



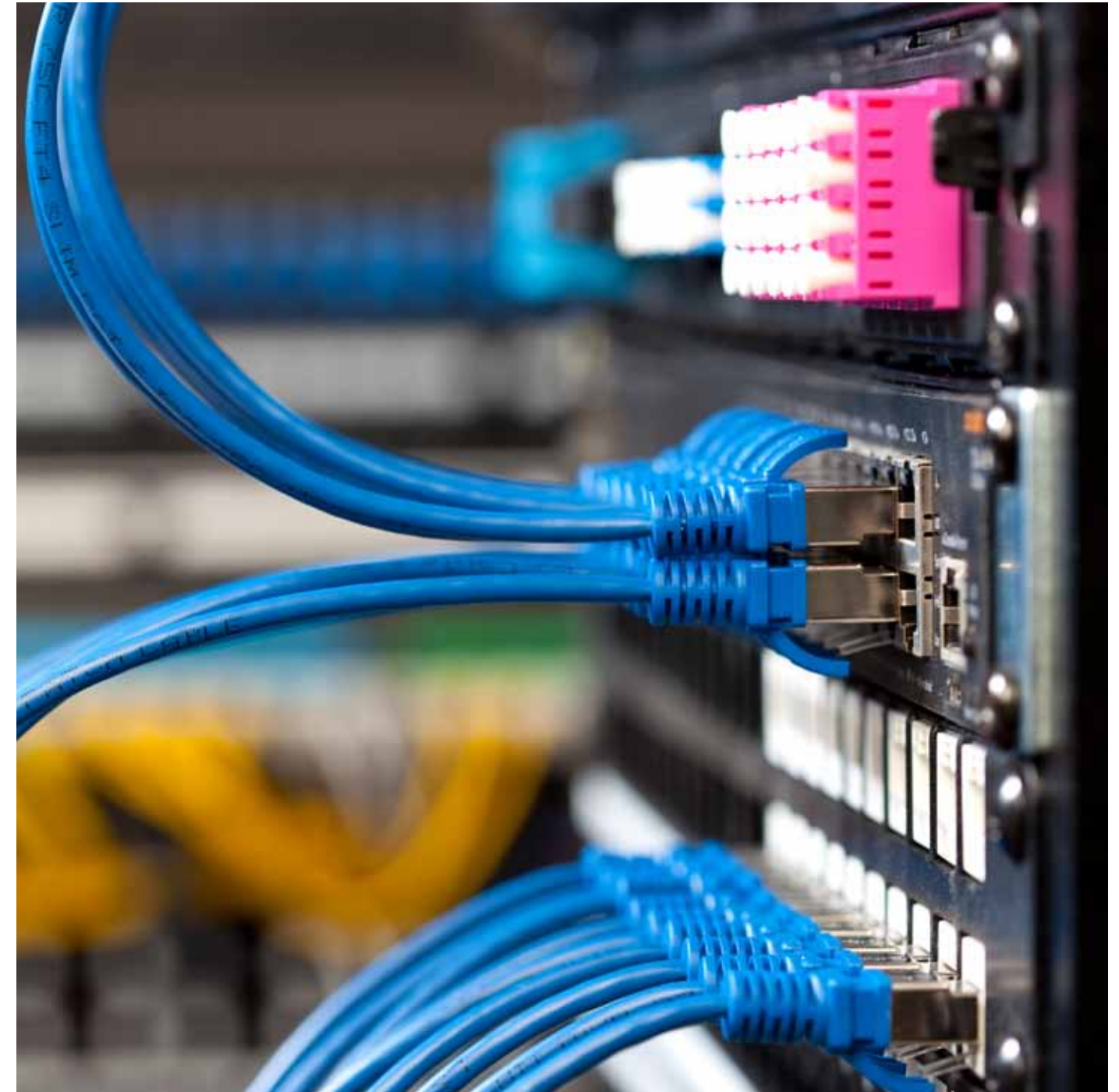
www.lssimple.com
Simple™ Structured Cabling System

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Simple™

Structured Cabling System



THE WORLD BEST CABLE SOLUTION LEADER

LS Cable & System supplies various cables and materials used for power grids and communication networks around the world across all industries providing its top class technology and excellent quality. The company has also developed state of the art products, such as superconductors, HVDC and submarine cables that will lead the future energy industry.

LS spun off from LG in 2003 as a group specializing in electronics, electrical systems, energy and materials.



LS Cable & System

Transmission Cable
Distribution Cable
Submarine Cable
Telecommunication Cable
Industrial Cable
Industrial Material

LSELECTRIC

Electric &
Automatic Equipments

LS-Nikko Copper

Copper Refinement

LS Mitron

Mechanical &
Electronic Parts

yesco
LNG

Ei
LPG

GBON
Power &
Communication
Cables



System List

Structured Cabling System

			
01. Shielded/Unshielded 4-pair Cable	02. Multi-pair Cable	03. Patch Panel	04. Modular Jack
			
05. Patch Cord	06. 110 Block	07. Faceplate	08. Indoor FO Cable
			
09. FDF	10. Fiber Jumper Cord	11. Fiber FI Connector	12. Rack

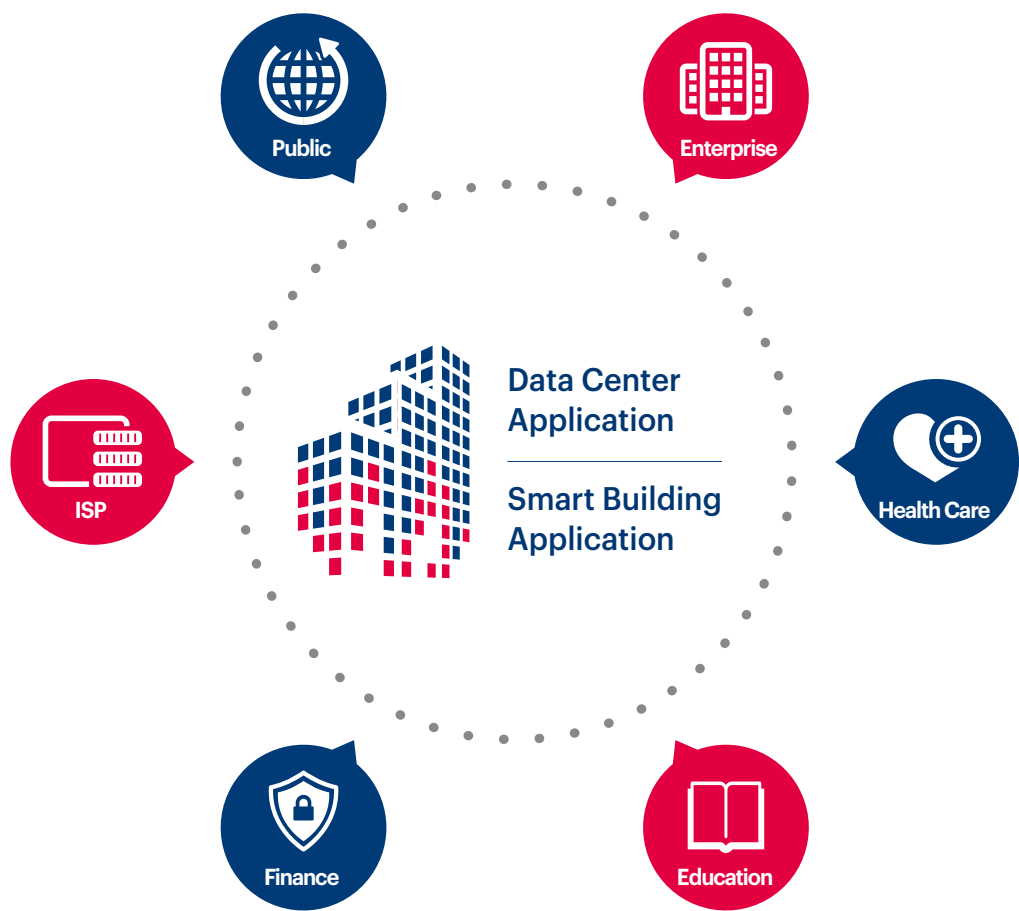
Data Center Solution

			
13. 10Gigabit Cable	14. OM3&4 Fiber Cable	15. MPO/MTP Solution	16. High Density Rack System
			
17. Raceway System	18. Security Patching System(Copper)	19. Security Patching System(Fiber)	20. Containment Solution

Keep your business *Simple*™

LS Simple™ is a brand of LS Cable & System and provides advanced cabling solutions for many different applications from general residential area to large-scale business projects such as data centers. With End-to-End solutions including data cables and connectivity, work area solution and management software, we support customers' simple system configuration and management.

LS Cable & System provides an optimized total solution with reliability, security, and safety in the development of communication infrastructure. In addition, our global leading performance supports customer's business growth and success providing them more competitiveness. For over 50 years, LS Cable & System has been leading the cabling technology and providing solutions that meet not only current requirements but also future needs. We are dedicated to the development of the optimized cabling solution throughout the network from the backbone to the work station.



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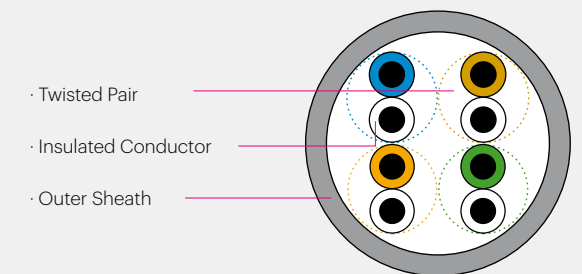
PoE Specialized Cabling Solution

SimpleWide™ Long Distance PoE Cable
PoE Type 3&4 UTP LP Plenum Cable
PoE Type 3&4 Modular Plug & Modular Jack

SimpleWide™ Long Distance PoE Cable



UTP-G-C6G-E1VN-M 23AWGX004P/XX (SimpleWide™)



Descriptions

LS SimpleWide™ Long distance PoE cable provides high level stability, this cable supports 30W PoE+ up to 200 meters and this cable enables branchless connection to CCTV Application and WiFi system that require long distances.

- 4 pair twisted cable
- Support Type2(30W) for Max. 200m transmission distance
- 75°C UL CM-LP(0.5A) Listed
- Conductor Size - 23AWG
- Outer Diameter - 6.0mm
- Comply with TIA-568.2-D Cat.6
- RoHS Compliant

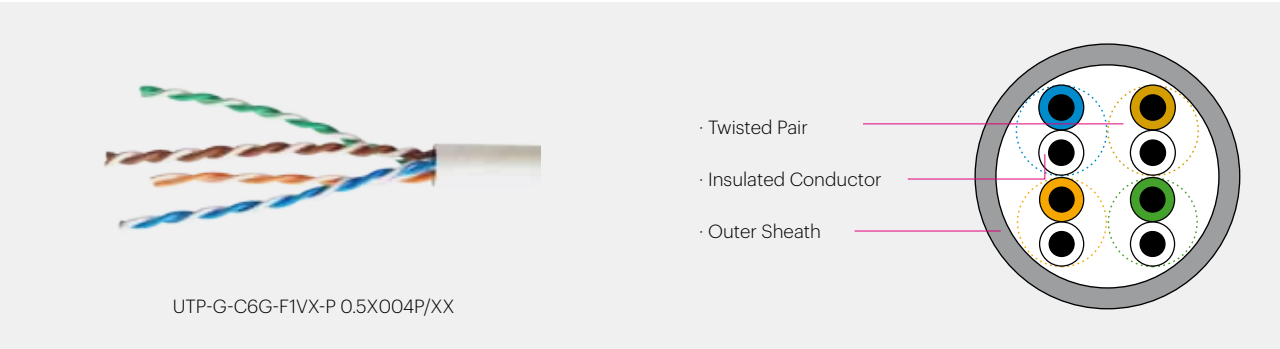
Applications

- Horizontal Long Distance Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000/10G BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- IEEE 802.3bt of Type 2(30W) for CCTV max.200m
- Type 4(100W) max.100m

Technical Details

Item	Unit	SimpleWide™ Cable
Conductor DC Resistance	Ohms/100m	Nominal 6.4
Resistance Unbalance	%	Nominal 2.5
Mutual Capacitance	nF/100m	5.6
Capacitance Unbalance (Pair to Ground)	pF/100m	Nominal 27
Characteristic Impedance	Ohms	100±15
Propagation Delay	ns/100m	Nominal 497 @ 250MHz
Delay Skew	ns/100m	Nominal 25
Nominal Velocity of Propagation	%	69
Operating Temperature	°C / °F	-20 ~ 75 / -4 ~ 167
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	4 x Cable Diameter
Packaging Type	1000ft (305m)	Reel / Reel
Packaging Weight	lb/kft (kg/km)	26(39)
Conductor Diameter / Material	-	23AWG, Solid Copper
Insulation Diameter / Material	Inch (mm)	0.042 (1.08), HDPE
Outer Diameter / Material	Inch (mm)	0.236(6.0), LS-PVC
Safety Standard, Performance Standard	CM-UL 1685	
Approvals Performance	TIA-568.2-D, ISO/IEC 11801 "Performance specifications for 4pairs 100 ohm Category 6 Cabling" within 100m	

PoE Type 3&4 UTP LP Plenum Cable



Descriptions

- 4 pair twisted cable
- UL Listed & CMP-LP(0.6A)
- Capable of handling full broadband and baseband video signals
- High flame retardant grade of the cable is protected propagation of fire(Plenum Cable)
- Electrical performances comply with TIA-568.2-D
- Specialized print legend contains footage from 1000ft to 0ft, Metric from 305m to 0m upon customer requirements (Basic option is Metric)
- Standardized packing (Reel, Reel, and RIB)
- RoHS compliant

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000 BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- PoE++ (IEEE 802.3bt Type 3(60W), Type 4(100W))

Technical Details

Item	Unit	Plenum
Conductor DC Resistance	Ohms/100 m	Max. 9.38
Resistance Unbalance	%	5
Mutual Capacitance	nF/100 m	5.6
Capacitance Unbalance	pF/100 m	330
Characteristic Impedance	Ohms	100 ± 15%
Propagation Delay	ns/100 m	536@250MHz
Delay Skew	ns	45
Nominal Velocity of Propagation	%	69
Operating Temperature	°C / °F	-20 ~ 105 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	4 x Cable Diameter
Packaging Type	1000ft (305m)	Reel / Reel
Packaging Weight	lb/kft (kg/km)	26(39), Cross filler(Optional)
Conductor Diameter / Material	-	23 AWG, Solid Copper
Insulation Diameter / Material	Inch (mm)	0.037 (0.95), FEP
Outer Diameter / Material	Inch (mm)	0.209(5.3), LS-PVC
Safety Standard, Performance Standard	CMP-NFPA262	
Approvals Performance	TIA-568.2-D, ISO/IEC 11801 "Performance specifications for 4pairs 100 ohm Category 6 Cabling"	

PoE Type 3&4 Modular Plug & Modular Jack

Modular Plug



Descriptions

This modular plug is assembled with LS PoE Type 3&4 Cables and high flame retardant material to ensure sufficient stability in high-power PoE transmission

Technical Details

Electrical / Mechanical Characteristics

- Rating Voltage & Current: 30VAC at 1.5A
- Contact Resistance : 20 Milli-ohm Max.
- Dielectric Strength : 1000VAC (RMS)
- Insulation Resistance : 500 Mega-ohm Min.
- Cable-to-Plug, Tensile Strength : 20lbs (89N) Min.
- Durability : 750 mating cycle Min.

Material

- Housing Material : Transparent High-impact Polycarbonate (PC), UL 94V-0
- Contacts : Brass plated with 50μ-inch thick gold over 100μ-inch thick nickel undercoat, 3-Prong

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000 BASE-T(IEEE 802.3)
- PoE++ (IEEE 802.3bt Type 3(60W), Type 4(100W))
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G

Modular Jack



Descriptions

Designed to maximized LS granted margin when high-power PoE is transmitted.

- Support horizontal long distance cabling
- Assembled with empty patch panel or adopt outlet connection
- Design to minimize electric shock for PoE type 3&4
- Support dedicated tools for easy assembling

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000 BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- PoE++ (IEEE 802.3bt Type 3(60W), Type 4(100W))

Part Numbers

Product Type	Part Number	Description
PoE Cable	UTP-G-C6G-E1VN-M 23AWGX004P/## (SimpleWide™)	Category 6 U/UTP Cable 4-Pair, CM rated for long distance
	UTP-G-C6G-F1VX-P 0.5X004P/##	Category 6 U/UTP Cable Non-Filler CMP rated
PoE Modular Plug	LS-MP-UC6-RJ45-EZ	8P8C unshielded modular plug suitable for stranded & solid wire, 50micro-inch gold coating, Snap Type
	LS-MP-SC-RJ45-EZ-C	8P8C shielded modular plug suitable for stranded & solid wire, 50micro-inch gold coating, Snap Type
PoE Modular Jack	LS-MJ-UC5E-XX-ERI	Unshielded Category 5e modular jack for PoE
	LS-MJ-UC6-XX-ERI	Unshielded Category 6 modular jack for PoE

* ## and XX denotes colors

* Compatibility information of PoE Cable and Connectivity can be found in the Appendix

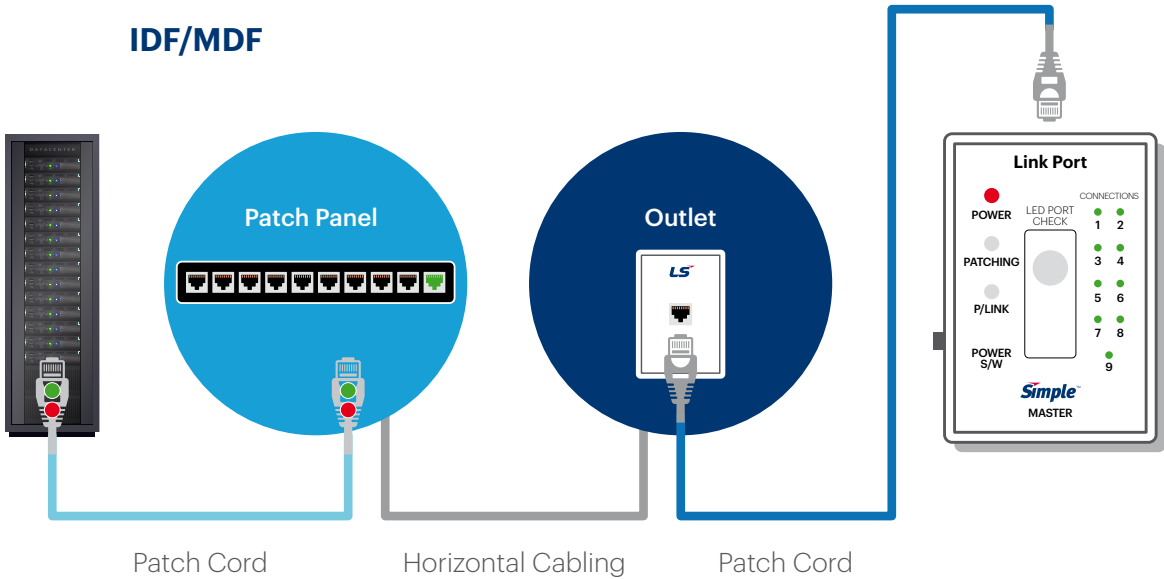
SimpleLight™ LED Cabling Management Solution

SimpleLight™ Solution
SimpleLight™ LED Patch Cord & Accessories
SimpleLight™ LED Fiber Jumper Cord
SimpleLight™ LED Modular Jack & Panel

SimpleLight™ Solution

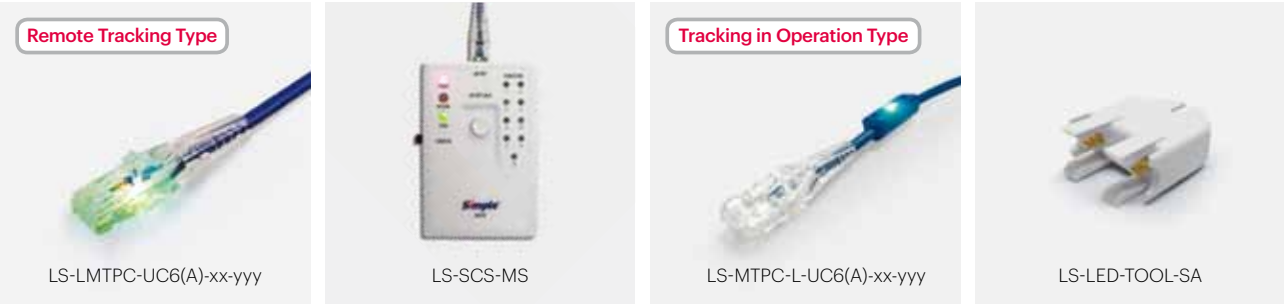
SimpleLight™ Solution Overview

SimpleLight™ LED Solution not only provides reliable standard communication performance, but also tracking the cabling route through the signal transmitter on the LED inside of the modular jack. With these functions the administrator can easily maintain the cabling system to improve the stability of user environment and communication performance, and reduce the maintenance cost by increasing the recycling rate.



Cabling Condition		LED Tester		IDF/MDF LED Panel	
Horizontal	IDF/MDF Patch Cord	Link	Patching	LED Jack	LED Cord
Disconnected	Disconnected	Off ○	Off ○	Off ○	-
Connected	Disconnected	On ●	Off ○	Off ●	-
Connected	Only connected on panel	On ●	Off ○	Off ○	On ●
Connected	Connected on S/W and panel	On ●	Off ●	Off ○	On ●

SimpleLight™ LED Patch Cord & Accessories



Descriptions

LS SimpleLight™ Remote LED Patching System enables users to check the location and connection status from the outlet location with LED tester.

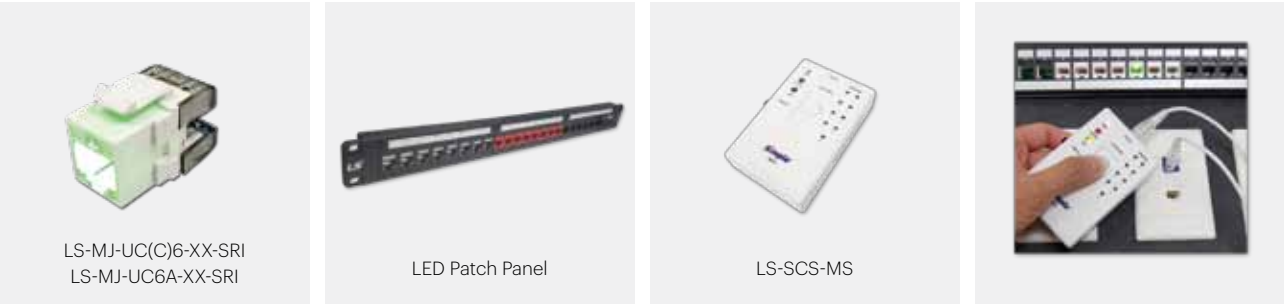
- Remote port status tracking support with LED inside plug
- Slim patch cable optimizes for high density enviroment
- Easy to track remote port using LED
- Comply TIA-568.2-D Channel
- Factory assembled and test type
- T568A, T568B Wiring support
- Conductor size of 28 or 32 AWG available
- Slim patch cable optimizes for high-density environment
- Tester compatible with LED modular jack and patch cord

Descriptions

The LS SimpleLight™ LED patch code provides the ability to check the end-to-end location of a patching complex and unmarked ports without removing or stopping the equipment.

- Non Stop tracking function support with LED on cable
- Slim patch cable optimizes TR cabling
- Easy to track remote port using LED
- Comply TIA-568.2-D Channel
- Factory assembled and test type
- T568A, T568B Wiring support
- Apply Stranded 28AWG conductor
- Battery-powered position tracking signal tool compatible

SimpleLight™ LED Modular Jack & Patch Panel



Descriptions

SimpleLight™ LED Modular Jack not only provides reliable standard communication performance, but also tracks down the cable route and connection status with LED inside modular jack through the signal transmitter from outlet user area.

- Remote port status is tracked with LED inside modular jack
- Complies TIA-568.2-D Channel
- Insertion Life : 750 Mating Cycles
- Plug Retention Force : 20 lbs (89N)
- IDC Accept : 23-26 AWG Solid Wire
- T568A / T569B Wire map support
- FCC CFR 47 Parts 68
- Tester compatible with LED modular jack and patch cord
- UL94-0 Rated

Technical Details

- Current Rating : 1.5 Amps
- Contact Resistance : 20 Milli-ohm Max.
- Insulation Resistance : 500 Megaohm
- DC Resistance : 0.1 ohm Max.
- Voltage : 150 Vac Max.
- Insertion Life : 750 Mating Cycles
- Plug Retention Force : 20 lbs (89N)
- Temperature : -40°C-68°C(-40°F-154°F)
- Humidity : 10%-90% RH
- IDC Accept : 23-26 AWG Solid Wire
- Housing Material : Polycarbonate (PC), UL 94V-0 Rated
- IDC Terminals : Phosphor Bronze, plated with tin over nickel under plate
- Jack Contacts : Phosphor bronze flat wire, plated with 2.54μm (100μin) thick hard gold on contact area over nickel underplate
- Panel color and material : black painted steel material

SimpleLight™ LED Fiber Jumper Cord



Descriptions

The LS SimpleLight™ LED Jumper cord system provides the ability to check the end-to-end location of a patching complex and unmarked fiber ports in the communication room without removing or stopping the equipment in the data-center

- LC type Jumper cord combined with LED tracker
- Support single-mode or multi-mode (OM1-OM4)
- LED cabling route tracking function in the complex data center

Part Numbers

Product Type	Part Number	Description
Copper LED Cabling System	LS-LMTPC-UC6A-xx-yyy	Unshielded Category 6A LED Patch Cord with T568B wiring, PVC Cable
	LS-LMTPC-UC6-xx-yyy	Unshielded Category 6 LED Patch Cord with T568B wiring, PVC Cable
	LS-MJ-UC(C)6-xx-SRI	Category 6 Unshielded LED Keystone Jack Slim Enhanced Rear IDC type
Remote Tracking Type	LS-MJ-UC6A-xx-SRI	Category 6A Unshielded LED Keystone Jack Slim Enhanced Rear IDC type
	LS-PP-24P-E-LWM	24-Ports 1U Empty Panel, Jack type for Unshielded & Shielded, 19" std. with management
	LS-SCS-MS	LED Cabling route check tester
Copper LED Patch Cord In Operation	LS-MTPC-L-UC6A-xx-yyy	Unshielded Category 6A LED Patch Cord in Operation type with T568B wiring, PVC Cable
	LS-MTPC-L-UC6-xx-yyy	Unshielded Category 6 LED Patch Cord in Operation type with T568B wiring, PVC Cable
	LS-LED-TOOL-SA	LED cabling route checker for In operation type LED patch cord
Fiber LED Patch Cord In Operation	LS-LJ-LC/LC-xx-30DP-yyy	LED Fiber Jumper Cord LC Duplex SM (or OM3, OM4)
	LS-LED-TOOL-SB	LED cabling route checker for LED Fiber In operation type LED fiber jumper

* In case of copper product, xx denotes color (WH : White, BL : Blue, etc.), yyy denotes length (010 : 1m, 020 : 2m, etc.)
* In case of fiber product, xx denotes mode (SM : Single Mode, M3 : OM3, etc.), yyy denotes length (010 : 1m, 020 : 2m, etc.)



SimpleTM CPR Product Mix

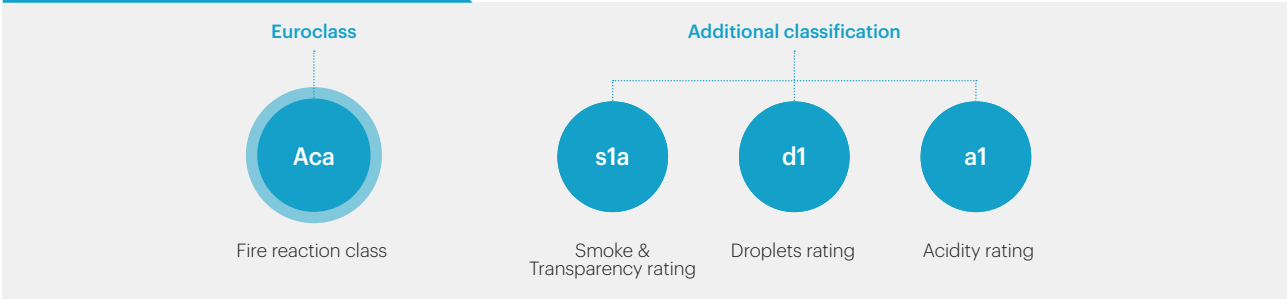
SimpleTM CPR Product Mix



What is CPR?

The Construction Products Regulation (CPR) is the standardized assessment of the fire performance of building materials throughout the European region. Through this regulation, people can choose cables based on commonstand ard when they design and construct buildings. Evaluated products demonstrate compliance with the CE mark and DoP. It is the responsibility of the manufacturer to develop and supply compliant products.

Decoding the Euroclass label



LS SimpleTM offers extensive CPR-Compliant Product Mix

Category	Structure	AWG	Filler	Sheath	Euro class	Additional class	Product
Category 5e	U/UTP	24	N/F	LSZH	Dca	s2-d2-a1	Category 5E U/UTP 4-pair Cable LSZH Dca
	U/UTP	24	N/F	PVC	Eca		Category 5E U/UTP 4-pair Cable PVC Eca
	U/UTP	24	X/F	PVC/PVC	Eca		Category 5E U/UTP 4-pair Cable PVC Double Sheath Eca
	F/UTP	24	N/F	LSZH	Eca		Category 5E F/UTP 4-pair Cable LSZH Eca
	F/UTP	24	N/F	PVC	Eca		Category 5E F/UTP 4-pair Cable PVC Eca
	F/UTP	24	X/F	PVC/PVC	Eca		Category 5E F/UTP 4-pair Cable PVC Double Sheath Eca
Category 6	U/UTP	23/24	X/F	LSZH	Dca	s2-d2-a1	Category 6 U/UTP 4-pair Cable LSZH Dca
	U/UTP	23/24	X/F	LSZH	Cca	s1a-d0-a1	Category 6 U/UTP 4-pair Cable LSZH Cca
				LSZH	B2ca	s1a-d0-a1	Category 6 U/UTP 4-pair Cable LSZH B2ca
	U/UTP	23	N/F	LSZH	B2ca	s1a-d0-a1	Category 6 U/UTP 4-pair Cable LSZH B2ca, Non-Filler
	U/UTP	24	X/F	PVC	Eca		Category 6 U/UTP 4-pair Cable PVC Eca
	U/UTP	24	X/F	PVC	Eca		Category 6 U/UTP 4-pair Cable PVC Double Sheath Eca
	F/UTP	24	N/F	LSZH	Eca		Category 6 F/UTP 4-pair Cable LSZH/PVC Double Sheath Eca
	F/UTP	24	N/F	LSZH	Eca		Category 6 F/UTP 4-pair Cable LSZH Eca (UL Spec)
Category 6A	F/UTP	24	X/F	PVC	Eca		Category 6 F/UTP 4-pair Cable PVC Double Sheath Eca
	U/UTP	23	X/F	LSZH	Dca	s2-d2-a1	Category 6A U/UTP 4-pair 1 st generation Cable LSZH Dca
	U/UTP	23	X/F	LSZH	Dca	s2-d2-a1	Category 6A U/UTP 4-pair Super Slim Cable LSZH Dca
	U/UTP	23	X/F	LSZH	Cca	s1a-d0-a1	Category 6A U/UTP 4-pair Super Slim Cable LSZH Double Sheath Cca
				LSZH	Cca	s1a-d0-a1	Category 6A U/UTP 4-pair Super Slim Cable LSZH Single Sheath Cca
	U/UTP	23	X/F	CM-LSZH	Dca	s2-d0-a2	Category 6A U/UTP 4-pair Ultra Super Slim Cable LSZH(CM) Dca
	U/UTP	26	X/F	LSZH	Eca		Category 6A U/UTP 4-pair Ultra Super Slim Cable LSZH Eca
	F/UTP	23	N/F	LSZH	Dca	s2-d2-a1	Category 6A F/UTP 4-pair Cable LSZH Dca

Simple™ MTPC Cord

Category 6 / 6A Mini Turn Boot Patch Cord

Category 6 / 6A Mini Turn Boot Patch Cord



Descriptions

Provides easy cabling installation and optimal performance especially in a high-density environment. With LS's unique patented turn-boot product, high density patch cord installtion could be simplified.

- Unshielded 28AWG (3.5mm) Stranded bare copper wire
- Unshielded/Shielded 32AWG Stranded bare copper wire
- O.D for UTP28AWG / UTP32AWG / FTP32AWG : 3.7 / 2.8 / 3.8mm
- TIA-568.2-D Category 6 or 6A Channel Level
- Optimized for HD system & configuration in TR
- T568A, T568B Wiring support
- Cable Jacket : PVC, LSZH

Applications

- High Density TR & Data Center Patching System
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000/10G BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G

Technical Details

- TIA-568.2-D Category 6 or 6A Channel Performance
- Max. Channel Length
 - UTP 28AWG : 100m (Permanent 90m + Combined Cord 10m)
 - UTP 32AWG : 97m (Permanent 90m + Combined Cord 7m)
 - FTP 32AWG : 98m (Permanent 90m + Combined Cord 8m)
- Plug standards : CFR Title 47 part 68 and IEC 60603-7
- Insertion Life : 750 Mating Cycles
- Contact blade : Phosphor bronze plated with 50uin thick gold over 100uin thick nickel undercoat
- Temperature : -20°C-68°C
- Humidity : 10%-90% RH

Color Index (Plug)

Description			Color Differentiation		
Performance		Conductor Diameter	Plug	Boot	Insert
Shielded	Category 6	28AWG	Transparent	Transparent Blue	Transparent
	Category 6	32AWG	Transparent	Transparent Black	Transparent
	Category 6A	28AWG	Transparent Green	Transparent Blue	Transparent Red
	Category 6A	32AWG	Transparent Green	Transparent Black	Transparent Red
Unshielded	Category 6	28AWG	Transparent	Transparent Blue	Transparent
	Category 6	32AWG	Transparent	Transparent Black	Transparent
	Category 6A	28AWG	Transparent Green	Transparent Blue	Transparent Red
	Category 6A	32AWG	Transparent Green	Transparent Black	Transparent Red

Part Numbers

Product Type	Product Number	Description
PVC	LS-MTPC-UC6(A)-xx-yyy	UTP Category 6(6A) 28AWG Mini Turn Boot Patch Cord, PVC
	LS-MTPC-UC6(A)32-xx-yyy	UTP Category 6(6A) 32AWG Mini Turn Boot Patch Cord, PVC
	LS-MTPC-SC6(A)32-xx-yyy	FTP Category 6(6A) 32AWG Mini Turn Boot Patch Cord, PVC
LSZH	LS-MTPC-UC6(A)L-xx-yyy	UTP Category 6(6A) 28AWG Mini Turn Boot Patch Cord, LSZH
	LS-MTPC-UC6(A)32L-xx-yyy	UTP Category 6(6A) 32AWG Mini Turn Boot Patch Cord, LSZH
	LS-MTPC-SC6(A)32L-xx-yyy	FTP Category 6(6A) 32AWG Mini Turn Boot Patch Cord, LSZH

* XX denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

* YYY denotes available length : 005(0.5m), 010(1m), 030(3m) ~200(20m).

Simple™ Copper Systems - Category 7 & 6A

Category 7 S/FTP Cable

Category 6A U/UTP Cable - Ultra Super Slim

Category 6A U/UTP Cable - Super Slim

Category 6A U/UTP Cable - 1st Generation

Category 6A F/UTP Cable

Category 6A F/FTP & S/FTP Cable

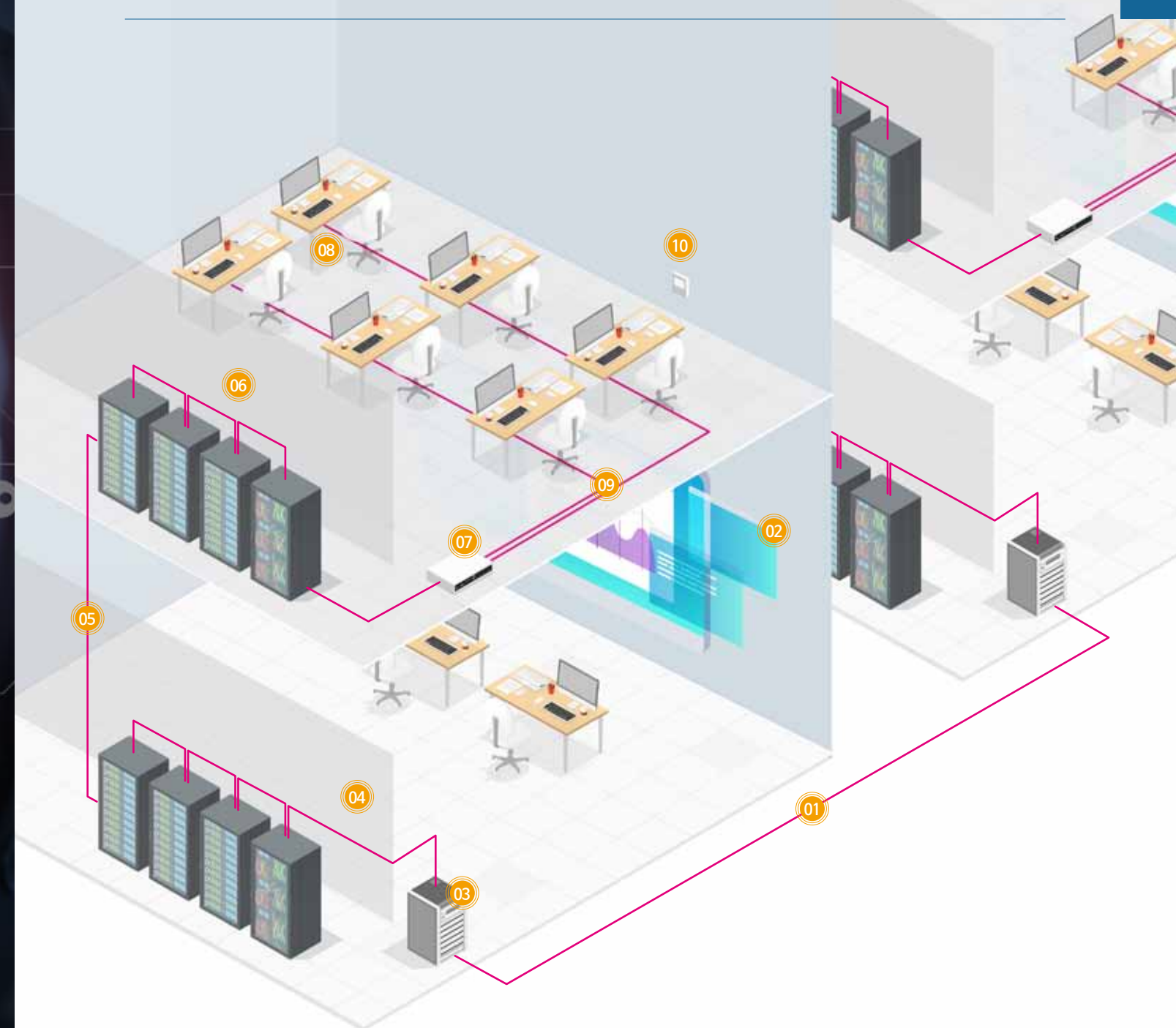
Category 6A S/FTP GSWB Cable

Category 6A Patch Panel

Category 6A Modular Jack

Category 6A Patch Cord

Telecommunication Structure



01. Backbone Cabling(Inter-BC) 02. Administration(TIA/EIA-606) 03. Entrance Facilities(EF)

04. Equipment Room(ER) 05. Backbone Cabling(Intra-BC) Vertical Cabling 06. Telecommunication Rooms(TR)

07. Consolidation Point(CP) 08. Work Area(WA) 09. Horizontal Cabling 10. Outlet

Simple™ Cat.7 S/FTP Cable

Simple™ Cat.6A Cables

U/UTP Cat.6A Cable 4pair
F/UTP Cat.6A Cable 4pair
F/FTP Cat.6A Cable 4pair
S/FTP Cat.6A Cable 4pair
S/FTP Cat.6A GSWB Cable

Simple™ Cat.6A Patch Panel

Empty Patch Panel
Unshielded Modular type
Patch Panel with Wire Management
Shielded Modular type
Patch Panel with Wire Management

Simple™ Cat.6A Modular Jacks

Unshielded Modular Jack
Shielded Modular Jack

Simple™ Cat.6A Patch Cord

Unshielded Category 6A Patch Cord
Shielded Category 6A Patch Cord

Category 7 S/FTP Cable



Descriptions

- 4 pair twisted cable
- Cable diameter : 0.303 in. (7.7mm)
- High performance Category 6A cable to transmit full broadband and baseband video signals
- Electrical performances according to IEC 61156-5
- Packaged on Wooden Reel
- DNV approved
- Applicable for LS Simple™ 25-Year Product Warranty program

Applications

- Data Center System
- Horizontal Distribution & Backbone Cabling
- 4/16Mbps Token Ring(IEEE 802.5)
- 10/100/1000/10G BASE-T (IEEE 802.3)
- 155 Mbps ATM
- 100 Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- PoE++ (IEEE 802.3bt Type 3(60W) or Type 4(100W))

Technical Details

Item	Unit	PVC / LSZH
DC Resistance	Ohms/100 m	Max. 9.5
DC Resistance Unbalance	%	≤ 2
Capacitance Unblance (Pair to Grd.)	pF/km (800~1000Hz)	≤ 1600
Insulation Resistance	MΩ · m	≥ 5000
Characteristic Impedance	Ohms	100 ± 5% (at 100MHz)
Propagation Delay	ns/100 m	535 at 600MHz
Delay Skew	ns	≤ 25
Nominal Velocity of Propagation	%	67
Installation Temperature	°C / °F	0~60/32~140
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	5 x Cable Diameter
Packaging Type	1000ft (305m)	Reel
Packaging Weight	lb/kft (kg/km)	38 (56)
Conductor Diameter / Material	-	23 AWG, Solid Copper
Insulation Diameter / Material	Inch(mm)	0.053(1.35), Foamed PE
Outer Diameter / Material	Inch(mm)	0.303(7.7), PVC or LSZH
Safety Standard, Performance Standard	PVC-UL444 / CMX-UL1581, IEC 60332-1 / CM-UL1685, IEC 60332-3 / CMR-UL1666 / LSZH-IEC 61034, IEC 60754	
Approvals Performance	IEC 61156-5 & ISO/IEC 11801 “Performance specifications for 100 ohm Category 7 Cabling”	

Category 7 S/FTP Cable

Part Numbers

Product Type	Part Number	Description
PVC	SSP-G-C7G-E1VN-X 0.5X004P/##	Category 7 S/FTP Cable 4-Pair, CMX rated
	SSP-G-C7G-E1VN-M 0.5X004P/##	Category 7 S/FTP Cable 4-Pair, CM rated
LSZH	SSP-G-C7G-E1ZN-X 0.5X004P/##	Category 7 S/FTP Cable 4-Pair, LSZH

