

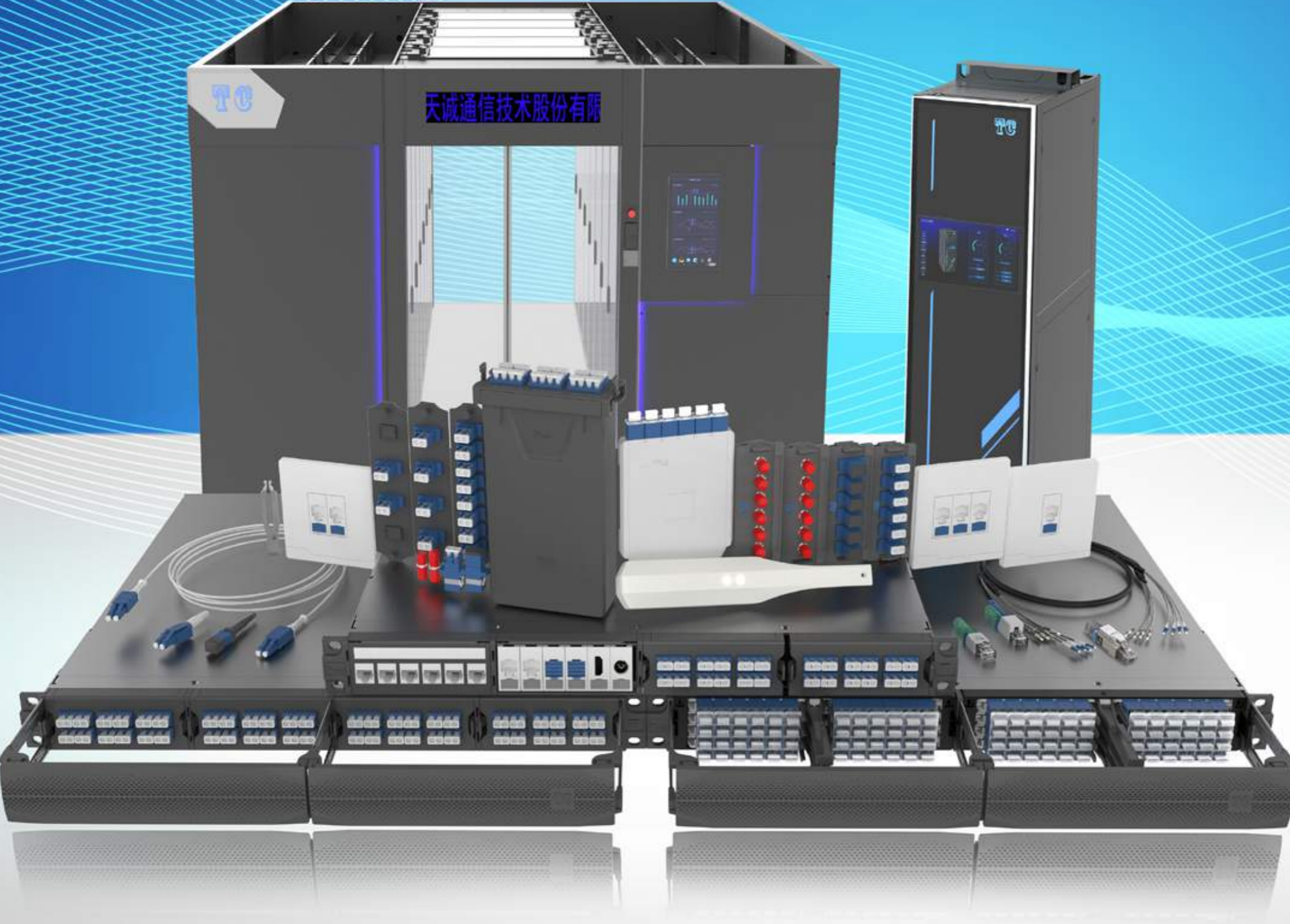


ICT Network Cabling Solution

ICT Network Cabling Solution



Smart Connect, TC is always on !



Company Profile

TC SMART SYSTEMS GROUP

TC SMART SYSTEM GROUP was founded in 1988 and is a renowned Chinese brand in the field of weak current cables. With 35 years of professional manufacturing experience, the company serves tens of thousands of high-quality engineering clients and has contributed to over ten thousand landmark buildings. The group comprises 20 subsidiary enterprises and possesses research and production facilities covering an area of 300,000 square meters. With a workforce of over 1,000 employees and 15,000 system integrator customers, it stands as one of the few domestic companies engaged in the complete series of weak current cables, structured cabling, and enterprise cloud and smart home manufacturing.

