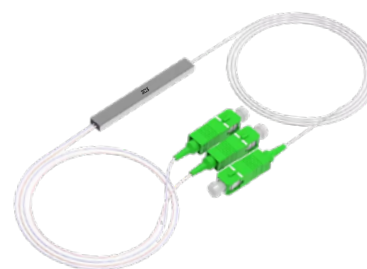
Features

- Light weight and Simple structure.
- Compact design for space saving.
- Easy for management and operation.
- Low Insertion loss and Low PDL.
- Uniform power splitting.
- High reliability.
- Excellent environmental stability
- 900µm Fiber
- PC+ABS Material
- Covered under 3C3® Performance Warranty

Planar Light Wave Circuit (PLC) - Blockless

Planar Light Wave Circuit (PLC) Splitters is a type of optical power management device that is fabricated using silica optical waveguide technology. It is small size, high reliability, wide operating wavelength range and good channel uniformity.

PARAMETER		SPECIFICATION			
Type		1:2	1:4	1:8	
Fiber Type		SM 9/125 , G657.A1			
Operating Wavelength		1260 ~ 1650nm			
Insertion Loss (dB)	Max	3.8	7.1	10.2	
Loss uniformity(dB)	Max	0.6	0.6	0.8	
Polarization	Max	0.15	0.15	0.2	
Dependent Loss (dB)					
Directivity(dB)	Min	55dB			
Return Loss	Min	UPC 50dB, APC 60dB			
Operating Temperature		-40°C ~ + 85°C			
Storage Temperature		-40°C ~ + 85°C			



Features

- Light weight and Simple structure.
- Compact design for space saving.
- Easy for management and operation.
- Low Insertion loss and Low PDL.
- Uniform power splitting.
- High reliability.
- Excellent environmental stability
- 900µm Fiber
- Covered under 3C3® Performance Warranty

Fiber Optic Outdoor Joint Enclosure

Fiber closure is used for connecting and protecting single core or bunch cables. It can be placed in underground, aerial, pedestal or direct buried, hand hole mounting and duct-mounting applications. 3C3® fiber closures can improve the operation of your network communication system



PARAMETER	SPECIFICATION
Construction	Cylindrical
Max. Splice Capacity	48F
Cable Entry/ Exit	4
Splice Tray Material	Aluminum+ ABS
Body Material	ABS Plastic body
Enclosure Dimension	190 x 130 x 500 mm.

Features

- Compact and Light Weight
- Available upto 576F
- IP68 Rated Variants are available
- Lightning strike erosion, aging resistance
- Operating temperature -40°C to 80°C

Fiber Optic Attenuators

Fiber optic attenuators are used to suppress signal strength in fiber optic networks by inducing variable or fixed losses. When inserted in a network, a fiber optic attenuator reduces the power of the input before delivering it to the load. They are also employed in testing the dynamic range and the linearity of photo detectors and photo sensors. Fiber optic attenuators utilize various methods to induce variable or fixed losses



Features

- Fixed In-line Attenuator for Single-mode fiber
- Polarization Dependent Loss $\leq 0.1\text{dB}$
- Return Loss: UPC $\geq 50\text{dB}$, APC $\geq 60\text{dB}$
- High-precision doping technology & Premium Ceramic Ferrule
- Male to Female, Female to Female and Other customized
- Options are available
- Variable Attenuators are available
- Comes with Factory test reports.



3C3[®]

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EXCELLENCE

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