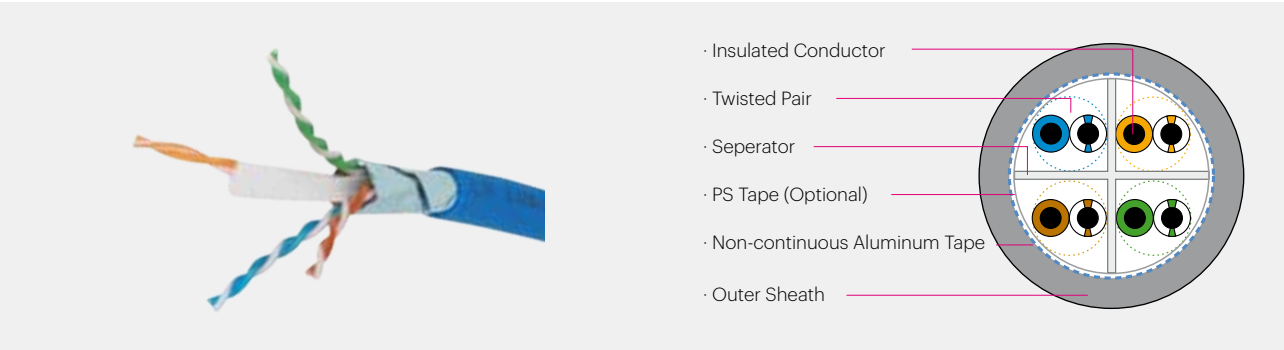
* ## denotes available Colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier

A	A	A	-	B	-	C	C	C	-	D	E	F	G	-	H	0.5	X	I	I	I	P	/	#	#			
A : Cable Type				B : Cable Performance				C : Cable Category				D-G :Material & Cable Construction				H : Flame Retardant Grade				I : Number of Pairs				# : Jacket Color			
• UTP – U/UTP • FTP – F/UTP • SFP – SF/UTP • SSP – S/FTP • FSP – F/FTP				• A – Augmented • E – Enhanced • G – General				• C3G – CAT3 • C5G – CAT5 • C6G – CAT6 • C7G – CAT7				• D : Insulation material E(PE), F(FEP) • E : Number of jacket • F : Jacket material V(PVC), Z(LSZH) • G : Others				• X : CMX • M : CM • R : CMR (Riser) • P : CMP (Plenum)				• 004P – 4 pair • 025P – 25 pair				• GY : Gray • WH : White • BL : Blue • VI : Violet • OR : Orange • RD : Red • GN : Green • YL : Yellow • BK : Black			

Category 6A U/UTP Cable

- Ultra Super Slim



Descriptions

- 4 pair twisted cable
- Supports 10G networking performance
- Optimized for higher density Data Centers
- Meets requirements of TIA-568.2-D and ISO/IEC 11801 with Max. 70m Channel length (Max. 60m Permanent link)
- Space-saver with 26AWG copper conductor and smaller cable diameter 5.8mm (0.23 in) nominal
- Compliant to 'Work Area CAT6A wiring performance' according to IEC 61156-6 Ed.3'

Part Numbers

Product Type	Part Number	Description
PVC	UTP-A-C6G-E1VL-X 26AWGx004P/##	Category 6A U/UTP Cable 4-Pair Ultra Super Slim, 5.8mm, CMX rated
	UTP-A-C6G-E1VL-M 26AWGx004P/##	Category 6A U/UTP Cable 4-Pair Ultra Super Slim, 5.8mm, CM rated
	UTP-A-C6G-E1VL-R 26AWGx004P/##	Category 6A U/UTP Cable 4-Pair Ultra Super Slim, 5.8mm, CMR rated
LSZH	UTP-A-C6G-E1ZL-X 26AWGx004P/##	Category 6A U/UTP Cable 4-Pair Ultra Super Slim, 5.8mm, LSZH

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Technical Details

Item	Unit	PVC / LSZH
Conductor DC Resistance	Ohms/100 m	Max. 14.8
Resistance Unbalance	%	Max. 2
Capacitance Unbalance	pF/100 m	1600(@ 800 or 1000Hz)
Characteristic Impedance	Ohms	100±5% @ 100MHz
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	4 x Cable Diameter
Packaging Type	1000ft (305m)	Reel-In-Box
Packaging Weight	lb/kft (kg/km)	20(30) PVC, 21(31) LSZH
Conductor Diameter / Material	-	26AWG, Solid Copper
Insulation Diameter / Material	Inch(mm)	0.03(0.8), HDPE
Outer Diameter / Material	Inch(mm)	0.23(5.8), PVC or LSZH
Safety Standard, Performance Standard	PVC-UL444 / CMX-UL1581, IEC 60332-1 / CM-UL1685, IEC 60332-3 / CMR-UL1666 / LSZH-IEC 61034, IEC 60754	
Approvals Performance	IEC 61156-6 Ed. 3 'Work Area CAT6A wiring performance' 'TIA-568.2-D' and 'ISO/IEC 11801' for channels of Max 70m or permanent links of max. 60m	

Category 6A U/UTP Cable

- Ultra Super Slim

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring (IEEE 802.5) up to 70m
- 10/100/1000/10G BASE-T (IEEE 802.3) up to 70m
- 155Mbps ATM up to 70m
- 100Mbps TP-PMD up to 70m
- ISDN, ADSL



Cable Type	1st Gen. Cat.6A	Super Slim Cat.6A	Ultra Super Slim Cat.6A
Diameter	26.4mm	19.5mm	17.4mm
Surface	100%	55%	43%

* Based on 7-cable bundle

Copper Cable Product Identifier

A	A	A	-	B	-	C	C	C	-	D	E	F	G	-	H	26AWG X	I	I	I	P	/	#	#
A : Cable Type			B : Cable Performance			C : Cable Category			D-G :Material & Cable Construction				H : Flame Retardant Grade			I : Number of Pairs			# : Jacket Color				
• UTP – U/UTP • FTP – F/UTP • SFP – SF/UTP • SSP – S/FTP • FSP – F/FTP			• A – Augmented • E – Enhanced • G – General			• C3G – CAT3 • C5G – CAT5 • C6G – CAT6 • C7G – CAT7			• D : Insulation material E(PE), F(FEP) • E : Number of jacket • F : Jacket material V(PVC), Z(LSZH) • G : Others				• X : CMX • M : CM • R : CMR (Riser) • P : CMP (Plenum)			• 004P – 4 pair • 025P – 25 pair			• GY : Gray • WH : White • BL : Blue • VI : Violet • OR : Orange • RD : Red • GN : Green • YL : Yellow • BK : Black				

Category 6A U/UTP Cable - Super Slim



Key Features

- High performance Category 6A cable to transmit full broadband and baseband video signals
- Meets ANSI/TIA-568-C.2 (or 568B) and IEEE802.3 to support maximum 10Gbit TX transmission, and a bandwidth up to 500MHz
- Performance guaranteed max. 6 connections in any length channel configuration up to 100m
- Products according to ISO/IEC 11801
- Product considered on PSACR-F and PSANEXT when cable bundling and provides optimized performance.
- Thinner cable diameter allows for higher efficiencies of work time, cost & space.
- Optimized solution for high density data centers and IBS buildings with thinner cable and a whole range of components

Guaranteed Channel Performances (6-connection)

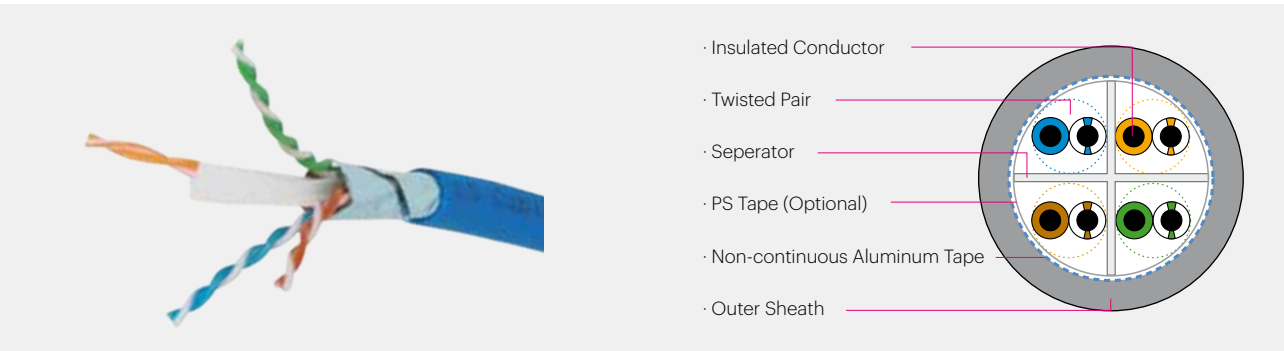
Frequency (MHz)	Attenuation (dB / 100m)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB / 100m)	PSELFEXT (dB / 100m)	Return Loss (dB)	PSANEXT (dB / 100m)	PSAELFEXT (dB / 100m)
1	2.3	65.0	62.0	63.3	60.3	19.0	67.0	67.0
4	4.2	63.0	60.5	51.2	48.2	19.0	67.0	65.0
8	5.8	58.2	55.6	45.2	42.2	19.0	67.0	58.9
10	6.5	56.6	54.0	43.3	40.3	19.0	67.0	57.0
16	8.2	53.2	50.6	39.2	36.2	18.0	67.0	52.9
20	9.2	51.6	49.0	37.2	34.2	17.5	67.0	51.0
25	10.2	50.0	47.3	35.3	32.3	17.0	66.0	49.0
31.25	11.5	48.4	45.7	33.4	30.4	16.5	65.1	47.1
62.5	16.4	43.4	40.6	27.3	24.3	14.0	62.0	41.1
100	20.9	39.9	37.1	23.3	20.3	12.0	60.0	37.0
200	30.1	34.8	31.9	17.2	14.2	9.0	55.5	31.0
250	33.9	33.1	30.2	15.3	12.3	8.0	54.0	29.0
300	37.4	31.7	28.8	13.7	10.7	7.2	52.8	27.5
400	43.7	28.7	25.8	11.2	8.2	6.0	51.0	25.0
500	49.3	26.1	23.2	9.3	6.3	6.0	49.5	23.0

* The figures larger than 67dB for PSANEXT and PSAELFEXT are information only.

Typical Channel Performance

Attenuation (dB / 100m)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB / 100m)	PSELFEXT (dB / 100m)	Return Loss (dB)	PSANEXT (dB / 100m)	PSAELFEXT (dB / 100m)
-10%	+5	+5	+8	+8	+5	+5	+8

Category 6A U/UTP Cable - Super Slim



Descriptions

- 4 pair twisted cable
- Cable diameter : 0.256in. (6.8mm), World's thinnest Category 6A Cable
- UL Listed CMR grade flame rating
- ETL Verified 6-Connector Channel
- Transmits full broadband and baseband video signals
- Electrical performance according to TIA-568.2-D
- Packaged on Wooden Reel
- Superior alien crosstalk mitigation
- RoHS compliant
- Applicable for LS 25-Year Extended Product Warranty
- Meets requirements of CPR (Dca s2-d2-a1) grade.

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000/10G BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- PoE++ (IEEE 802.3bt draft. Type 3(60W) or Type 4(100W))

Technical Details

Item	Unit	PVC / LSZH
Conductor DC Resistance	Ohms/100 m	Max. 9.38
Resistance Unbalance	%	5
Mutual Capacitance	nF/100 m	5.6
Capacitance Unbalance	pF/100 m	330
Characteristic Impedance	Ohms	100 ± 15%
Propagation Delay	ns/100 m	536 @ 500MHz
Delay Skew	ns	45
Nominal Velocity of Propagation	%	67
Installation Temperature	°C / °F	0~60/32~140
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	4 x Cable Diameter
Packaging Type	1000ft (305m)	Reel
Packaging Weight	lb/kft (kg/km)	34 (50)
Conductor Diameter / Material	-	23 AWG, Solid Copper
Insulation Diameter / Material	Inch (mm)	0.043(1.1), HDPE
Outer Diameter / Material	Inch (mm)	0.256in. (6.8mm), PVC or LSZH
Safety Standard, Performance Standard	PVC-UL444 / CMX-UL1581, IEC 60332-1 / CM-UL1685, IEC 60332-3 / CMR-UL1666 / LSZH-IEC 61034, IEC 60754	
Approvals Performance	TIA-568.2-D / ISO / IEC 11801“Performance specifications for 100 ohm Category 6A Cabling”	

Category 6A U/UTP Cable - Super Slim

Part Numbers		
Product Type	Part Number	Description
PVC	UTP-A-C6G-E1VF-X 0.5X004P/##	Category 6A U/UTP Cable 4-Pair Super Slim, 7mm, CMX rated
	UTP-A-C6G-E1VF-M 0.5X004P/##	Category 6A U/UTP Cable 4-Pair Super Slim, 7mm, CM rated
	UTP-A-C6G-E1VF-R 0.5X004P/##	Category 6A U/UTP Cable 4-Pair Super Slim, 7mm, CMR rated
LSZH	UTP-A-C6G-E1ZF-X 0.5X004P/##	Category 6A U/UTP Cable 4-Pair Super Slim, 7mm, LSZH
	UTP-A-C6G-E2ZF-C 0.5X004P/## (Double Sheath)	Category 6A U/UTP Cable 23AWG Double Sheath Cca(D)-s1a,da,a1
	UTP-A-C6G-E1ZF-C 0.5X004P/## (Single Sheath)	Category 6A U/UTP 23AWG Single Sheath Cca(S)-s1a,d1,a1

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier

A	A	A	-	B	-	C	C	C	-	D	E	F	G	-	H	0.5	X	I	I	I	P	/	#	#
A : Cable Type				B : Cable Performance			C : Cable Category				D-G : Material & Cable Construction				H : Flame Retardant Grade			I : Number of Pairs				# : Jacket Color		
• UTP – U/UTP • FTP – F/UTP • SFP – SF/UTP • SSP – S/FTP				• A – Augmented • E – Enhanced • G – General			• C3G – CAT3 • C5G – CAT5 • C6G – CAT6 • C7G – CAT7				• D : Insulation material E(PE), F(FEP) • E : Number of jacket • F : Jacket material V(PVC), Z(LSZH) • G : Others				• X : CMX • M : CM • R : CMR (Riser) • P : CMP (Plenum)			• 004P – 4 pair • 025P – 25 pair				• GY : Gray • WH : White • BL : Blue • VI : Violet • OR : Orange • RD : Red • GN : Green • YL : Yellow • BK : Black		

Category 6A U/UTP Cable - 1st Generation



Key Features

- High performance Category 6A cable to transmit full broadband and baseband video signals
- Meets ANSI/TIA-568-C.2 (or 568B) and IEEE802.3 to support maximum 10Gbit TX transmission, and a bandwidth up to 500MHz
- Performance guaranteed max. 6 connections in any length channel configuration up to 100m
- Products according to ISO/IEC 11801
- Product considered on PSACR-F and PSANEXT when cable bundling and provides optimized performance.
- Thinner cable diameter allows for higher efficiencies of work time, cost & space.
- Optimized solution for high density data centers and IBS buildings with thinner cable and a whole range of components

Guaranteed Channel Performances (4-Connection)

Frequency (MHz)	Attenuation (dB / 100m)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB / 100m)	PSELFEXT (dB / 100m)	Return Loss (dB)	PSANEXT (dB / 100m)	PSAELFEXT (dB / 100m)
1.00	2.3	65.0	62.0	63.3	60.3	19.0	82.0 *	77.9 *
4.00	4.2	63.0	60.5	51.2	48.2	19.0	76.0 *	65.9
8.00	5.9	58.2	55.6	45.2	42.2	19.0	73.0 *	59.8
10.00	6.6	56.6	54.0	43.3	40.3	19.0	72.0 *	57.9
16.00	8.3	53.2	50.6	39.2	36.2	18.0	70.0 *	53.8
20.00	9.3	51.6	49.0	37.2	34.2	17.5	69.0 *	51.9
25.00	10.5	50.0	47.3	35.3	32.3	17.0	68.0 *	49.9
31.25	11.7	48.4	45.7	33.4	30.4	16.5	67.1 *	48.0
62.50	16.9	43.4	40.6	27.3	24.3	14.0	64.0	42.0
100.00	21.7	39.9	37.1	23.3	20.3	12.0	62.0	37.9
200.00	31.7	34.8	31.9	17.2	14.2	9.0	57.5	31.9
250.00	35.9	33.1	30.2	15.3	12.3	8.0	56.0	29.9
300.00	39.8	31.7	28.8	13.7	10.7	7.2	54.8	28.4
400.00	46.9	26.8	23.8	11.2	8.2	6.0	53.0	25.9
500.00	53.4	22.0	19.0	9.3	6.3	6.0	51.5	23.9

* The figures larger than 67dB for PSANEXT and PSAELFEXT are information only.

Typical Channel Performance

Attenuation (dB / 100m)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB / 100m)	PSELFEXT (dB / 100m)	Return Loss (dB)	PSANEXT (dB / 100m)	PSAELFEXT (dB / 100m)
-10%	+3	+3	+5	+5	+5	+2	+2

Category 6A U/UTP Cable - 1st Generation



Descriptions

- 4 pair twisted cable
- Cable diameter : 0.331in. (8.4mm)
- UL Listed CMR & CMP grade flame rating
- Transmits full broadband and baseband video signals
- Electrical performance according to TIA-568.2-D
- Packaged on Wooden Reel
- Superior alien crosstalk mitigation
- RoHS compliant
- Applicable for LS 25-Year Extended Product Warranty
- Meets requirements of CPR (Dca s2-d2-a1) grade.

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000/10G BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- PoE++ (IEEE 802.3bt draft. Type 3(60W) or Type 4(100W))

Technical Details

Item	Unit	Non-Plenum	Plenum
Conductor DC Resistance	Ohms/100 m	Max. 9.38	Max. 9.38
Resistance Unbalance	%	5	5
Mutual Capacitance	nF/100 m	5.6	5.6
Capacitance Unbalance	pF/100 m	330	330
Characteristic Impedance	Ohms	100 ± 15%	100 ± 15%
Propagation Delay	ns/100 m	536 @ 500MHz	536 @ 500MHz
Delay Skew	ns	45	45
Nominal Velocity of Propagation	%	67	69
Installation Temperature	°C / °F	0~60 / 32~140	0~60 / 32~140
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176	-20 ~ 80 / -4 ~ 176
Bending Radius	-	4 x Cable Diameter	4 x Cable Diameter
Packaging Type	1000ft (305m)	Reel	Reel
Packaging Weight	lb/kft (kg/km)	43(65)	43(65)
Conductor Diameter / Material	-	23 AWG, Solid Copper	23 AWG, Solid Copper
Insulation Diameter / Material	Inch (mm)	0.045(1.15), HDPE	0.041(1.05)Ø, FEP
Outer Diameter / Material	Inch (mm)	0.331(8.4)Ø, PVC or LSZH (Low Smoke Zero Halogen)	0.335(8.5)Ø , PVC(Plenum Rated)
Safety Standard, Performance Standard	CMX-UL1581, IEC 60332-1 / CM-UL1685, IEC 60332-3, CMR-UL1666 / CMP-NFPA262 / LSZH-IEC 61034, IEC 60754		
Approvals Performance	TIA-568.2-D, ISO/IEC 11801 “Performance specifications for 100 ohm Category 6A Cabling”		

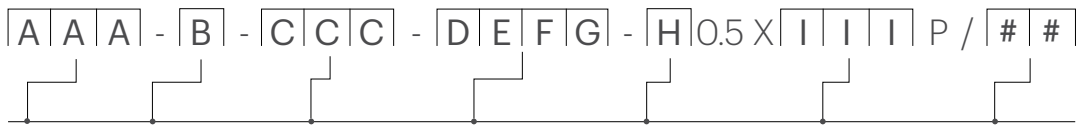
Category 6A U/UTP Cable - 1st Generation

Part Numbers

Product Type	Part Number	Description
PVC	UTP-A-C6G-E1VI-X 0.5X004P/##	Category 6A U/UTP Cable 4-Pair 1st Generation, CMX rated
	UTP-A-C6G-E1VI-M 0.5X004P/##	Category 6A U/UTP Cable 4-Pair 1st Generation, CM rated
	UTP-A-C6G-E1VI-R 0.5X004P/##	Category 6A U/UTP Cable 4-Pair 1st Generation, CMR rated
	UTP-A-C6G-F1VI-P 0.5X004P/##	Category 6A U/UTP Cable 4-Pair 1st Generation, CMP rated
LSZH	UTP-A-C6G-E1ZI-X 0.5X004P/##	Category 6A U/UTP Cable 4-Pair 1st Generation, LSZH

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier



- | | | | | | | |
|--|--|---|---|---|--|---|
| <ul style="list-style-type: none">• UTP – U/UTP• FTP – F/UTP• SFP – SF/UTP• SSP – S/FTP | <ul style="list-style-type: none">• A – Augmented• E – Enhanced• G – General | <ul style="list-style-type: none">• C3G – CAT3• C5G – CAT5• C6G – CAT6• C7G – CAT7 | <ul style="list-style-type: none">• D : Insulation material E(PE), F(FEP)• E : Number of jacket• F : Jacket material V(PVC), Z(LSZH)• G : Others | <ul style="list-style-type: none">• X : CMX• M : CM• R : CMR (Riser)• P : CMP (Plenum) | <ul style="list-style-type: none">• 004P – 4 pair• 025P – 25 pair | <ul style="list-style-type: none">• GY : Gray• WH : White• BL : Blue• VI : Violet• OR : Orange• RD : Red• GN : Green• YL : Yellow• BK : Black |
|--|--|---|---|---|--|---|

Category 6A F/UTP Cable



Descriptions

- 4 pair twisted cable
- Cable diameter : 0.283in. (7.2mm)
- UL Listed/Verified
- Transmits full broadband and baseband video signals
- Electrical performance according to TIA-568.2-D
- Packaged on Wooden Reel
- Superior alien crosstalk mitigation
- RoHS compliant
- Applicable for LS 25-Year Extended Product Warranty
- Meets requirements of CPR (Dca s2-d2-a1) grade.

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000/10G BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- PoE++ (IEEE 802.3bt draft. Type 3(60W) or Type 4(100W))

Technical Details

Item	Unit	PVC / LSZH
Conductor DC Resistance	Ohms/100 m	Max. 9.38
Resistance Unbalance	%	5
Mutual Capacitance	nF/100 m	5.6
Capacitance Unbalance	pF/100 m	330
Characteristic Impedance	Ohms	100 ± 15%
Propagation Delay	ns/100 m	536 @ 500MHz
Delay Skew	ns	45
Nominal Velocity of Propagation	%	67
Installation Temperature	°C / °F	0~60/32~140
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	5 x Cable Diameter
Packaging Type	1000fit (305m)	Reel
Packaging Weight	lb/kft (kg/km)	43(65)
Conductor Diameter / Material	-	23 AWG, Solid Copper
Insulation Diameter / Material	Inch (mm)	0.043(1.1), HDPE
Outer Diameter / Material	Inch (mm)	0.283(7.2)Ø, PVC or LSZH(Low Smoke Zero Halogen)
Safety Standard, Performance Standard	CMX-UL1581, IEC 60332-1 / CM-UL1685, IEC 60332-3 / CMR-UL1666 / CMP-NFPA262 / LSZH-IEC 61034, IEC 60754	
Approvals Performance	TIA-568.2-D, ISO/IEC 11801 “Performance specifications for 100 ohm Category 6A Cabling”	

Category 6A F/UTP Cable

Part Numbers

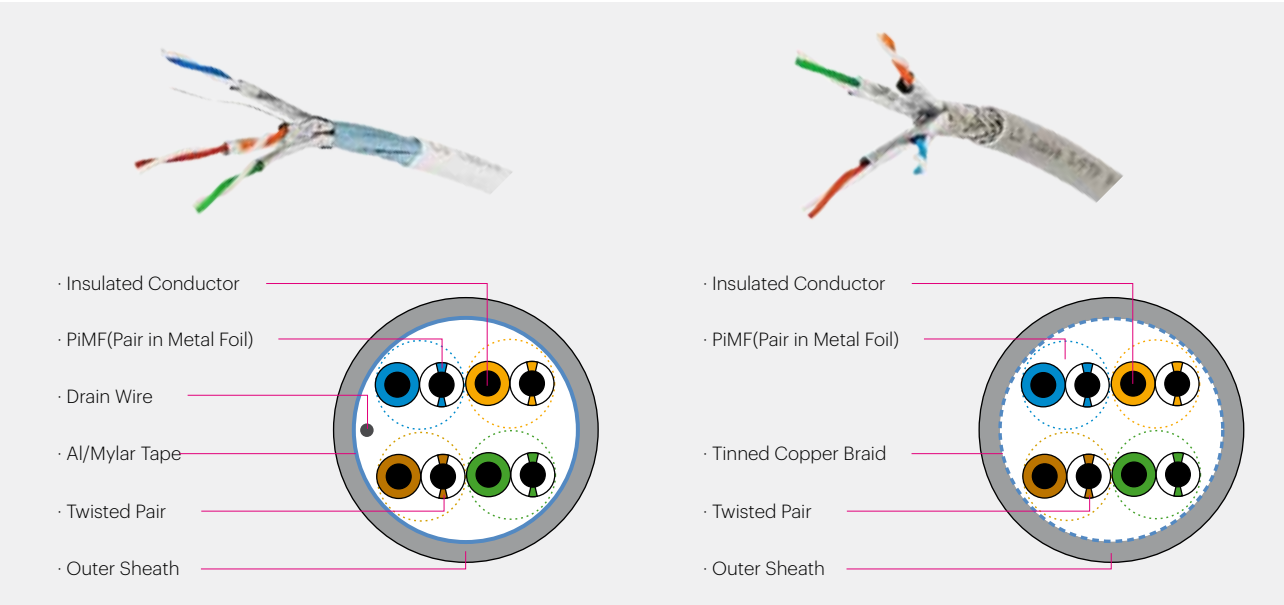
Product Type	Part Number	Description
PVC	FTP-A-C6G-E1VN-X 0.5X004P/##	Category 6A F/UTP Cable 4-Pair, CMX rated
	FTP-A-C6G-E1VN-M 0.5X004P/##	Category 6A F/UTP Cable 4-Pair, CM rated
	FTP-A-C6G-E1VN-R 0.5X004P/##	Category 6A F/UTP Cable 4-Pair, CMR rated
	FTP-A-C6G-F1VN-P 0.5X004P/##	Category 6A F/UTP Cable 4-Pair, CMP rated
LSZH	FTP-A-C6G-E1ZN-X 0.5X004P/##	Category 6A F/UTP Cable 4-Pair, LSZH

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier

A	A	A	-	B	-	C	C	C	-	D	E	F	G	-	H	0.5 X	I	I	I	P	/	#	#
A : Cable Type				B : Cable Performance			C : Cable Category			D-G :Material & Cable Construction					H : Flame Retardant Grade		I : Number of Pairs				# : Jacket Color		
• UTP – U/UTP				• A – Augmented			• C3G – CAT3			• D : Insulation material E(PE), F(FEP)					• X : CMX		• 004P – 4 pair				• GY : Gray		
• FTP – F/UTP				• E – Enhanced			• C5G – CAT5			• E : Number of jacket					• M : CM		• 025P – 25 pair				• WH : White		
• SFP – SF/UTP				• G – General			• C6G – CAT6			• F : Jacket material V(PVC), Z(LSZH)					• R : CMR (Riser)						• BL : Blue		
• SSP – S/FTP							• C7G – CAT7			• G : Others					• P : CMP (Plenum)						• VI : Violet		
																					• OR : Orange		
																					• RD : Red		
																					• GN : Green		
																					• YL : Yellow		
																					• BK : Black		

Category 6A F/FTP & S/FTP Cable



Descriptions

- 4 pair twisted cable
- Cable diameter : 0.303in. (7.7mm)
- Transmits full broadband and baseband video signals
- Electrical performance according to IEC 61156-5
- RoHS compliant
- Applicable for LS 25-Year Extended Product Warranty

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000/10G BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- PoE++ (IEEE 802.3bt draft. Type 3(60W) or Type 4(100W))

Technical Details

Item	Unit	PVC / LSZH
DC Resistance	Ohms/100 m	Max. 9.5
Resistance Unbalance	%	≤2
Capacitance Unbalance(Pair to Grd.)	pF/km(800~1000Hz)	≤1600
Characteristic Impedance	Ohms	100±5% (at 100MHz)
Propagation Delay	ns/100 m	536 @ 500MHz
Delay Skew	ns	≤25
Nominal Velocity of Propagation	%	67
Installation Temperature	°C / °F	0~60 / 32~140
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	5 x Cable Diameter
Packaging Type	1000fit (305m)	Reel
Packaging Weight	lb/kft (kg/km)	43(65)
Conductor Diameter / Material	-	23 AWG, Solid Copper
Insulation Diameter / Material	Inch (mm)	0.053(1.35), Foamed PE
Outer Diameter / Material	Inch (mm)	0.303(7.7)Ø, PVC or LSZH(Low Smoke Zero Halogen)
Safety Standard, Performance Standard	CMX-UL1581, IEC 60332-1 / CM-UL1685, IEC 60332-3 / LSZH-IEC 61034, IEC 60754	
Approvals Performance	IEC 61156-5, ISO/IEC 11801 “Performance specifications for 100 ohm Category 6A Cabling”	

Category 6A F/FTP & S/FTP Cable

Part Numbers(F/FTP Category 6A)

Product Type	Part Number	Description
PVC	FSP-A-C6G-E1VN-X 0.5X004P/##	Category 6A F/FTP Cable 4-Pair, CMX rated
	FSP-A-C6G-E1VN-M 0.5X004P/##	Category 6A F/FTP Cable 4-Pair, CM rated
LSZH	FSP-A-C6G-E1ZN-X 0.5X004P/##	Category 6A F/FTP Cable 4-Pair, LSZH

Part Numbers(S/FTP Category 6A)

Product Type	Part Number	Description
PVC	SSP-A-C6G-E1VN-X 0.5X004P/##	Category 6A S/FTP Cable 4-Pair, CMX rated
	SSP-A-C6G-E1VN-M 0.5X004P/##	Category 6A S/FTP Cable 4-Pair, CM rated
LSZH	SSP-A-C6G-E1ZN-X 0.5X004P/##	Category 6A S/FTP Cable 4-Pair, LSZH

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier



A : Cable Type	B : Cable Performance	C : Cable Category	D-G :Material & Cable Construction	H : Flame Retardant Grade	I : Number of Pairs	# : Jacket Color
• UTP – U/UTP • FTP – F/UTP • SFP – SF/UTP • SSP – S/FTP • FSP – F/FTP	• A – Augmented • E – Enhanced • G – General	• C3G – CAT3 • C5G – CAT5 • C6G – CAT6 • C7G – CAT7	• D : Insulation material E(PE), F(FEP) • E : Number of jacket • F : Jacket material V(PVC), Z(LSZH) • G : Others	• X : CMX • M : CM • R : CMR (Riser) • P : CMP (Plenum)	• 004P – 4 pair • 025P – 25 pair	• GY : Gray • WH : White • BL : Blue • VI : Violet • OR : Orange • RD : Red • GN : Green • YL : Yellow • BK : Black

Category 6A S/FTP GSWB Cable



Descriptions

- 4 pair twisted cable
- Cable diameter : 12.5mm Nominal
- Galvanized Steel Wire Braided, LSZH sheathed, Category 6A
- ABS Approved
- Transmits full broadband and baseband video signals
- Flame Retardant according to IEC 60332-3-22
- Electrical Performance according to IEC 61156-5
- Meets the International standard as per ISO/IEC 11801
- RoHS compliant

Applications

- Horizontal Distribution & Backbone Cabling
- Communication in Offshore & Marine
- 4/16 Mbps Token Ring (IEEE 802.5)
- 10/100/1000/10G BASE-T (IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- PoE++ (IEEE 802.3bt draft. Type 3(60W) or Type 4(100W))

Technical Details

Item	Unit	PVC / LSZH
DC Resistance	Ohms/100 m	Max. 9.5
DC Resistance Unbalance	%	≤2
Capacitance Unbalance(Pair to Grd.)	pF/km(800~1000Hz)	≤1600
Insulation Resistance	MΩ·m	≥ 5000
Characteristic Impedance	Ω	100±5% (at 100MHz)
Propagation Delay	ns/100 m	536 (@ 500MHz)
Delay Skew	ns	≤25
Nominal Velocity of Propagation	%	69%
Installation Temperature	°C / °F	0~60 / 32~140
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	Min. 5 x Cable Diameter
Packaging Type	-	Reel
Conductor Diameter / Material	-	23 AWG, Solid Copper
Insulation Diameter / Material	Inch (mm)	0.053(1.35), Foamed PE
Outer Diameter / Material	Inch (mm)	0.492(12.5) / LSZH
Safety Standard, Performance Standard	IEC 60332-3-22, IEC 61034, IEC 60754	
Approvals Performance	IEC 61156-5 "Performance specifications for 100ohm Category 6A Cabling"	

Part Numbers

Product Number	Description
SSP-A-C6G-E2ZG-X 0.5X004P/BK	Category 6A S/FTP GSWB Cable 4-Pair, CMX, CM rated, Black Color

Category 6A Patch Panel



Descriptions

- This 1U patch panel includes cable management, accessories and full installation instructions
- Complies with the requirements set out in TIA-568.2-D
- Support max. 6 connection channels
- Easy cable routing and bundling through improved rear cable management
- LS 25 year warranty is available when installed with all channel with LS Brand by LSI (Authorized installer by LS)

Approvals

- TIA-568.2-D Category 6A , ISO/IEC 11801 Class EA
- FCC CFR 47 Parts 68
- T568A/T568B

Technical Details

Electrical / Mechanical Characteristics

- Current Rating : 1.5 Amps
- Insulation Resistance : 500 Megaohm
- DC Resistance : 0.1 ohm Max.
- Voltage : 150 Vac Max.
- Insertion Life : 750 Mating Cycles
- Plug Retention Force : 20 lbs (89N)
- Operation temperature : -40°C-68°C (-40°F-154°F)
- Humidity : 10%-90% RH
- Compatible cable : 23-26 AWG Solid Wire

Materials

- Panel : SPCC black coating, t=1.6mm (0.063in)
- Hanger : SPCC nickel electroplating, t=1.6mm (0.063in)
- Cable Manager : SPCC black powder coating finish
- Frame : Acrylonitrile Butadiene Styrene (ABS resin) + Polycarbonate (PC resin), UL 94V-0 rated, Black
- Jack Housing : PC, UL 94V-0 Plastic
- IDC Holder : PC, UL 94V-0
- IDC Terminal : Phosphor Bronze, plated with tin over nickel underplate
- Jack Contacts : Phosphor bronze flat wire, plated with 1.27µm(50µin) thick hard gold on contact area over nickel underplate

Part Numbers

Product Number	Description
LS-PPP-UC-24P-E4-WM-C+LS-MJ-UC6A-WH-ERI	24-Port 1U horizontal UTP empty panel with 6 in-1 module & wire management
LS-PPP-SC-24P-E4-WM-C+LS-MJ-SC6A-ERI	24-Port 1U horizontal STP empty panel with 6 in-1 module & wire management
LS-PP-24P-E-LWM + LS-MJ-UC6A-WH-ERI	24-Port Unshielded Modular type Patch Panel with Wire Management & Unshielded Enhanced Rear IDC Category 6A Modular Jack, Silk printing label
LS-PP-24P-E-LWM + LS-MJ-SC6A-ERI	24-Port Unshielded Modular type Patch Panel with Wire Management & Shielded Enhanced Rear IDC Category 6A Modular Jack, Silk printing label

Category 6A Modular Jack



LS-MJ-UC6A-XX-ERI



LS-MJ-UC6A-xx-ERD



LS-MJ-SC6A-ERI, LS-MJ-SC6A-ERI

Descriptions

LS Simple™ Category 6A modular jacks are desinged based on interna-tiona standard, and easily can be terminated using punching down tool or easy termination tool.

The LS Simple™ Modular Jack comes with the ability to T568A or T568B configuration and fully complies with TIA-568.2-D Category 6A trans-mission performance.

- Comply with Category 6A performance level based on TIA-568.2-D
- Support max. 6 connection channels
- Universal design and label supports both T568A and T568B wiring
- IDC Connector allows quick and easy installation of 23-26 AWG cable
- Optimal performance is achieved with LS Simple™ Category 6A patch cords
- Slide door type for dust proof on unused port is applicable (if necessary)
- 2-way semi-conductive IDC cover for crosstalk mitigation at adjacent port in HD system configuration

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000/10G BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G

Part Numbers

Product Number	Description
LS-MJ-UC6A-XX-ERI	Category 6A Unshielded Keystone Jack, Slim Enhanced Rear IDC type
LS-MJ-SC6A-XX-ERI	Category 6A Shielded Keystone Jack, Slim Enhanced Rear IDC type
LS-MJ-UC6A-XX-ERD	Category 6A Unshielded Keystone Jack, Slim ERI type with door

* XX denotes available colors : WH(White), BL(Blue), RD(Red), BK(Black), etc.

Technical Details

Electrical / Mechanical Characteristics

- Current Rating : 1.5 Amps
- Insulation Resistance : 500 Megaohm
- DC Resistance : 0.1 ohm Max.
- Voltage : 150 Vac Max.
- Insertion Life : 750 Mating Cycles
- Plug Retention Force : 20 lbs (89N)
- Temperature : -40°C-68°C(-40°F-154°F)
- Humidity : 10%-90% RH
- IDC Accept : 23-26 AWG Solid Wire

Materials

- Jack Housing : PC, UL 94V-0
- IDC Holder : PC, UL 94V-0
- IDC Terminal : Phosphor Bronze, plated with tin over nickel underplate
- Jack Contacts : Phosphor bronze flat wire, plated with 1.27µm(50µin) thick hard gold on contact area over nickel underplate

Approvals

- TIA-568.2-D Category 6A, ISO/IEC 11801 Class EA
- FCC CFR 47 Parts 68
- T568A/T568B

Category 6A Patch Cord



LS-PC-UC6A(L)-XX-C-YYY



LS-PC-SC6A(L)-XX-C-YYY



Color Clip (Optional)

Descriptions

LS Simple™ Category 6A patch cords are factory terminated, providing the quality required to support your channel requirements. They are fully booted and have clip protection for simple removal.

- Comply with TIA-568.2-D performance levels
- Support max. 6 connection channels

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000/10G BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G

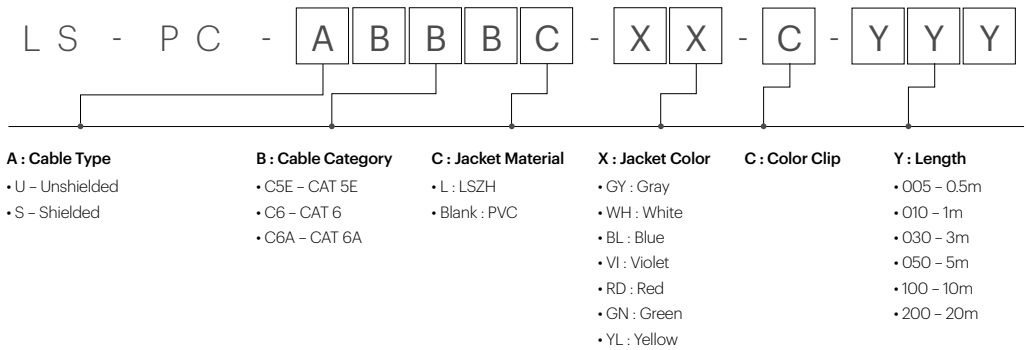
Part Numbers

Product Type	Product Number	Description
PVC	LS-PC-UC6A-XX-C-YYY	Unshielded Category 6A Patch Cord with T568B wiring, PVC Cable (CM rated), Color Clip option
	LS-PC-SC6A-XX-C-YYY	Shielded Category 6A Patch Cord with T568B wiring, PVC Cable (CM rated), Color Clip option
LSZH	LS-PC-UC6AL-XX-C-YYY	Unshielded Category 6A Patch Cord with T568B wiring, LSZH Cable, Color Clip option
	LS-PC-SC6AL-XX-C-YYY	Shielded Category 6A Patch Cord with T568B wiring, LSZH Cable, Color Clip option

* XX denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

* YY denotes available length : 005(0.5m), 010(1m), 030(3m) ~200(20m)

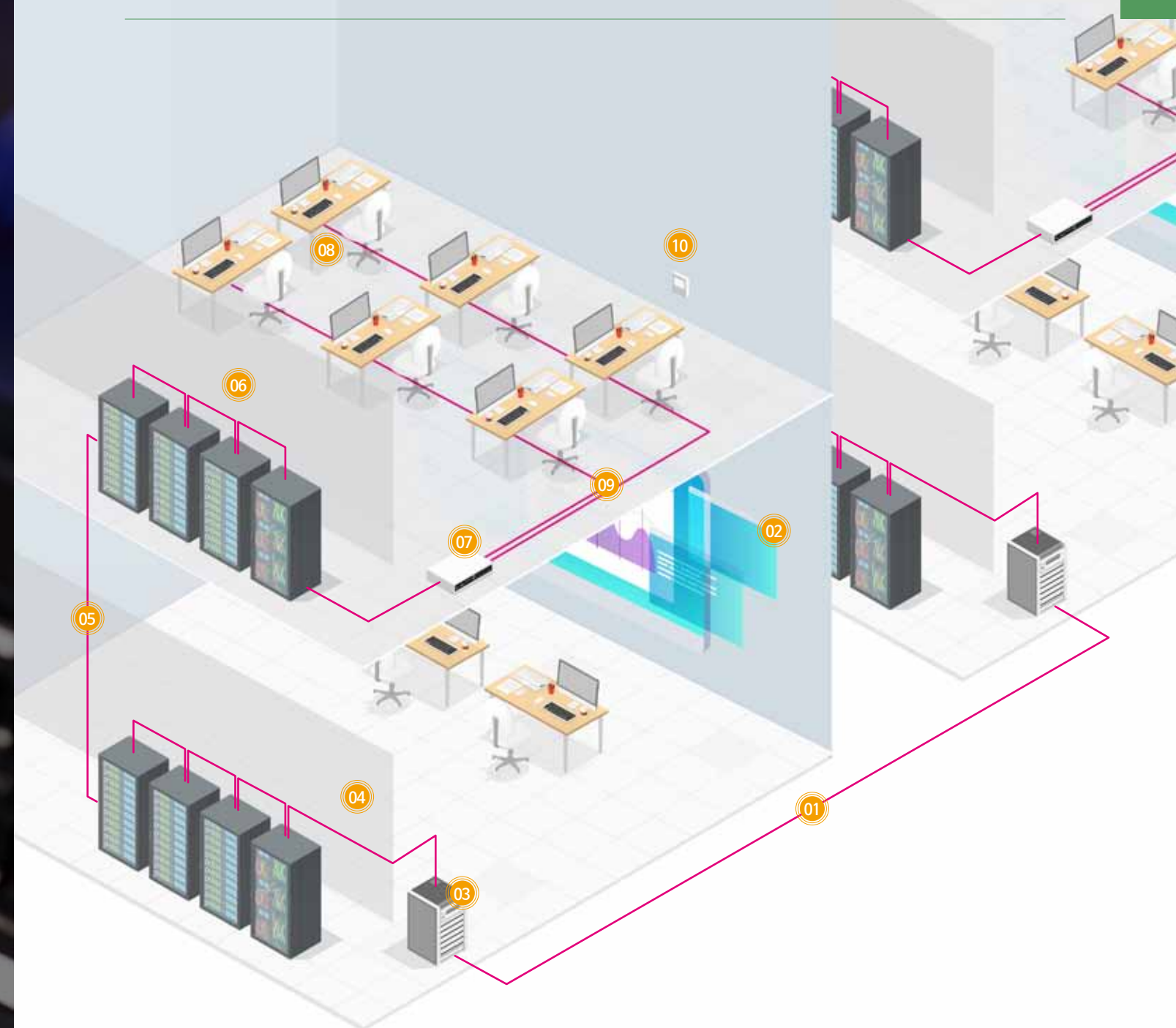
Patch Cord Product Identifier



Simple™ Copper Systems - Category 6

Category 6 U/UTP Cable
Category 6 F/UTP Cable
Category 6 SF/UTP Cable
Category 6 SF/UTP Cable (Carbon Wire Braid)
Category 6 Patch Panel
Category 6 Modular Jack
Category 6 Patch Cord

Telecommunication Structure



01. Backbone Cabling(Inter-BC) 02. Administration(TIA/EIA-606) 03. Entrance Facilities(EF)
04. Equipment Room(ER) 05. Backbone Cabling(Intra-BC) Vertical Cabling 06. Telecommunication Rooms(TR)
07. Consolidation Point(CP) 08. Work Area(WA) 09. Horizontal Cabling 10. Outlet

Simple™ Cat.6 Cable

U/UTP Cat.6 Cable 4pair
F/UTP Cat.6 Cable 4pair
SF/UTP Cat.6 Cable 4pair

Simple™ Cat.6 Patch Panel

Unshielded Modular type
Patch Panel with Wire Management
Shielded Modular type
Patch Panel with Wire Management

Simple™ Cat.6 Modular Jacks

Unshielded Modular Jack
Shielded Modular Jack

Simple™ Cat.6 Patch Cord

Unshielded Category 6 Patch Cord
Shielded Category 6 Patch Cord

Category 6 Cabling System



Key Features

- High performance Category 6 cable to transmit full broadband and baseband video signals
- Meets TIA-568.2-D and IEEE802.3 to support maximum 1Gbit TX transmission and a bandwidth up to 250MHz
- Performance guaranteed max. 4 connections in any length channel configuration up to 100m
- Optimized solution for high density data centers and IBS buildings with thinner cable and a whole range of components

Guaranteed Channel Performances

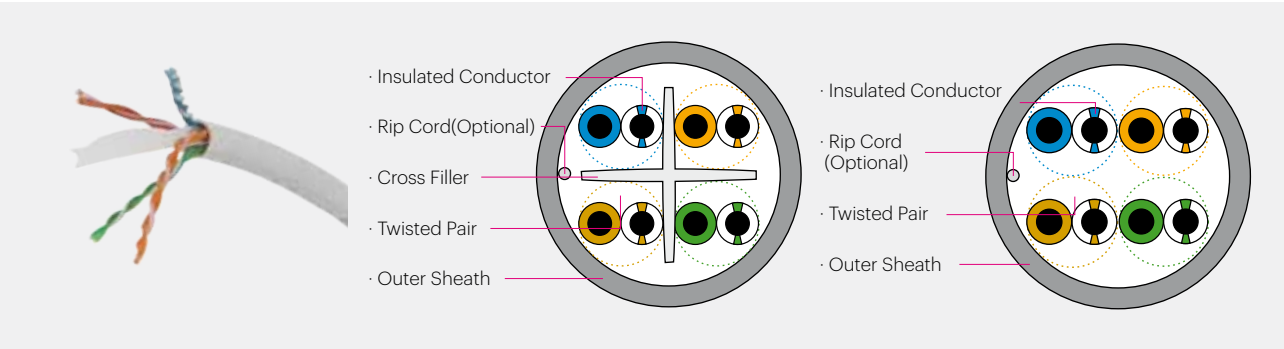
Frequency (MHz)	Attenuation (dB / 100m)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB / 100m)	PSELFEXT (dB / 100m)	Return Loss (dB)
1.00	2.1	65.0	62.0	63.3	60.3	19.0
4.00	4.0	63.0	60.5	51.2	48.2	19.0
8.00	5.7	58.2	55.6	45.2	42.2	19.0
10.00	6.3	56.6	54.0	43.3	40.3	19.0
16.00	8.0	53.2	50.6	39.2	36.2	18.0
20.00	9.0	51.6	49.0	37.2	34.2	17.5
25.00	10.1	50.0	47.3	35.3	32.3	17.0
31.25	11.4	48.4	45.7	33.4	30.4	16.5
62.50	16.5	43.4	40.6	27.3	24.3	14.0
100.00	21.3	39.9	37.1	23.3	20.3	12.0
200.00	31.5	34.8	31.9	17.2	14.2	9.0
250.00	35.9	33.1	30.2	15.3	12.3	8.0

* The figures larger than 67dB for PSANEXT and PSAELFEXT are information only.