Additionally, the company provides products and solutions for smart communities, intelligent parks, and smart cities. Guided by the principles of "Hard work leads to success, and integrity is the foundation," TC SMART SYSTEM GROUP strives to build a century-old enterprise.

ShanghaiTiancheng Communication Technology Co., Ltd

TC Smart Systems Group established ShanghaiTiancheng Communication Technology Co., Ltd (Stock Code: 872049) in 2002. It is a high-tech enterprise under the Tiancheng Intelligent Group, dedicated to research, production, sales, and service of intelligent building structured cabling, enterprise data centers, micro-modular data centers, optical wafers and optical chips, as well as intelligent interconnection management systems. The company aims to provide end-to-end integrated solutions for voice, data, and image systems for its customers.

Adhering to the business philosophy of "hard work brings rewards, integrity is fundamental," Tiancheng Communication has been deeply involved in the field of structured cabling for twenty years. It has received numerous prestigious titles and awards, including being recognized as one of the "Top Ten Brands in China's Structured Cabling Products," "Shanghai Patent Pilot Enterprise," "Shanghai Brand Leading Demonstration Enterprise," "Jing'an District Enterprise Technology Center," and one of the "First Batch of National Specialized, Refined, Special and New Small Giant Enterprises" by the Ministry of Industry and Information Technology.

The company boasts strong research and development capabilities, with industry-certified R&D laboratories accredited by CMA and CNAS, emphasizing the construction of its own intellectual property rights. It has been certified for its intellectual property management system and holds a total of 224 patents for independently developed products, including more than 11 invention patents. As a member of the ISO/IEC committee and a member unit of the National Standardization Committee, Tiancheng Communication has participated in the formulation of over ten international and national standards.

With the slogan "Tiancheng Cabling, Strengthening China," the company has become a leading brand in the industry after two decades of hard work and continuous efforts. With the implementation of Digital China and the rapid development of communication technology, the communication industry is currently in a golden period of growth. Tiancheng Communication is poised to make new strides, reach new heights, and create an even more brilliant future. With intelligent interconnection, Tiancheng is always at the forefront!

Enterprises Culture

VISION: Improvement of TC People, Achievement of Business, and Building of our Home

CREED: Diligence is rewarded by the heavens, Integrity is the foundation

RESPONSIBILITY: Promote patriotism through consumption and contribute to the country through industry

SPIRIT: Relentlessly pursue excellence without bounds.

GOAL: Cultivate top-tier talents, establish a leading brand, and maintain the forefront position in the intelligent construction industry

Company Businesses

Data Center Solution

Copper Cabling Solution

Optical Fiber Cabling Solution

Smart Home Cabling Solution

Excellent History

- 1988 Start of Tiancheng Cable and Wire Co.,Ltd.
- 2002 Start of ShanghaiTiancheng Communication Technology Co., Ltd
- 2005 Win the bid for the full six-category structured cabling system of the Shanghai Changning District Government Building
- 2008 Win the bid for Smart Engineering Project in Beijing Olympic Village
- 2010 Awarded as "High Technology Enterprise of Shanghai"
- 2012 Honored as Enterprise Technology Center of Zhaibei District
- 2013 Officially named as TC SMART SYSTEMS GROUP
- 2016 Stock transformation of ShanghaiTiancheng Communication Technology Co., Ltd
- 2017 Listed on the New Third Board
- 2018 Enter the innovation layer of New Three Board
- 2019 Honored as specialized, fined, peculiar and new "Small Giant Enterprise" by National Ministry of Industry and Information
- 2020 Standards implementation of intellectual property system, 2020 Shanghai patent pilot enterprise

Influential Chinese Enterprises

Qualifications

Contract Credit Rating A
Business Enterprise of Observing Contract and Valuing Credit
Certificate of Credit Rating BB+3A level credit in the intelligent building industry

Patents

4 Computer Software Copyrights
12 Invention Patents
36 Appearance Patents
172 Utility Model Patents

Honors

Top Ten Brands of Structured Cabling
"Specialized, Fined, Peculiar, and New" Enterprise of Shanghai
Small Giant Enterprise of Shanghai
Specialized, Fined, Peculiar and New "Small Giant Enterprise" by National Ministry of Industry and Information
Science and Technology Enterprise of Shanghai
Shanghai City's 2020 Intellectual Property Pilot Enterprise
Shanghai City's Brand-leading Demonstration Enterprise
"Best New Brand Award" of Qianjia Cabling Net
"Best National Cabling Brand Award" of Qianjia Cabling Net
"Reliable Products" honored by Quality and Technology Supervision Bureau
High Technology Enterprise of Shanghai
Jing'an District Enterprise Technology Center
Outstanding Innovative Technology and Solutions Provider for "Smart Cities"
"The Most Potential Science and Technology Enterprise in ICT Industry" in Shanghai
The First Group of "Specialized, Fined, Peculiar and New" Enterprises Small Giant Best Science and Technology Innovation Brand
The Most Loved Brand in Smart Building Market
The Best Science and Technology Innovation Brand in Smart Building Market
The Best National Brand in Smart Building Market
The National Top Ten Brands of Structured Cabling in Smart Building Market
The National Top Ten Brands of Structured Cabling in Low Voltage Operation and Maintenance
30-Year Star Entrepreneur of Technology Business Incubator in Shanghai