Typical Channel Performance

Attenuation (dB / 100m)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB / 100m)	PSELFEXT (dB / 100m)	Return Loss (dB)
-10%	+8	+8	+10	+10	+5

Category 6 U/UTP Cable



Descriptions

- 4 pair twisted cable
- ETL Verified & UL Listed
- Transmits full broadband and baseband video signals
- Available with higher flame retardant grade(Plenum Cable)
- Electrical performance according to TIA-568.2-D
- Packaged in a Box (Reelex or RIB)
- RoHS compliant
- Applicable for LS 25-Year Extended Product Warranty
- Meets requirements of CPR : Eca grade for PVC jacket / Dca grade for LSZH jacket
- UV Resistance to UL 1581 and -40°C Cold Resistance to GR-3164 (Optional)

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000 BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- PoE & PoE+ (IEEE 802.3af Type 1(15.4W), IEEE 802.3at Type 2(30W))

Technical Details

Item	Unit	Non-Plenum	Plenum
Conductor DC Resistance	Ohms/100 m	Max. 9.38	Max. 9.38
Resistance Unbalance	%	5	5
Mutual Capacitance	nF/100 m	5.6	5.6
Capacitance Unbalance	pF/100 m	330	330
Characteristic Impedance	Ohms	100 ± 15%	100 ± 15%
Propagation Delay	ns/100 m	536 @ 250MHz	536 @ 250MHz
Delay Skew	ns	45	45
Nominal Velocity of Propagation	%	67	69
Operating Temperature	°C / °F	-20~60 / -4~140 (-40~60 / -40~140 in case of Cold Resistance)	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176	-20 ~ 80 / -4 ~ 176
Bending Radius	-	4 x Cable Diameter	4 x Cable Diameter
Packaging Type	1000ft (305m)	Reelex / Reel In a Box/Reel	Reelex / Reel In a Box/Reel
Packaging Weight	lb/kft (kg/km)	24(36), Cross filler	26(39), Cross filler
Conductor Diameter / Material	-	23~24 AWG, Solid Copper	23~24 AWG, Solid Copper
Insulation Diameter / Material	Inch (mm)	0.037 (0.95), HDPE	0.037 (0.95), FEP
Outer Diameter / Material	Inch (mm)	0.236 (6.0), PVC or LSZH - Cross filler 0.213(5.4), PVC or LSZH - Non-filler	0.228 (5.8), LS-PVC - Cross filler 0.209(5.3), LS-PVC - Non-filler
Safety Standard, Performance Standard	UL444 / CMX-UL1581, IEC 332-1 / CM-UL1685, IEC 332-3 / CMR-UL1666 / CMP-NFPA262 / LSZH-IEC 61034, IEC 60754		
Approvals Performance	TIA-568.2-D, ISO/IEC 11801 “Performance specifications for 4pairs 100 ohm Category 6 Cabling”		

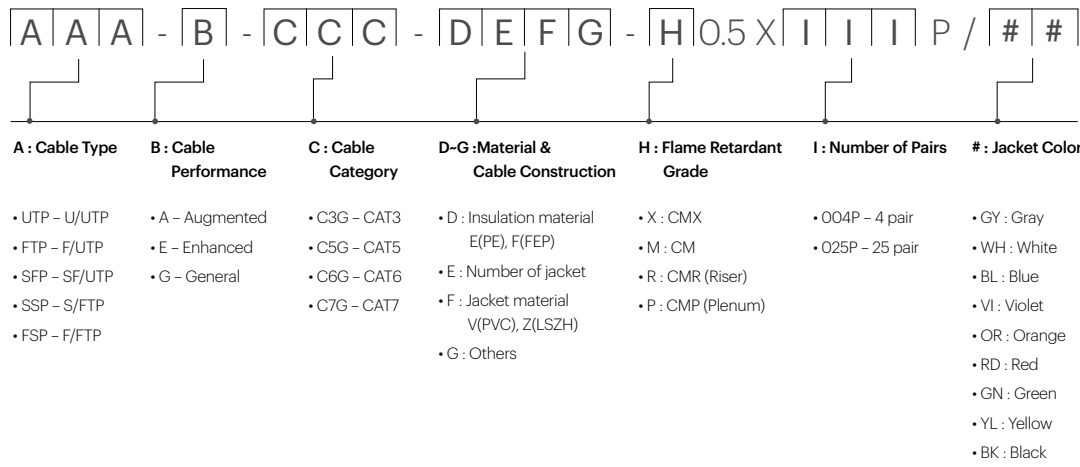
Category 6 U/UTP Cable

Part Numbers (Cross-filler)

Product Type	Product Number	Description
PVC	UTP-G-C6G-E1VN-X 0.5X004P/##	Category 6 U/UTP Cable 4-Pair, CMX rated
	UTP-G-C6G-E1VN-M 0.5X004P/##	Category 6 U/UTP Cable 4-Pair, CM rated
	UTP-G-C6G-E1VN-R 0.5X004P/##	Category 6 U/UTP Cable 4-Pair, CMR rated
	UTP-G-C6G-F1VN-P 0.5X004P/##	Category 6 U/UTP Cable 4-Pair, CMP rated
	UTP-G-C6G-E2VV-X 0.5X004P/##	Category 6 U/UTP Cable 4-Pair, Double Sheath, UV (Eca)
LSZH	UTP-G-C6G-E1ZN-X 0.5X004P/##	Category 6 U/UTP Cable 4-Pair, LSZH
	UTP-G-C6G-E1ZN-C 0.5X004P/##	Category 6 U/UTP 23/24AWG Cca-s1a,d0,a1
	UTP-G-C6G-E1ZN-B 0.5X004P/##	Category 6 U/UTP 23/24AWG B2ca-s1a,d0,a1

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier



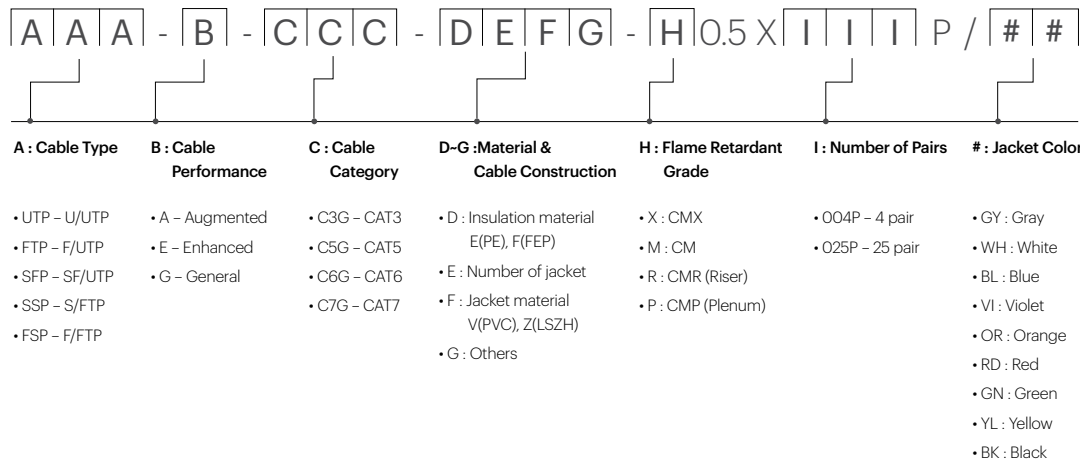
Category 6 U/UTP Cable

Part Numbers (Non-filler)

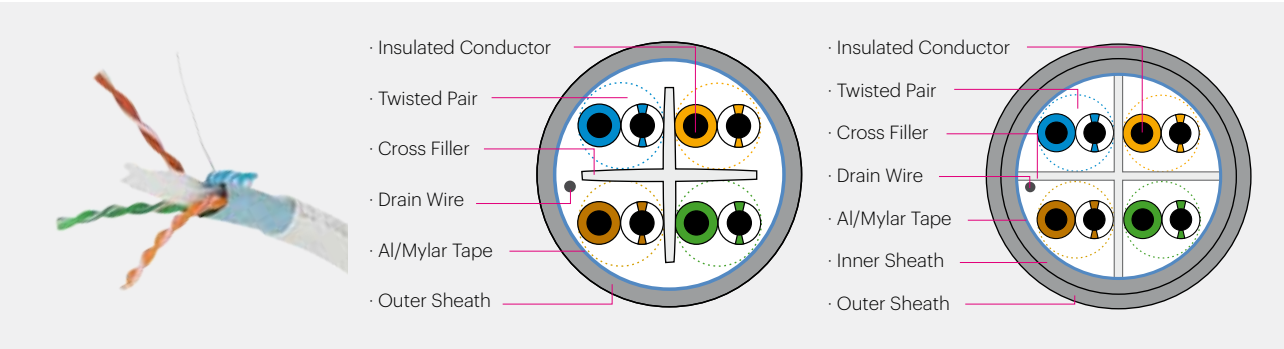
Product Type	Product Number	Description
PVC	UTP-G-C6G-E1VX-X 0.5X004P/##	Category 6 U/UTP Cable 4-Pair, CMX rated
	UTP-G-C6G-E1VX-M 0.5X004P/##	Category 6 U/UTP Cable 4-Pair, CM rated
	UTP-G-C6G-E1VX-R 0.5X004P/##	Category 6 U/UTP Cable 4-Pair, CMR rated
	UTP-G-C6G-F1VX-P 0.5X004P/##	Category 6 U/UTP Cable 4-Pair, CMP rated
	UTP-G-C6G-E1ZX-X 0.5X004P/##	Category 6 U/UTP Cable 4-Pair, LSZH
LSZH	UTP-G-C6G-E1ZX-X 0.5X004P/## (Non-Filler)	Category 6 U/UTP 23AWG B2ca-s1a,d0,a1

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier



Category 6 F/UTP Cable



Descriptions

- 4 pair twisted cable
- Cable diameter : 0.283 in. (7.2 mm)
- UL Listed & Verified
- Transmits full broadband and baseband video signals
- Electrical performances according to TIA-568.2-D
- Packaged on Wooden Reel
- RoHS compliant
- Applicable for LS 25-Year Extended Product Warranty
- Superior transmission performance by LS specialized coding program for shield effectiveness and crosstalk mitigation
- HDBase-T Certified
- 2K/4K resolution video signals transmitted up to 100m
- Superior AV signals transmitted with by 100% shielded structure
- Meets the requirements of CPR(Eca) grade.

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000 BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- PoE++ (IEEE 802.3bt draft. Type 3(60W))

Technical Details

Item	Unit	PVC/LSZH
Conductor DC Resistance	Ohms/100 m	Max. 9.38
Resistance Unbalance	%	5
Mutual Capacitance	nF/100 m	5.6
Capacitance Unbalance	pF/100 m	330
Characteristic Impedance	Ohms	100 ± 15%
Propagation Delay	ns/100 m	536 @ 250MHz
Delay Skew	ns	45
Nominal Velocity of Propagation	%	67
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	5 x Cable Diameter
Packaging Type	1000ft (305m)	Reel
Packaging Weight	lb/kft (kg/km)	36 (54)
Conductor Diameter / Material	-	23~24 AWG, Solid Copper
Insulation Diameter / Material	Inch (mm)	0.043 (1.10), HDPE
Outer Diameter / Material	Inch (mm)	0.283 (7.2), PVC or LSZH (Low Smoke Zero Halogen)
Safety Standard, Performance Standard	UL444 / CMX-UL1581, IEC 332-1 / CM-UL1685, IEC 332-3 / CMR-UL1666 / LSZH-IEC 61034, IEC 60754	
Approvals Performance	TIA-568.2-D, ISO/IEC 11801 “Performance specifications for 4pairs 100 ohm Category 6 Cabling”	

Category 6 F/UTP Cable

Part Numbers

Product Type	Product Number	Description
PVC	FTP-G-C6G-E1VN-X 0.5X004P/###	Category 6 F/UTP Cable 4-Pair, CMX rated
	FTP-G-C6G-E1VN-M 0.5X004P/###	Category 6 F/UTP Cable 4-Pair, CM rated
	FTP-G-C6G-E1VN-R 0.5X004P/###	Category 6 F/UTP Cable 4-Pair, CMR rated
	FTP-G-C6G-E2VV-X 0.5X004P/###	Category 6 F/UTP Cable 4-Pair, Double Sheath, UV (Eca)
LSZH	FTP-G-C6G-E1ZN-X 0.5X004P/###	Category 6 F/UTP Cable 4-Pair, LSZH

* ### denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier

A	A	A	-	B	-	C	C	C	-	D	E	F	G	-	H	0.5	X	I	I	I	P	/	#	#
A : Cable Type				B : Cable Performance			C : Cable Category			D-G :Material & Cable Construction					H : Flame Retardant Grade			I : Number of Pairs				# : Jacket Color		
• UTP – U/UTP				• A – Augmented			• C3G – CAT3			• D : Insulation material E(PE), F(FEP)					• X : CMX			• 004P – 4 pair				• GY : Gray		
• FTP – F/UTP				• E – Enhanced			• C5G – CAT5			• E : Number of jacket					• M : CM			• 025P – 25 pair				• WH : White		
• SFP – SF/UTP				• G – General			• C6G – CAT6			• F : Jacket material V(PVC), Z(LSZH)					• R : CMR (Riser)							• BL : Blue		
• SSP – S/FTP							• C7G – CAT7			• G : Others					• P : CMP (Plenum)							• VI : Violet		
• FSP – F/FTP																						• OR : Orange		
																						• RD : Red		
																						• GN : Green		
																						• YL : Yellow		
																						• BK : Black		

Category 6 SF/UTP Cable



Descriptions

- 4 pair twisted cable
- Cable diameter : 0.283 in. (7.2 mm)
- UL Listed & Verified
- Transmits full broadband and baseband video signals
- Electrical performances according to TIA-568.2-D
- Packaged on Wooden Reel
- RoHS compliant
- Applicable for LS 25-Year Extended Product Warranty
- Superior transmission performance by LS specialized coding program for shield effectiveness and crosstalk mitigation
- Carbon Fiber Braided Screen is available for an environment requiring light weight and high flexibility.

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000 BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- PoE++ (IEEE 802.3bt draft. Type 3(60W))

Technical Details

Item	Unit	PVC/LSZH
Conductor DC Resistance	Ohms/100 m	Max. 9.38
Resistance Unbalance	%	5
Mutual Capacitance	nF/100 m	5.6
Capacitance Unbalance	pF/100 m	330
Characteristic Impedance	Ohms	100 ± 15%
Propagation Delay	ns/100 m	536 @ 250MHz
Delay Skew	ns	45
Nominal Velocity of Propagation	%	67
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	5 x Cable Diameter
Packaging Type	1000ft(305m)	Reel
Packaging Weight	lb/kft (kg/km)	40 (60)
Conductor Diameter / Material	-	23 ~ 24 AWG, Solid Copper
Insulation Diameter / Material	inch (mm)	0.043 (1.10), HDPE
Outer Diameter / Material	inch (mm)	0.295 (7.5), PVC or LSZH
Safety Standard, Performance Standard	UL444 / CMX-UL1581, IEC 332-1 / CM-UL1685, IEC 332-3 / CMR-UL1666 / LSZH-IEC 61034, IEC 60754	
Approvals Performance	TIA-568.2-D, ISO/IEC 11801 "Performance specifications for 4pairs 100 ohm Category 6 Cabling"	

Category 6 SF/UTP Cable

Part Numbers

Product Type	Product Number	Description
PVC	SFP-G-C6G-E1VN-X 0.5X004P/###	Category 6 SF/UTP Cable 4-Pair, CMX rated
	SFP-G-C6G-E1VN-M 0.5X004P/###	Category 6 SF/UTP Cable 4-Pair, CM rated
	SFP-G-C6G-E1VN-R 0.5X004P/###	Category 6 SF/UTP Cable 4-Pair, CMR rated
LSZH	SFP-G-C6G-E1ZN-X 0.5X004P/###	Category 6 SF/UTP Cable 4-Pair, LSZH

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier

A	A	A	-	B	-	C	C	C	-	D	E	F	G	-	H	0.5	X	I	I	I	P	/	#	#
A : Cable Type				B : Cable Performance			C : Cable Category			D-G :Material & Cable Construction					H : Flame Retardant Grade			I : Number of Pairs					# : Jacket Color	
• UTP – U/UTP				• A – Augmented			• C3G – CAT3			• D : Insulation material E(PE), F(FEP)					• X : CMX			• 004P – 4 pair					• GY : Gray	
• FTP – F/UTP				• E – Enhanced			• C5G – CAT5			• E : Number of jacket					• M : CM			• 025P – 25 pair					• WH : White	
• SFP – SF/UTP				• G – General			• C6G – CAT6			• F : Jacket material V(PVC), Z(LSZH)					• R : CMR (Riser)								• BL : Blue	
• SSP – S/FTP							• C7G – CAT7			• G : Others					• P : CMP (Plenum)								• VI : Violet	
• FSP – F/FTP																							• OR : Orange	
																							• RD : Red	
																							• GN : Green	
																							• YL : Yellow	
																							• BK : Black	

Category 6 SF/UTP Cable (Carbon Wire Braid)



Descriptions

- 4 pair twisted cable
- UL Listed
- Cable diameter : 0.299 in. (7.6mm)
- Capable of handling full broadband and baseband video signals
- Electrical performances comply with IEC 61156-5
- Specialized print legend contains footage from 1000 to 0, Metric from 305 to 0 and dual marking footage and metric
- Wooden reel is standard, so wire pulls through reel for easy access
- RoHS compliant
- Qualifies for the LS 25-Year Extended Product Warranty and Applications Assurance when included as part of a registered LS Category 6 Channel
- Meet superior transmission performance by using LS dedicated coding program for shield effectiveness and crosstalk mitigation based on long-term cable design & process technology

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring (IEEE 802.5)
- 10/100/1000 BASE-T (IEEE 802.3)
- 155 Mbps ATM
- 100 Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G
- PoE++ (IEEE 802.3bt Type 3)

Technical Details

Item	Unit	PVC/LSZH
Conductor DC Resistance	Ohms/100 m	Max. 9.5
Resistance Unbalance	%	5
Mutual Capacitance	nF/100 m	5.6
Capacitance Unbalance	pF/100 m	330
Characteristic Impedance	Ohms	100 ± 15%
Propagation Delay	ns/100 m	536 @ 250MHz
Delay Skew	ns	45
Nominal Velocity of Propagation	%	67
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	5 x Cable Diameter
Packaging Type	1000ft(305m)	Reel
Packaging Weight	lb/kft (kg/km)	32 (48)
Conductor Diameter / Material	-	23 AWG, Solid Copper
Insulation Diameter / Material	inch (mm)	0.043 (1.10), HDPE
Outer Diameter / Material	inch (mm)	0.299 (7.6), PVC or LSZH
Safety Standard, Performance Standard	UL 444 / CMX-UL1581, IEC 332-1 / CM-UL1685, IEC 332-3 / CMR-UL1666 / LSZH-IEC 61034, IEC 60754	
Approvals Performance	IEC 61156-5, ISO/IEC 11801 "Performance specifications for 4pairs 100ohm Category 6 Cabling"	

Category 6 SF/UTP Cable (Carbon Wire Braid)

Part Numbers

Product Type	Product Number	Description
PVC	CFP-G-C6G-E1VN-X 0.5X004P/###	Category 6 SF/UTP (Carbon Wire Braid), Cable 4-Pair, CMX rated
	CFP-G-C6G-E1VN-M 0.5X004P/###	Category 6 SF/UTP (Carbon Wire Braid), Cable 4-Pair, CM rated
	CFP-G-C6G-E1VN-R 0.5X004P/###	Category 6 SF/UTP (Carbon Wire Braid), Cable 4-Pair, CMR rated
LSZH	CFP-G-C6G-E1ZN-X 0.5X004P/BL/###	Category 6 SF/UTP (Carbon Wire Braid), Cable 4-Pair, CMX rated

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier

A	A	A	-	B	-	C	C	C	-	D	E	F	G	-	H	0.5 X	I	I	I	P	/	#	#
A : Cable Type				B : Cable Performance			C : Cable Category			D-G :Material & Cable Construction					H : Flame Retardant Grade		I : Number of Pairs				# : Jacket Color		
• UTP – U/UTP				• A – Augmented			• C3G – CAT3			• D : Insulation material E(PE), F(FEP)					• X : CMX		• 004P – 4 pair				• GY : Gray		
• FTP – F/UTP				• E – Enhanced			• C5G – CAT5			• E : Number of jacket					• M : CM		• 025P – 25 pair				• WH : White		
• SFP – SF/UTP				• G – General			• C6G – CAT6			• F : Jacket material V(PVC), Z(LSZH)					• R : CMR (Riser)						• BL : Blue		
• SSP – S/FTP							• C7G – CAT7			• G : Others					• P : CMP (Plenum)						• VI : Violet		
• FSP – F/FTP																					• OR : Orange		
																					• RD : Red		
																					• GN : Green		
																					• YL : Yellow		
																					• BK : Black		

Category 6 Patch Panel



LS-PP-UC6-24P-WM-EC



LS-PP-24P-E-LWM + LS-MJ-UCC6-WH-ERI



LS-PP-24P-E-LWM + LS-MJ-SC6-ERI

Descriptions

- These PCB 1U 24 ports patch panels includes cable management, accessories and full installation instructions.
- It fully complies with the requirements of TIA-568.2-D
- UL Listed
- Support max. 6 connection channels
- Easy cable routing and bundling through improved rear cable management
- Electrical performances comply with TIA-568.2-D (Category 6 / Class E level)

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring (IEEE 802.5)
- 10/100/1000 BASE-T (IEEE 802.3)
- 155Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G

Technical Details

Electrical / Mechanical Characteristics

- Current Rating : 1.5 Amps
- Insulation Resistance : 500 Megaohm
- DC Resistance : 0.1 ohm Max
- 150 Vac Max.
- Insertion Life : 750 Mating Cycles
- Temperature : -40°C ~ 68°C (-40°F ~ 154°F)
- Humidity : 10% ~ 90% RH
- IDC Accept : 23-26 AWG Solid Wire

Materials

- Housing : High impact Flame Retardant Plastic UL 94V-O Rated
- Spring Wire : Phosphor Bronze plated with 50μ-inch (1.27μm) thick Gold over 100μ-inch (2.54μm) thick Nickel
- IDC Plastic : Polycarbonate or ABS, UL 94V-O rated over
- IDC Contact : Phosphor Bronze plated with 100μ-inch (2.54μm) minimum thick Tin
- Panel : Steel with Black Painting

Part Numbers

Product Number	Description
LS-PP-UC6-24P-WM-EC	24-Port Cat.6 Unshielded Patch Panel with Wire Management
LS-PP-24P-E-LWM + LS-MJ-UCC6-WH-ERI	24-Port Modular type Patch Panel with Wire Management & Unshielded Enhanced Rear IDC Category 6 Modular Jack
LS-PP-24P-E-LWM + LS-MJ-SC6-ERI	24-Port Modular type Patch Panel with Wire Management & Shielded Enhanced Rear IDC Category 6 Modular Jack

Category 6 Modular Jack



LS-MJ-UC(C)6-xx-ERI



LS-MJ-UC6-xx-ERD



LS-MJ-SC6-ERI

Descriptions

- LS Simple™ Category 6 modular jacks are desinged based on internationa standard, and easily can be terminated using punching down tool or easy termination tool.
- The LS Simple™ Modular Jack comes with the ability to T568A or T568B configuration and fully complies with TIA-568.2-D Category 6 transmission performance.
- Electrical performances comply with TIA-568.2-D (Category 6 performance levels)
- Support max. 6 connection channels
- Universal design and label supports both T568A and T568B wiring
- IDC Connector allows quick and easy installation of 23-26 AWG cable
- Optimal performance is achieved with LS Simple™ Category 6 patch cords
- Slide door type for dust proof on unused port is applicable (if necessary)
- 2-way slim IDC cover applicable in HD system configuration

Technical Details

Electrical / Mechanical Characteristics

- Current Rating : 1.5 Amps
- Insulation Resistance : 500 Mega-ohm Min.
- DC Resistance : 0.1 ohm Max.
- Voltage : 150 Vac Max.
- Insertion Life : 2000 Mating Cycles
- Plug Retention Force : 20 lbs (89N)
- Temperature : -40°C ~ 68°C (-40°F ~ 154°F)
- Humidity : 10% ~ 90% RH
- IDC Accept : 23-26 AWG Solid Wire

Materials

- Jack Housing : PC, UL 94V-O
- IDC Holder : PC, UL 94V-O, White
- IDC Terminal : Phosphor Bronze, plated with tin over nickel underplate
- Jack Contacts : Phosphor bronze flat wire, plated with 1.27μm(50μin) thick hard gold on contact area over nickel underplate

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring (IEEE 802.5)
- 10/100/1000 BASE-T (IEEE 802.3)
- 155Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- ATM LAN 1.2G

Part Numbers

Product Number	Description
LS-MJ-UC(C)6-XX-ERI	Category 6 Unshielded Keystone Jack, Enhanced Rear IDC type
LS-MJ-SC6-ERI	Category 6 Shielded Keystone Jack, Enhanced Rear IDC type
LS-MJ-UC6-XX-ERD	Category 6 Unshielded Keystone Jack, ERI type with door

* XX denotes available colors : WH(White), BL(Blue), RD(Red), BK(Black), etc.

Category 6 Patch Cord



LS-PC-UC6(L)-XX-C-YYY



LS-PC-SC6(L)-XX-C-YYY



Color Clip (Optional)

Descriptions

- LS Simple™ Category 6 patch cords are factory terminated, providing the quality required to support your channel requirements.
- It is fully booted and have clip protection for simple removal.
- Comply with Category 6 / Class E performance levels
- Support max. 6 connection channels

Technical Details

Electrical / Mechanical Characteristics

- Current Rating : 1.5 Amps
- Contact Resistance : 20 milli-ohm
- Insertion Resistance : 500 Mega-ohm
- Insertion Life : 750 Mating Cycles
- Plug Retention Force : 20 lbs (89N)
- Temperature : -40°C ~ 68°C (-40°F ~ 154°F)
- Humidity : 10% ~ 90% RH

Materials

- Housing : Polycarbonate, UL 94V-2 Rated
- Cable Jacket : PVC, LSZH

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring (IEEE 802.5)
- 10/100/1000 BASE-T (IEEE 802.3)
- 155Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL

Approvals

- TIA-568.2-D Category 5e, ISO/IEC 11801 Class D
- FCC CFR 47 Parts 68
- T568A/T568B

Category 6 Patch Cord

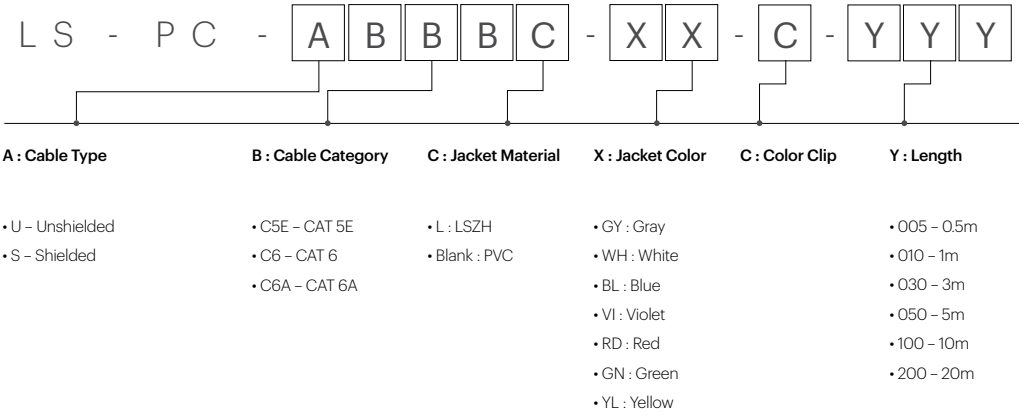
Part Numbers

Product Type	Part Number	Description
PVC	LS-PC-UC6-XX-C-YYY	Category 6 Unshielded Patch Cord with T568B wiring, PVC CM rated ,Color Clip option
	LS-PC-SC6-XX-C-YYY	Category 6 Shielded Patch Cord with T568B wiring, PVC CM rated, Color Clip option
LSZH	LS-PC-UC6L-XX-C-YYY	Category 6 Unshielded Patch Cord with T568B wiring, LSZH, Color Clip option
	LS-PC-SC6L-XX-C-YYY	Category 6 Shielded Patch Cord with T568B wiring, LSZH, Color Clip option

* XX denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

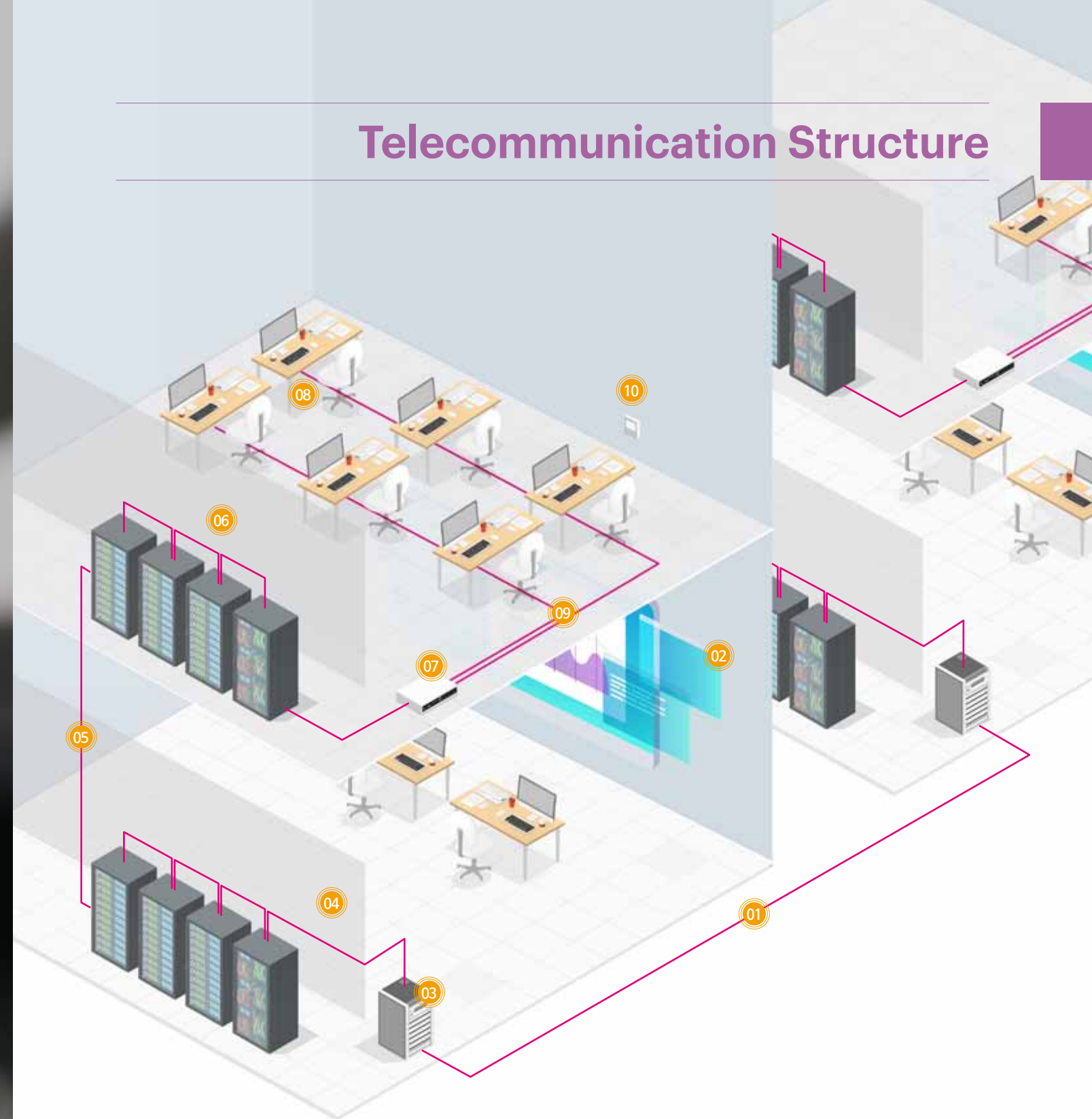
* YYY denotes available length : 005(0.5m), 010(1m), 030(3m) ~200(20m).

Patch Cord Product Identifier



Simple™ Copper Systems - Category 5e

Category 5e U/UTP Cable
Category 5e U/UTP 25-Pair Cable
Category 5e F/UTP Cable
Category 5e SF/UTP Cable
Category 5e Patch Panel
Category 5e Modular Jack
Category 5e Patch Cord
Category 5e 110 Patching System



Simple™ Cat.5e Cables

U/UTP Cat.5e Cable 4Pair
U/UTP Cat.5e Cable 25Pair
F/UTP Cat.5e Cable 4Pair
SF/UTP Cat.5e Cable 4Pair

Simple™ Cat.5e Patch Panels

Unshielded Modular type
patch panel with wire management
Shielded Patch Panel with wire
management

Simple™ Cat.5e Modular Jacks

Unshielded Modular Jack
Shielded Modular Jack

Simple™ Cat.5e Patch Cords

Unshielded Patch Cord
Shielded Patch Cord

Simple™ Cat.5e 110 Patching Systems

110 Block
110 Patch cord
Jumper Through

Category 5e Cabling System



Key Features

- High performance Category 5e cable to transmit full broadband and baseband video signals
- Compliance with TIA-568.2-D and IEEE802.3 1000Base-T
- Meets ISO/IEC 11801 and TIA-568.2-D to support maximum 100Mbit/s or 1Gbit/s transmission and a bandwidth up to 100MHz
- Optimized solution for IBS buildings with a whole range of components including shielded/unshielded construction.

Guaranteed Channel Performances

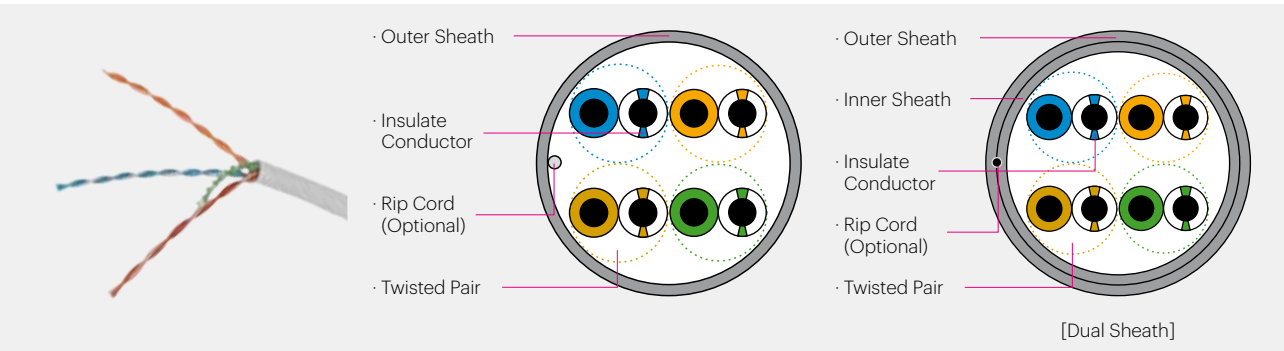
Frequency (MHz)	Attenuation (dB / 100m)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB / 100m)	PSELFEXT (dB / 100m)	Return Loss (dB)
1.00	2.2	60.0	57.0	57.4	54.4	17.0
4.00	4.5	53.5	50.5	45.4	42.4	17.0
8.00	6.3	48.6	45.6	39.3	36.3	17.0
10.00	7.1	47.0	44.0	37.4	34.4	17.0
16.00	9.1	43.6	40.6	33.3	30.3	17.0
20.00	10.2	42.0	39.0	31.4	28.4	17.0
25.00	11.4	40.3	37.3	29.4	26.4	16.0
31.25	12.9	38.7	35.7	27.5	24.5	15.1
62.50	18.6	33.6	30.6	21.5	18.5	12.1
100.00	24.0	30.1	27.1	17.4	14.4	10.0

* The figures larger than 67dB for PSANEXT and PSAELFEXT are information only.

Typical Channel Performance

Attenuation (dB / 100m)	NEXT (dB)	PSNEXT (dB)	ELFEXT (dB / 100m)	PSELFEXT (dB / 100m)	Return Loss (dB)
-10%	+6	+6	+8	+8	+4

Category 5e U/UTP Cable



Descriptions

- 4 pair twisted cable
- Cable diameter : 0.193inch (4.9 mm)
- ETL Verified & UL Listed
- Supports Fast Ethernet/Gigabit Ethernet, up to 155 Mb/s
- Approved design for global commercial network installation
- Optimized solution for sustainable network infrastructure
- Electrical performances to TIA-568.2-D
- RoHS compliant
- Applicable for LS 25-Year Extended Product Warranty
- Meets the requirements of CPR Dca grade (PVC jacket)

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring (IEEE 802.5)
- 10/100/1000 BASE-T (IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- PoE & PoE+ (IEEE 802.3af Type 1(15.4W), IEEE 802.3at Type 2(30W))

Technical Details

Item	Unit	Non-Plenum	Plenum
Conductor DC Resistance	Ohms/100 m	Max. 9.38	Max. 9.38
Resistance Unbalance	%	5	5
Mutual Capacitance	nF/100 m	5.6	5.6
Capacitance Unbalance	pF/100 m	330	330
Characteristic Impedance	Ohms	100 ± 15%	100 ± 15%
Propagation Delay	ns/100 m	538 @ 100MHz	538 @ 100MHz
Delay Skew	ns	45	45
Nominal Velocity of Propagation	%	67	68
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176	-20 ~ 80 / -4 ~ 176
Bending Radius	-	4 x Cable Diameter	4 x Cable Diameter
Packaging Type	1000ft (305m)	Reelex / RIB	Reelex / RIB
Packaging Weight	lb/kft (kg/km)	17 (25)	20 (30)
Conductor Diameter / Material	-	24 AWG, Solid Copper	24 AWG, Solid Copper
Insulation Diameter / Material	inch (mm)	0.035(0.90) Ø, HDPE	0.034(0.86) Ø, FEP
Outer Diameter / Material	inch (mm)	0.193(4.9) Ø, PVC or LSZH (Low Smoke Zero Halogen)	0.185(4.7) Ø, LS-PVC(Plenum)
Safety Standard, Performance Standard	UL444 / CMX-UL1581, IEC 332-1 / CM-UL1685, IEC 332-3 / CMR-UL1666 / CMP-NFPA262 / LSZH-IEC 60754, IEC 61034		
Approvals Performance	TIA-568.2-D, ISO/IEC 11801 "Performance specifications for 4Pairs 100 ohm Category 5E / Class D Cabling"		

Category 5e U/UTP Cable

Part Numbers

Product Type	Product Number	Description
PVC	UTP-E-C5G-E1VN-X 0.5X004P/##	Category 5E U/UTP 4-Pair Cable, CMX rated, Eca
	UTP-E-C5G-E1VN-M 0.5X004P/##	Category 5E U/UTP 4-Pair Cable, CM rated
	UTP-E-C5G-E1VN-R 0.5X004P/##	Category 5E U/UTP 4-Pair Cable, CMR rated
	UTP-E-C5G-E1VN-P 0.5X004P/##	Category 5E U/UTP 4-Pair Cable, CMP rated
	UTP-E-C5G-E2VV-X 0.5X004P/BK	Category 5E U/UTP 4-Pair Cable, Double Sheath, UV (Eca)
LSZH	UTP-E-C5G-E1ZN-X 0.5X004P/##	Category 5E U/UTP 4-Pair Cable, CMX rated, Dca s2,d2,a1

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier

A	A	A	-	B	-	C	C	C	-	D	E	F	G	-	H	0.5	X	I	I	I	P	/	#	#
A : Cable Type				B : Cable Performance			C : Cable Category				D-G :Material & Cable Construction					H : Flame Retardant Grade			I : Number of Pairs				# : Jacket Color	
• UTP – U/UTP • FTP – F/UTP • SFP – SF/UTP • SSP – S/FTP • FSP – F/FTP				• A – Augmented • E – Enhanced • G – General			• C3G – CAT3 • C5G – CAT5 • C6G – CAT6 • C7G – CAT7				• D : Insulation material E(PE), F(FEP) • E : Number of jacket • F : Jacket material V(PVC), Z(LSZH) • G : Others					• X : CMX • M : CM • R : CMR (Riser) • P : CMP (Plenum)			• 004P – 4 pair • 025P – 25 pair				• GY : Gray • WH : White • BL : Blue • VI : Violet • OR : Orange • RD : Red • GN : Green • YL : Yellow • BK : Black	

Category 5e U/UTP 25-Pair Cable



Descriptions

- Cable diameter : 0.5 inch (12.7 mm)
- Supports Fast Ethernet/Gigabit Ethernet, up to 155 Mb/s
- Approved design for global commercial network installation
- Optimized solution for sustainable network infrastructure
- Electrical performances to TIA-568.2-D
- RoHS compliant
- Applicable for LS 25-Year Extended Product Warranty

Applications

- Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000 BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL

Technical Details

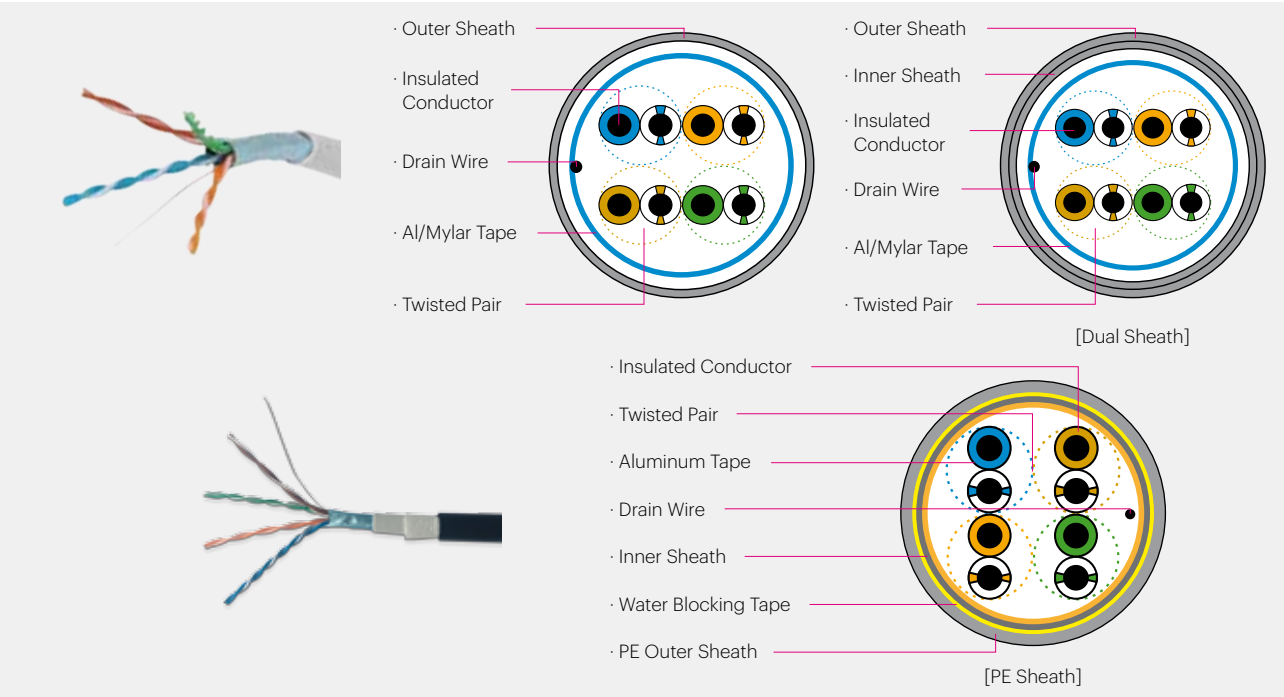
Item	Unit	PVC/LSZH
Conductor DC Resistance	Ohms/100 m	Max. 9.38
Resistance Unbalance	%	5
Mutual Capacitance	nF/100 m	5.6
Capacitance Unbalance	pF/100 m	330
Characteristic Impedance	Ohms	100 ± 15%
Propagation Delay	ns/100 m	538 @ 100MHz
Delay Skew	ns	45
Nominal Velocity of Propagation	%	67
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	10 x Cable Diameter
Packaging Type	1000ft (305m)	Reel / Drum
Packaging Weight	lb/kft (kg/km)	124 (185)
Conductor Diameter / Material	-	24 AWG, Solid Copper
Insulation Diameter / Material	inch (mm)	0.037(0.95) Ø, HDPE
Outer Diameter / Material	inch (mm)	0.5(12.7) Ø, PVC or LSZH(Low Smoke Zero Halogen)
Safety Standard, Performance Standard	UL444 / CMX-UL1581, IEC 332-1 / CM-UL1685, IEC 332-3 / CMR-UL1666 / LSZH-IEC 60754, IEC 61034	
Approvals Performance	TIA-568.2-D, ISO/IEC 11801 “Performance specifications for 25Pairs 100 ohm Category 5e / Class D Cabling”	

Part Numbers

Product Type	Product Number	Description
PVC	UTP-E-C5G-E1VN-X 0.5X025P/##	Category 5E U/UTP 25-Pair Cable, CMX rated
	UTP-E-C5G-E1VN-M 0.5X025P/##	Category 5E U/UTP 25-Pair Cable, CM rated
	UTP-E-C5G-E1VN-R 0.5X025P/##	Category 5E U/UTP 25-Pair Cable, CMR rated
LSZH	UTP-E-C5G-E1ZN-X 0.5X025P/##	Category 5E U/UTP 25-Pair Cable, CMX rated

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Category 5e F/UTP Cable



Descriptions

- 4 pair twisted cable
- Cable diameter : 0.236 inch (6.0 mm)
- ETL Verified & UL Listed
- Supports Fast Ethernet/Gigabit Ethernet, up to 155 Mb/s
- Approved design for global commercial network installation
- Optimized solution for sustainable network infrastructure
- Electrical performances to TIA-568.2-D
- RoHS compliant
- Applicable for LS 25-Year Extended Product Warranty
- Meets requirements of CPR : Eca grade for PVC jacket / Dca grade for LSZH jacket

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring (IEEE 802.5)
- 10/100/1000 BASE-T (IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- PoE & PoE+ (IEEE 802.3af Type 1(15.4W), IEEE 802.3at Type 2(30W))

Technical Details

Item	Unit	PVC/LSZH
Conductor DC Resistance	Ohms/100 m	Max. 9.38
Resistance Unbalance	%	5
Mutual Capacitance	nF/100 m	5.6
Capacitance Unbalance	pF/100 m	330
Characteristic Impedance	Ohms	100 ± 15%
Propagation Delay	ns/100 m	538 @ 100MHz
Delay Skew	ns	45
Nominal Velocity of Propagation	%	67
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	5 x Cable Diameter
Packaging Type	1000ft (305m)	Reel In a Box / Reel
Packaging Weight	lb/kft (kg/km)	30 (46)
Conductor Diameter / Material	-	24 AWG, Solid Copper
Insulation Diameter / Material	inch (mm)	0.043(1.08) Ø, HDPE
Outer Diameter / Material	inch (mm)	0.236(6.0) Ø, PVC or LSZH(Low Smoke Zero Halogen)
Safety Standard, Performance Standard	UL444 / CMX-UL1581, IEC 332-1 / CM-UL1685, IEC 332-3 / CMR-UL1666 / LSZH-IEC 60754, IEC 61034	
Approvals Performance	TIA-568.2-D, ISO/IEC 11801 "Performance specifications for 4Pairs 100 ohm Category 5E / Class D Cabling"	

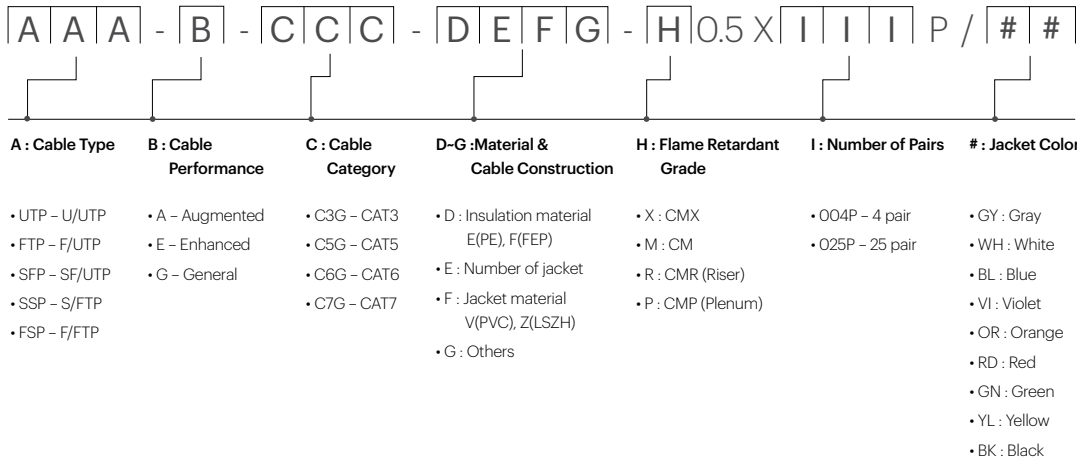
Category 5e F/UTP Cable

Part Numbers

Product Type	Product Number	Description
PVC	FTP-E-C5G-E1VN-X 0.5X004P/##	Category 5E F/UTP 4-Pair Cable, CMX rated, Eca
	FTP-E-C5G-E1VN-M 0.5X004P/##	Category 5E F/UTP 4-Pair Cable, CM rated
	FTP-E-C5G-E1VN-R 0.5X004P/##	Category 5E F/UTP 4-Pair Cable, CMR rated
	FTP-E-C5G-E2VV-X 0.5X004P/##	Category 5E F/UTP 4-Pair Cable, Double Sheath, UV (Eca)
LSZH	FTP-E-C5G-E1ZN-X 0.5X004P/##	Category 5E F/UTP 4-Pair Cable, LSZH, Eca

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier



Category 5e SF/UTP Cable



Descriptions

- 4 pair twisted cable
- Cable diameter : 0.256 in. (6.5 mm)
- Supports Fast Ethernet/Gigabit Ethernet, up to 155 Mb/s
- Approved design for global commercial network installation
- Optimized solution for sustainable network infrastructure
- Electrical performances according to TIA-568.2-D
- Packaged on Wooden Reel
- RoHS compliant
- Applicable for LS 25-Year Extended Product Warranty
- Carbon Fiber Braided Screen is available for an environment requiring light weight and High Flexibility.

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring (IEEE 802.5)
- 10/100/1000 BASE-T (IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL
- PoE & PoE+ (IEEE 802.3af Type 1(15.4W), IEEE 802.3at Type 2(30W))

Technical Details

Item	Unit	PVC/LSZH
Conductor DC Resistance	Ohms/100 m	Max. 9.38
Resistance Unbalance	%	5
Mutual Capacitance	nF/100 m	5.6
Capacitance Unbalance	pF/100 m	330
Characteristic Impedance	Ohms	100 ± 15%
Propagation Delay	ns/100 m	538 @ 100MHz
Delay Skew	ns	45
Nominal Velocity of Propagation	%	67
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	5 x Cable Diameter
Packaging Type	1000ft (305m)	Reel
Packaging Weight	lb/kft (kg/km)	38 (57)
Conductor Diameter / Material	-	24 AWG, Solid Copper
Insulation Diameter / Material	inch (mm)	0.043(1.08) Ø, HDPE
Outer Diameter / Material	inch (mm)	0.256(6.5) Ø, PVC or LSZH(Low Smoke Zero Halogen)
Safety Standard, Performance Standard	UL444 / CMX-UL1581, IEC 332-1 / CM-UL1685, IEC 332-3 / CMR-UL1666 / LSZH-IEC 60754, IEC 61034	
Approvals Performance	TIA-568.2-D, ISO/IEC 11801 “Performance specifications for 4Pairs 100 ohm Category 5E / Class D Cabling”	

Category 5e SF/UTP Cable

Part Numbers

Product Type	Product Number	Description
PVC	SFP-E-C5G-E1VN-X 0.5X004P/##	Category 5E SF/UTP 4-Pair Cable, CMX rated
	SFP-E-C5G-E1VN-M 0.5X004P/##	Category 5E SF/UTP 4-Pair Cable, CM rated
	SFP-E-C5G-E1VN-R 0.5X004P/##	Category 5E SF/UTP 4-Pair Cable, CMR rated
LSZH	SFP-E-C5G-E1ZN-X 0.5X004P/##	Category 5E SF/UTP Cable 4-Pair Cable, LSZH

* ## denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

Copper Cable Product Identifier

A A A - B - C C C - D E F G - H 0.5 X I I I P / # #						
A : Cable Type	B : Cable Performance	C : Cable Category	D-G:Material & Cable Construction	H : Flame Retardant Grade	I : Number of Pairs	# : Jacket Color
• UTP – U/UTP • FTP – F/UTP • SFP – SF/UTP • SSP – S/FTP • FSP – F/FTP	• A – Augmented • E – Enhanced • G – General	• C3G – CAT3 • C5G – CAT5 • C6G – CAT6 • C7G – CAT7	• D : Insulation material E(PE), F(FEP) • E : Number of jacket • F : Jacket material V(PVC), Z(LSZH) • G : Others	• X : CMX • M : CM • R : CMR (Riser) • P : CMP (Plenum)	• 004P – 4 pair • 025P – 25 pair	• GY : Gray • WH : White • BL : Blue • VI : Violet • OR : Orange • RD : Red • GN : Green • YL : Yellow • BK : Black

Category 5e Patch Panel



LS-PP-UC5E-24P-EC



LS-PP-24P-E-LWM + LS-MJ-UC5E-WH-ERI



LS-PP-24P-E-LWM + LS-MJ-SC5E-RIDC

Descriptions

LS Simple™ Category 5e 1U patch panel includes cable management, accessories and full installations. They fully comply with the requirements of TIA-568.2-D

- Meet Category 5e/Class D performance levels
- Support max. 6 connection channels
- Easy cable routing and bundling through improved rear cable management

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring (IEEE 802.5)
- 10/100/1000 BASE-T (IEEE 802.3)
- 155Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL

Technical Details

Electrical / Mechanical Characteristics

- Current Rating : 1.5 Amps
- Contact Resistance : 20 milli-ohm
- Insulation Resistance : 500 Mega-ohm
- DC Resistance : 0.1 ohm Max.
- Voltage : 150 Vac Max.
- Insertion Life : 750 Mating Cycles
- Plug Retention Force : 20 lbs (89N)
- Temperature : -40°C-68°C(-40°F-154°F)
- Humidity : 10%-90% RH
- IDC Accept : 23-26 AWG Solid Wire

Materials

- Housing : High Impact Flame Retardant Plastic, UL 94V-0 Rated
- Spring Wire : Phosphor Bronze plated with 50μ-inch (1.27μm) thick Gold over 100μ-inch (2.54μm) thick Nickel undercoat
- IDC Plastic : Polycarbonate, UL 94V-0 Rated
- IDC Contact : Phosphor Bronze plated with 100μ-inch (2.54μm) minimum thick Tin
- Panel : Steel with Black Painting

Part Numbers

Product Number	Description
LS-PP-UC5E-24P-EC	24-ports Category 5e Unshielded Patch Panel without Wire Management
LS-PP-24P-E-LWM + LS-MJ-UC5E-WH-ERI	24-Port Modular type Patch Panel with Wire Management & Unshielded Enhanced Rear IDC Category 5e Modular Jack
LS-PP-24P-E-LWM + LS-MJ-SC5E-RIDC	24-Port Modular type Patch Panel with Wire Management & Shielded Rear IDC Category 5e Modular Jack

Category 5e Modular Jack



LS-MJ-UC5E-xx-ERI



LS-MJ-SC5E-RIDC

Descriptions

LS Simple™ Category 5e modular jacks are desinged based on internationa standard, and easily can be terminated using punching down tool or easy termination tool.

The LS Simple™ Modular Jack comes with the ability to T568A or T568B configuration and fully complies with TIA-568.2-D Category 5e transmission performance and ISO/IEC 11801(Class D) component performances. The slide door type modular jack for dust proof on unused port is applicable based on customer requirement and also 2-way slim IDC cover is applica-ble in HD system configuration.

- Meet Category 5e/Class D performance levels
- Support max. 6 connection channels
- Universal design and label supports both T568A and T568B wiring
- IDC Connector allows quick and easy installation of 23-26 AWG cable
- Optimal performance is achieved with LS Simple™ Category 6A patch cords

Technical Details

Electrical / Mechanical Characteristics

- Current Rating : 1.5 Amps
- DC Resistance : 0.1 ohm Max.
- Voltage : 150 Vac Max.
- Insertion Life : 750 Mating Cycles
- Plug Retention Force : 20 lbs (89N)
- Temperature : -40°C-68°C(-40°F-154°F)
- Humidity : 10%-90% RH
- IDC Accept : 23-26 AWG Solid Wire

Materials

- Jack Housing : PC, UL 94V-0
- IDC Holder : PC, UL 94V-0
- IDC Terminal : Phosphor Bronze, plated with tin over nickel underplate
- Jack Contacts : Phosphor bronze flat wire, plated with 1.27μm(50μin) thick hard gold on contact area over nickel underplate

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring (IEEE 802.5)
- 10/100/1000 BASE-T (IEEE 802.3)
- 155Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL

Approvals

- TIA-568.2-D Category 5e, ISO/IEC 11801 Class D
- FCC CFR 47 Parts 68
- T568A/T568B

Part Numbers

Product Number	Description
LS-MJ-UC5E-XX-ERI	Category 5e Unshielded Keystone Jack, Enhanced Rear IDC type
LS-MJ-SC5E-RIDC	Category 5e Shielded Keystone Jack, Rear IDC type

* XX denotes available colors : WH(White), BL(Blue), RD(Red), BK(Black), etc.

Category 5e Patch Cord



LS-PC-UC6A(L)-XX-C-YYY



LS-PC-SC6A(L)-XX-C-YYY



Color Clip (Optional)

Descriptions

LS Simple™ Category 5e patch cords are factory terminated, providing the quality required to support your channel requirements. They are fully booted and have clip protection for simple removal.

- Meet Category 5e / Class D performance levels
- Support max. 6 connection channels
- Optimal performance is achieved with LS Simple™ Category 5e patch cords

Applications

- Horizontal Distribution & Backbone Cabling
- 4/16 Mbps Token Ring (IEEE 802.5)
- 10/100/1000 BASE-T (IEEE 802.3)
- 155Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL

Approvals

- TIA-568.2-D Category 5e, ISO/IEC 11801 Class D
- FCC CFR 47 Parts 68
- T568A/T568B

Technical Details

Electrical / Mechanical Characteristics

- Current Rating : 1.5 Amps
- Contact Resistance : 20 milli-ohm
- Insertion Resistance : 500 Mega-ohm
- Insertion Life : 750 Mating Cycles
- Plug Retention Force : 20 lbs (89N)
- Temperature : -40°C-68°C(-40°F-154°F)
- Humidity : 10%-90% RH

Materials

- Housing : Polycarbonate, UL 94V-2 Rated
- Cable Jacket : PVC, LSZH

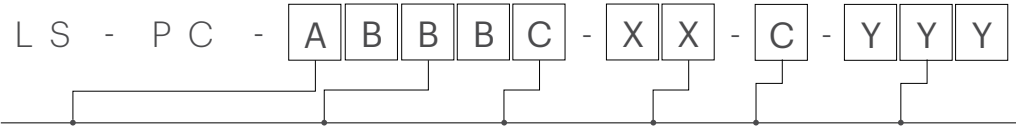
Part Numbers

	Product Number	Description
PVC	LS-PC-UC5E-XX-C-YYY	Category 5e Unshielded Patch Cord with T568B wiring, CM rated
	LS-PC-SC5E-XX-C-YYY	Category 5e Shielded Patch Cord with T568B wiring, CM rated
LSZH	LS-PC-UC5EL-XX-C-YYY	Category 5e Unshielded Patch Cord with T568B wiring, LSZH
	LS-PC-SC5EL-XX-C-YYY	Category 5e Shielded Patch Cord with T568B wiring, LSZH

* XX denotes available colors : WH(White), BL(Blue), GY(Gray), OR(Orange), RD(Red), GN(Green), YL(Yellow), BK(Black)

* YYY denotes available length : 005(0.5m), 010(1m), 030(3m) ~200(20m).

Copper Cable Product Identifier



A : Cable Type

B : Cable Category

C : Jacket Material

X : Jacket Color

C : Color Clip

Y : Length

- U – Unshielded
- S – Shielded

- C5E – CAT 5E
- C6 – CAT 6
- C6A – CAT 6A

- L : LSZH
- Blank : PVC

- GY : Gray
- WH : White
- BL : Blue
- VI : Violet
- RD : Red
- GN : Green
- YL : Yellow

- 005 – 0.5m
- 010 – 1m
- 030 – 3m
- 050 – 5m
- 100 – 10m
- 200 – 20m

Category 5e 110 Patching System



LS-110WB-UC5ES-100P-W/O



LS-110WB-UC5ES-50P-W



LS-110PCC-4-GY-YYY



LS-JT-T1-W/O & LS-JT-T2-W

Descriptions

- LS Simple™ 110 wiring blocks accept 23-26AWG conductors, and blocks are available in 25, 50 and 100 pair sizes for backboard mounting
- The 110 Jumper troughs are flame-retardant molded plastic frame, which serves as a horizontal cable management for routing of patch cords and cross-connection wire.

Approvals

- TIA-568.2-D Category 5e, ISO/IEC 11801 Class D
- FCC CFR 47 Parts 68
- T568A/T568B

Technical Details

Materials

PC, UL 94V-O Rated

Part Numbers

	Product Number	Description
110 Wiring Block	LS-110WB-UC5ES-100P-W/O	Category 5e Unshielded 110wiring block, 100pair with label hoders, IDC connectors, papers, drill screws, white color without leg
	LS-110WB-UC5ES-50P-W/O	Category 5e Unshielded 110wiring block, 50pair with label hoders, IDC connectors, papers, drill screws, white color without leg
	LS-110WB-UC5ES-25P-W/O	Category 5e Unshielded 110wiring block, 25pair with label hoders, IDC connectors, papers, drill screws, white color without leg
	LS-110WB-UC5ES-100P-W	Category 5e Unshielded 110wiring block, 100pair with label hoders, IDC connectors, papers, drill screws, white color with leg
	LS-110WB-UC5ES-50P-W	Category 5e Unshielded 110wiring block, 50pair with label hoders, IDC connectors, papers, drill screws, white color with leg
110 Patch Cord	LS-110PCC-4-GY-YYY	Category 5e Unshielded 110wiring Patch Cord 4pair, Gray cable (110 patch to 110 patch)
	LS-110PCR-4-GY-YYY	Category 5e Unshielded 110wiring Patch Cord 4pair, Gray cable (110 patch to 8pin plug T568B wiring)
Jumper Through	LS-JT-T1-W/O	110 Jumper Trough, 5 Wire Hangers without Legs
	LS-JT-T2-W	110 Jumper Trough, 5 Wire Hangers with Legs

* YYY denotes available length : 005(0.5m), 010(1m), 030(3m) ~200(20m)

Simple™ Copper Systems - Voice & Outdoor Cables

Category 5 U/UTP Multi-Pair Cable

Category 3 U/UTP Multi-Pair Cable

Category 5e & 6 U/UTP Outdoor Cable

Category 5 U/UTP Multi-Pair Cable



Descriptions

- Approved design for global commercial network installation
- Optimized solution for sustainable network infrastructure
- Electrical performances according to TIA/EIA-568-B.2

Applications

- Backbone Cabling
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000 BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL

Technical Details

Item	Unit	PVC
Conductor DC Resistance	Ohms/100 m	Max. 9.38
Resistance Unbalance	%	5
Mutual Capacitance	nF/100 m	5.6
Capacitance Unbalance	pF/100 m	330
Characteristic Impedance	Ohms	100 ± 15%
Propagation Delay	ns/100 m	538@100MHz
Delay Skew	ns	45
Nominal Velocity of Propagation	%	67
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	10 x Cable Diameter
Packaging Type	500m or 1000m	Reel or Drum
Packaging Weight	lb/kft (kg/km)	249(370), 50-Pair 460(685), 100-Pair
Conductor Diameter / Material	-	24 AWG, Solid Copper
Insulation Diameter / Material	inch (mm)	0.036(0.92), HDPE
Outer Diameter / Material	inch (mm)	0.669 (17.0) / PVC, 50-Pair 0.944 (24.0) / PVC, 100-Pair
Safety Standard, Performance Standard	UL444 / CMX-UL1581, IEC 332-1	
Approvals Performance	TIA/EIA-568-B.2 "Performance specifications for Multi-pair 100 ohm Category 5 Cabling"	

Part Numbers

Product Type	Product Number	Description
PVC	UTP-G-C5G-E1VN-X 0.5X###P/XX	Category 5 U/UTP Multi-Pair Cable, CMX rated

* ### denotes number of pairs : 50P=050, 100P=100

* XX denotes available colors : WH(White), BL(Blue), GY(Gray)

Category 3 U/UTP Multi-Pair Cable



Descriptions

- Approved design for global commercial network installation
- Optimized solution for sustainable network infrastructure
- Electrical performances according to TIA/EIA-568-B.2

Applications

- Backbone Cabling
- 4Mbps Token Ring(IEEE 802.5)
- 10 BASE-T(IEEE 802.3)

Technical Details

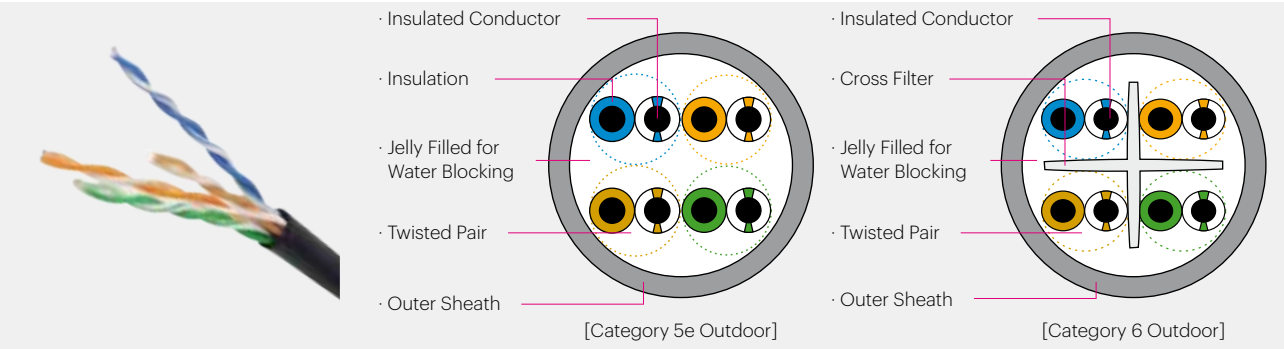
Item	Unit	PVC
Conductor DC Resistance	Ohms/100 m	Max. 9.38
Resistance Unbalance	%	5
Mutual Capacitance	nF/100 m	5.6
Capacitance Unbalance	pF/100 m	330
Characteristic Impedance	Ohms	100 ± 15%
Propagation Delay	ns/100 m	543@16MHz
Delay Skew	ns	45
Nominal Velocity of Propagation	%	70
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	4 x OD (2-pair), 10 x OD (Multi-Pair)
Packaging Type	500m or 1000m	Reel or Drum
Conductor Diameter / Material	-	24 AWG, Solid Copper
Insulation Diameter / Material	inch (mm)	0.031(0.80), HDPE
Outer Diameter / Material	inch (mm)	0.394(10.0), 25-pair, PVC
Safety Standard, Performance Standard	UL444 / CMX-UL1581, IEC 332-1 CM-UL1685, IEC 332-3 CMR-UL1666 IEC 61034, IEC 60754	
Approvals Performance	TIA-568.2-D “Performance specifications for multi-pairs 100 ohms Category 3 Cabling”	

Part Numbers

Product Type	Product Number	Description
PVC	UTP-G-C3G-E1VN-X 0.5X###P/XX	Category 3 U/UTP Multi-Pair Cable, CMX rated
	UTP-G-C3G-E1VN-M 0.5X###P/XX	Category 3 U/UTP Multi-Pair Cable, CM rated
	UTP-G-C3G-E1VN-R 0.5X###P/XX	Category 3 U/UTP Multi-Pair Cable, CMR rated

* ### denotes number of pairs : 25P=025, 50P=050, 100P=100, 200P=200, 500P=500
* XX denotes available colors : WH(White), BL(Blue), GY(Gray)

Category 5e & 6 U/UTP Outdoor Cable



Descriptions

- Approved design for global commercial network installation
- Optimized solution for sustainable network infrastructure
- Electrical performances according to TIA/EIA-568-B.2
- UV Resistance for Outdoor application

Applications

- Horizontal Distribution & Backbone Cabling
- UV Resistance(UL1581)
- 4/16 Mbps Token Ring(IEEE 802.5)
- 10/100/1000 BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL

Technical Details

Item	Unit	Jelly Filled
Conductor DC Resistance	Ohms/100 m	9.38
Resistance Unbalance	%	5
Mutual Capacitance	nF/100 m	5.6
Capacitance Unbalance	pF/100 m	330
Characteristic Impedance	Ohms	100 ± 15%
Propagation Delay	ns/100 m	538@100MHz
Delay Skew	ns	45
Nominal Velocity of Propagation	%	67
Operating Temperature	°C / °F	-20 ~ 60 / -4 ~ 140
Storage Temperature	°C / °F	-20 ~ 80 / -4 ~ 176
Bending Radius	-	4 x Cable Diameter
Packaging Type	1000ft (305m)	Reel
Packaging Weight	lb/kft (kg/km)	20(30), Cat.5e 26(39), Cat.6
Conductor Diameter / Material	-	23 or 24AWG, Solid Copper
Insulation Diameter / Material	inch (mm)	0.036 (0.92) / PP, Cat.5e 0.040 (1.02) / PP, Cat.6
Outer Diameter / Material	inch (mm)	0.212 (5.4) / PE, Cat.5e 0.255 (6.5) / PE, Cat.6
Approvals Performance	TIA-568.2-D “Performance specifications for 4pair 100 ohm Category 5e/6 Cabling”	

Part Numbers

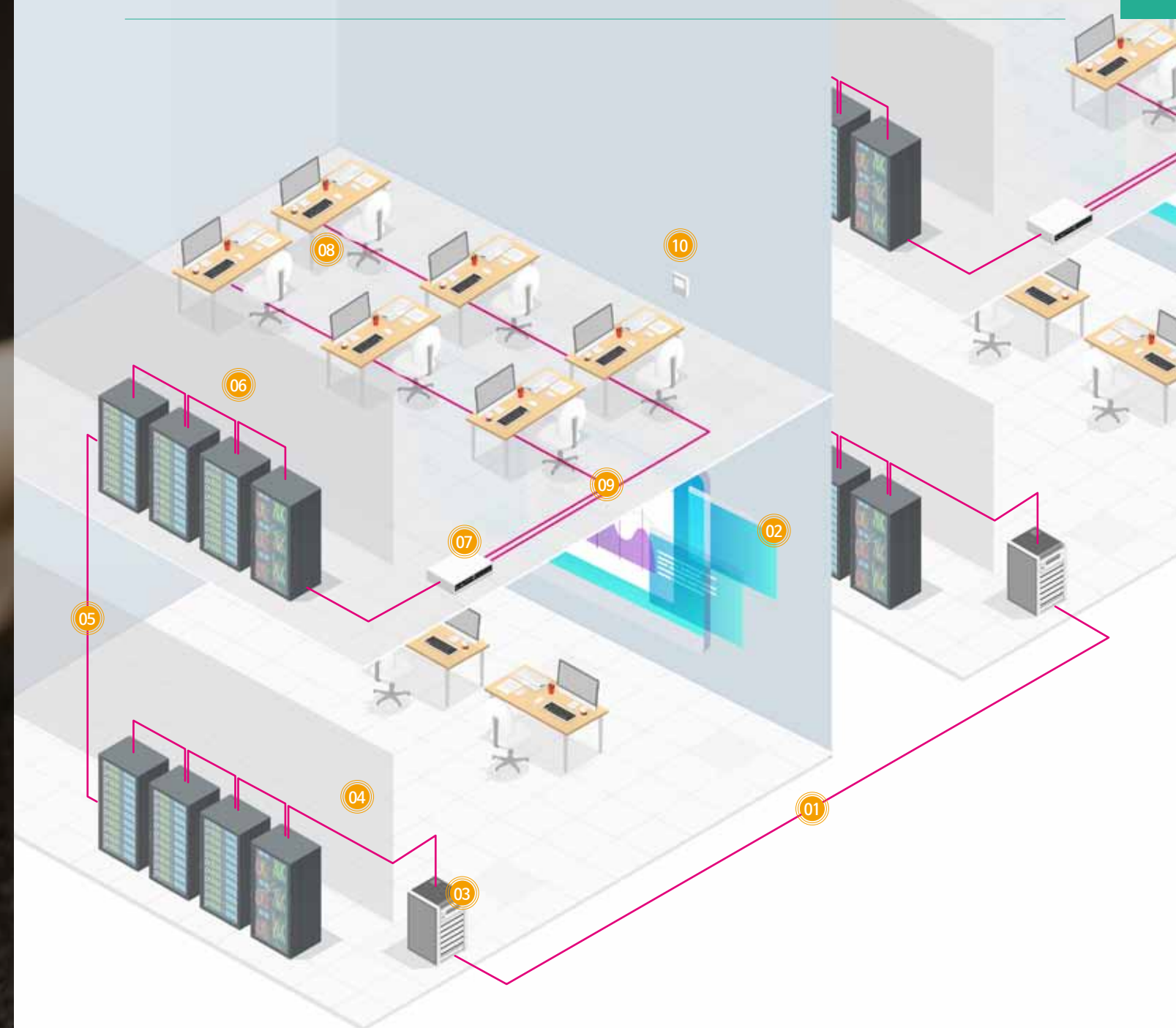
Product Number	Description
UTP-E-C5G-E1EN-N 0.5X004/XX	Category 5e U/UTP 4-Pair Outdoor Cable, CMX(PVC) rated
UTP-E-C5G-E1EN-N 0.5X004P/XX	Category 5e U/UTP 4-Pair Outdoor Cable, PE
UTP-E-C5G-E1EW-N 0.5X004P/XX	Category 5e U/UTP 4-Pair Outdoor Cable, PE, Water Blocking
UTP-E-C6G-E1VN-X 0.5X004P/XX	Category 6 U/UTP 4-Pair Outdoor Cable, CMX (PVC) rated
UTP-G-C6G-E1EN-N 0.5X004P/XX	Category 6 U/UTP 4-Pair Outdoor Cable, PE
UTP-G-C6G-E1EW-N 0.5X004P/XX	Category 6 U/UTP 4-Pair Outdoor Cable, PE, Water Blocking

* XX denotes available colors : BK(Black), IV(Ivory)

Simple™ Security Patch Cord Solutions

Copper Security Patch Cord
Fiber Security Jumper Cord

Telecommunication Structure



01. Backbone Cabling(Inter-BC) 02. Administration(TIA/EIA-606) 03. Entrance Facilities(EF)
04. Equipment Room(ER) 05. Backbone Cabling(Intra-BC) Vertical Cabling 06. Telecommunication Rooms(TR)
07. Consolidation Point(CP) 08. Work Area(WA) 09. Horizontal Cabling 10. Outlet

Copper Security Patch Cord

Fiber Security Jumper Cord

Copper Security Patch Cord



Descriptions

LS Simple™ copper security patch cords are comprised of regular Category 6/6A patch cord and security stopper with security key. It's required of the place where need to secure for systems especially in data center or public telecommunication area such as Military, Airport and Health Care Center.

- Port Insert and Remove requires security key necessarily to ensure physical security
- Designed for pre-terminated and field terminated applications
- Compatible with industry-standard RJ45 Cat.6 and Cat.6A Modular Jacks
- Slim-line and compact design is suitable with high-density applications

Part Numbers

Product Type	Product Number	Description
Category 6 Security Patch Cord	LS-SPC-UC6-XX-YYY	Unshielded Category 6 Security Patch Cord with T568B wiring
	LS-SPC-SC6-XX-YYY	Shielded Category 6 Security Patch Cord with T568B wiring
Category 6A Security Patch Cord	LS-SPC-UC6A-XX-YYY	Unshielded Category 6A Security Patch Cord with T568B wiring
	LS-SPC-SC6A-XX-YYY	Shielded Category 6A Security Patch Cord with T568B wiring
Stopper	LS-SRS-BL	Security Stopper of RJ45 Modular Jack, Blue color
Security Key	LS-TOOL-SPC	Security unlock/lock key for Patch Cord
	LS-TOOL-SRS	Security unlock/lock key for RJ45 Modular Jack Stopper

* XX denotes available colors : WH(White), RD(Red), YL(Yellow)
* YYY denotes available length : 005(0.5m), 010(1m), 030(3m), 200(20m) etc.

Fiber Security Jumper Cord



Descriptions

LS Simple™ fiber security patch cords are comprised of regular LC type adaptor and security stopper with security key. It's required of the place where need to secure for systems especially in data center or public telecommunication area such as Military, Airport and Health Care Center.

- Port Insert and Remove requires security key necessarily to ensure physical security
- Designed for pre-terminated and field terminated applications
- Compatible with industry-standard LC type adaptor
- Slim-line and compact design is suitable with high-density applications

Part Numbers

Product Type	Product Number	Description
LC type Patch Cord	LS-SJC-LC-SM-20DPV-YYY	Single-mode LC connector duplex security fiber patch cord, fiber cable diameter 2mm
	LS-SJC-LC-M3-20DPV-YYY	Multi-mode LC connector duplex security fiber patch cord, fiber cable diameter 2mm
Stopper	LS-SLS-BL	Security fiber stopper of LC adaptor, Blue color
Security Key	LS-TOOL-SPC / SLS	Security unlock/lock key for fiber Patch Cord & LC adaptor Stopper

* YYY denotes available length : 005(0.5m), 010(1m), 030(3m), 300(30m) etc.

Simple™ Empty Patch Panel & Work Area Solution

- Empty Patch Panel
- Faceplate
- Back Box
- Surface Mount Box
- Outlet Module
- Consolidation Box & Mini Panel
- Accessories
- Moudular Plug
- Termination Tools

Empty Patch Panel



Descriptions

These unshielded/shielded empty patch panels includes cable management accessories and full installation instructions. Empty panel is compatible with the shield/unshield modular jack, fiber adaptor & coupler etc.

- Available in a 24 & 48 ports configuration
- Angled or Flat type panel frame
- Support 100Mbps and 1G/10Gbps applications
- Support all copper Cat.5e/Cat.6/Cat.6A Modular Jacks

Part Numbers

Product Type	Description
LS-PP-24P-E-LWM	24-Ports 1U Empty Panel, Jack type for Unshielded & Shielded, 19" std. with management
LS-PP-48P-E-WM	48-Ports 2U Empty Panel, Jack type for Unshielded & Shielded, 19" std. with management
LS-APP-24P-E	24-Ports 1U Hinged Angled Empty Panel, Jack type for Unshielded, 19" std. (Wire management (LS-PP-MD-WM) is compatible)
LS-APP-48P-E	48-Ports 2U Hinged Angled Empty Panel, Jack type for Unshielded, 19" std. (Wire management (LS-PP-MD-WM) is compatible)
LS-APP-24P-E-WM	24-Ports 1U Hinged Angled Empty Panel, Jack type for Unshielded, 19" std. with management
LS-APP-48P-E-WM	48-Ports 2U Hinged Angled Empty Panel, Jack type for Unshielded, 19" std. with management
LS-APP-UC-24P-E4-WM-C	24-Ports 1U Angled Empty Patch Panel, Removable Module type for Unshielded, 19" std. with management
LS-PPP-UC-24P-E4-WM-C	24-Ports 1U Empty Patch Panel, Removable Module type for Unshielded, 19" std. with management
LS-APP-SC-24P-E4-WM-C	24-Ports 1U Angled Empty Patch Panel, Removable Module type for Shielded, 19" std. with management
LS-PPP-SC-24P-E4-WM-C	24-Ports 1U Empty Patch Panel, Removable Module type for Shielded, 19" std. with management
LS-PP-48P-E-WM-1U	48-Ports 1U Empty Patch Panel, Jack type for Unshielded & Shielded(If not continuous mounting), 19" std. with management
LS-APP-48P-E-WM-1U(-S)	48-Ports 1U Empty Patch Panel, Jack type, 19" std. with management ('-S' : Shielded type)

Faceplate



Descriptions

These faceplates capable to accomodates keystone jacks on customer’s requirements.

Part Numbers

Product Number	Description	Size (W*H mm)
LS-FP-SF-1	1-Port British Type Face Plate with Shutter & Icon of Keystone Moduar Jack	86*86
LS-FP-SF-2	2-Port British Type Face Plate with Shutter & Icon of Keystone Moduar Jack	86*86
LS-FP-SF-4	4-Port British Type Face Plate with Shutter & Icon of Keystone Moduar Jack	86*86
LS-FP-SA-1	1-Port Euro Type Face Plate with Angled Shutter Bezel of Keystone Moduar Jack	86*86
LS-FP-SA-2	2-Port Euro Type Face Plate with Angled Shutter Bezel of Keystone Moduar Jack	86*86
LS-FP-SU-1	1-Port Single Gang British Type Faceplate with Shutter	86*86
LS-FP-SU-2	2-Port Single Gang British Type Faceplate with Shutter	86*86
LS-FP-AUS-H-1	1-Port Australian Type Face Plate with Shutter & Icon of Keystone Modular Jack	114*70
LS-FP-AUS-H-2	2-Port Australian Type Face Plate with Shutter & Icon of Keystone Modular Jack	114*70
LS-FP-US-1PORT	1-Port US type Single Gang Face Plate of Keystone Modular Jack	70*114
LS-FP-US-2PORT	2-Port US type Single Gang Face Plate of Keystone Modular Jack	70*114
LS-FP-US-4PORT	4-Port US type Single Gang Face Plate of Keystone Modular Jack	70*114
LS-FP-US-6PORT	6-Port US type Single Gang Face Plate of Keystone Modular Jack	70*114

Technical Details

- Housing : High Impact Flame Retardant Plastic, UL 94V-0 Rated.