Certificates

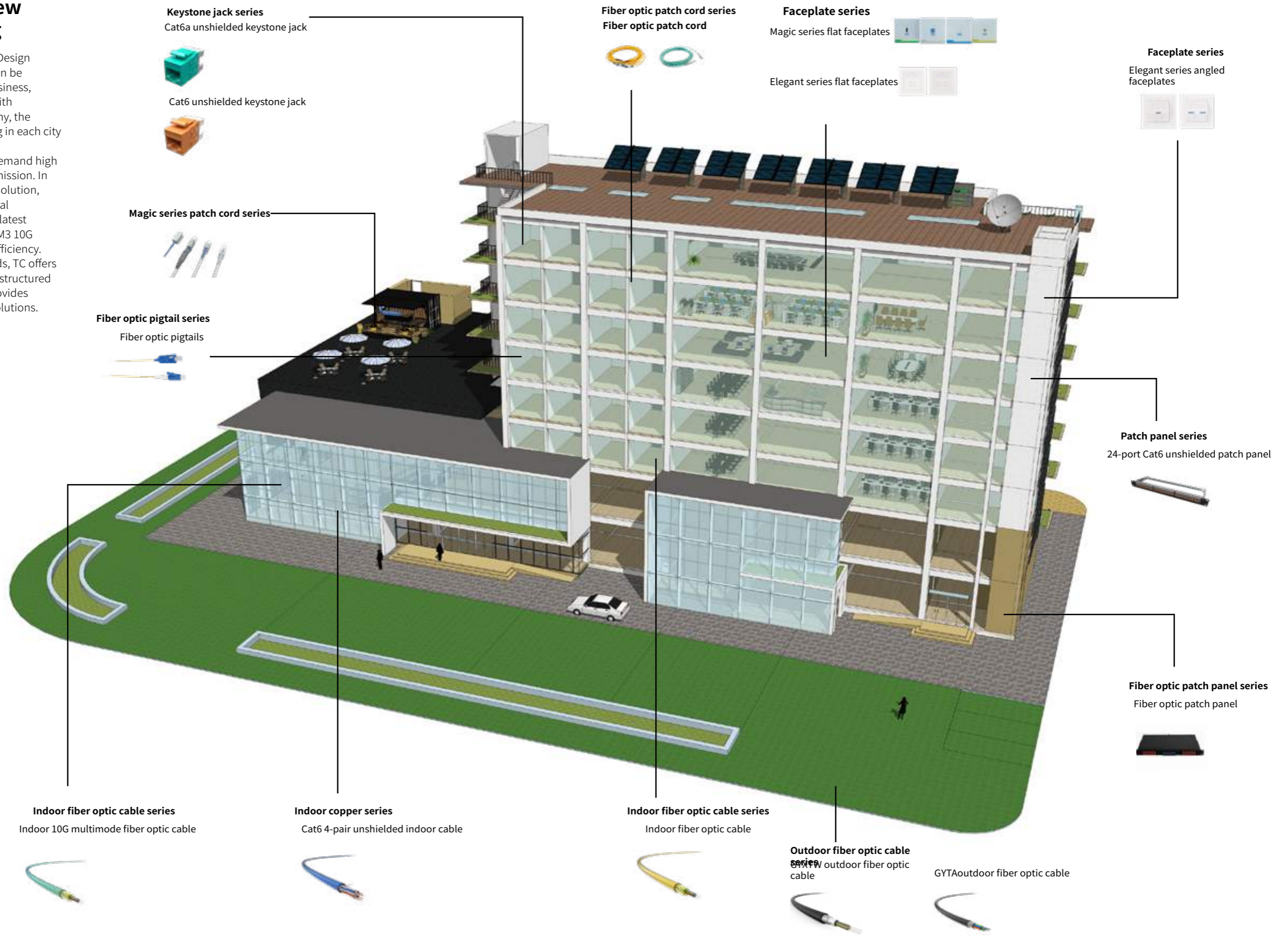
RoHS Certificate
CE Certificate
UL Certificate
FORCE Certificate
ISO9001 Quality Management System Certification
ISO14001 Environmental Management System Certificate
GB/T29490 Intellectual Property Management System Certification
ISO45001 Occupational Health And Safety Management System Certification