Back Box



Descriptions

The back box is designed to mount into a wall or floor.
“Molded-in” rear and side cable entries are convenient to install the cables easily.
Unit includes screws and double-sided tape for mounting, rubber door seals and cable tie.

Technical Details

- Housing : High Impact Flame Retardant Plastic, UL 94V-0 Rated

Part Numbers

Product Number	Description	Size (W*H*D mm)
LS-BB-8686-37	Euro Mode Single Gang Back Box (Depth 37mm) Compatible items : LS-FP-SA-1, LS-FP-SA-2, LS-FP-SF-1, LS-FP-SF-2, LS-FP-SF-4	86*86*37
LS-BB-11572-38	US type Single Gang Back Box (Depth38mm) Compatible items : LS-FP-US-1PORT(or 2PORT or 4PORT or 6PORT), LS-FP-AUS-H-1(or 2 or 3)	72*115*38

Surface Mount Box



Part Numbers

Product Number	Description	Size (W*H*D mm)
LS-SMB-1PORT	1-Port Surface Mount Box with Shutter & Icon	48 * 65 * 27
LS-SMB-2PORT	2-Port Surface Mount Box with Shutter & Icon	61* 52 * 21
LS-SMB-4PORT	4-Port Surface Mount Box with Shutter & Icon	132 * 66 * 30
LS-SMB-6PORT	6-Port Surface Mount Box with Shutter & Icon	189 * 66 * 30

Technical Details

- Material : High Impact Flame Retardant Plastic, UL 94V-0 Rated

Outlet Module



Descriptions

These adaptor inserts are ideal for the installation of “F” NTSC-TV connectors or LC, SC, ST fiber optic connectors. Insert the units into plastic inserts before snap in the faceplates.

Technical Details

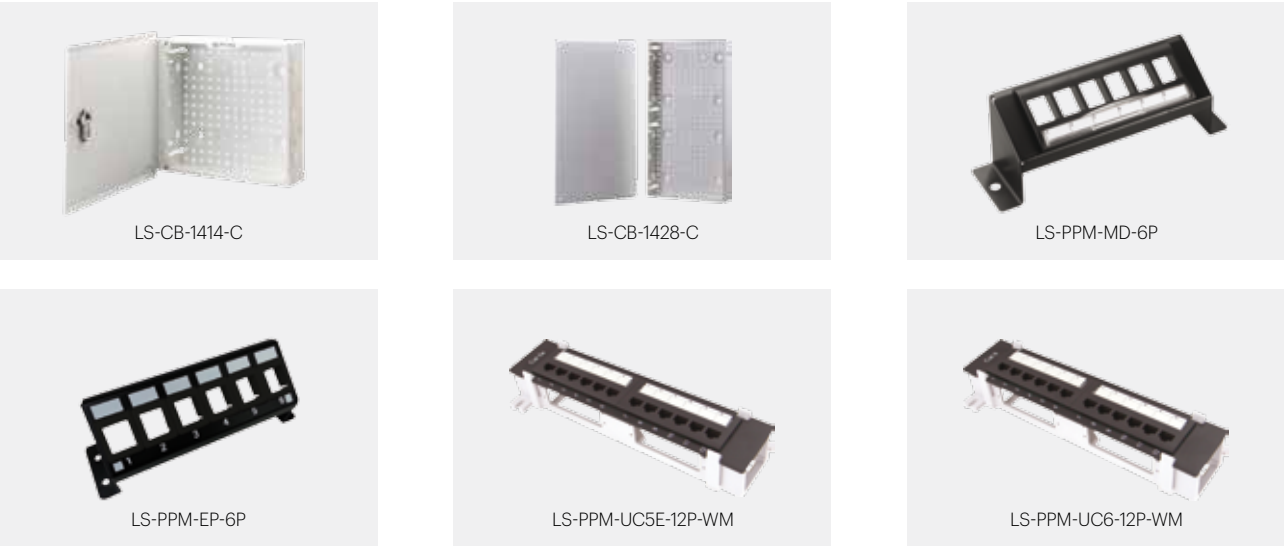
Electrical / Mechanical Characteristics • Insertion Loss : ≤0.15dB Typical • Durability : Max. 0.15dB Increase After 500-Cycle • Insulation Resistance : 500 Mega-ohm • Retention Force : 200 ~ 600g • Temperature : -20℃ ~ 70℃ (-4°F ~ 158°F) • High-Performance Interconnections offer very low Insertion Loss • Ceramic (Zirconia) or Low-cost Phosphor Bronze Alignment Sleeves • Adaptors are Supplied with Dust Caps • Environmental Stable	Materials • Housing : High Impact Flame Retardant Plastic, UL 94V-0 Rated • Sleeve : Ceramic (Zirconia) for Singlemode / Phosphor Bronze for Multimode • Spring Plate : Stainless Steel
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Part Numbers

Product Number	Description
LS-AI-US-XX-SM	LC Duplex Adaptor Insert, Single-Mode (Blue color) with dust cover, Snap-In type, Dimension (H19.2 *W16.8)
LS-AI-US-XX-MM	LC Duplex Adaptor Insert, Multi-Mode (Beige color) with dust cover, Snap-In type, Dimension (H19.2 *W16.8)
LS-AI-US-XX-SM	SC Simplex Adaptor Insert, Single-Mode (Blue color) with dust cover, Snap-In type, Dimension (H19.2 *W16.8)
LS-AI-US-XX-MM	SC Simplex Adaptor Insert, Multi-Mode (Beige color) with dust cover, Snap-In type, Dimension (H19.2 *W16.8)
LS-AI-US-ST-YY	ST Simplex Adaptor Insert, Single-Mode, Zinc alloy, Plate with nickel Snap-In type, Dimension (H19.2 *W16.8)
LS-AI-US-ST-YY	ST Simplex Adaptor Insert, Multi-Mode, Zinc alloy, Plate with nickel Snap-In type, Dimension (H19.2 *W16.8)
LS-AI-US-BI-1	Blank Adaptor Insert, Snap-In type Dimension (H19.2 *W16.8 *D32mm)
LS-FP-SBB	System Box Bezel, Snap-In type, Dimension (H19.2 *W16.8)

* XX denotes Transmission Mode : LC(Duplex), SC(Simplex)
* YY denotes Fiber Type : SM(Single-Mode), MM(Multi-Mode)

Consolidation Box & Mini Panel



Descriptions

- Patching panel for SOHO or Consolidation Point
- TIA-570-B / EIA-600 CEBus (Consumer Electronics Bus)
- 6-port Module Type Blank Patch Panel for SOHO BOX
- CATV, 110 Patching

Part Numbers

Product Number	Description
LS-CB-1414-C	Consolidation Box 14inch X 14inch with Cover
LS-CB-1428-C	Consolidation Box 14inch X 28inch with Cover
LS-CB-1414-H	Consolidation Box 14inch X 14inch with Hinged Door
LS-CB-1428-H	Consolidation Box 14inch X 28inch with Hinged Door
LS-PPM-MD-6P	6-Port Empty Mini Modular type panel, 6 module in 1 plastic
LS-PPM-EP-6P	6-Port Empty Mini Modular type panel
LS-PPM-MD-12P-E-WM	12-Port Empty Mini Modular type panel with Wire manager
LS-PPM-MD-12P-E	12-Port Empty Mini Modular type panel
LS-PPM-UC5E-12P-WM	Category 5e 12-Port Mini panel with Wire manager
LS-PPM-UC6-12P-WM	Category 6 12-Port Mini panel with Wire manager

Accessories



Part Numbers

Product Number	Description
LS-TAPE-BK-EIT	Insulation Tape, PVC, 19mm Width, 10m Length, Black
LS-28LSU-XX-A	Label Supporter for 28AWG Cable
LS-ACC-CUT-BK-100	Cable Velcro Tie Black 10m

* XX denotes color

Modular Plug



Part Numbers

Product Number	Description
LS-MP-UC5E-RJ45	8P8C Category 5e unshielded modular plug for suitable stranded & solid wire, 50micro-inch gold coating
LS-MP-UC6-RJ45	8P8C Category 6 unshielded modular plug for suitable stranded & solid wire, 50micro-inch gold coating with boot of semi-transparency white color, separator of pairs
LS-MP-UC5E-RJ45-EZ-L	8P8C Category 5e modular plug suitable for stranded & solid wire, 50micro-inch gold coating,Long-latch type, Snap Type
LS-MP-UC6-RJ45-EZ	8P8C Category 6 modular plug suitable for stranded & solid wire, 50micro-inch gold coating, Snap Type
LS-MP-SC-RJ45-EZ-C	8P8C shielded modular plug suitable for stranded & solid wire, 50micro-inch gold coating

* Please refer to Appedix for further information of Plug & Campatible Tool

Technical Details

Electrical / Mechanical Characteristics

- Rating Voltage & Current: 30VAC at 1.5A
- Contact Resistance : 20 Milli-ohm Max.
- Dielectric Strength : 1000VAC (RMS)
- Insulation Resistance : 500 Mega-ohm Min.
- Cable-to-Plug, Tensile Strength : 20lbs (89N) Min.
- Durability : 750 mating cycle Min.
- Temperature : -20°~80°(-4°~176°)

Materials

- Housing: Polycarbonate (PC)
- Contacts: Copper Alloy Selective Gold Over Nickel Plating

Specification

- Meet FCC CFR 47 Part 68 and IEC 60603-7

Termination Tools



Part Numbers

Product Number	Description
LS-CT-C5E(6)-SI1	Crimping Tool for Category 5e & 6 Modular Plug
LS-CT-EZ	Crimping Tool for EZ type Modular Plug
LS-CT-SC6(A)-SI1	Crimping Tool for Shielded Modular Plug

Crimping Tool & Compatible Plugs

Cable		Plug	Tool
Cat.5e	U/UTP	LS-MP-UC5E-RJ45	LS-CT-C5E(6)-SI1
		LS-MP-UC5E-RJ45-EZ-L	LS-CT-EZ
	SF/UTP	LS-MP-SC5E-RJ45-TRBOOT	LS-CT-SC6(A)-SI1
		LS-MP-SC-RJ45-EZ-C	LS-CT-EZ
Cat.6	U/UTP	LS-MP-UC6-RJ45	LS-CT-C5E(6)-SI1
		LS-MP-UC6-RJ45-EZ	LS-CT-EZ
	SF/UTP	LS-MP-SC6-RJ45-TRBOOT	LS-CT-SC6(A)-SI1
		LS-MP-SC-RJ45-EZ-C	LS-CT-EZ



Part Numbers

Product Number	Description
LS-STOOL	Cable Stripper with cutter
LS-PTOOL-5P	Punch down Tool for 5-Pair 110 Connecting Block
LS-EZT-TOOL-ERI	Easy Termination Tool for Modular Jack of ERI type

Simple™ Fiber Systems

- Fiber Optic Drop Cable
- Fiber Optic Simplex and Duplex Cord
- Fiber Optic Distribution Cable
- Fiber Optic Central Loose Tube Cable
- Fiber Optic Loose Tube Cable
- Fiber Optic Cable Part Number
- Fiber Distribution Solution
- Fiber Adaptor & Connector
- Field Installable Optical Connector
- Fiber Transceiver Solution
- Fiber Jumper Cord
- Anti-hacking Fiber Cord

Fiber Optic Drop Cable

Flat type Drop Cable with/without Messenger Wire

Descriptions

- Suitable for Indoor & Outdoor (Aerial) application
- Flame Retardant LSZH jacket is applied
- Excellent crush and impact resistance
- Field installable connector (Ez-SC) is available

Options

- Fiber type: Single Mode (G652D) / Bend-Insensitive (G657A)
- Sequential meter or footage markings
- With or Without Messenger Wire

Color Identification

- 01 – Blue
- 02 - Orange

Approvals

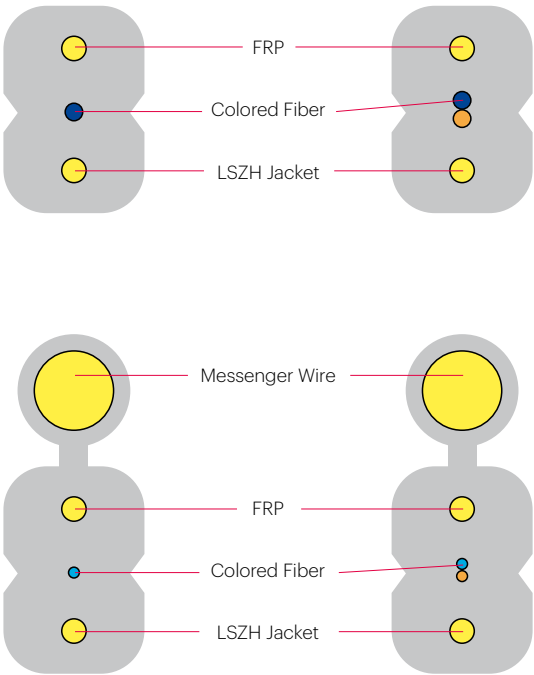
- IEC-60794
- IEC-60332-1
- ITUT-G652D, G657A

Technical Details

Storage & Operating Temperature : -10 to 75 °C

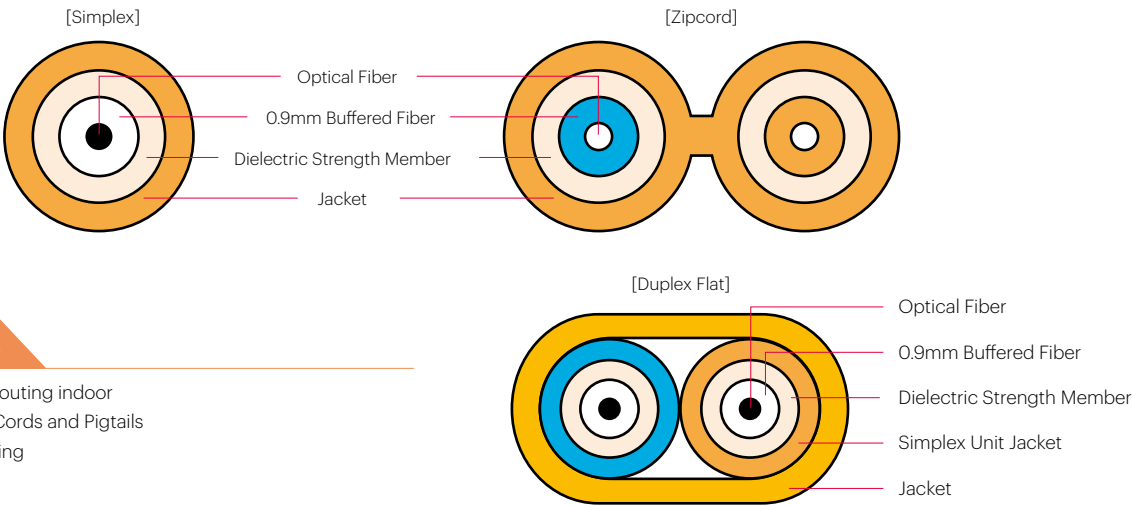
Messenger Type	Fiber Count	Nominal Outer Diameter		Nominal Weight		Max Tensile Load	Max Crush Load	Min Bending Radius (Loaded)		Min Bending Radius (Unloaded)	
		[mm]	[Inch]	[kg/km]	[lb/kft]	[N]	[N/cm]	[mm]	[Inch]	[mm]	[Inch]
Without	1	2.0 x 3.0	0.08 x 0.12	8	5.4	150	100	10	0.4	15	0.6
	2	2.0 x 3.0	0.08 x 0.12	8	5.4	150	100	10	0.4	15	0.6
With	1	2.0 x 5.0	0.08 x 0.20	25	16.8	460	200	30	1.2	60	2.4
	2	2.0 x 5.0	0.08 x 0.20	25	16.8	460	200	30	1.2	60	2.4

* Please refer the end part of Fiber Optic Cable Solutions for Part Number Scheme.



Fiber Optic Simplex and Duplex Cord

ONFR(riser rated), OFNP(plenum rated) or LSZH rated



Descriptions

- Suitable for system routing indoor
- For Jumpers, Patch Cords and Pigtails
- Tight-Buffering Coating

Construction

- Simplex
 - Buffer Color : Natural(White)
- Zip Cord
 - Buffer Color : Blue and Orange
- Duplex Flat
 - Buffer Color : Natural(White)
 - Simplex unit color : Blue and Orange
- Fiber
 - Single mode,
 - Multi mode(50um/62.5um)
- Jacket Color
 - Single Mode : Yellow
 - 62.5/125μm 1Gbe : Orange
 - 50/125μm 1Gbe : Orange
 - 50/125μm 10Gbe : Aqua

Approvals

- ISO / IEC 11801
- Telcordia GR-409-CORE
- ANSI/ ICEA S-83-596

Technical Details

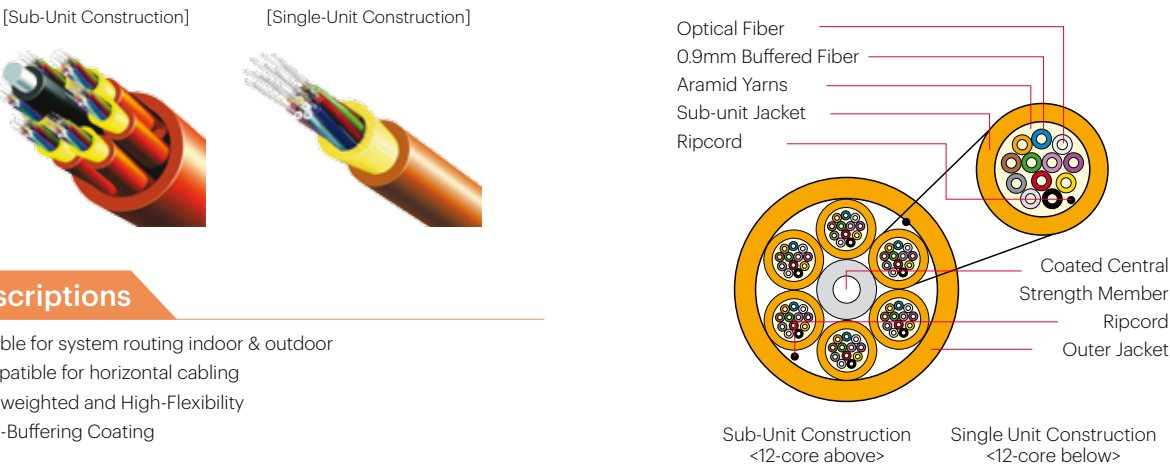
Storage Temperature : -40 to 70°C / Operating Temperature : -10 to 70°C

Construction		Buffered Fiber Outer Diameter [μm]	Nominal Outer Diameter		Nominal Weight		Maximum Tensile Load		Crush Load		Minimum Bend Radius			
			[mm]	[inch]	[kg/km]	[lb/kft]	Short Term [N]	Long Term [N]	Short Term [N]	Long Term [N]	Loaded		Installed	
											[mm]	[inch]	[mm]	[inch]
Simplex Cord	Riser/Pleum rate 1.6mm	600±50um	1.6±0.1	0.063±0.004	5	0.01	130	65	3.5	1.5	40	1.575	20	0.787
	Riser/Pleum rate 1.8mm	600±50um	1.8±0.1	0.071±0.004	5	0.01	130	65	3.5	1.5	60	2.362	30	1.181
	Riser/Pleum rate 2.0mm	900±50um	2.0±0.1	0.079±0.004	5	0.01	250	125	3.5	1.5	40	1.575	20	0.787
	Riser/Pleum rate 2.4mm	900±50um	2.4±0.1	0.094±0.004	10	0.02	300	150	3.5	1.5	60	2.362	30	1.181
	Riser/Pleum rate 2.9mm	900±50um	2.9±0.2	0.114±0.008	10	0.02	300	150	3.5	1.5	60	2.362	30	1.181
Zip Cord	Riser/Pleum rate 1.6mm	600±50um	1.6x3.2	0.063x0.126	10	0.02	260	130	3.5	1.5	40	1.575	20	0.787
	Riser/Pleum rate 1.8mm	600±50um	1.8x3.6	0.071x0.142	10	0.02	260	130	3.5	1.5	60	2.362	30	1.181
	Riser/Pleum rate 2.0mm	900±50um	2.0x4.1	0.079x0.161	10	0.02	500	250	3.5	1.5	40	1.575	20	0.787
	Riser/Pleum rate 2.4mm	900±50um	2.4x4.9	0.094x0.193	20	0.04	600	300	3.5	1.5	60	2.362	30	1.181
	Riser/Pleum rate 2.9mm	900±50um	2.9x5.9	0.114x0.232	20	0.04	600	300	3.5	1.5	60	2.362	30	1.181
Duplex Flat	Riser rate 2.0mm	900±50um	3.0x5.0	0.118x0.197	20	0.04	500	250	3.5	1.5	60	2.362	30	1.181
	Plenum rate 2.0mm	900±50um	3.0x5.0	0.118x0.197	20	0.04	500	250	3.5	1.5	60	2.362	30	1.181

* Please refer the end part of Fiber Optic Cable Solutions for Part Number Scheme.

Fiber Optic Distribution Cable

900um tight buffered Aramid yarn strength member



Descriptions

- Suitable for system routing indoor & outdoor
- Compatible for horizontal cabling
- Lightweighted and High-Flexibility
- Tight-Buffering Coating

Specification

- ISO / IEC 11801
- Telcordia GR-409-CORE
- ANSI/ ICEA S-83-596

Construction

- Fiber
 - Single mode, Multi mode(50um/62.5um) available
- Sub-unit & Outer Jacket color
 - Single Mode : Yellow
 - 62.5/125μm 1Gbe : Orange
 - 50/125μm 1Gbe : Orange
 - 50/125μm 10Gbe : Aqua
- If the cable will be used indoor/outdoor applications, outer cable jacket shall be black
- Outer jacket : PVC or LSZH (Low Smoke Zero Halogen)

Technical Details

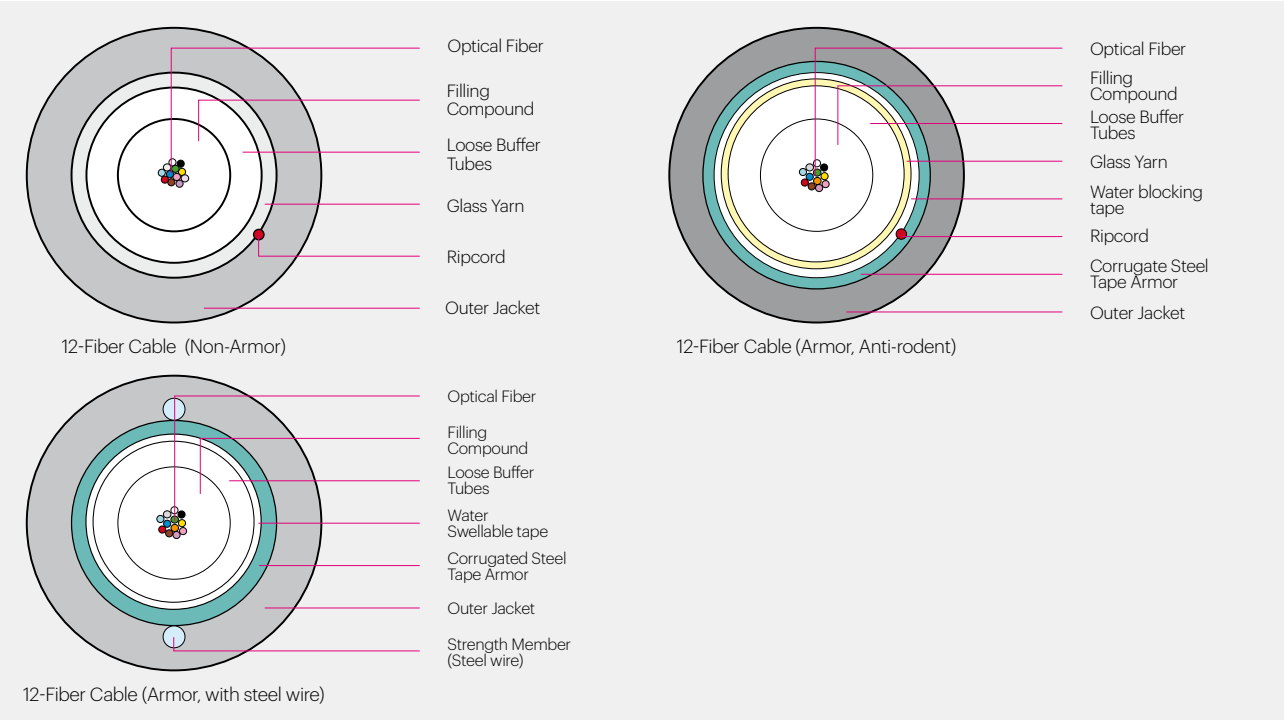
Storage Temperature : -20 to 70°C / Operating Temperature : -10 to 60°C

Construction	Fiber Count	Nominal Outer Diameter		Nominal Weight		Maximum Tensile Load		Crush Load		Minimum Bend Radius			
		[mm]	[Inch]	[kg/km]	[lb/kft]	Short Term [N]	Long Term [N]	Short Term [N]	Long Term [N]	Loaded		Installed	
										[mm]	[inch]	[mm]	[inch]
Single Unit	2	4.5	0.177	25	0.06	660	300	50	25	100	3.937	50	1.969
	4	5.3	0.209	30	0.07	660	300	50	25	120	4.724	60	2.362
	6	5.7	0.224	35	0.08	660	300	50	25	120	4.724	60	2.362
	12	6.7	0.264	50	0.11	660	300	50	25	140	5.512	70	2.756
	24	9.2	0.362	75	0.17	1320	660	100	50	200	7.874	100	3.937
6 Fiber subunits	24	13.8	0.543	160	0.35	1600	800	100	50	280	11.024	140	5.512
	36	16.5	0.650	270	0.60	2700	1350	100	50	360	14.173	180	7.087
12 Fiber subunits	48	18.3	0.720	320	0.71	2700	1350	100	50	380	14.961	190	7.480
	72	22.9	0.902	450	0.99	2700	1350	100	50	460	18.110	230	9.055
	96	27.2	1.071	650	1.43	2700	1350	100	50	560	22.047	280	11.024
	144	30.1	1.185	700	1.54	2700	1350	100	50	640	25.197	320	12.598

* Please refer the end part of Fiber Optic Cable Solutions for Part Number Scheme.

Fiber Optic Central Loose Tube Cable

Single Jacketed Central Tube Cable



Descriptions

- Single Jacket Central Loose Tube cable is a UV-stabilized, fully water blocked cable for outdoor duct applications (PE outer jacket) or indoor/Outdoor applications(LSZH outer jacket)
- Loose tube design provides stable and highly reliable transmission parameters for a variety of voice, data, video and imaging applications.
- Compact design for limited conduit space
- RoHS (Restriction of the use of Certain Hazardous Substances Directive) complied

Construction

- Fiber – Single mode, Multi mode(50um/62.5um) available
- Sequential meter or footage markings
- Outer jacket : Black UV-and moisture-resistant Polyethylene or LSZH (Low Smoke Zero Halogen)

Color Identification

- | | | |
|---------------|--------------|---------------|
| • 01 - Blue | • 05 - Slate | • 09 - Yellow |
| • 02 - Orange | • 06 - White | • 10 - Violet |
| • 03 - Green | • 07 - Red | • 11 - Rose |
| • 04 - Brown | • 08 - Black | • 12 - Aqua |

Specification

- Telcordia GR-20-CORE
- IEC 60793, 60794
- ITU-T G652

Fiber Optic Central Loose Tube Cable

Single Jacketed Central Tube Cable

Technical Details

Storage Temperature : -20 to 70°C / Operating Temperature : -10 to 60°C

[Non Armor]

Fiber Count	Nominal Outer Diameter		Nominal Weight		Maximum Tensile Load		Crush Load		Minimum Bend Radius			
					Short Term	Long Term	Short Term	Long Term	Loaded		Installed	
	[mm]	[Inch]	[kg/km]	[lb/kft]	[N]	[N]	[N/cm]	[N/cm]	[mm]	[Inch]	[mm]	[Inch]
2	6.4	0.25	45	0.1	1200	600	220	110	126	4.96	63	2.51
4	6.4	0.25	45	0.1	1200	600	220	110	126	4.96	63	2.51
6	6.4	0.25	45	0.1	1200	600	220	110	126	4.96	63	2.51
8	6.4	0.25	45	0.1	1200	600	220	110	126	4.96	63	2.51
10	6.4	0.25	45	0.1	1200	600	220	110	126	4.96	63	2.51
12	6.4	0.25	45	0.1	1200	600	220	110	126	4.96	63	2.51
16	6.4	0.25	55	0.12	1200	600	220	110	126	5.35	68	2.71
18	6.4	0.25	55	0.12	1200	600	220	110	126	5.35	68	2.71
24	6.4	0.25	55	0.12	1200	600	220	110	126	5.35	68	2.71

* Please refer the end part of Fiber Optic Cable Solutions for Part Number Scheme.

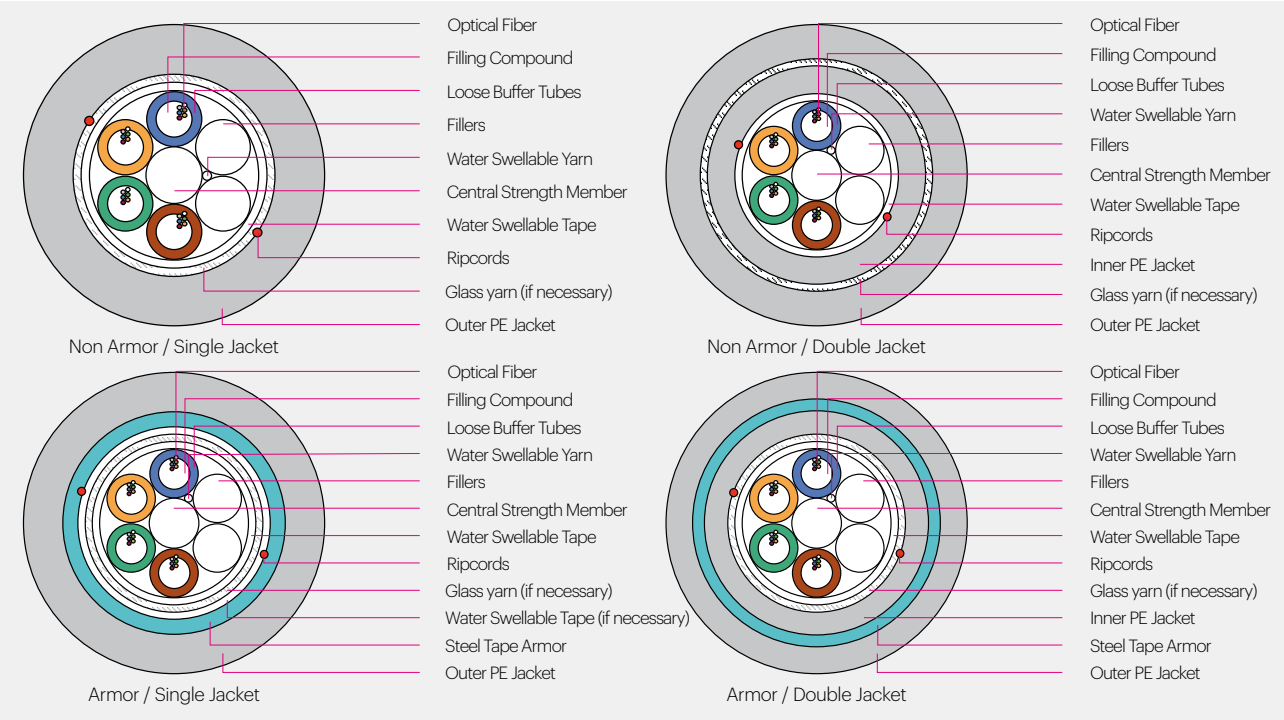
[Armor]

Fiber Count	Nominal Outer Diameter		Nominal Weight		Maximum Tensile Load		Crush Load		Minimum Bend Radius			
					Short Term	Long Term	Short Term	Long Term	Loaded		Installed	
	[mm]	[Inch]	[kg/km]	[lb/kft]	[N]	[N]	[N/cm]	[N/cm]	[mm]	[Inch]	[mm]	[Inch]
2	10.4	0.41	160	0.35	2700	600	220	110	208	8.19	104	4.09
4	10.4	0.41	160	0.35	2700	600	220	110	208	8.19	104	4.09
6	10.4	0.41	160	0.35	2700	600	220	110	208	8.19	104	4.09
8	10.4	0.41	160	0.35	2700	600	220	110	208	8.19	104	4.09
10	10.4	0.41	160	0.35	2700	600	220	110	208	8.19	104	4.09
12	10.4	0.41	160	0.35	2700	600	220	110	208	8.19	104	4.09
16	10.4	0.41	160	0.35	2700	600	220	110	208	8.19	104	4.09
18	10.4	0.41	160	0.35	2700	600	220	110	208	8.19	104	4.09
24	10.4	0.41	160	0.35	2700	600	220	110	208	8.19	104	4.09

* Please refer the end part of Fiber Optic Cable Solutions for Part Number Scheme.

Fiber Optic Loose Tube Cable

Single/Double Jacketed Loose Tube Cable



Descriptions

- Single Jacket Loose Tube cable is a UV-stabilized, fully water blocked cable for In/Outdoor duct applications.
- Loose tube design provides stable and highly reliable transmission parameters for a variety of voice, data, video and imaging applications.
- This lightweight cable offers durability and flexibility required for many outside plant uses.
- RoHS (Restriction of the use of Certain Hazardous Substances Directive) complied

Specification

- Telcordia GR-20-CORE
- IEC 60793, 60794
- IEC 60332-1,3
- IEEE 383

Color Identification

- | | | |
|---------------|--------------|---------------|
| • 01 - Blue | • 05 - Slate | • 09 - Yellow |
| • 02 - Orange | • 06 - White | • 10 - Violet |
| • 03 - Green | • 07 - Red | • 11 - Rose |
| • 04 - Brown | • 08 - Black | • 12 - Aqua |

Construction

- Fiber
 - Single mode, multi mode(50um/62.5um) available
- Sequential meter or footage markings
- Outer jacket : Black UV and moisture-resistant LSZH (Low Smoke Zero Halogen) or PE(Polyethylene)

Fiber Optic Loose Tube Cable

Single/Double Jacketed Loose Tube Cable

Technical Details

Storage Temperature : -50 to 80°C / Operating Temperature : -40 to 70°C

Fiber Count	Nominal Outer Diameter				Nominal Weight		Nominal Weight				Maximum Tensile Load	
	Non Armor/ Single Jacket	Non Armor/ Double Jacket	Armor/ Single Jacket	Armor/ Double Jacket			Non Armor/ Single Jacket	Non Armor/ Double Jacket	Armor/ Single Jacket	Armor/ Double Jacket	All Products	
											Short Term	Long Term
	[mm]/[Inch]	[mm]/[Inch]	[mm]/[Inch]	[mm]/[Inch]	[kg/km]	[lb/kft]	[kg/km]/[lb/kft]	[kg/km]/[lb/kft]	[kg/km]/[lb/kft]	[kg/km]/[lb/kft]	[N]	[N]
6	10.8 / 0.43	12.1 / 0.48	13.0 / 0.51	13.8 / 0.54	185	0.41	88 / 0.19	110 / 0.24	160 / 0.35	185 / 0.41	2700	890
12	10.8 / 0.43	12.1 / 0.48	13.0 / 0.51	13.8 / 0.54	185	0.41	88 / 0.19	110 / 0.24	160 / 0.35	185 / 0.41	2700	890
18	10.8 / 0.43	12.1 / 0.48	13.0 / 0.51	13.8 / 0.54	185	0.41	88 / 0.19	110 / 0.24	160 / 0.35	185 / 0.41	2700	890
24	10.8 / 0.43	12.1 / 0.48	13.0 / 0.51	13.8 / 0.54	185	0.41	88 / 0.19	110 / 0.24	160 / 0.35	185 / 0.41	2700	890
30	10.8 / 0.43	12.1 / 0.48	13.0 / 0.51	13.8 / 0.54	185	0.41	88 / 0.19	110 / 0.24	160 / 0.35	185 / 0.41	2700	890
36	11.8 / 0.46	12.1 / 0.48	13.0 / 0.51	13.8 / 0.54	185	0.41	88 / 0.19	110 / 0.24	160 / 0.35	185 / 0.41	2700	890
48	11.8 / 0.46	13.4 / 0.53	14.0 / 0.55	14.8 / 0.58	210	0.46	105 / 0.23	135 / 0.30	182 / 0.40	210 / 0.46	2700	890
60	11.8 / 0.46	13.4 / 0.53	14.0 / 0.55	14.8 / 0.58	210	0.46	105 / 0.23	135 / 0.30	182 / 0.40	210 / 0.46	2700	890
72	11.8 / 0.46	13.4 / 0.53	14.0 / 0.55	14.8 / 0.58	210	0.46	105 / 0.23	135 / 0.30	182 / 0.40	210 / 0.46	2700	890
96	13.5 / 0.53	15.2 / 0.60	15.7 / 0.62	16.4 / 0.65	255	0.56	136 / 0.30	180 / 0.40	230 / 0.51	255 / 0.56	2700	890
120	15.0 / 0.59	16.6 / 0.65	17.2 / 0.68	17.9 / 0.70	295	0.65	166 / 0.37	210 / 0.46	270 / 0.60	295 / 0.65	2700	890
144	16.5 / 0.65	18.2 / 0.72	18.8 / 0.74	19.5 / 0.77	345	0.76	202 / 0.45	250 / 0.55	315 / 0.69	345 / 0.76	2700	890
228	17.2 / 0.68	18.9 / 0.74	19.5 / 0.77	20.4 / 0.80	365	0.81	215 / 0.47	260 / 0.57	340 / 0.75	365 / 0.80	2700	890
252	18.3 / 0.72	19.8 / 0.78	20.4 / 0.80	21.5 / 0.85	405	0.89	240 / 0.53	290 / 0.64	360 / 0.79	405 / 0.89	2700	890
276	19.0 / 0.75	20.4 / 0.80	21.0 / 0.83	22.1 / 0.87	430	0.95	260 / 0.57	310 / 0.68	380 / 0.84	430 / 0.95	2700	890
288	19.6 / 0.77	21.1 / 0.83	21.7 / 0.85	22.8 / 0.90	455	1.00	275 / 0.61	325 / 0.72	410 / 0.90	455 / 1.00	2700	890

* Please refer the end part of Fiber Optic Cable Solutions for Part Number Scheme.

Fiber Count	Crush Load				Minimum Bend Radius													
	Non Armor/ Single & Double Jacket, Armor /Single Jacket		Armor / Double Jacket		Non Armor/ Single Jacket		Non Armor/ Double Jacket		Armor/ Single Jacket		Armor/ Double Jacket		Loaded	Installed	Loaded	Installed	Loaded	Installed
	Short Term	Long Term	Short Term	Long Term	Loaded	Installed	Loaded	Installed	Loaded	Installed	Loaded	Installed						
	[N/Cm]	[N/Cm]	[N/Cm]	[N/Cm]	[mm]	[Inch]	[mm]	[Inch]	[mm]	[Inch]	[mm]	[Inch]						
6	220	110	440	220	216	8.50	108	4.25	242	9.53	121	4.76	260	10.24	130	5.12	276	10.87
12	220	110	440	220	216	8.50	108	4.25	242	9.53	121	4.76	260	10.24	130	5.12	276	10.87
18	220	110	440	220	216	8.50	108	4.25	242	9.53	121	4.76	260	10.24	130	5.12	276	10.87
24	220	110	440	220	216	8.50	108	4.25	242	9.53	121	4.76	260	10.24	130	5.12	276	10.87
30	220	110	440	220	216	8.50	108	4.25	242	9.53	121	4.76	260	10.24	130	5.12	276	10.87
36	220	110	440	220	216	8.50	108	4.25	242	9.53	121	4.76	260	10.24	130	5.12	276	10.87
48	220	110	440	220	236	9.29	118	4.65	268	10.55	134	5.28	280	11.02	140	5.51	296	11.65
60	220	110	440	220	236	9.29	118	4.65	268	10.55	134	5.28	280	11.02	140	5.51	296	11.65
72	220	110	440	220	236	9.29	118	4.65	268	10.55	134	5.28	280	11.02	140	5.51	296	11.65
96	220	110	440	220	270	10.63	135	5.31	304	11.97	152	5.98	314	12.36	157	6.18	328	12.91
120	220	110	440	220	300	11.81	150	5.91	332	13.07	166	6.54	344	13.54	172	6.77	358	14.09
144	220	110	440	220	330	12.99	165	6.50	364	14.33	182	7.17	376	14.80	188	7.40	390	15.35
228	220	110	440	220	344	13.54	172	6.77	378	14.88	189	7.44	390	15.35	195	7.68	408	16.06
252	220	110	440	220	366	14.41	183	7.20	396	15.59	198	7.80	408	16.06	204	8.03	430	16.93
276	220	110	440	220	380	14.96	190	7.48	408	16.06	204	8.03	420	16.54	210	8.27	442	17.40
288	220	110	440	220	392	15.43	196	7.72	422	16.61	211	8.31	434	17.09	217	8.54	456	17.95

Fiber Optic Cable Part Number

Fiber Optic Simplex and Zip Cord

① Unit Material	V : PVC, Z : LSZH etc.
② Strip Performance	L : Loose Strip, S : Semi-tight, T : Tight Strip, X : Not applied
③ Sheath Structure	KVX : Aramid yarn + PVC, KZX : Aramid yarn + LSZH etc.
④ W/B type	J : Jelly-filled, B : W/B Dry core, A : Air-filled
⑤ Cable Shape	R : Round, Z : Zip type cord etc, D: Duplex Flat
⑥ Fire retardant	X : CMX(IEC332-1), M : CM(IEC332-3), R : Riser(UL-1666) etc.
⑦ Fiber Code	SC : Single Mode Fiber Conventional, SE : Single Mode Fiber Enhanced etc.
⑧ Number of Fiber	# : 1, 2 etc.

Part Number

SIMPLEX CORD SC - N /

ZIP CORD DC - N /

& Duplex Flat

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Fiber Optic Distribution Cable - 900um Tight Buffered Aramid yarn Strength Member

① CSM type	M : Metal, D: Non-metal, N : Non-CSM
② Unit Material	E : PE, V : PVC, Z : LSZH, Y : Lead Free PVC, T : Tefron, N : Nylon etc.
③ Strip Performance	L : Loose Strip, S : Semi-tight Strip, T : Tight Strip, X : Not applied
④ Sheath Structure	KVXX : Aramid yarn + PVC, KZXX: Aramid yarn + LSZH etc.
⑤ W/B type	J : Jelly-filled, B : W/B Dry core, A : Air-filled
⑥ Cable type	R : Round, Z : Zip type cord etc.
⑦ Fire retardant	X : CMX(IEC332-1), M : CM(IEC332-3), R : Riser(UL-1666) etc.
⑧ Fiber Code	SE : Single Mode Fiber Enhanced, MX : 10Giga, HG : Giga grade
⑨ No. of Fiber	4XX : 4-core, 6XX : 6-core, 12X : 12-core etc.

Part Number

DT - /

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Fiber Optic Drop Cable

① CSM type	DXX: Non-metal (FRP)
② Sheath Material	ZXX : LSZH
③ W/B type	A : Air-filled
④ Cable type	F : Flat
⑤ Fire retardant	X : CMX (IEC 60332-1)
⑥ Fiber Code	SE : Single mode enhanced B(A): G657A Bend Insensitive Fiber
⑦ No. of Fiber	1XXX : 1 core / 2XXX: 2 cores

Part Number

DP - /

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* Please contact your regional representative for other material code.

Fiber Optic Cable Part Number

Single Jacketed Central Loose Tube Cable

① Unit Structure	JB : Jelly-filled PBT Tube etc.
② Sheath Structure	GZXX : Glass Yarn + LSZH, GSEX : Glass Yarn + St. tape + PE GSZX : Glass Yarn + St. tape + LSZH, SMEX : St. tape + Metallic Strength Member + PE etc.
③ W/B type	J : Jelly-filled, B : W/B Dry core, A : Air-filled
④ Cable type	R : Round etc.
⑤ Fiber retardant	N : Non-fire retardant X : CMX(IEC332-1), M : CM(IEC332-3), R : Riser(UL-1666) etc.
⑥ Fiber Code	SE : Single mode Fiber Enhanced, MG : Giga grade, MX : 10Giga etc.
⑦ No. of Fiber	4XXX : 4-core, 6XXX : 6-core, 8XXX : 8-core, 12XX : 12-core etc.

Part Number

CT - N /

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Single/Double Jacketed Loose Tube Cable

① CSM type	M : Metal, D: Non-metal
② Unit Structure	JB : Jelly-filled PBT Tube etc.
③ Sheath Structure	GEXX : Glass Yarn + PE, GZXX : Glass Yarn + LSZH GSEX : Glass Yarn + St. tape + PE, GESE : Glass Yarn + PE + St. tape + PE
④ W/B type	J : Jelly-filled, B : W/B Dry core, A : Air-filled
⑤ Cable type	R : Round etc.
⑥ Fiber retardant	N : Non-fire retardant X : CMX(IEC332-1), M : CM(IEC332-3), R: Riser(UL-1666) etc.
⑦ Fiber Code	SE : Single mode Fibre Enhanced, MG : Giga grade, MX : 10Giga etc.
⑧ No. of Fiber	4XXX : 4-core, 6XXX : 6-core, 8XXX : 8-core, 12XX : 12-core 48XX : 48-core etc.

Part Number

LT - /

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* Please contact your regional representative for other material code.

Fiber Distribution Solution

Multi-connection Module type FDF



Descriptions

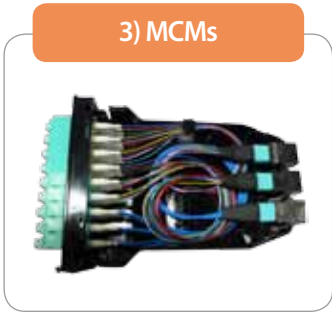
LS Simple™ Multi-connection module type FDFs fully comply with the requirements set out TIA 19-inch rack type. It holds the 4 FDM¹⁾ (Fiber Distribution adaptor Module) or 4 MCF²⁾ (Multi-Connection fiber Frame) or 4 MCM³⁾ (Multi-Connection MPO/MTP Cassettes) which are configured with fiber optic adaptors or blank. It's possible to configure the system according to needs and special site environments with LS dedicated slim module. Maximum 144 Core in 1 Rack-Unit (36 Core per each module)

Applications

- 4/16Mbps Token Ring(IEEE 802.5)
- 10/100/1000/10G BASE-T(IEEE 802.3)
- 155 Mbps ATM
- 100Mbps TP-PMD
- ISDN, ADSL

Construction

- Multi-connection module type FDF
- Connector Insertion Loss ≤ 0.5dB
- Material : Steel (SCP-1 1.2T) & PC
- 19-inch rack mountable 1U~4U etc.



Fiber Distribution Solution

Fiber Distribution adaptor Module(FDM) & Multi-Connection fiber Frame(MCF)

Descriptions

- Manageable & Flexible**
- 4 module type configuration in 1RU
 - Customized system configuration by either FDM or MCF
- Easy Install**
- Detachable structure in front of rack
 - Slim Design for Easy Handling
- High Density**
- Possible to splice Max. LC 36-core by using Splicing Fixture in Cassette
 - High-Density System Configuration in Data Center etc.



* Please refer to page 100 for products by type.

- Reliable**
- Support pre-terminated solution with low-loss MTP(Max. 0.35dB) for quality assurance

Technical Details

FDF Capacity

Adaptor type	Core No.	A	B	C	D	Core No./RU
LC	12C	√	√	√		48C
	24C	√	√	√		96C
	36C		√	√		144C
SC	6C	√	√	√		24C
	12C	√	√	√		48C
	18C	√	√	√		72C
MPO / MTP	72C or 144C				√	288C or 576C

A. Closure type FDFs by FDM

4 FDMs (LC & SC) + Closure (Outer & Drawer)

B. Non-Closure type FDFs by FDM

4 FDMs (LC & SC) + Non-Closure type Panel

C. Module type FDFs by MCF

4 MCFs (LC & SC) + Non-Closure type

D. MPO/MTP system configuration

MPO/MTO + Non-Closure type Panel

Fiber Distribution Solution

Multi-connection Module type Fiber Distribution Frame



Part Numbers(Empty Closure)

Type	Product Number	Description
Outer type Empty Closure	LS-FDF-1U-EP-O	FDF(Fiber Distribution Frame) 1U, Empty enclosing body, outer type
	LS-FDF-2U-EP-O	FDF(Fiber Distribution Frame) 2U, Empty enclosing body, outer type
	LS-FDF-3U-EP-O	FDF(Fiber Distribution Frame) 3U, Empty enclosing body, outer type
	LS-FDF-4U-EP-O	FDF(Fiber Distribution Frame) 4U, Empty enclosing body, outer type

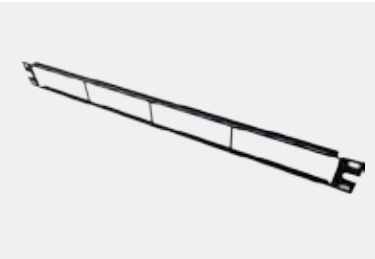


Part Numbers(Front Panel for Individual Fiber Adaptor Installation)

Product Number	Description	Compatible Adaptor
LS-FDP-BK-012-SCSP-W	Front empty panel 1U for mounting SC simplex adaptor 12ea	Adaptor(Flange type) LS-FA-SC-MM-C-1-BG-W LS-FA-SC-SM-C-1-BL-W
LS-FDP-BK-024-SCSP-W	Front empty panel 1U for mounting SC simplex adaptor 24ea	
LS-FDP-BK-024-SCDP-W	Front empty panel 1U for mounting SC duplex adaptor 12ea(24core)	
LS-FDP-BK-048-SCDP-W	Front empty panel 1U for mounting SC duplex adaptor 24ea(48core)	Adaptor(Flange type) LS-FA-SC-MM-C-2-BG-W LS-FA-SC-SM-C-2-BL-W
LS-FDP-BK-024-LCDP-W	Front empty panel 1U for mounting LC duplex adaptor 12ea(24core)	
LS-FDP-BK-048-LCDP-W	Front empty panel 1U for mounting LC duplex adaptor 24ea(48core)	Adaptor(Flange type) LS-FA-LC-MM-C-2-BG-W LS-FA-LC-SM-C-2-BL-W
LS-FDP-BK-012-STSP-W	Front empty panel 1U for mounting ST simplex adaptor 12ea	
LS-FDP-BK-024-STSP-W	Front empty panel 1U for mounting ST simplex adaptor 24ea	

Fiber Distribution Solution

Multi-connection Module type Fiber Distribution Frame



Part Numbers(Front Panel for Module Installation)

Product Number	Description	Compatible Adaptor Module
LS-FDP-BK-4M	4 module empty front panel for FDM, MCF, MCM series	LS-FDM-series LS-MCF-series LS-MCM-series



example. Slide FDF with FDM module
(splicing tray and front module is optional)

Part Numbers(Empty Closure with panel for Slide FDF)

Part Number	Description	Compatible Items
LS-FDF-MC1U-EP4M-D	FDF(Fiber Distribution Frame) 1U, Empty enclosing body, 4 empty holes for FDM module or MCF cassette, slide type	Fiber adaptor module : LS-FDM series Fiber cassette : LS-MCF series Cable splicing tray : LS-SPTR-024(048)

4U Vertical Multi-connection Module type FDF



Part Numbers

Part Number	Description	Compatible Items
LS-FDF-MC4U-EP10M-VI	FDF 4U, Empty enclosing body, 10 empty vertical holes for FDM module or MCF Cassette, inner type	Fiber adaptor module : LS-FDM series Fiber cassette : LS-MCF series Cable splicing tray : LS-SPTR-024(048)

Fiber Distribution Solution

Fiber Distribution Adaptor Module(FDM) & Multi-connection Fiber Frame(MCF)

Part Numbers			
FDM Module	Image	MCF Module	Image
LS-FDM-SC-SP-06-SM LS-FDM-SC-SP-06-MM LS-FDM-SC-SP-06-M3		LS-MCF-SC-SP-06-SM LS-MCF-SC-SP-06-MM LS-MCF-SC-SP-06-M3	
LS-FDM-SC-DP-12-SM LS-FDM-SC-DP-12-MM LS-FDM-SC-DP-12-M3		LS-MCF-SC-DP-12-SM LS-MCF-SC-DP-12-MM LS-MCF-SC-DP-12-M3	
LS-FDM-SC-DP-18-SM LS-FDM-SC-DP-18-MM LS-FDM-SC-DP-18-M3		LS-MCF-SC-DP-18-SM LS-MCF-SC-DP-18-MM LS-MCF-SC-DP-18-M3	
LS-FDM-LC-DP-12-SM LS-FDM-LC-DP-12-MM LS-FDM-LC-DP-12-M3		LS-MCF-LC-DP-12-SM LS-MCF-LC-DP-12-MM LS-MCF-LC-DP-12-M3	
LS-FDM-LC-4M-24-SM LS-FDM-LC-4M-24-MM LS-FDM-LC-4M-24-M3		LS-MCF-LC-4M-24-SM LS-MCF-LC-4M-24-MM LS-MCF-LC-4M-24-M3	
LS-FDM-LC-4M-36-SM LS-FDM-LC-4M-36-MM LS-FDM-LC-4M-36-M3		LS-MCF-LC-4M-36-SM LS-MCF-LC-4M-36-MM LS-MCF-LC-4M-36-M3	
LS-FDM-BLK			

Fiber Distribution Solution

Multi-connection Module type Fiber Distribution Frame

Ordering Information					
Empty closure		Front Panel	Module	Splicing Tray (Optional)	Gland (Optional)
Outer type LS-FDF-1U-EP-O LS-FDF-2U-EP-O LS-FDF-3U-EP-O LS-FDF-4U-EP-O	Individual Adaptor type	LS-FDP-BK-012-SCSP-W	LS-FA-SC-MM-C-1-BG-W	LS-SPTR-024 LS-SPTR-048	LS-GLAND-D13.5 LS-GLAND-D16
		LS-FDP-BK-024-SCSP-W	LS-FA-SC-SM-C-1-BL-W		
		LS-FDP-BK-024-SCDP-W	LS-FA-SC-MM-C-2-BG-W		
		LS-FDP-BK-048-SCDP-W	LS-FA-SC-SM-C-2-BL-W		
		LS-FDP-BK-024-LCDP-W	LS-FA-LC-MM-C-2-BG-W		
		LS-FDP-BK-048-LCDP-W	LS-FA-LC-SM-C-2-BL-W		
		LS-FDP-BK-012-STSP-W	LS-FA-ST-MM-C-1		
		LS-FDP-BK-024-STSP-W	LS-FA-ST-SM-C-1		
	Module Adaptor type	LS-FDP-BK-4M	LS-FDM-SC-SP-06-xx	LS-SPTR-024 LS-SPTR-048	LS-GLAND-D13.5 LS-GLAND-D16
			LS-FDM-SC-DP-12-xx		
			LS-FDM-SC-DP-18-xx		
			LS-FDM-LC-DP-12-xx		
			LS-FDM-LC-4M-24-xx		
			LS-FDM-LC-4M-36-xx		
			LS-FDM-BLK		
	Cassette Module type	LS-FDP-BK-4M	LS-MCF-SC-SP-06-xx	No needed	No needed
			LS-MCF-SC-DP-12-xx		
			LS-MCF-SC-DP-18-xx		
			LS-MCF-LC-DP-12-xx		
			LS-MCF-LC-4M-24-xx		
			LS-MCF-LC-4M-36-xx		
			LS-FDM-BLK		

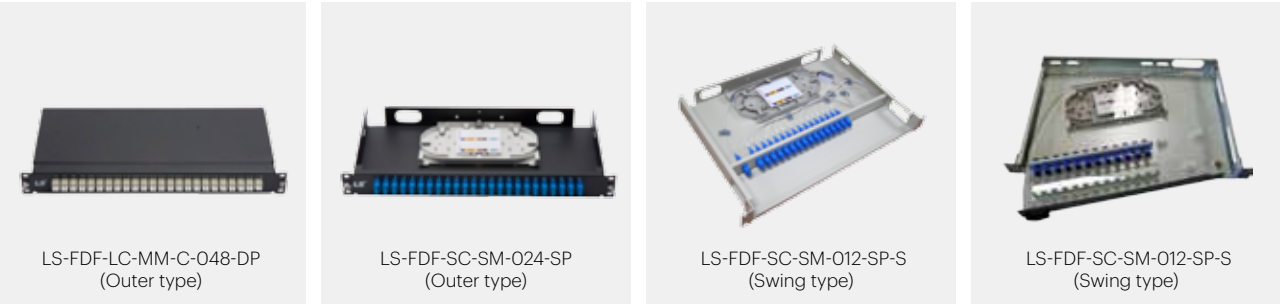
Closure		Module	Splicing Tray (Optional)	Gland (Optional)
Drawer type LS-FDF-MC1U-EP4M-D (Closure + Front Panel All-in-one type)	Individual Adaptor type	LS-FDM-SC-SP-06-xx	LS-SPTR-024 LS-SPTR-048	LS-GLAND-D13.5 LS-GLAND-D16
		LS-FDM-SC-DP-12-xx		
		LS-FDM-SC-DP-18-xx		
		LS-FDM-LC-DP-12-xx		
		LS-FDM-LC-4M-24-xx		
		LS-FDM-SC-4M-36-xx		
		LS-FDM-BLK		
	Cassette Module type	LS-MCF-SC-SP-06-xx	No needed	No needed
		LS-MCF-SC-DP-12-xx		
		LS-MCF-SC-DP-18-xx		
		LS-MCF-LC-DP-12-xx		
		LS-MCF-LC-4M-24-xx		
		LS-MCF-LC-4M-36-xx		
		LS-FDM-BLK		

* xx denotes SM (Single-mode), MM (Multi-mode), M3 (OM3 or OM4)

* Gland is optional item for only 1U Outer / Slide type FDF

* Only FDM module is applicable in case of angled type.

Fiber Distribution Solution



Features

- Splicing Tray & Accessories are included
- Mounted in 19" standard rack
- Robust configuration by using screw fixed adaptor
- Maximum 48Core in 1 Rack-Unit (LC Duplex 24 Port)

Specification

- Modular structure with up to 48 fiber core
- Include fiber splicing tray basically
- Connector loss ≤ 0.5dB
- Material : Steel (SCP-11.2T/1.0T [Inner type])
- 19" rack mountable 1U

FDF Capacity

LC Type(DP)	SC Type(SP)	SC Type(DP)	ST Type(SP)
48C	24C	48C	24C

* FDF is supplied with cover

Based on 1U FDF

Fiber Distribution Solution

Assembled Fiber Distribution Frame(Outer type)

Part Numbers		
Type	Product Number	Description
Outer FDF LC Type MM with splicing tray	LS-FDF-LC-MM-C-004-DP	Fiber Distribution Frame, 4-Core MM LC Duplex
	LS-FDF-LC-MM-C-008-DP	Fiber Distribution Frame, 8-Core MM LC Duplex
	LS-FDF-LC-MM-C-012-DP	Fiber Distribution Frame, 12-Core MM LC Duplex
	LS-FDF-LC-MM-C-016-DP	Fiber Distribution Frame, 16-Core MM LC Duplex
	LS-FDF-LC-MM-C-024-DP	Fiber Distribution Frame, 24-Core MM LC Duplex
	LS-FDF-LC-MM-C-048-DP	Fiber Distribution Frame, 48-Core MM LC Duplex
Outer FDF LC Type SM with splicing tray	LS-FDF-LC-SM-004-DP	Fiber Distribution Frame, 4-Core SM LC Duplex
	LS-FDF-LC-SM-008-DP	Fiber Distribution Frame, 8-Core SM LC Duplex
	LS-FDF-LC-SM-012-DP	Fiber Distribution Frame, 12-Core SM LC Duplex
	LS-FDF-LC-SM-016-DP	Fiber Distribution Frame, 16-Core SM LC Duplex
	LS-FDF-LC-SM-024-DP	Fiber Distribution Frame, 24-Core SM LC Duplex
Outer FDF SC Type MM with splicing tray	LS-FDF-SC-MM-C-004-DP	Fiber Distribution Frame, 4-Core MM SC Duplex
	LS-FDF-SC-MM-C-008-DP	Fiber Distribution Frame, 8-Core MM SC Duplex
	LS-FDF-SC-MM-C-012-DP	Fiber Distribution Frame, 12-Core MM SC Duplex
	LS-FDF-SC-MM-C-016-DP	Fiber Distribution Frame, 16-Core MM SC Duplex
	LS-FDF-SC-MM-C-024-DP	Fiber Distribution Frame, 24-Core MM SC Duplex
Outer FDF SC Type SM with splicing tray	LS-FDF-SC-MM-C-048-DP	Fiber Distribution Frame, 48-Core MM SC Duplex
	LS-FDF-SC-SM-004-SP	Fiber Distribution Frame, 4-Core SM SC Simplex
	LS-FDF-SC-SM-008-SP	Fiber Distribution Frame, 8-Core SM SC Simplex
	LS-FDF-SC-SM-012-SP	Fiber Distribution Frame, 12-Core SM SC Simplex
	LS-FDF-SC-SM-016-SP	Fiber Distribution Frame, 16-Core SM SC Simplex
	LS-FDF-SC-SM-024-SP	Fiber Distribution Frame, 24-Core SM SC Simplex
	LS-FDF-SC-SM-012-DP	Fiber Distribution Frame, 12-Core SM SC Duplex
	LS-FDF-SC-SM-024-DP	Fiber Distribution Frame, 24-Core SM SC Duplex
	LS-FDF-SC-SM-048-DP	Fiber Distribution Frame, 48-Core SM SC Duplex
	LS-FDF-SC-SM-2U-096-DP	Fiber Distribution Frame, 2U 96-Core SM SC Duplex
Outer FDF ST Type	LS-FDF-SC-SM-4U-096-SP	Fiber Distribution Frame, 4U 96-Core SM SC Simplex
	LS-FDF-ST-MM-024-SP	Fiber Distribution Frame, 24-Core MM ST Simplex with splicing tray
	LS-FDF-ST-SM-024-SP	Fiber Distribution Frame, 24-Core SM ST Simplex with splicing tray

Fiber Distribution Solution

Assembled Fiber Distribution Frame(Inner type)

Part Numbers		
Type	Product Number	Description
Inner FDF LC MM with splicing tray	LS-FDF-LC-MM-C-0XX-DP-I	Fiber Distribution Frame, Multi-mode, LC Duplex Inner
Inner FDF LC SM with splicing tray	LS-FDF-LC-SM-0XX-DP-I	Fiber Distribution Frame, Single-mode, LC Duplex Inner
Inner FDF SC MM with splicing tray	LS-FDF-SC-MM-C-0XX-DP-I	Fiber Distribution Frame, Multi-mode, SC Duplex Inner
Inner FDF SC SM with splicing tray	LS-FDF-SC-SM-0XX-SP-I	Fiber Distribution Frame, Single-mode, SC Duplex Inner
Inner FDF ST Type	LS-FDF-ST-MM-C-024-SP-I	Fiber Distribution Frame, 24-Core MM ST Simplex Inner with splicing tray
	LS-FDF-ST-SM-C-024-SP-I	Fiber Distribution Frame, 24-Core SM ST Simplex Inner with splicing tray

Assembled Fiber Distribution Frame (Swing type)

Part Numbers		
Type	Product Number	Description
Swing FDF LC type with splicing tray	LS-FDF-LC-MM-C-0XX-DP-S	Fiber Distribution Frame, Multi-mode, LC Duplex, Swing
	LS-FDF-LC-MM-2U-048-DP-S	Fiber Distribution Frame, 2U 48-core, MM LC Duplex, Swing
	LS-FDF-LC-SM-C-0XX-DP-S	Fiber Distribution Frame, Single-mode, LC Duplex, Swing
	LS-FDF-LC-SM-2U-048-DP-S	Fiber Distribution Frame, 2U 48-core, SM LC Duplex, Swing
Swing FDF SC type with splicing tray	LS-FDF-SC-MM-C-0XX-SP-S	Fiber Distribution Frame, Multi-mode, SC Duplex, Swing
	LS-FDF-SC-MM-2U-048-SP-S	Fiber Distribution Frame, 2U 48-core, MM SC Simplex, Swing
	LS-FDF-SC-SM-C-0XX-SP-S	Fiber Distribution Frame, Single-mode, SC Duplex, Swing
	LS-FDF-SC-SM-2U-048-SP-S	Fiber Distribution Frame, 2U 48-core, SM SC Simplex, Swing
Swing FDF ST type with splicing tray	LS-FDF-ST-MM-C-024-SP-S	Fiber Distribution Frame, 24-core, Multi-mode ST Simplex, Swing
	LS-FDF-ST-SM-C-024-SP-S	Fiber Distribution Frame, 24-core, Single-mode ST Simplex, Swing

* xx denotes the number of cores

Fiber Distribution Solution

Multi-Connection MPO Frame



Descriptions		Technical details
• MPO trunk cables and fan-out cords can be installed • Includes plastic case, adaptor plate etc. • Guaranteed high performance by pre-terminated and pre-tested in factory • Can be installed on LS Simple 4-Module Empty Panel		• Based on IEC 61754-7 MPO type connector
		• Fiber types : Single-Mode & Multi-Mode type
		• Insertion Loss & Return Loss is based on ANSI/TIA-568-C.3
		• MPO connector insertion loss : ≤ 0.35dB (low-loss)
		• LC/SC connector insertion loss : ≤ 0.2dB (SM), 0.3dB (MM)
		• Connection polarity is based on ANSI/TIA-568-C.3
		• Operating temperature : 0°C~ +70°C
		• Material : Plastic UL 94-V 2 above

Part Numbers		
Description	Part Number	Image
SC Duplex 12-core to 1 Male MPO Cassette, MPO 12Core/1 Connector (MPO Base-12)	LS-MCM-SC-DP-12-SM LS-MCM-SC-DP-12-M3 LS-MCM-SC-DP-12-M4	
LC Duplex 12-core to 1 Male MPO Cassette, MPO 12Core/1 Connector (MPO Base-12)	LS-MC(M)(D)-LC-DP-12-SM LS-MC(M)(D)-LC-DP-12-M3 LS-MC(M)(D)-LC-DP-12-M4	
LC Quad 24-core to 2 Male MPO Cassette, MPO 12Core/1 Connector * 2 pcs (MPO Base-12)	LS-MC(M)(D)-LC-4M-24-SM LS-MC(M)(D)-LC-4M-24-M3 LS-MC(M)(D)-LC-4M-24-M4	
LC Quad 36-core to 3 Male MPO Cassette MPO 12Core/1 Connector * 3 pcs (MPO Base-12)	LS-MC(M)(D)-LC-4M-36-SM LS-MC(M)(D)-LC-4M-36-M3 LS-MC(M)(D)-LC-4M-36-M4	
LC Quad 24-core to 1 Male MPO Cassette MPO 24Core/1 Connector * 1 pcs (MPO Base-24)	LS-MC(M)(D)-LC-4M-24-SM-C24 LS-MC(M)(D)-LC-4M-24-M3-C24 LS-MC(M)(D)-LC-4M-24-M4-C24	
MPO Adaptor Panel (6-ports, cross-connection)	LS-MCM-MCC6	

* (M) : Non-Door Adaptor, (D) : Door Adaptor

Fiber Distribution Solution

Splicing Tray / Gland / Sleeve / FCM



Part Numbers

Type	Product Number	Description
Splicing Tray	LS-SPTR-024	Splicing tray Max. 24-Cores
	LS-SPTR-048	Splicing tray Max. 48-Cores
Gland	LS-GLAND-D7	Cable Gland D7
	LS-GLAND-D9	Cable Gland D9
	LS-GLAND-D11	Cable Gland D11
	LS-GLAND-D13.5	Cable Gland D13.5 for Drawer type FDF
	LS-GLAND-D16	Cable Gland D16 for Drawer type FDF
Sleeve	LS-FDF-FHSS-12P	Fiber Heat Shrink Sleeve 12pcs/1Package
FCM	LS-FCM-1U	Fiber Cable Management(Front type) 1U for slide type FDF
	LS-FCM-2U	Fiber Cable Management(Front type) 2U for slide type FDF

Fiber Distribution Solution

Mini wall-mounted FDF



Descriptions

Suitable to be Wall Mounted
Fiber Tray and Accessories are included

Applications

- Telecommunication network
- Horizontal distribution systems
- Local Area Networks
- CATV Systems
- LAN and WAN (IEEE 802.3ba, 100BASE-FX, 10GBASE-LX4, 10GBASE-ER/EW, 40GBASE-LR4, 100GBASE-ER4 etc.)

Technical Details

- Wall mountable structure (Hanging bracket)
- 12-core fiber splicing tray basically included
- Material : Steel (SCP-1 1.2T)
- SC Simplex/Duplex 12 core available

Part Numbers

Type	Description
LS-FDF-SC-SM-C-004-DP-MTV	Vertical Mini FDF 4-Cores Single-mode SC type Duplex
LS-FDF-SC-SM-C-006-SP-MTC	Plate Mini FDF 6-Cores Single-mode SC type Simplex with cover
LS-FDF-LC-SM-C-008-DP-MTC	Plate Mini FDF 8-Cores Single-mode LC type Duplex with cover
LS-FDF-SC-SM-C-008-SP-MW	Mini wall mount FDF 8-Cores Single-Mode SC type Simplex
LS-FDF-SC-SM-C-012-SP-MW	Mini wall mount FDF 12-Cores Single-Mode SC type Simplex
LS-FDF-SC-MM-C-004-DP-MTV	Vertical Mini FDF 4-Cores Multi-mode SC type Duplex
LS-FDF-SC-MM-C-006-SP-MTC	Plate Mini FDF 6-Cores Multi-mode SC type Simplex with cover
LS-FDF-LC-MM-C-008-DP-MTC	Plate Mini FDF 8-Cores Multi-mode LC type Duplex with cover
LS-FDF-SC-MM-C-008-SP-MW	Mini wall mount FDF 8-Cores Multi-Mode SC type Simplex
LS-FDF-SC-MM-C-012-SP-MW	Mini wall mount FDF 12-Cores Multi-Mode SC type Simplex
LS-FDF-EP24-W	Wall mount type Empty FDF, 24 adaptor hole for SC simplex 24-core & LC duplex 48-core
LS-FDF-EP48-W	Wall mount type Empty FDF, 48 adaptor hole for SC simplex

Fiber Adaptor & Connector



Part Numbers

Item	Product Number	Description
Adaptor	LS-FA-LC-xx-C-y-zz-WO	Fiber Adaptor LC type, without Flange, for outlet port
	LS-FA-LC-xx-C-y-zz-W	Fiber Adaptor LC type, with Flange
	LS-FA-SC-xx-C-y-zz-WO	Fiber Adaptor SC type, without Flange, for outlet port
	LS-FA-SC-xx-C-y-zz-W	Fiber Adaptor SC type, with Flange
	LS-FA-ST-xx-C-y	Fiber Adaptor ST type
Connector	LS-FC-LC/PC-xx-y-zz	Fiber Connector LC(PC) type
	LS-FC-LC/APC-xx-y-zz	Fiber Connector LC(APC) type
	LS-FC-SC/PC-xx-y-zz	Fiber Connector SC(PC) type
	LS-FC-SC/APC-xx-y-zz	Fiber Connector SC(APC) type
	LS-FC-ST/PC-xx-y-zz	Fiber Connector ST type

* xx denotes SM(Single Mode) or MM(Multi Mode)
* y denotes 1 or 2 Core
* zz denotes Color : BL(Blue)-SM/PC, BG(Beige)-MM/PC, GN(Green)-SM/APC, AQ(Aqua)-OM3,OM4/PC
* Please contact your LS representative for available port & type.

Electrical / Mechanical Characteristics

Item	Specifications
Insertion Loss	≤ 0.3dB
Durability	Max. 0.2dB increase after 500-Cycle
Retention Force	200 ~ 600g
Temperature	-20°C ~ 70°C (-4°F ~ 158°F)

Field Installable Optical Connector



Descriptions

- LS Simple™ FIOC connector
- Cable connectors without polishing
- Enables fast, on-site installation of connectors
- Using a simple tool and recycled several times
- Telcordia GR-326

Key Features

- Quick and easy fiber termination
- High success rate of connection
- Superior optical characteristic value
- No Failure after opening

Specification

Item		Value
Insertion Loss		<0.5dB (typical 0.3dB)
Return Loss		>50dB
Endurance (IL Change)	After 500 times re-connection	<0.2dB
	0.9mm diameter : 0.75kg tensile load 2mm and 3mm diameter : 2kg tensile load	<0.2dB
	21 times thermal cycling -40°C ~ +75°C	<0.2dB

Part Numbers

Type	Product Number	Description
SC Type	LS-FC-SC/PC-SM-BL-FI-30	SC/PC SM, Cable Ø=3mm
	LS-FC-SC/PC-SM-BL-FI-09	SC/PC SM, Cable Ø=0.9mm
	LS-FC-SC/PC-M2-BG-FI-30	SC/PC MM(OM2), Cable Ø=3mm
	LS-FC-SC/PC-M2-BG-FI-09	SC/PC MM(OM2), Cable Ø=0.9mm
	LS-FC-SC/PC-M3-AQ-FI-30	SC/PC MM(OM3), Cable Ø=3mm
	LS-FC-SC/PC-M3-AQ-FI-09	SC/PC MM(OM3), Cable Ø=0.9mm
	LS-FC-SC/PC-M4-AQ-FI-30	SC/PC MM(OM4), Cable Ø=3mm
	LS-FC-SC/PC-M4-AQ-FI-09	SC/PC MM(OM4), Cable Ø=0.9mm
LC Type	LS-FC-LC/PC-SM-BL-FI-20	LC/PC SM, Cable Ø=2mm
	LS-FC-LC/PC-SM-BL-FI-09	LC/PC SM, Cable Ø=0.9mm
	LS-FC-LC/PC-M2-BG-FI-20	LC/PC MM(OM2), Cable Ø=2mm
	LS-FC-LC/PC-M2-BG-FI-09	LC/PC MM(OM2), Cable Ø=0.9mm
	LS-FC-LC/PC-M3-AQ-FI-20	LC/PC MM(OM3), Cable Ø=2mm
	LS-FC-LC/PC-M3-AQ-FI-09	LC/PC MM(OM3), Cable Ø=0.9mm
	LS-FC-LC/PC-M4-AQ-FI-20	LC/PC MM(OM4), Cable Ø=2mm
	LS-FC-LC/PC-M4-AQ-FI-09	LC/PC MM(OM4), Cable Ø=0.9mm
ST Type	LS-FC-ST/PC-SM-BL-FI-09	ST/PC SM, Cable Ø=0.9mm
	LS-FC-ST/PC-M2-BG-FI-09	ST/PC MM(OM2), Cable Ø=0.9mm
	LS-FC-ST/PC-M3-AQ-FI-09	ST/PC MM(OM3), Cable Ø=0.9mm
	LS-FC-ST/PC-M4-AQ-FI-09	ST/PC MM(OM4), Cable Ø=0.9mm

Fiber Transceiver Solution

Fiber transceiver solution for Max. 100G Ethernet Network



General transceiver interface : MPO Connector

- MPO connector technology for electric interface
- Typically connect to 12-fibers or 24-fibers MFO for pre-terminated cabling
- Increasing requests for connecting from high-speed switch to switch, switch to server
- Easy to transfer from 10G to 100G by a assembly with two 12-fibers cable

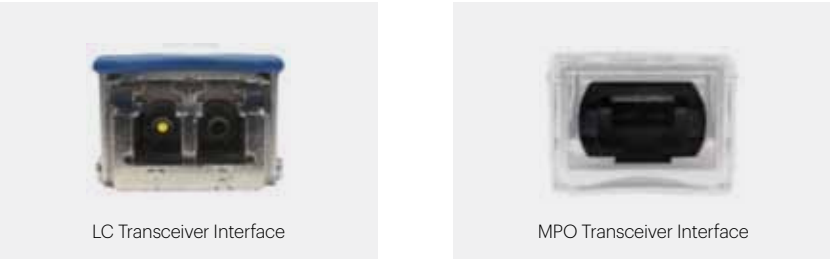
General distance for data center cabling (Ethernet network)

OM4 fiber has more long link distance than OM3 not only optical channel application but also 10Gb/s, 40G/s, 100G/s telecommunication
Refer to below table which is comparison OM3 vs. OM4
(International standard: TIA/EIA 492AAD, IEC 60793-2-10, ISO/IEC 111801, ITUG651.1)

Fiber	1G	10G	40G	100G
OM3	1000m	300m	100m	100m
OM4	1000m	500m	150m	150m

Fiber Transceiver Solution

Application for 40G/100G applying MPO, LC



Transfer media for 40G

- 40 GBASE-SR4 (Parallel optics)
- 100m on OM3 fiber
 - 150m on OM4 fiber

Transfer media for 100G

- 100GBASE-SR10 (Parallel optics)
- 100m on OM3 fiber
 - 150m on OM4 fiber

Optical transceiver module

Classification	Product Number	Data Rate	Form Factor	Product Type	Connector Type	Distance	TX Wave length	Operating Temp'
25G SFP28	LS-S2B520C-ILx	25.78Gbps	SFP+	Duplex	LC receptacle	20Km	-	-40~85℃
	LS-S2B520C-IL3						1286.66nm	
	LS-S2B520C-IL4						1291.09nm	
	LS-S2B520C-IL5						1295.55nm	
	LS-S2B520C-IL6						1300.05nm	
	LS-S2B520C-IL7						1304.57nm	
	LS-S2B520C-IL8						1309.13nm	
6G SFP+ Duplex	LS-CP6015C-Exx	6.1444Gbps	SFP+	Duplex	LC receptacle	15Km	-	-20~85℃
	LS-CP6015C-E31						1311nm	
	LS-CP6015C-E27						1271nm	
	LS-CP6015C-E29						1291nm	
	LS-CP6015C-E33						1331nm	
	LS-CP6015C-E51						1511nm	
	LS-CP6015C-E53						1531nm	
	LS-CP6015C-E55						1551nm	
	LS-CP6015C-E57						1571nm.	
1.25G SFP 10Km	LS-SP1210C-IS3	1.25Gbps	SFP	Duplex	LC receptacle	10Km	1310nm	-40~85℃
1.25G SFP 20Km	LS-SP1220C-CS3	1.25Gbps	SFP	Duplex	LC receptacle	20Km	1310nm	0~70℃
1.25G SFP 20Km	LS-SP1220C-IS3	1.25Gbps	SFP	Duplex	LC receptacle	20Km	1310nm	-40~85℃
10G SFP+ 20Km	LS-SPA020C-IS3	10Gbps	SFP+	Duplex	LC receptacle	20Km	1310nm	-40~85℃
10G SFP+ 40Km	LS-SPA040C-CS3	10Gbps	SFP+	Duplex	LC receptacle	40Km	1550nm	0~70℃
10G SFP+ 80Km	LS-SPA080C-CS3	10Gbps	SFP+	Duplex	LC receptacle	80Km	1550nm	0~70℃

Fiber Jumper Cord



Descriptions

- Various type of connectors (SC, LC, ST, FC, etc.)
- Optimum optical performance through high quality ferrules
- 100% Factory tested for Insertion & Return Loss
- Ferrule inspection data sheet included with all shipments
- Small Form Factor for high density applications

Applications

- Telecommunication network
- Data Processing Systems (Data Center)
- Horizontal Distribution & Backbone Cabling
- LAN and WAN
- (10/100/1000 BASE-FX ,155Mbps, 100Mbps, 1Gbps, 10Gbps) ISDN, ADSL
- Fiber Optic Test & Measurement System
- RoHS Compliant

Specification

Fiber Type	SM(1310/1550nm)		MM(850/1300nm)
Polishing Type	PC	APC	PC
Insertion Loss	≤ 0.3dB(Typ. ≤ 0.2dB)		
Return Loss	≥ 50dB	≥ 60dB	≥ 20dB

Note : PC(Physical Contact), APC(Angled Physical Contact)

Technical Details

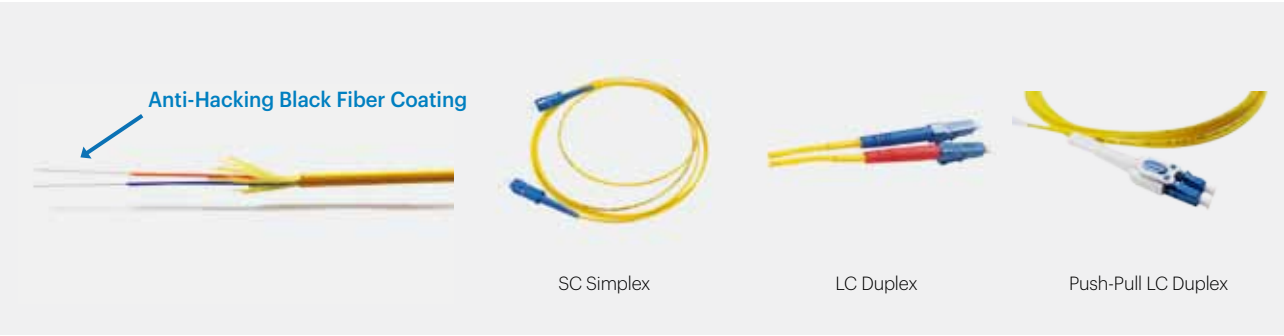
- Insertion Loss and return Loss is based on ANSI/TIA-568-C.3 requirements
- Fiber types: SM (OS1/2) - 9/125μm & MM (OM1-OM4) – 50/125μm, 62.5/125μm
- Cable Diameter : Jumper Cord (1.8 ~ 3.0mm), One side connector (0.9 ~ 3.0mm) available
- Link Length up to 300m(OM3), 550m(OM4) with 850nm source for 10Gbps systems (IEEE802.3ae)
- Material of Ferrules : Ceramic (Zirconia)
- IEC 61754, TIA 604 Standard for Connectors

Part Numbers

Description	Part Number
Fiber Optic Jumper Cord	LS-JC-AB/AB-C-DEF-G
Fiber Optic One Side Connector	LS-PIG-AB-C-DEF-G

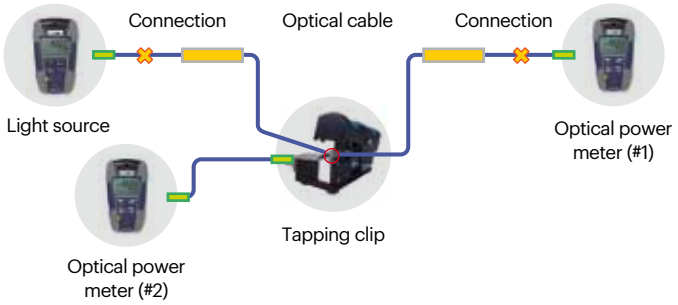
A denotes Connector type : **SC, LC, ST, FC**
B denotes Polishing : **Blank(PC), AC(APC)**
C denotes Fiber type : **SM, M1 (OM1), M2(OM2), M3(OM3), M4(OM4)**
D denotes Cable diameter : **09(Ø0.9), 16(Ø1.6), 18(Ø1.8), 20(Ø2.0), 24(Ø2.4), 30(Ø3.0), etc.**
E denotes Cable type : **SP (Simplex Cord), DP (Duplex Cord)**
F denotes Cable Jacket : **V (PVC), Z (LSZH)**
G denotes Meter : **005(0.5m), 010(1m), 050(5m), 100(10m) etc.**

Anti-hacking Fiber Cord



Descriptions

- Block hacking by preventing external leakage of light source
- Applying excellent Macro Bending performance
- Support above 15D Bending Radius
- Apply Low-Loss pigtail for performance
- Simplex, Duplex Jumper code (O.D2.0mm)



Part Numbers

Part Number	Description
LS-AHJ-LC(SC)/LC(SC)-SM-20DPV-YYY	Anti-Hacking Fiber Cord Duplex LC, SC OD2mm, PVC
LS-AHJ-PLC/PLC-SM-20DPV-YYY	Push-pull Anti-Hacking Fiber Cord Duplex LC OD2mm, PVC, SM
LS-AHJ-PLC/PLC-M4-20DPV-YYY	Push-pull Anti-Hacking Fiber Cord Duplex LC OD2mm, PVC, OM4
LS-AHPIG-LC(SC)-SM-09SPV-YYY	Anti-Hacking Fiber Cord, Pigtail, SC OD2mm, PVC

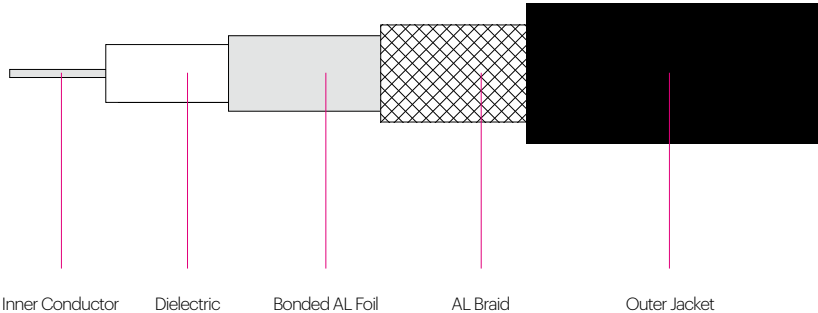
* YYY denotes Length: 010(1M), 020(2M), 030(3M). etc.

Wave Length [nm]	Limit [dBm]	Testing Result	LS Simple™ Anti-Hacking	Normal Optical Fiber Cable (A)	Normal Optical Fiber Cable (B)
1550	≤ -28	Average	-57	-29	-28
		Max.	-51	-16	-22
		Min.	-66	-50	-39
		Result	Satisfaction	Dissatisfaction	Dissatisfaction

Simple™ CATV Solutions

RG Series 6 Coaxial Cable
RG Series 59 Coaxial Cable
RG Series 11 Coaxial Cable

RG Series 6 Coaxial Cable RG 6 CCS 60%,80% Dual Shield



Physical Dimensions

Center Conductor	1.02 ± 0.01mm Copper clad steel (21% Conductivity)
Dielectric	Nom. 4.57mm
Shield	Bonded AL Foil
Braid Coverage	16 x 5 x 0.12 ± 0.01mm AL Wire (60% or 80% coverage)
Jacket	6.90 ± 0.20 mm PVC
Jacket Thickness	Nom. 0.80 mm
Jacket Color Code	Black : RAL9005

Electrical Characteristics

Item	Unit	Specification(RG6)
DC Resistance / Inner	Ω/km	≤102
Capacitance	pF/m	50 ± 3
Relative Propagation Velocity	%	≥82
SRL_5MHz ~ 1000MHZ	dB	20
SRL_1000MHz ~ 3000MHZ	dB	15
Impedance	Ω	75 ± 3

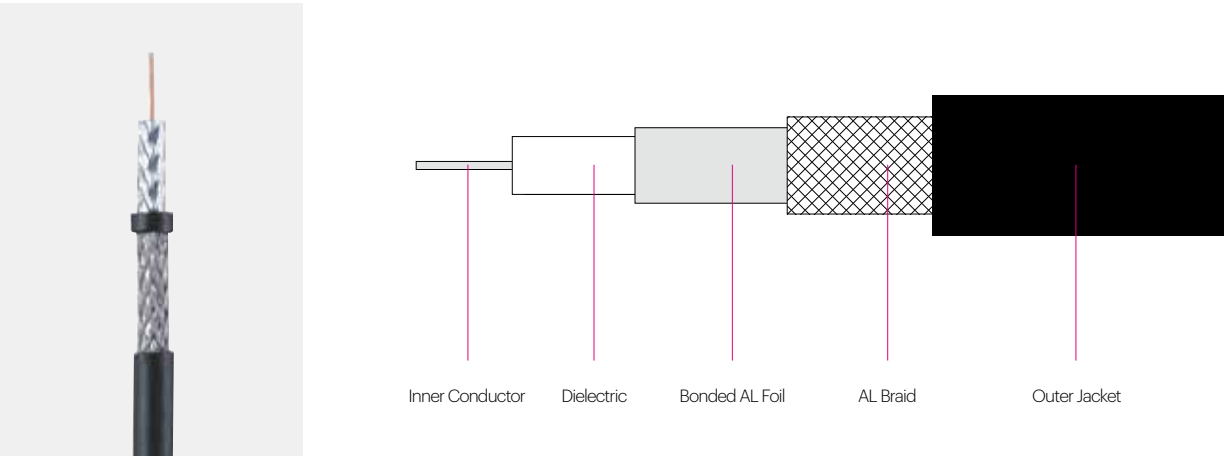
Attenuation [@68°F. (20°C)]

Series_Frequency(MHz)	RG6_Max.(dB/100m)
5	2.60
55	5.25
211	10.00
250	10.82
270	11.04
300	11.64
330	12.26
350	12.63

Series_Frequency(MHz)	RG6_Max.(dB/100m)
400	13.61
450	14.43
500	15.29
550	16.08
600	16.73
750	18.54
870	20.04
1000	21.49

RG Series 59 Coaxial Cable

RG59 CCS 60%, 80%, 80% Siamese Dual Shield



Physical Dimensions

Center Conductor		0.81±0.008mm Copper Clad Steel (24% Conductivity)
Dielectric		Nom. 3.45 Foam PE
Shield		Bonded AL Foil
Braid Coverage		16 x 4 x 0.12 ± 0.01mm AL Wire (60% or 80% coverage)
Jacket		5.80 ± 0.20 mm PVC
Jacket Thickness		Nom. 0.80mm
Jacket Color Code		Black : RAL9005 / White : RAL9010
Power Wire 2/18AWG	Conductor	Stranded CCA 15* 0.25mm
	Insulation	PE 2.0±0.10mm
	Jacket	PVC 4.95 ±0.2mm (Thick. Nom. 0.50mm)

Electrical Characteristics

Item	Unit	Specification(RG59)
DC Resistance / Inner	Ω/km	≤140
Capacitance	pF/m	50 ± 3
Relative Propagation Velocity	%	≥82
SRL_5MHz ~ 1000MHZ	dB	≥20
SRL_1000MHz ~ 3000MHZ	dB	15
Impedance	Ω	75 ± 3

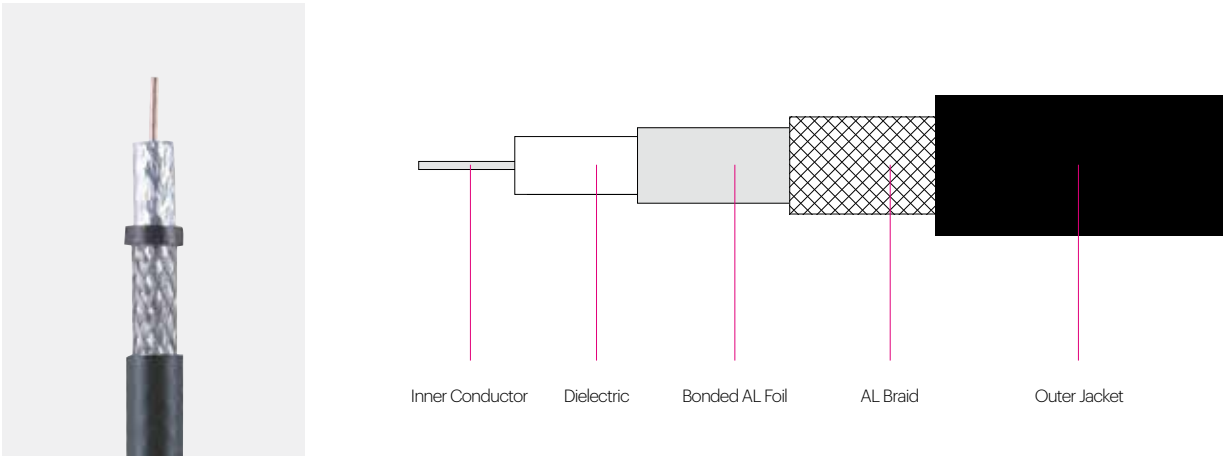
Attenuation [@68°F. (20°C)]

Series_Frequency(MHz)	RG59_Max.(dB/100m)
5	2.85
55	6.73
211	12.47
250	13.45
270	13.85
300	14.60
330	15.29
350	15.75

Series_Frequency(MHz)	RG59_Max.(dB/100m)
400	16.73
450	17.72
500	18.70
550	19.52
600	20.34
750	22.87
870	24.85
1000	26.64

RG Series 11 Coaxial Cable

RG 11 CCS 60%, 80%, 90% Dual Shield



Physical Dimensions

Center Conductor		1.63 ± 0.01mm Copper clad steel (21% Conductivity)
Dielectric		Nom. 7.11mm Foam PE
Shield		Bonded AL Foil
Braid Coverage		16 x 5 x 0.16 ± 0.01mm AL Wire (60% or 80% or 90% coverage)
Jacket		10.16 ± 0.20 mm PVC
Jacket Thickness		Nom. 1.07 mm
Jacket Color Code		Black : RAL9005 / White : RAL9010

Electrical Characteristics

Item	Unit	Specification(RG11)
DC Resistance / Inner	Ω/km	≤40.4
Capacitance	pF/m	50 ± 3
Relative Propagation Velocity	%	≥82
SRL_5MHz ~ 1000MHZ	dB	20
SRL_1000MHz ~ 3000MHZ	dB	15
Impedance	Ω	75 ± 3

Attenuation [@68°F. (20°C)]

Series_Frequency(MHz)	RG11_Max.(dB/100m)
5	1.50
55	3.30
211	6.23
250	6.72
270	7.00
300	7.38
330	7.71
350	7.94

Series_Frequency(MHz)	RG11_Max.(dB/100m)
400	8.53
450	9.10
500	9.70
550	10.20
600	10.63
750	12.25
870	13.50
1000	14.40

Simple™ Rack & Raceway

Rack Solutions
Raceway

Rack Solutions

The LS Racks generally conform to IEC297, EIA-310-D standard and provides unsurpassed strength, stability and durability for supporting FDF, patch panel, high-density blocks, cabling and other telecommunication equipments.
It is a versatile rack that can be freely adjusted in height, width and depth to be easily changed in specification.



LS-CR-22-2430-EX



LS-CR-40-2430-EX



LS-MWR-9U-EX

Cabinet Rack

- Front door: Tempered bent holed Steel or glass(optional)
- Load capability Maximum 1,000kg
- Aluminum frame & 19Inch standard Rack
- Fan unit (220V-1FAN), C-Shelf, Cable Bar 3ea
- Power Unit(220V-8Way)
- Slim Nuts M5, mounting bar, rear door, side/top/bottom panel included

Part Numbers

Part Number	Dimension (H* W* D,mm)	Description
LS-CR-22-2430-EX	1200*600*750	CABINET RACK 19" (22U), M5 bolt 50ea
LS-CR-27-2430-EX	1400*600*750	CABINET RACK 19" (27U), M5 bolt 60ea
LS-CR-31-2430-EX	1600*600*750	CABINET RACK 19" (31U), M5 bolt 70ea
LS-CR-36-2430-EX	1800*600*750	CABINET RACK 19" (36U), M5 bolt 70ea
LS-CR-40-2430-EX	2000*600*750	CABINET RACK 19" (40U), M5 bolt 80ea
LS-CR-42-2430-EX	2100*600*750	CABINET RACK 19" (42U), M5 bolt 80ea
LS-CR-45-2430-EX	2200*600*750	CABINET RACK 19" (45U), M5 bolt 90ea

Mini Wall Mounted Rack & Management

- Front door: Tempered bent holed Steel
- Load capability Maximum 500kg
- Aluminum frame & 19Inch standard Rack
- Fan unit (220V-1FAN), A-Shelf, Cable Bar 3ea
- Power Unit(220V-6Way)
- Slim Nuts M5, mounting bar, rear door, side/top/bottom panel included

Part Numbers

Part Number	Dimension (H* W* D,mm)	Description
LS-MWR-9U-EX	470*626*500	Mini Wall Mounted Rack with steel door, 9U
LS-MWR-11U-EX	607*646*600	Mini Wall Mounted Rack with steel door, 11U
LS-MWR-13U-EX	697*646*600	Mini Wall Mounted Rack with steel door, 13U

Rack Solutions



2Post Open Rack & Management

- Load capability Maximum 1000Kg, M5 Screw Mounting
 - Available for mounting vertical cable management in the left or right(optional)
- Rack material: black color, cold-rolled steel, aluminum
 - VCM Guide: flame retardant PC or ABS

Item	Product Number	Dimension (H* W* D,mm)	Description
Open Rack	LS-OR-PAT-36A-EX	1800*600*365	2Post Open Rack 36U
	LS-OR-PAT-40A-EX	2000*600*365	2Post Open Rack 40U
	LS-OR-PAT-44A-EX	2200*600*365	2Post Open Rack 44U
Vertical Cable Management (for Open Rack)	LS-OR-PATV-36A-EX	1800*150*178	Vertical management for 36U
	LS-OR-PATV-40A-EX	2000*150*178	Vertical management for 40U
	LS-OR-PATV-44A-EX	2200*150*178	Vertical management for 44U
Plinth	LS-OR-PATP-30A-EX	300*600*360	Plinth of under floor base 4post supporter
Support	LS-OR-PATS-A-EX	-	Accessory, Rack holder on the wall

Extension Rack for Data Center

- Load capability Maximum 1200Kg, M5 Screw Mounting
 - Available for mounting vertical cable management in the left or right(optional)
- Rack material: black color, cold-rolled steel, aluminum
 - VCM Guide: flame retardant PC or ABS

Item	Product Number	Dimension (H* W* D,mm)	Description
4Post Rack Frame	LS-HVF-36S-EX	1850*600*800	4 Post Rack Frame, 19", (36U) M5 Cage Net & Bolt 72ea
	LS-HVF-42S-EX	2100*600*800	4 Post Rack Frame, 19", (42U) M5 Cage Net & Bolt 84ea
	LS-HVF-45S-EX	2250*600*800	4 Post Rack Frame, 19", (45U) M5 Cage Net & Bolt 90ea
Vertical Cable Management	LS-VCM-36S-EX	1760*600*115	Built in vertical cable management for 36U
	LS-VCM-42S-EX	2100*600*115	Built in vertical cable management for 42U
	LS-VCM-45S-EX	2160*600*115	Built in vertical cable management for 45U
Side Cover	LS-SD-36S-EX	1658*567*17	Side cover for 36U
	LS-SD-42S-EX	1908*567*17	Side cover for 42U
	LS-SD-45S-EX	2058*567*17	Side cover for 45U
Dual Door	LS-FD-36S-EX	1756*590*20	Perforation hole rate 70% over , Dual door for 36U Frame
	LS-FD-42S-EX	2006*590*20	Perforation hole rate 70% over , Dual door for 42U Frame
	LS-FD-45S-EX	2156*590*20	Perforation hole rate 70% over , Dual door for 45U Frame

Rack Solutions



High Density Rack for Data Center

- High Density PKG Server & Patch rack
 - 4Post with Air Perforated Doors (Perforation Rate 70% over), Side panel
- Loading capacity: 1200kg
 - Fan unit (220V-2FAN)

Item	Product Number	Dimension (H* W* D,mm)	Description
Server Rack	LS-HDR-SVR31A-EX	1600*600*1000	High Density Server Rack 31U, M5 cage nut & bolt 62ea, with Key, Top entry 2 hole, cage nut frame
	LS-HDR-SVR36A-EX	1800*600*1000	High Density Server Rack 36U, M5 cage nut & bolt 72ea, with Key, Top entry 2 hole, cage nut frame
	LS-HDR-SVR40A-EX	2000*600*1000	High Density Server Rack 40U, M5 cage nut & bolt 80ea, with Key, Top entry 2 hole, cage nut frame
	LS-HDR-SVR42A-EX	2100*600*1000	High Density Server Rack 42U, M5 cage nut & bolt 84ea, with Key, Top entry 2 hole, cage nut frame
	LS-HDR-SVR45A-EX	2200*600*1000	High Density Server Rack 45U, M5 cage nut & bolt 90ea, with Key, Top entry 2 hole, cage nut frame
Network Rack	LS-HDR-NWK36A-EX	1800*800*1000	High Density Network Rack 36U, M5 cage nut & bolt 72ea, with Key, Top entry 2 hole, cage nut frame
	LS-HDR-NWK40A-EX	2000*800*1000	High Density Network Rack 40U, M5 cage nut & bolt 80ea, with Key, Top entry 2 hole, cage nut frame
	LS-HDR-NWK42A-EX	2100*800*1000	High Density Network Rack 42U, M5 cage nut & bolt 84ea, with Key, Top entry 2 hole, cage nut frame
	LS-HDR-NWK45A-EX	2200*800*1000	High Density Network Rack 45U, M5 cage nut & bolt 90ea, with Key, Top entry 2 hole, cage nut frame
Finger Kit	LS-FG-A-EX	10U	VCM Finger Kit for high density Rack

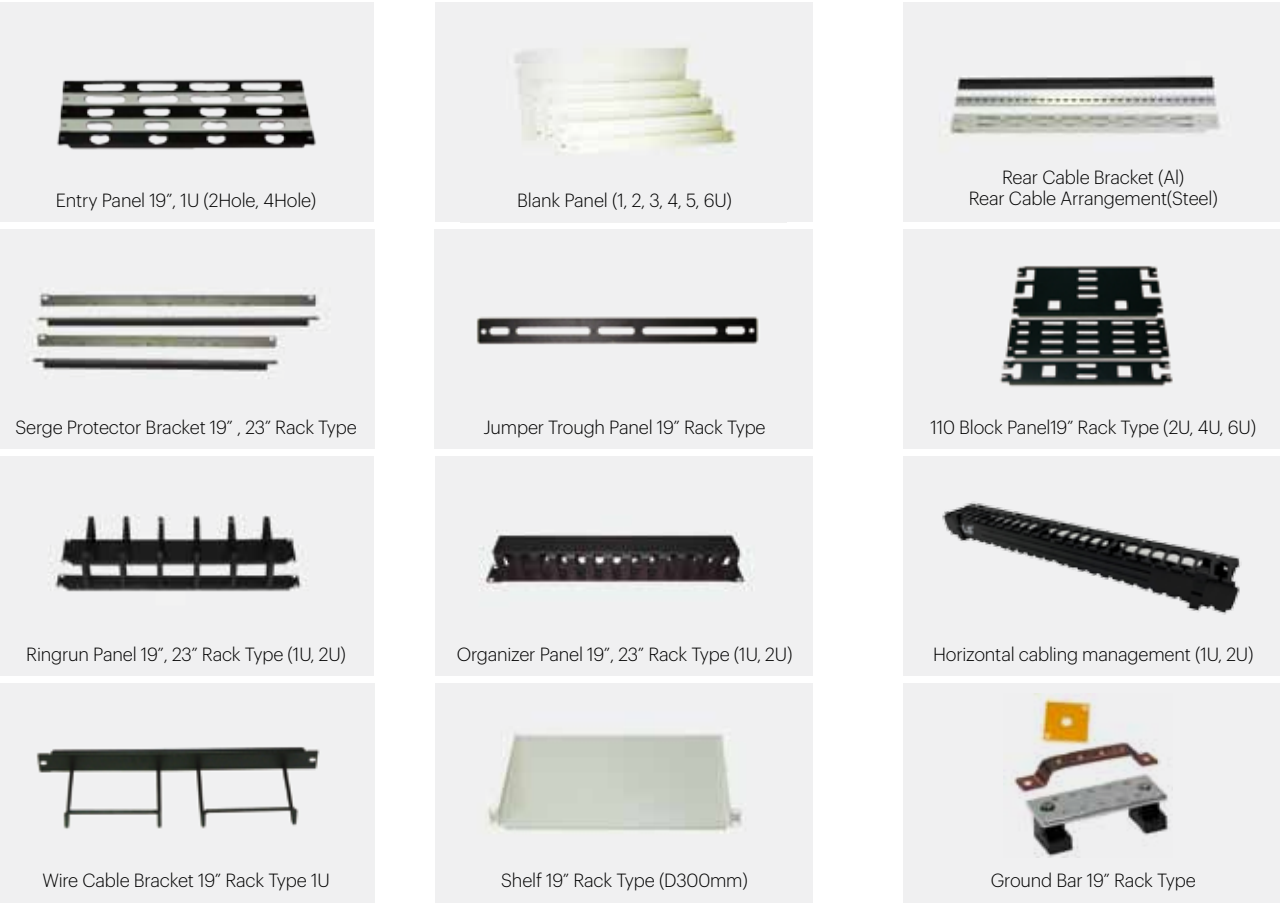
Eco Rack

The LS Echo Rack is an eco-friendly plastic compact rack suitable for small equipments such as hubs, routers, switches and can be used in a confined space such as offices.

- Eco-friendly Design by Plastic Cover
- Convenient Installation & Transport by low-weight
- Sufficient Strength & Hardness

Item	Product Number	Dimension (H* W* D,mm)	Description
Mini Eco-friendly Rack	LS-MER-6U-390-EX	390*560*560	Eco friendly rack (ABS/Steel/Glass) 6U
	LS-MER-9U-525-EX	525*560*560	Eco friendly rack (ABS/Steel/Glass) 9U
	LS-MER-14U-750-EX	750*560*560	Eco friendly rack (ABS/Steel/Glass) 14U

Rack Solutions



Rack Accessory

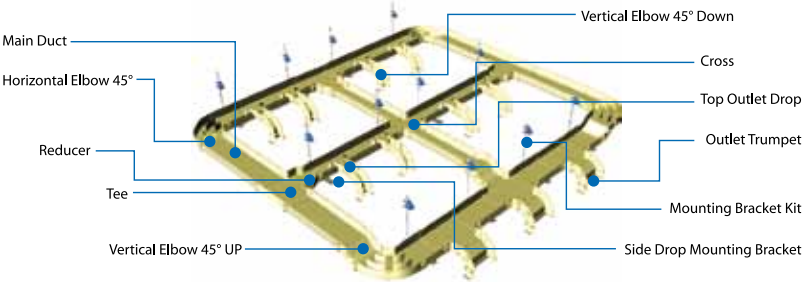
Part Numbers			
Item	Product Number	Dimension (H* W* D,mm)	Description
Entry Panel	LS-EN-1U-EX	43*482*10	Entry Panel, 4 entry holes 1U
	LS-EB-1U-EX	43*482*10	Entry Brush 1U
Blank Panel	LS-BK-1U-EX	43*482*10	Blank panel 1U
	LS-BK-2U-EX	88*482*10	Blank panel 2U
	LS-BK-3U-EX	132*482*10	Blank panel 3U
	LS-RC-EX	12*482*10	Supplement cable bracket OD6mm
Bracket	LS-SP-B-EX	-	Serge protector bracket
	LS-JTP-1U-EX	43*482*10	Jumper Through Panel 1U
110 Block Panel	LS-110B-1U-EX	43*482*10	110 Bracket 1U
	LS-110B-2U-EX	88*482*10	110 Bracket 2U
	LS-110B-4U-EX	173*482*10	110 Bracket 4U
Ringrun Panel	LS-RR-1U-EX	43*482*78	5 Ring-run 1U
	LS-RR-2U-EX	88*482*77	5 Ring-run 2U
Organizer Panel	LS-OZ-1U-EX	43*482*77	Organizer panel 1U
	LS-OZ-2U-EX	88*482*55	Organizer panel 2U
Horizontal Cabling Management	LS-HCM-1U-C	42.3*482*71	Horizontal Cabling Management 1U
	LS-HCM-2U-C	86.2*482*71	Horizontal Cabling Management 2U
Wire Cable Bracket	LS-WC-B-1U	-	Wire Cable Bracket 1U
Shelf	LS-SF-300CR-IV-EX	D300mm	Shelf, Black, 19", 2points holding
	LS-SF-750CR-IV-EX	D750mm	Shelf, Black, 19", 4points holding
	LS-SF-1000HDR-BK-EX	D1000mm	Shelf, Black, 19", 4points holding
	LS-SF-1100HDR-BK-EX	D1100mm	Shelf, Black, 19", 4points holding
Ground Bar	LS-RACKACC-GND	-	Ground Bar

Raceway



Features and Benefits

- Non-Toxic materials (RoHS, Halogen-Free)
- Flame retardant – UL 94V-0 rated
- Reliable Strength
- Provide variable size
- UV resistant materials
- Fast & Easy installation – saving time & manpower
- Effective protection for cables
- No need special tools for installation



Part Numbers

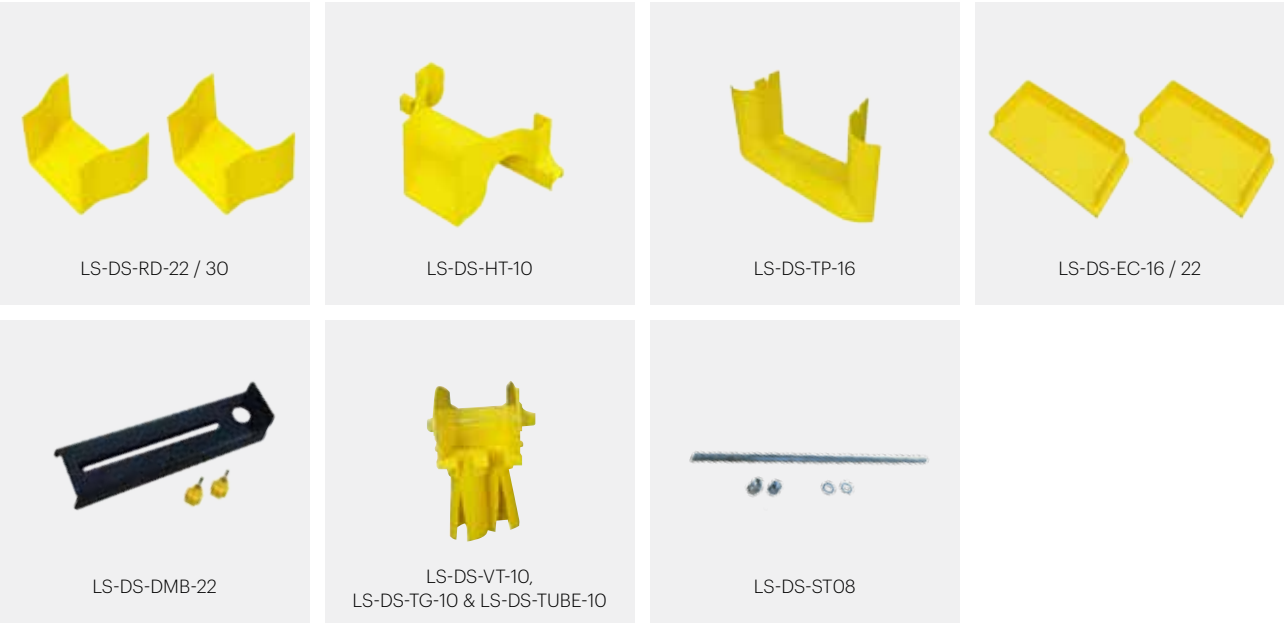
Type	Product Number	Description	Type	Product Number	Description
Main Duct	LS-DS-MD-03	Main Duct W(30mm)	Joiner	LS-DS-JO-05	Joiner with Screw W(50mm)
	LS-DS-MD-05	Main Duct W(50mm)		LS-DS-JO-10	Joiner with Screw W(100mm)
	LS-DS-MD-10	Main Duct W(100mm)		LS-DS-JO-16	Joiner with Screw W(160mm)
	LS-DS-MD-16	Main Duct W(160mm)		LS-DS-JO-22	Joiner with Screw W(220mm)
	LS-DS-MD-22	Main Duct W(220mm)		LS-DS-JO-30	Joiner with Screw W(300mm)
	LS-DS-MD-30	Main Duct W(300mm)	Cross type	LS-DS-CA-10	Horizontal Cross-Type Duct W(100)
Main Duct Cover	LS-DS-MDC-03	Main Duct Cover W(30mm)		LS-DS-CA-16	Horizontal Cross-Type Duct W(160)
	LS-DS-MDC-05	Main Duct Cover W(50mm)		LS-DS-CA-22	Horizontal Cross-Type Duct W(220)
	LS-DS-MDC-10	Main Duct Cover W(100mm)		LS-DS-CA-30	Horizontal Cross-Type Duct W(300)
	LS-DS-MDC-16	Main Duct Cover W(160mm)	Cross Cover	LS-DS-CAC-10	Horizontal Cross-Type Duct Cover W(100mm)
	LS-DS-MDC-22	Main Duct Cover W(220mm)		LS-DS-CAC-16	Horizontal Cross-Type Duct Cover W(160mm)
	LS-DS-MDC-30	Main Duct Cover W(300mm)		LS-DS-CAC-22	Horizontal Cross-Type Duct Cover W(220mm)
				LS-DS-CAC-30	Horizontal Cross-Type Duct Cover W(300mm)

Raceway



Part Numbers			Type	Product Number	Description
Horizontal Elbow	LS-DS-HA45-10	45degree Horizontal Elbow W(100mm)	45degree Vertical Elbow Down	LS-DS-DA45-05	45degree Vertical Elbow Down W(50mm)
	LS-DS-HA45-16	45degree Horizontal Elbow W(160mm)		LS-DS-DA45-10	45degree Vertical Elbow Down W(100mm)
	LS-DS-HA45-22	45degree Horizontal Elbow W(220mm)		LS-DS-DA45-16	45degree Vertical Elbow Down W(160mm)
	LS-DS-HA45-30	45degree Horizontal Elbow W(300mm)		LS-DS-DA45-22	45degree Vertical Elbow Down W(220mm)
45degree Horizontal Elbow Cover	LS-DS-HAC45-10	45degree Horizontal Elbow Cover W(100mm)	45degree Vertical Elbow Down Cover	LS-DS-DA45-30	45degree Vertical Elbow Down W(300mm)
	LS-DS-HAC45-16	45degree Horizontal Elbow Cover W(160mm)		LS-DS-DAC45-10	45degree Vertical Elbow Down Cover W(100mm)
	LS-DS-HAC45-22	45degree Horizontal Elbow Cover W(220mm)		LS-DS-DAC45-16	45degree Vertical Elbow Down Cover W(160mm)
	LS-DS-HAC45-30	45degree Horizontal Elbow Cover W(300mm)		LS-DS-DAC45-22	45degree Vertical Elbow Down Cover W(220mm)
T- Type Main Duct	LS-DS-TA-03	Horizontal T-Type Duct W(30)	45degree Vertical Elbow Up	LS-DS-DAC45-30	45degree Vertical Elbow Down Cover W(300mm)
	LS-DS-TA-10	Horizontal T-Type Duct W(100)		LS-DS-UA45-05	45degree Vertical Elbow Up W(50mm)
	LS-DS-TA-16	Horizontal T-Type Duct W(160)		LS-DS-UA45-10	45degree Vertical Elbow Up W(100mm)
	LS-DS-TA-22	Horizontal T-Type Duct W(220)		LS-DS-UA45-16	45degree Vertical Elbow Up W(160mm)
	LS-DS-TA-30	Horizontal T-Type Duct W(300)		LS-DS-UA45-22	45degree Vertical Elbow Up W(220mm)
T- Type Main Duct Cover	LS-DS-TAC-03	Horizontal T-Type Duct Cover W(30)	45degree Vertical Elbow Up Cover	LS-DS-UA45-30	45degree Vertical Elbow Up W(300mm)
	LS-DS-TAC-10	Horizontal T-Type Duct Cover W(100)		LS-DS-UAC45-10	45degree Vertical Elbow Up Cover W(100mm)
	LS-DS-TAC-16	Horizontal T-Type Duct Cover W(160)		LS-DS-UAC45-16	45degree Vertical Elbow Up Cover W(160mm)
	LS-DS-TAC-22	Horizontal T-Type Duct Cover W(220)		LS-DS-UAC45-22	45degree Vertical Elbow Up Cover W(220mm)
	LS-DS-TAC-30	Horizontal T-Type Duct Cover W(300)		LS-DS-UAC45-30	45degree Vertical Elbow Up Cover W(300mm)

Raceway



Part Numbers			Type	Product Number	Description
Reducer	LS-DS-RD-10	Reducer W(100mm) → W(50mm)	Outlet Trumpet	LS-DS-TP-05	Outlet Trumpet W(50mm)
	LS-DS-RD-16	Reducer W(160mm) → W(100mm)		LS-DS-TP-10	Outlet Trumpet W(100mm)
	LS-DS-RD-22	Reducer W(220mm) → W(160mm)		LS-DS-TP-16	Outlet Trumpet W(160mm)
	LS-DS-RD-30	Reducer W(300mm) → W(220mm)		LS-DS-TP-22	Outlet Trumpet W(220mm)
	LS-DS-RDC-10	Reducer Cover W(100mm) → W(50mm)		LS-DS-TP-30	Outlet Trumpet W(300mm)
	LS-DS-RDC-16	Reducer Cover W(160mm) → W(100mm)	End Cap	LS-DS-EC-16	End Cap W(160mm)
	LS-DS-RDC-22	Reducer Cover W(220mm) → W(160mm)		LS-DS-EC-22	End Cap W(220mm)
	LS-DS-RDC-30	Reducer Cover W(300mm) → W(220mm)		LS-DS-EC-30	End Cap W(300mm, CUT 16mm, CUT 10mm)
Top Outlet Drop set	LS-DS-HT-10	Mold Horizontal Top Outlet Drop W(100mm)	Main Duct Mounting Set	LS-DS-ST08	Threaded Rod 450mm
	LS-DS-HTC-10	Mold Horizontal Top Outlet Drop Cover W(100mm)		LS-DS-DMB-10/16	Duct Mounting Bracket with T-bolt W(100mm/160mm)
	LS-DS-SDB-10	Side Drop bracket with T-bolt W(100mm)		LS-DS-DMB-22	Duct Mounting Bracket with T-bolt W(220mm)
Vertical Top Outlet Drop Set	LS-DS-VT-10	Mold Vertical Top Outlet Drop W(100mm)		LS-DS-DMB-30	Duct Mounting Bracket with T-bolt W(300mm)
	LS-DS-VTC-10	Mold Vertical Top Outlet Drop Cover W(100mm)	Vertical Top Outlet Drop Set	LS-DS-TBOLT	Tees Bolt & Nut
	LS-DS-TG-10	Tube Guide Set (100mm)		LS-DS-M4	Pan Head Screw M4*10 (160 & 300mm Joiners)
	LS-DS-TUBE-10	36mm Tube 1m		LS-DS-SP-SETL	Suspension Set

Simple™ Fiber Pre-Terminated Solution

MPO/MTP Fiber Distribution Frame

MPO/MTP Trunk Cable

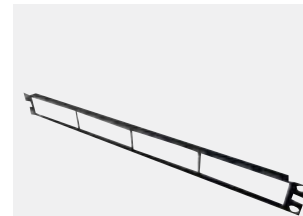
MPO/MTP Fan-out Cable

MPO/MTP Changeable Connector Cable

MPO/MTP Fiber Distribution Frame Accessories

Packing Information

MPO/MTP Fiber Distribution Frame



LS-FDP-BK-4M



LS-MCM-SC-DP-12-MM



LS-MCM-LC-DP-12-M4



LS-MCM-LC-4M-24-M3



LS-MCM-LC-4M-36-SM



LS-MCM-MCC6



LS-FDM-BLK

Descriptions

MPO/MTP Modular Panel is a Fiber Distribution Frame (FDF) case which is installed for MPO /MTP cassette modules and MPO/MTP adapter panels. This product includes the metallic case, cable protective guide, cable management and other necessary materials to array MPO/MTP cable. The MPO/MTP Modular Panel is installed on the international standard equipment rack or cabinet rack.

Applications / Specification

- Telecommunication Network
- Data Center Systems (1G~400Gbps between MDA to EDA)
- Based on IEC 61754-7 MPO/MTP Type Connector
- Fiber types : SM & MM
- Capacity : Up to 144 fiber core per 1U
- 4 Spaces for MPO/MTP Cassette or MPO/MTP Adapter Panel
- Poly-Carbonate (PC) Material for Front Cable Management
- 19" Rack mountable 1U
- Transport & Storage Temperature : 0°C ~ 70°C
- Insertion Loss ≤ 0.35dB(Low-Loss MPO/MTP)

Part Numbers (MPO 12C / 1Connector type)

Part number	Description
LS-FDP-BK-4M	FDF Empty panel
LS-MCM-LC-DP-12-xx	LC Duplex 12-core to 1 Male MPO Pre-term. Cassette (MPO Base-12/1C type)
LS-MCM-LC-4M-24-xx	LC 4 array type 24-core to 1 Male MPO Pre-term. Cassette (MPO Base-12/1C type)
LS-MCM-LC-4M-36-xx	LC 4 array type 36-core to 1 Male MPO Pre-term. Cassette (MPO Base-12/1C type)
LS-MCM-SC-DP-12-xx	SC Duplex 12-core to 1 Male MPO Pre-term. Cassette (MPO Base-12/1C type)
LS-MCD-LC-DP-12-xx	LC Duplex 12-core to 1 Male MPO Pre-term. Cassette (MPO Base-12/1C type), Door type LC
LS-MCD-LC-4M-24-xx	LC Duplex 24-core to 1 Male MPO Pre-term. Cassette (MPO Base-12/1C type), Door type LC
LS-MCD-LC-4M-36-xx	LC Duplex 36-core to 1 Male MPO Pre-term. Cassette (MPO Base-12/1C type), Door type LC

* LS standard product type : A type

Part Numbers (MPO 24C / 1Connector type)

Part number	Description
LS-MCM-LC-4M-24-C24	LC 4 array type LC 12-core to 1 Male MPO Pre-term. Cassette (MPO Base-24/1C type), Door type LC connector
LS-MCD-LC-4M-24-C24	LC 4 array type LC 12-core to 1 Male MPO Pre-term. Cassette (MPO Base-24/1C type), Door type LC connector

* MCD : Door type Adaptor

* xx denotes SM(Single-Mode), M1-M4 (Multi-Mode)

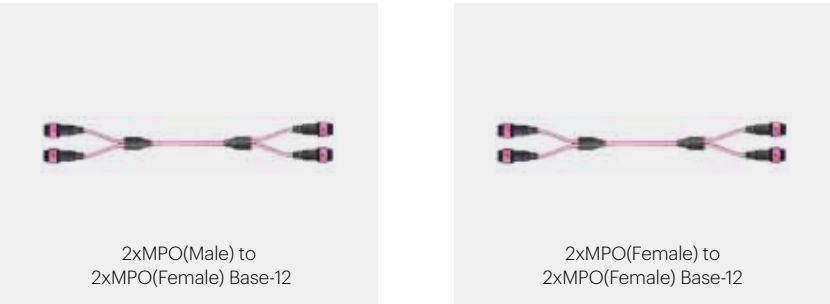
MPO/MTP Trunk Cable

MPO 12C / 1Connector type, Single Port



Part Numbers	
Part number	Description
LS-MTC-FF-xx-12Z-yyy	Female to Female MPO connector Trunk Cable, 12-core Micro Distri. Cable(LSZH), Type A
LS-MTC-MF-xx-12Z-yyy	Male to Female MPO connector Trunk Cable with 12-core Micro Distri. Cable(LSZH), Type A
LS-MTC-FF-xx-24Z-yyy	Female to Female MPO connector Trunk Cable with 24-core Micro Distri. Cable(LSZH), Type A
LS-MTC-MF-xx-24Z-yyy	Male to Female MPO connector Trunk Cable with 24-core Micro Distri. Cable(LSZH), Type A

MPO 12C / 1Connector type, 2 by 2 way

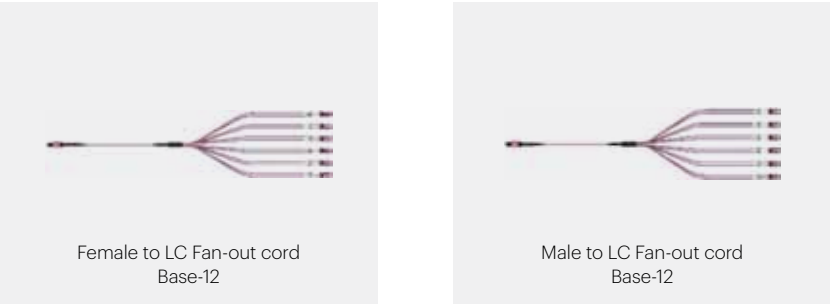


Part Numbers	
Part number	Description
LS-MTC-FF-xx-D12Z-yyy	Female to Female MPO connector Trunk Cable(2x2 type) with 24(12x2)-core Micro Distri. Cable(LSZH), Type A
LS-MTC-MF-xx-D12Z-yyy	Male to Female MPO connector Trunk Cable(2x2 type) with 24(12x2)-core Micro Distri. Cable(LSZH), Type A

* xx(fiber mode) denotes fiber mode : SM (Single-mode), M3 (OM3), M4 (OM4) etc.
* yyy denotes fiber length : 003 (3m), 005 (5m), 010 (10m) etc.

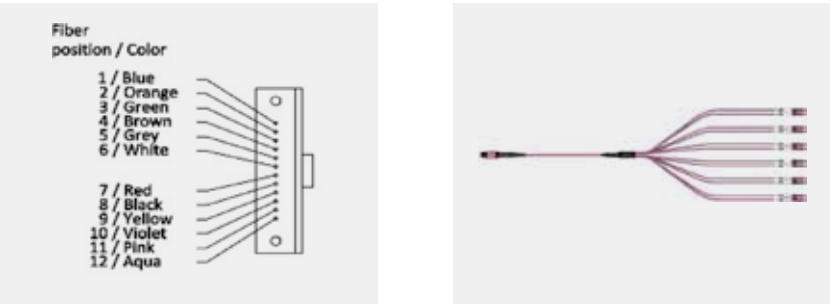
MPO/MTP Fan-out Cord

MPO 12C / 1Connector type, Straight



Part Numbers		
Part number	Description	Wire-Map
LS-MFC-FSC-xx-12Z-yyy	Female MPO to 12-core SC connector Fan-out Cord(LSZH) with Straight	1 / Blue 7 / Red 2 / Orange 8 / Black 3 / Green 9 / Yellow 4 / Brown 10 / Violet 5 / Grey 11 / Pink 6 / White 12 / Aqua
LS-MFC-FLC-xx-12Z-yyy	Female MPO to 12-core LC connector Fan-out Cord(LSZH) with Straight	
LS-MFC-MSC-xx-12Z-yyy	Male MPO to 12-core SC connector Fan-out Cord(LSZH)with Straight	
LS-MFC-MLC-xx-12Z-yyy	Male MPO to 12-core LC connector Fan-out Cord(LSZH) with Straight	

MPO 12C / 1Connector type, Pair-flipped

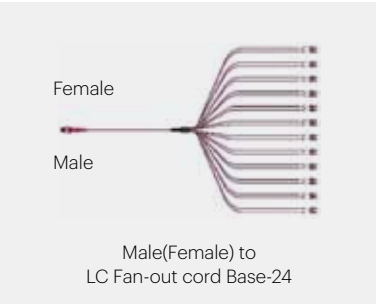


Part Numbers		
Part number	Description	Wire-Map
LS-MFC-FSC-xx-12Z-yyy-PF	Female MPO to 12-core SC connector Fan-out Cord(LSZH) with Pair-flipped	2/ Orange 8 / Black 1 / Blue 7 / Red 4 / Brown 10 / Violet 3 / Green 9 / Yellow 6 / White 12 / Aqua 5 / Grey 11 / Pink
LS-MFC-FLC-xx-12Z-yyy-PF	Female MPO to 12-core LC connector Fan-out Cord(LSZH) with Pair-flipped	
LS-MFC-MSC-xx-12Z-yyy-PF	Male MPO to 12-core SC connector Fan-out Cord(LSZH) with Pair-flipped	
LS-MFC-MLC-xx-12Z-yyy-PF	Male MPO to 12-core LC connector Fan-out Cord(LSZH) with Pair-flipped	

* xx(fiber mode) denotes fiber mode : SM (Single-mode), M3 (OM3), M4 (OM4) etc.
* yyy denotes fiber length : 003 (3m), 005 (5m), 010 (10m) etc.

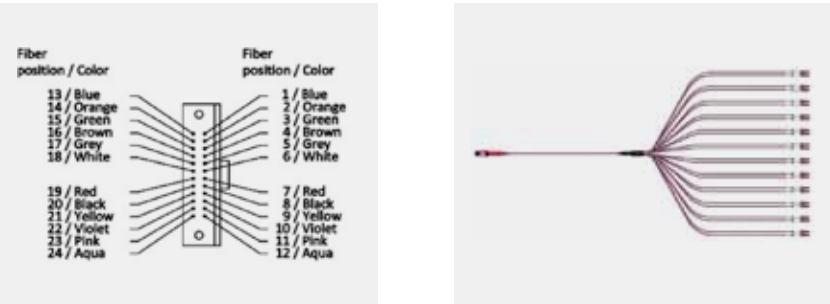
MPO/MTP Fan-out Cord

MPO 24C / 1Connector type, Straight



Part Numbers				
Part number	Description	Wire-Map		
LS-MFC-FSC-xx-24Z-yyy	Female MPO to 24-core SC connector Fan-out Cord(LSZH) with Straight	1 / Blue	9 / Yellow	17 / Grey
LS-MFC-FLC-xx-24Z-yyy	Female MPO to 24-core LC connector Fan-out Cord(LSZH) with Straight	2 / Orange	10 / Violet	18 / White
		3 / Green	11 / Pink	19 / Red
LS-MFC-MS-xx-24Z-yyy	Male MPO to 24-core SC connector Fan-out Cord(LSZH) with Straight	4 / Brown	12 / Aqua	20 / Black
		5 / Grey	13 / Blue	21 / Yellow
LS-MFC-MLC-xx-24Z-yyy	Male MPO to 24-core LC connector Fan-out Cord(LSZH) with Straight	6 / White	14 / Orange	22 / Violet
		7 / Red	15 / Green	23 / Pink
		8 / Black	16 / Brown	24 / Aqua

MPO 24C / 1Connector type, Pair-flipped

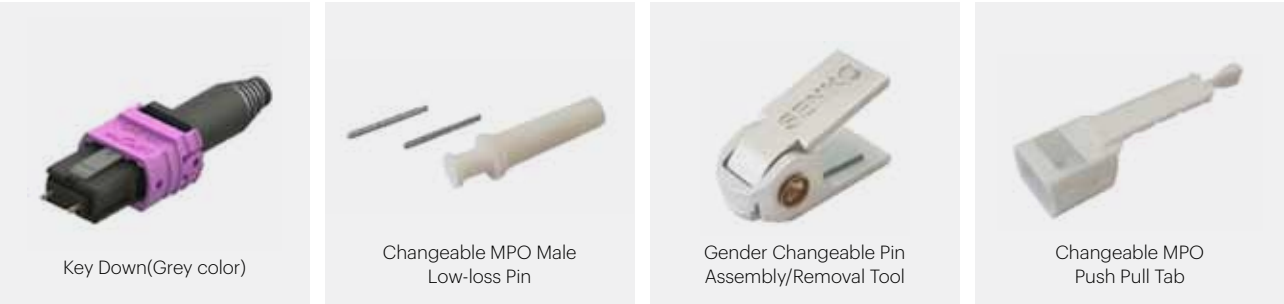


Part Numbers				
Part number	Description	Wire-Map		
LS-MFC-FSC-xx-24Z-yyy-PF	Female MPO to 24-core SC connector Fan-out Cord(LSZH) with Pair-flipped	2 / Orange	10 / Violet	18 / White
LS-MFC-FLC-xx-24Z-yyy-PF	Female MPO to 24-core LC connector Fan-out Cord(LSZH) with Pair-flipped	1 / Blue	9 / Yellow	17 / Grey
		4 / Brown	12 / Aqua	20 / Black
LS-MFC-MS-xx-24Z-yyy-PF	Male MPO to 24-core SC connector Fan-out Cord(LSZH) with Pair-flipped	3 / Green	11 / Pink	19 / Red
		6 / White	14 / Orange	22 / Violet
LS-MFC-MLC-xx-24Z-yyy-PF	Male MPO to 24-core LC connector Fan-out Cord(LSZH) with Pair-flipped	5 / Grey	13 / Blue	21 / Yellow
		8 / Black	16 / Brown	24 / Aqua
		7 / Red	15 / Green	23 / Pink

* xx(fiber mode) denotes fiber mode : SM (Single-mode), M3 (OM3), M4 (OM4) etc.
* yyy denotes fiber length : 003 (3m), 005 (5m), 010 (10m) etc.

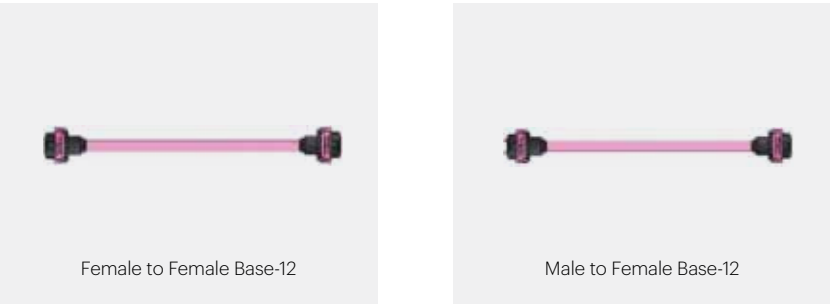
MPO/MTP Changeable Connector Cable

MPO Changeable connector accessories



Part Numbers			
Part number	Description		
LS-MPIN-10SET	MPO Male Pin Set 10 pairs = 20PCS - Applied MPO Base-12 Multi mode		
LS-MPIN-10SET-LL	MPO Male Low-loss Pin Set 10 pairs = 20PCS - Applied MPO Base-12 Single mode - Applied MPO Base-24 Single mode / Multi mode		
LS-MCKP-U1	Tool for polarity change		
LS-MPPT-50	Push-Pull Tab for Changeable MPO 50mm White		

MPO 12C/1Connector type , MPO Changeable Connector Trunk Cable

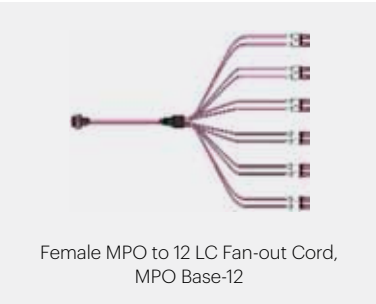


Part Numbers			
Part number	Description		
LS-MTCC-FF-xx-12Z-yyy	Changeable Female to Female MPO connector Trunk Cable, 12-core Micro Distri. Cable(LSZH), Type A		
LS-MTCC-MF-xx-12Z-yyy	Changeable Male to Female MPO connector Trunk Cable with 12-core Micro Distri. Cable(LSZH), Type A		
LS-MTCC-FF-xx-24Z-yyy	Changeable Female to Female MPO connector Trunk Cable with 24-core Micro Distri. Cable(LSZH), Type A		
LS-MTCC-MF-xx-24Z-yyy	Changeable Male to Female MPO connector Trunk Cable with 24-core Micro Distri. Cable(LSZH), Type A		

* xx(fiber mode) denotes fiber mode : SM (Single-mode), M3 (OM3), M4 (OM4) etc.
* yyy denotes fiber length : 003 (3m), 005 (5m), 010 (10m) etc.

MPO/MTP Changeable Connector Cable

MPO 12C/1Connector type, MPO to LC/SC Changeable Connector Fan-out Cord



Part Numbers		
Part number	Description	Wire-Map
LS-MFCC-FSC-xx-12Z-yyy	Changeable Female MPO to 12-core SC connector Fan-out Cord(LSZH) with Straight	1 / Blue 2 / Orange 3 / Green 4 / Brown 5 / Grey 6 / White 7 / Red 8 / Black 9 / Yellow 10 / Violet 11 / Pink 12 / Aqua
LS-MFCC-FLC-xx-12Z-yyy	Changeable Female MPO to 12-core LC connector Fan-out Cord(LSZH) with Straight	
LS-MFCC-MS-xx-12Z-yyy	Changeable Male MPO to 12-core SC connector Fan-out Cord(LSZH) with Straight	
LS-MFCC-MLC-xx-12Z-yyy	Changeable Male MPO to 12-core LC connector Fan-out Cord(LSZH) with Straight	

* xx(fiber mode) denotes fiber mode : SM (Single-mode), M3 (OM3), M4 (OM4) etc.
* yyy denotes fiber length : 003 (3m), 005 (5m), 010 (10m) etc.

MPO/MTP Fiber Distribution Frame Accessories



Part Numbers	
Part number	Description
LS-RCM-1U-3R	Rear Fiber Cable Management 3 Roll-Trays



Part Numbers	
Part number	Description
LS-FCM-1U-F1	Front Fiber Cable Management 1U

Packing Information

Assemblies less than 50meter(<50) will be packed in LDPE plastic bag
Assemblies more than 50 meter (≥50) will be delivered on a paper reel
Applied “pulling eye” to both ends of the trunk cable assembly



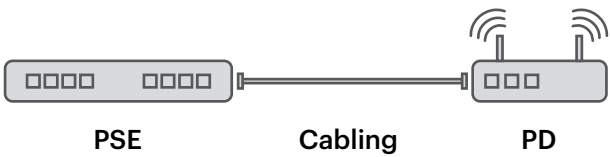
Appendix

- PoE (Power over Ethernet)
- Compatible Products & Construction of Patch Cord
- CPR (Construction Products Regulation)
- FDF Ordering Information
- Type of Cable Structure
- Product Standards
- PoE Cable Installation Specification and Application List
- Flame Retardant / Permanent Link & Channel
- RCDD
- Warranty Program

PoE (Power over Ethernet)

PoE (Power over Ethernet) Standard Specification

PoE (Power over Ethernet) is a technology delivering power to devices over Ethernet data cables without extra installation of power supplies in standard of IEEE802.3.



Item	Maximum power delivered by PSE	Power available at PD	Maximum current	Standard
PoE (Type 1)	15.4 W	12.95 W	350 mA	IEEE 802.3af
PoE+ (Type 2)	30 W	25.5 W	600 mA	IEEE 802.3at
PoE++ (Type 3)	60 W	51 W	600mA per pair	IEEE 802.3bt
PoE++ (Type 4)	100 W	71 W	960mA per pair	IEEE 802.3bt

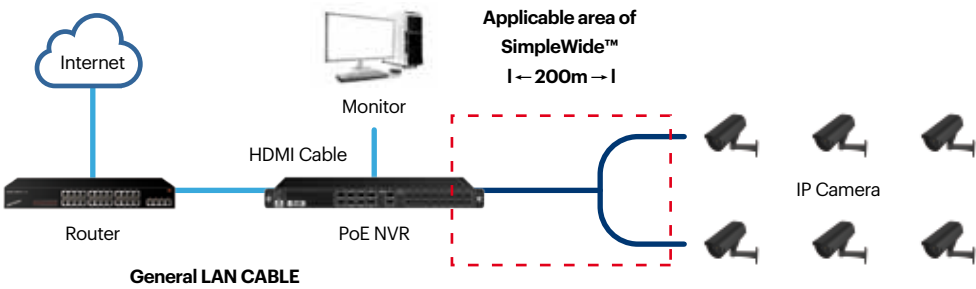
PoE Types and Power

Data and DC Power can be delivered through LAN cable without additional AC power supply

Item	802.3af (802.3at Type 1) "PoE"	802.3at Type 2 "PoE+"	802.3bt Type 3 "4PPoE"	802.3bt Type 4
Maximum power delivered by PSE	15.40 W	30.0 W	60 W	100 W
Power available at PD	12.95 W	25.50 W	51 W	71 W
Voltage range (at PSE)	44.0–57.0 V	50.0–57.0 V	50.0–57.0 V	52.0–57.0 V
Voltage range (at PD)	37.0–57.0 V	42.5–57.0 V	42.5–57.0 V	41.1–57.0 V
Maximum current	350 mA	600 mA	600 mA per pair	960 mA per pair
Supported modes 1) Mode A: 12, 36 pair 2) Mode B: 45, 78 pair 3) 4 pair mode	Mode A or B	Mode A or B	Mode A,B or 4 pair mode	4 pair mode

SimpleWide™ Installation for long distance up to 200m

SimpleWide™ enables PoE IP Camera to be connected to PoE NVR eliminating additional connecting devices. (Maximum 30W PoE+ / 1Gbps Transferable)



Compatible Products & Construction of Patch Cord

Compatible plugs and tools

Cable		Plug	Tool
Cat.5e	U/UTP	LS-MP-UC5E-RJ45	LS-CT-C5E(6)-SI1
		LS-MP-UC5E-RJ45-EZ-L	LS-CT-EZ
	SF/UTP	LS-MP-SC5E-RJ45-TRBOOT	LS-CT-SC6(A)-SI1
		LS-MP-SC-RJ45-EZ-C	LS-CT-EZ
Cat.6	U/UTP	LS-MP-UC6-RJ45	LS-CT-C5E(6)-SI1
		LS-MP-UC6-RJ45-EZ	LS-CT-EZ
	SF/UTP	LS-MP-SC6-RJ45-TRBOOT	LS-CT-SC6(A)-SI1
		LS-MP-SC-RJ45-EZ-C	LS-CT-EZ

Compatible PoE Item

Cable	Modular Plug	Modular Jack
UTP-G-C6G-E1VN-M 23AWGX004P/### (SimpleWide™) - Long distance PoE Type 3&4 4Pair	LS-MP-SC-RJ45-EZ-C	LS-MJ-UC5E-XX-ERI
		LS-MJ-UC6-XX-ERI
UTP-G-C6G-F1VX-P 0.5X004P/### - UTP LP Plenum PoE Type 3&4 4Pair	LS-MP-UC6-RJ45-EZ	LS-MJ-UC5E-XX-ERI
		LS-MJ-UC6-XX-ERI

* ### denotes available colors

Construction of Patch Cord

Category	Plug	Cable	Sheath Material	Marking on the Cable Sheath
Cat.5e	Unshield	U/UTP	PVC (CM Rated)	LS Cable & System UTP E245354 CM C(UL)US 24AWG 4PR 75C ANSI/TIA-568.2-D ISO/IEC 11801 CAT 5E PATCH CABLE
	Shield	F/UTP	PVC (CM Rated)	LS Cable & System F/UTP E245354 CM C(UL)US 26AWG 4PR 75C ANSI/TIA-568.2-D ISO/IEC 11801 CAT 5E PATCH CABLE
	Unshield	U/UTP	LSZH	LS Cable & System UTP E245354 LSZH C(UL)US 24AWG 4PR 75C ANSI/TIA-568.2-D ISO/IEC 11801 CAT 5E PATCH CABLE
	Shield	F/UTP	LSZH	LS Cable & System F/UTP E245354 LSZH C(UL)US 26AWG 4PR 75C ANSI/TIA-568.2-D ISO/IEC 11801 CAT 5E PATCH CABLE
Cat.6	Unshield	U/UTP	PVC (CM Rated)	LS Cable & System UTP E245354 CM C(UL)US 24AWG 4PR 75C ANSI/TIA-568.2-D ISO/IEC 11801 CAT 6 PATCH CABLE
	Shield	U/FTP	PVC (CM Rated)	LS Cable & System U/FTP E245354 CM C(UL)US 26AWG 4PR 75C ANSI/TIA-568.2-D ISO/IEC 11801 CAT 6 PATCH CABLE
	Unshield	U/UTP	LSZH	LS Cable & System UTP E245354 LSZH C(UL)US 24AWG 4PR 75C ANSI/TIA-568.2-D ISO/IEC 11801 CAT 6 PATCH CABLE
	Shield	U/FTP	LSZH	LS Cable & System U/FTP E245354 LSZH C(UL)US 26AWG 4PR 75C ANSI/TIA-568.2-D ISO/IEC 11801 CAT 6 PATCH CABLE
Cat.6A	Unshield	U/FTP	PVC (CM Rated)	LS Cable & System UTP E245354 CM C(UL)US 26AWG 4PR 75C ANSI/TIA-568.2-D ISO/IEC 11801 CAT6(A) PATCH CABLE
	Shield	U/FTP	PVC (CM Rated)	LS Cable & System U/FTP E245354 CM C(UL)US 26AWG 4PR 75C ANSI/TIA-568.2-D ISO/IEC 11801 CAT6(A) PATCH CABLE
	Unshield	U/FTP	LSZH	LS Cable & System UTP E245354 LSZH C(UL)US 26AWG 4PR 75C ANSI/TIA-568.2-D ISO/IEC 11801 CAT6(A) PATCH CABLE
	Shield	U/FTP	LSZH	LS Cable & System U/FTP E245354 LSZH C(UL)US 26AWG 4PR 75C ANSI/TIA-568.2-D ISO/IEC 11801 CAT6(A) PATCH CABLE

CPR (Construction Products Regulation)

What is CPR?

The Construction Products Regulation (CPR) is a “common technical language” that proposes the standardized assessment of the fire performance of building materials throughout the European region. Through this regulation, people can choose cables based on commonstand ard when they design and construct buildings. Evaluated products demonstrate compliance with the CE mark and DoP. It is the responsibility of the manufacturer to develop and supply compliant products.

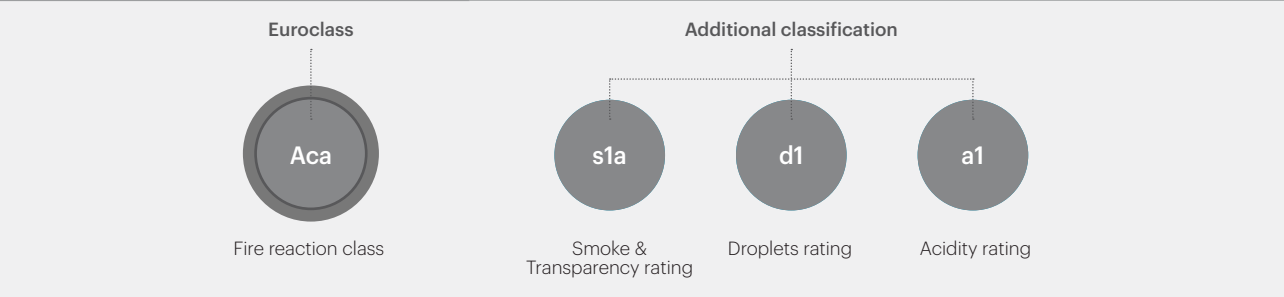
CPR Classification Criteria in Detail

Item	Classification Criteria			
	EN ISO 1716	EN 50399	EN 50399	EN 60332-1-2
	Calorific value	Heat emission & Fire growth rate	Non-fire propagation	Non-flame propagation
Aca	●			
B1ca		●	●	●
B2ca		●	●	●
Cca		●	●	●
Dca		●		●
Eca				●
Fca	No performance determined			

Additional Classification Criteria

EN 50399	EN 61034	EN 50399	EN 60754-2
Smoke production s1: Little smoke production and slow smoke propagation. s2: Average smoke production and propagation. s3: Neither a1 or a2.	Smoke transmittance s1a: s1 with smoke transmittance over 80% s1b: s1 with smoke transmittance over 60% and below 80%	Burning droplets and particles d0: No flaming droplets /particles occur within 1200 s d1: No flaming droplets /particles persisting longer than 10 s occur within 1200 s d2: None of the above.	Acidity a1: Low acidity (Conductivity < 2.5 μS/mm and pH > 4.3) Intermediate values of a2: acid (Conductivity < 10μS/mm and pH > 4.3) a3: None of the above.

Decoding the Euroclass label



FDF Ordering Information

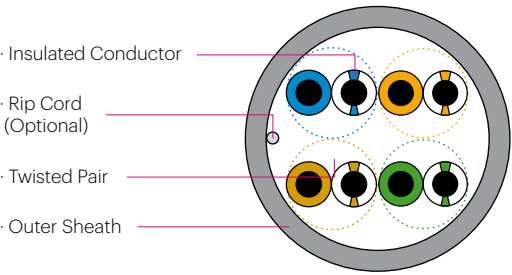
Multi-connection Module type Fiber Distribution Frame

Ordering Information					
Empty closure		Front Panel	Module	Splicing Tray (Optional)	Gland (Optional)
Outer type LS-FDF-1U-EP-O LS-FDF-2U-EP-O LS-FDF-3U-EP-O LS-FDF-4U-EP-O	Individual Adaptor type	LS-FDP-BK-012-SCSP-W	LS-FA-SC-MM-C-1-BG-W	LS-SPTR-024 LS-SPTR-048	LS-GLAND-D13.5 LS-GLAND-D16
		LS-FDP-BK-024-SCSP-W	LS-FA-SC-SM-C-1-BL-W		
		LS-FDP-BK-024-SCDP-W	LS-FA-SC-MM-C-2-BG-W		
		LS-FDP-BK-048-SCDP-W	LS-FA-SC-SM-C-2-BL-W		
		LS-FDP-BK-024-LCDP-W	LS-FA-LC-MM-C-2-BG-W		
		LS-FDP-BK-048-LCDP-W	LS-FA-LC-SM-C-2-BL-W		
		LS-FDP-BK-012-STSP-W	LS-FA-ST-MM-C-1		
		LS-FDP-BK-024-STSP-W	LS-FA-ST-SM-C-1		
	Module Adaptor type	LS-FDP-BK-4M	LS-FDM-SC-SP-06-xx	LS-SPTR-024 LS-SPTR-048	LS-GLAND-D13.5 LS-GLAND-D16
			LS-FDM-SC-DP-12-xx		
			LS-FDM-SC-DP-18-xx		
			LS-FDM-LC-DP-12-xx		
			LS-FDM-LC-4M-24-xx		
			LS-FDM-LC-4M-36-xx		
	Cassette Module type	LS-FDP-BK-4M	LS-FDM-BLK	No needed	No needed
			LS-MCF-SC-SP-06-xx		
			LS-MCF-SC-DP-12-xx		
			LS-MCF-SC-DP-18-xx		
			LS-MCF-LC-DP-12-xx		
			LS-MCF-LC-4M-24-xx		
Closure		Module	Splicing Tray (Optional)	Gland (Optional)	
Drawer type LS-FDF-MC1U-EP4M-D (Closure + Front Panel All-in-one type)	Individual Adaptor type	LS-FDM-SC-SP-06-xx	LS-SPTR-024 LS-SPTR-048	LS-GLAND-D13.5 LS-GLAND-D16	
		LS-FDM-SC-DP-12-xx			
		LS-FDM-SC-DP-18-xx			
		LS-FDM-LC-DP-12-xx			
		LS-FDM-LC-4M-24-xx			
		LS-FDM-SC-4M-36-xx			
		LS-FDM-BLK			
	Cassette Module type	LS-MCF(MCM)-SC-SP-06-xx	No needed	No needed	
		LS-MCF(MCM)-SC-DP-12-xx			
		LS-MCF(MCM)-SC-DP-18-xx			
		LS-MCF(MCM)-LC-DP-12-xx			
		LS-MCF(MCM)-LC-4M-24-xx			
		LS-MCF(MCM)LC-4M-36-xx			
		LS-FDM-BLK			

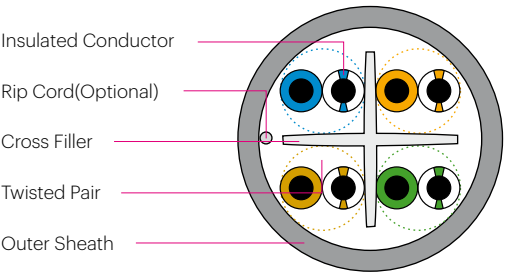
* xx denotes SM (Single-mode), MM (Multi-mode), M3 (OM3 or OM4)
* Gland is optional item for only 1U Outer / Slide type FDF
* Only FDM module is applicable in case of angled type.

Type of Cable Structure

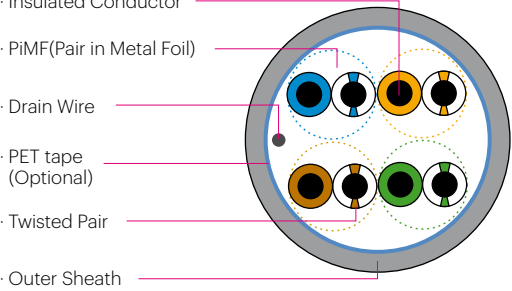
U/UTP Cable



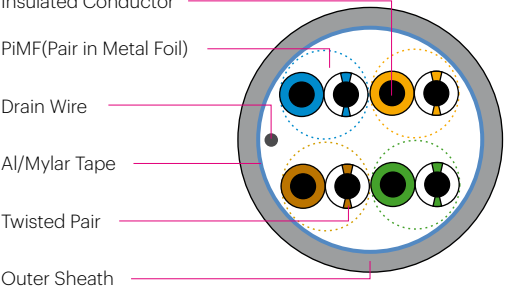
U/UTP Cable (Cross-filler)



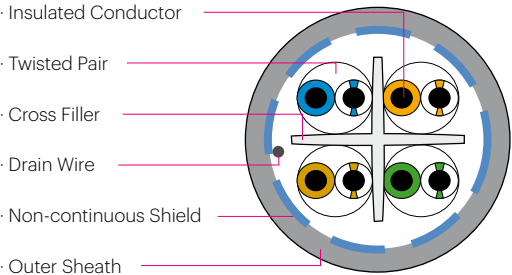
U/FTP Cable



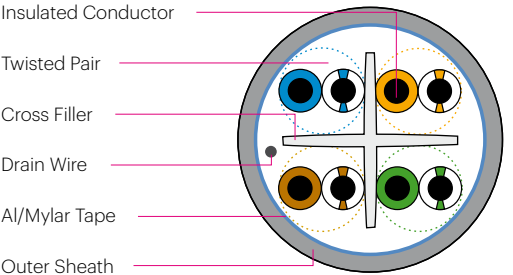
F/FTP Cable



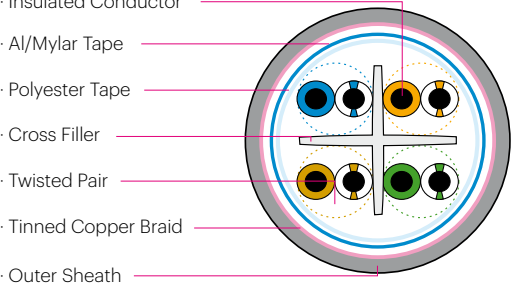
SS/UTP Cable



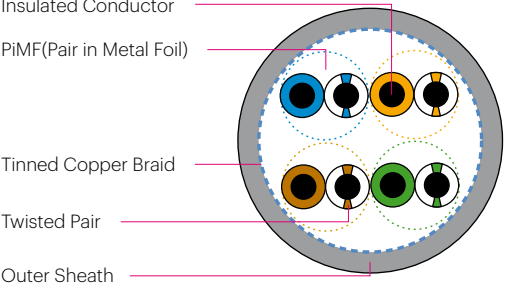
F/UTP Cable



SF/UTP Cable



S/FTP Cable



Product Standards

Standard Descriptions

• ISO/IEC 11801	: Information Technology – Generic cabling for customer premises
• IEC 61156-5	: Multicore and symmetrical pair/quad cables for digital communications – Symmetrical pair/quad cables with transmission characteristics up to 1000MHz - Horizontal floor wiring – Sectional specification.
• IEC 60332-1 Part 1-1	: Tests on electric and optical fiber cables under fire conditions – Test for vertical flame propagation for a single insulated wire or cable
• IEC 60332-3 Part 3-10	: Tests on electric and optical fiber cables under fire conditions – : Test for vertical flame spread of vertically-mounted bunched wires or cables.
• IEC 61034-2 Part 2	: Measurement of smoke density of cables burning under defined conditions – Test procedure and requirements
• IEC 60754 Part 2	: Test on gases evolved during combustion of materials from cables – Determination of acidity (by pH measurement) and conductivity.
• IEC 61754	: Fiber optic interconnecting devices and passive components – Fiber optic connector interfaces.
• ANSI/TIA-568-C.2	: Balanced Twisted-Pair Telecommunications Cabling and Components Standard
• ANSI/TIA-568.2-D	: Balanced Twisted-Pair Telecommunications Cabling and Components Standard
• TIA	: Telecommunications Industry Association
• EIA	: Electronic Industries Alliance
• UL444	: Communication Cables
• UL1581	: Reference standard for electrical wires, cables, and flexible cords
• UL1666	: Standard for test for flame propagation height of electrical and optical-fiber cables installed vertically in shafts
• UL1685	: Standard for vertical-tray fire-propagation and smoke-release test for electrical and optical-fiber cables.
• FCC 47 CFR	: Regulation of the direct electrical connection of telecommunications equipment and customer premises wiring with the public switched telephone network.
• FCC	: Federal Communications Commission
• CFR Part 68	: Code of Federal Regulations of the United States. : Connection of terminal equipment to the telephone network
• NFPA 262	: Standard Method of Test for Flame Travel and Smoke of Wires and Cables for Use in Air-Handling Spaces.

PoE Cable Installation Specification and Application List

LS Simple™ PoE Cable Installation specification

AWG	The number of 4-pair cables in one bundle																				
	1			2~7			8~19			20~37			38~61			62~91			92~192		
	Rated Temperature (°C)			Rated Temperature (°C)			Rated Temperature (°C)			Rated Temperature (°C)			Rated Temperature (°C)			Rated Temperature (°C)			PSE		
	60	75	90	60	75	90	60	75	90	60	75	90	60	75	90	60	75	90	60	75	90
26	1	1	1	1	1	1	0.7	0.8	1	0.5	0.6	0.7	0.4	0.5	0.6	0.4	0.5	0.6	NA	NA	NA
24	2	2	2	1	1.4	1.6	0.8	1	1.1	0.6	0.7	0.9	0.5	0.6	0.7	0.4	0.5	0.6	0.3	0.4	0.5
23	2.5	2.5	2.5	1.2	1.5	1.7	0.8	1.1	1.2	0.6	0.8	0.9	0.5	0.7	0.8	0.5	0.7	0.8	0.4	0.5	0.6
22	3	3	3	1.4	1.8	2.1	1	1.2	1.4	0.7	0.9	1.1	0.6	0.8	0.9	0.6	0.8	0.9	0.5	0.6	0.7

* Based on NEC Cable Installation Guide(Table 725.144)

LS Simple™ Application Support List

Category		Cable Type			
Specification	Electrical Performance	Category 5E	Category 6		Category 6A
	Structure	U/UTP F/UTP SF/UTP	U/UTP	F/UTP SF/UTP	U/UTP, S/FTP GSWB, F/UTP F/FTP, S/FTP
	Conductor diameter	24 AWG	23 AWG or 24 AWG		23 AWG
Application	Ethernet IEEE 802.3	100Mb (100m) 1Gb (100m by 4pair)	1Gb (100m) 10Gb (55m)		10Gb (100m)
	PoE 802.3af Type	PoE Type 1 PoE Type 2	PoE Type 1 PoE Type 2	PoE Type 3	PoE Type 3 PoE Type 4
	NBASE-T	~350Mhz LD	~500Mhz LD		Fully Comply
	HDBT	Partial Comply	Partial Comply		Fully Comply

Flame Retardant / Permanent Link & Channel

Applications by Flame-retardant Rating

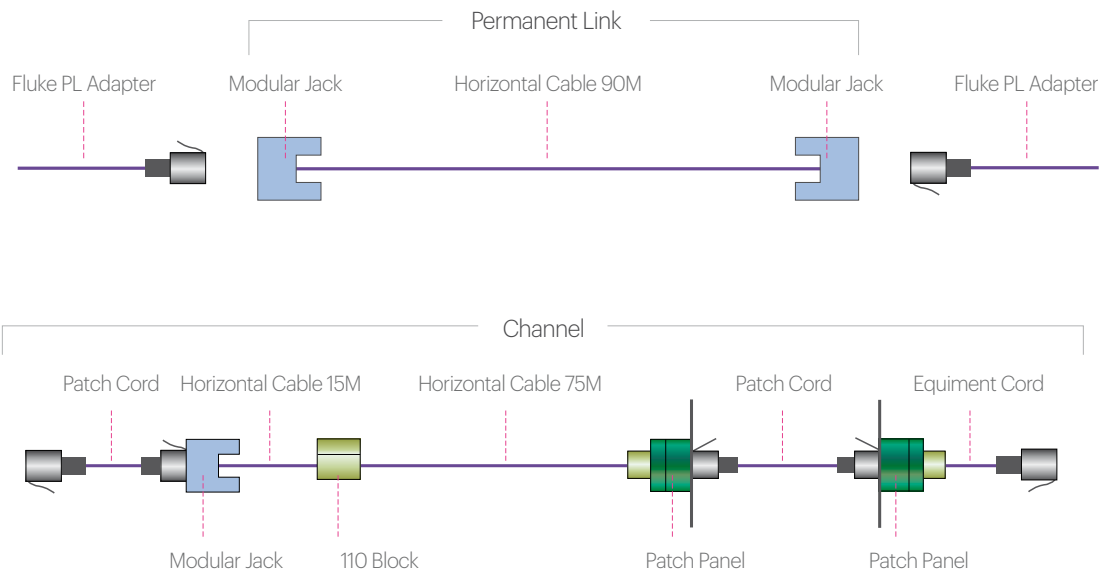
The higher the rating, the less human damage caused by cables in case of fire.

Category	CMX	CM	CMR	CMP
Use by Flame Retardant	For general residential use	For horizontal cabling	For riser between floors	For high flame-retardant wiring for horizontal
Standards and Regulations	· Non-Plenum Cable · UL 1581 (VW-1 Test) · IEC 60332-1	· Non-Plenum Cable · UL 1685 (VTFT Test) · IEC 60332-3	· Non-Plenum Cable · UL 1666 (Riser Test)	· Plenum Cable · NFPA 262 · Smoke Density Regulation
Sheath	PVC LSZH	PVC LSZH	PVC LSZH	PVC

* Europe-CRP certification for building materials regulates combustion length, generated heat, non-toxicity, smoke density, and whether sparks generated (LS supplies up to Cca and B2ca grades in LSZH)

* U.S-CMR/CMP grade PVC (in the case of CMP, there is no burning of sheath and insulation in case of fire)

Permanent Link & Channel



· 4 Connection example

RCDD

RCDD (Registered Communication Distribution Designer)

RCDD is a qualification system managed by BICS (Building Consulting Service International), the largest communication hardware installation and management committee in the United States. RCDD means a specialist in the design, operation, and regulation of a comprehensive structured cabling system including UTP, fiber optical and wireless communication.



Warranty Program

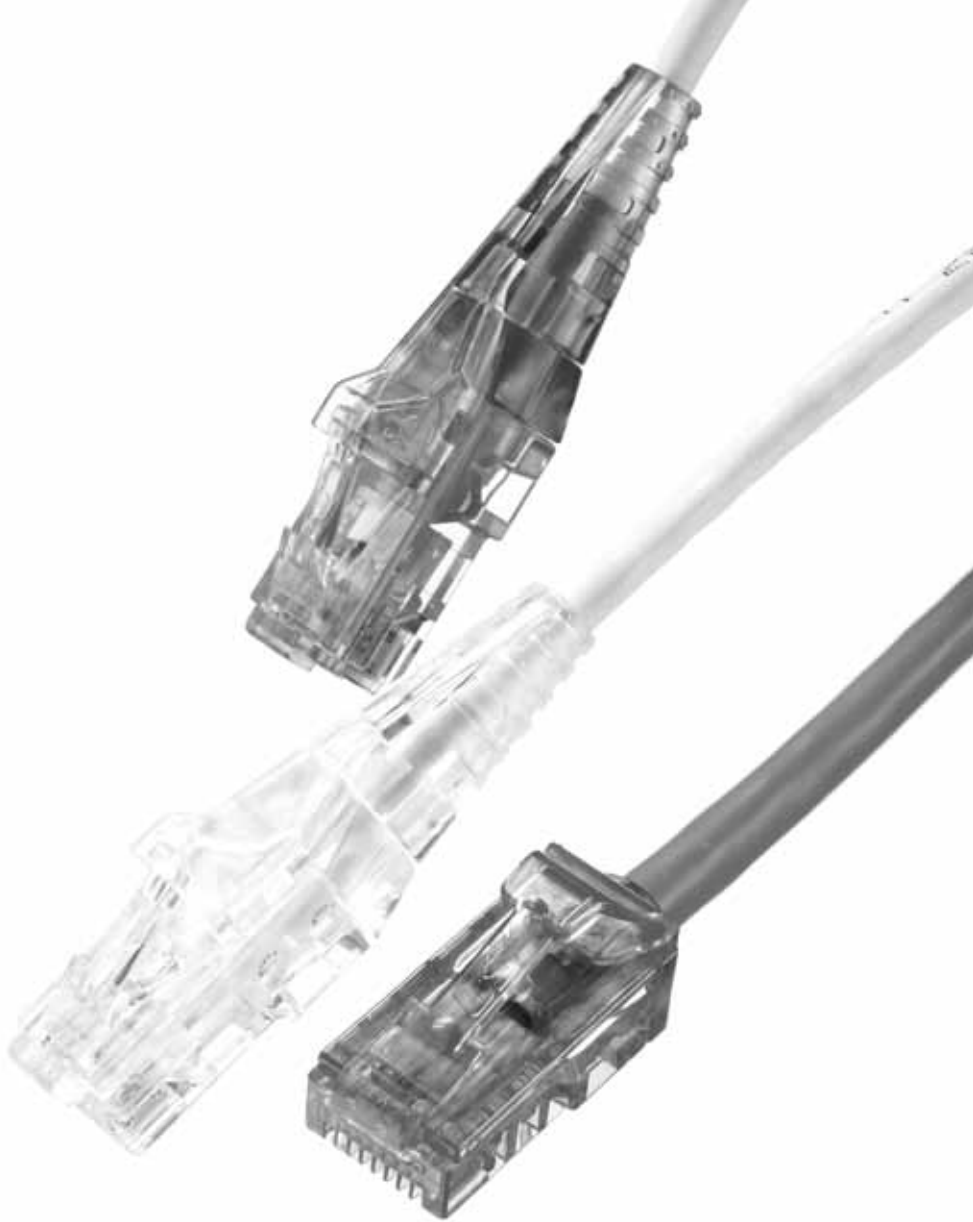
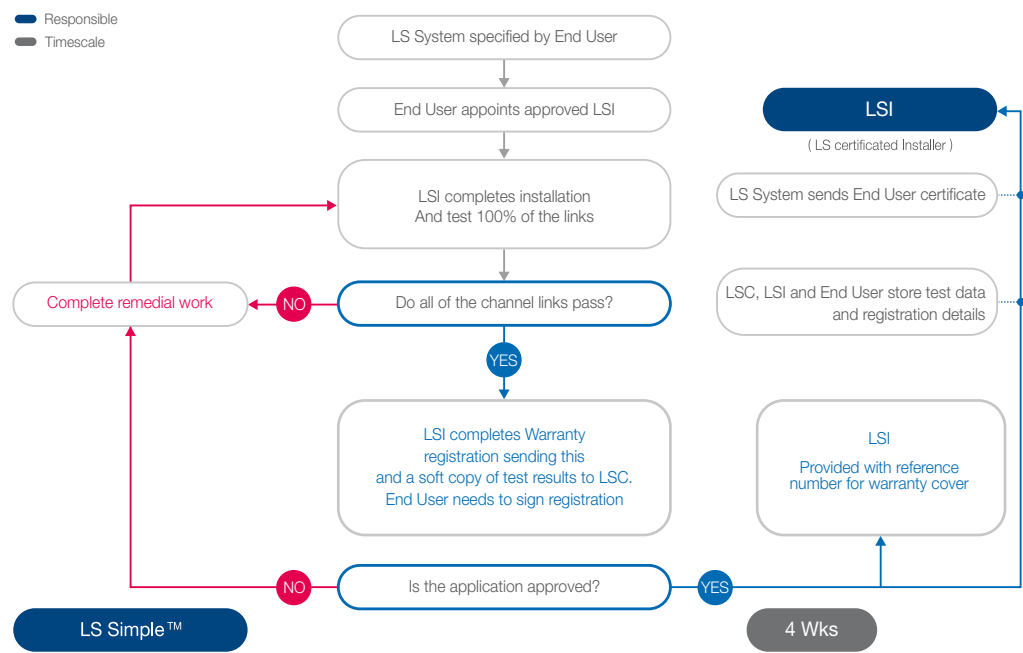
LS Simple™ Warranty

The Simple™ range of solutions is supported by a Simple™ comprehensive warranty

- Unique 25 year application and product warranty.
- The warranty applied to the network and can be sold as an asset.
- The warranty is only offered by fully trained LS Integrators.
- The system is independently inspected by a third party.



LS Simple™ Warranty Process



LS Simple™ provides



END-TO-END SOLUTION

We provide a total solution from copper and fiber cables to modular plugs and jacks, patch panels, racks, and intelligent management systems to provide customers with a simple one-stop purchase, providing optimized convenience.



TRUSTWORTHY PRODUCTS

LS Simple follows the outstanding product development and quality control process established by LS Cable & System with 58 years of manufacturing experience.. We have ISO 9001/14001, UL, DELTA, ETL, RoHS, REACH certifications, and have a management environment that meets international quality management standards.



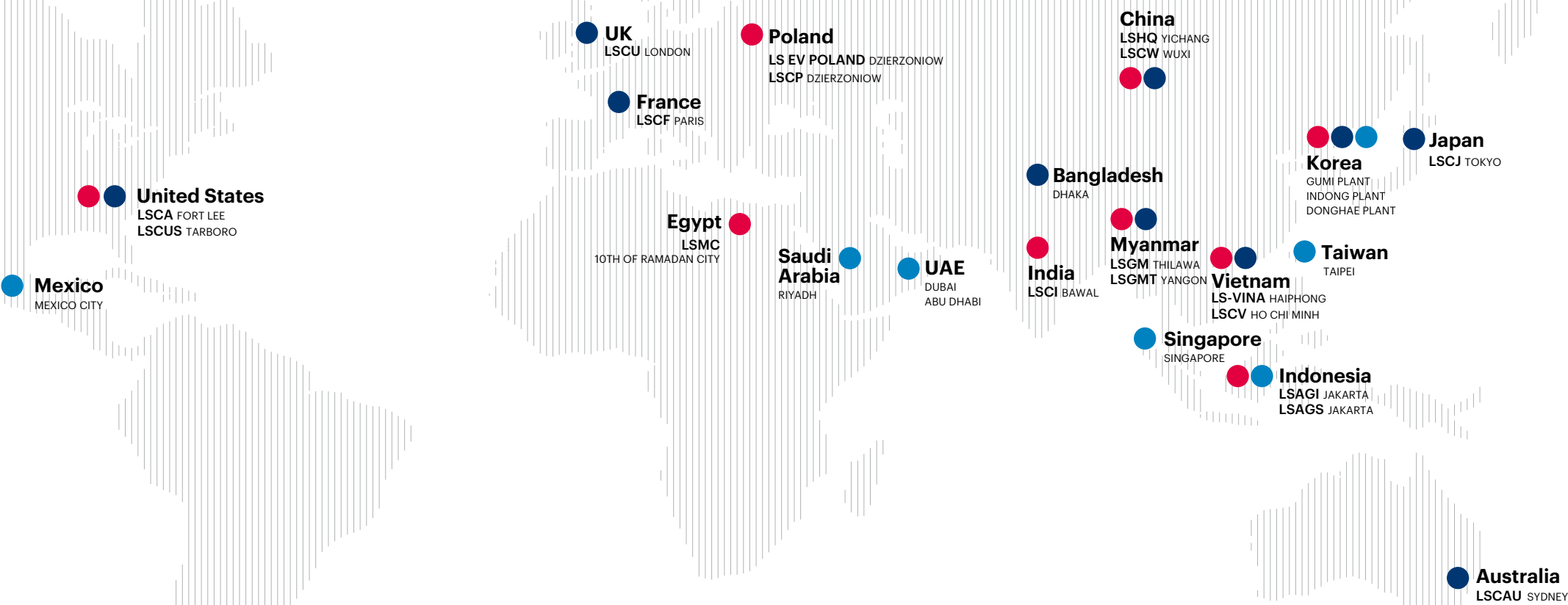
25-YEAR WARRANTY

The 25-year warranty is an expression of confidence in your product. LS Simple™'s products installed by a company registered as an LS Simple Installer (LSI) are guaranteed to be used for 25 years. LS Simple™ goes beyond just product supply to support customers' stable use of products. * After applying the design and construction based on the standard, warranty will be issued after checking the installation status.

GLOBAL NETWORK

More than 60 Factories,
Sales and Production Sites
in 20 Countries.

- Factory
- Sales office
- Branch office



KOREA



Gumi Plant
EHV / MV / LV cable
UTP, Coaxial cable
SCR, Magnet wire
Overhead cable, Bus duct

Indong Plant
Optical fiber
Optical cable

Donghae Plant
Submarine cable
Industrial specialty cable

CHINA



LSHQ(Yichang)
EHV / MV / LV cable
Industrial specialty cable

LSCW(Wuxi)
Industrial devices cable
Automotive cable
Harness & module
Aluminum, Bus duct

VIETNAM



LS-VINA(Haiphong)
EHV / MV / LV cable
SCR, ACSR
Overhead cable

LSCV(HO Chi Minh)
MV / LV cable
UTP, Optical cable
Overhead cable

INDIA



LSCI(Bawal)
EHV / MV / LV cable
Coaxial cable
Overhead cable

USA



LSCUS(Tarboro)
MV / LV cable
Control, Instrument cable

POLAND



LS EV Poland./LSCP (Dzierzoniow)
Automotive battery components
Optical cable