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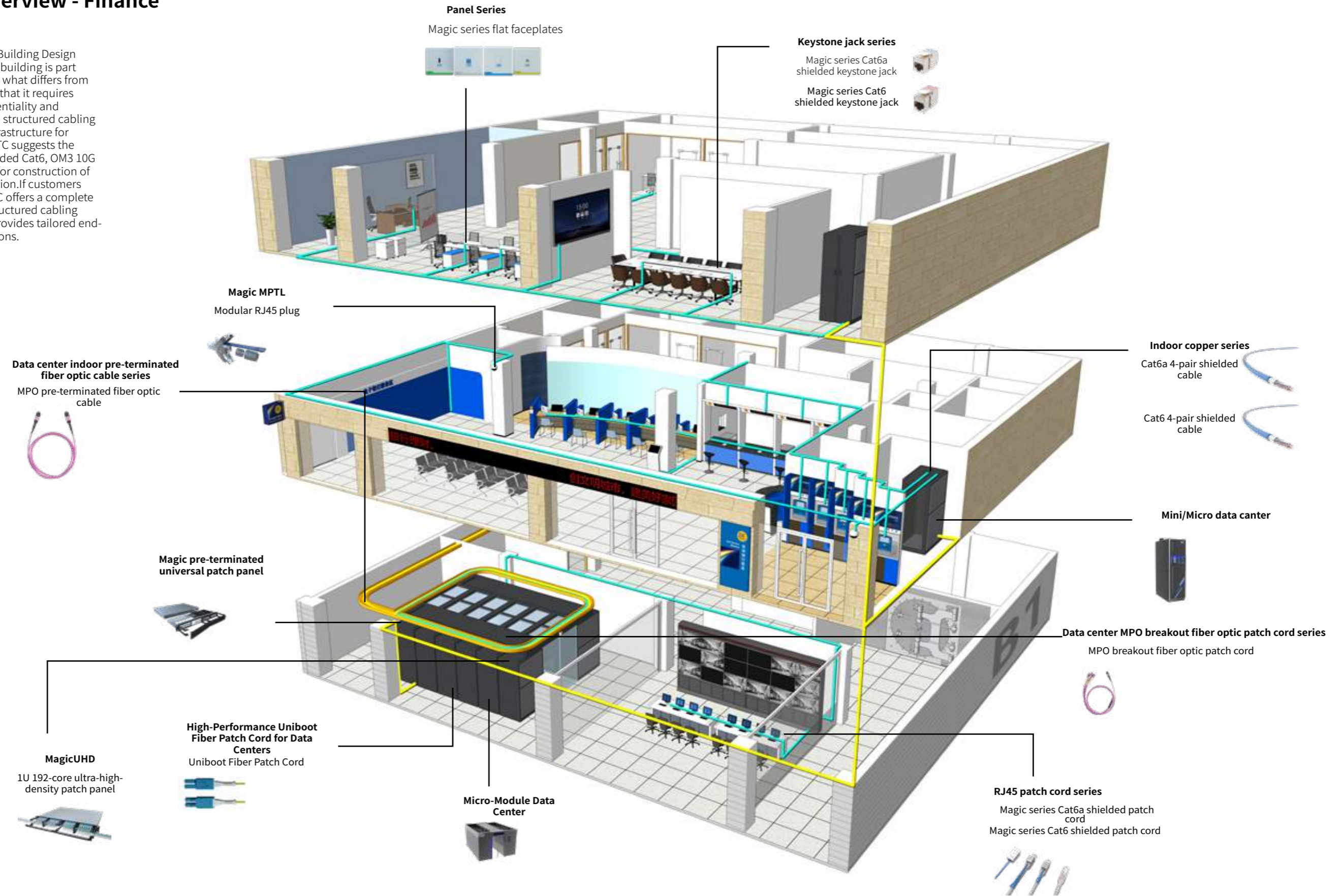
Product Overview - Office Building

According to "Smart Building Design Standards", office buildings can be categorized as three types: business, administration and finance. With fast growth of Chinese economy, the development of office building in each city is in its full swing. All the three office buildings demand high bandwidth efficiency in transmission. In finding an structured cabling solution, physical infrastructure for signal transmission, TC suggests the latest 5G Base-T unshielded Cat6, OM3 10G multimode as a way for cost efficiency. If customers have special needs, TC offers a complete production line of structured cabling products, and thus provides tailored end-to-end full-link solutions.



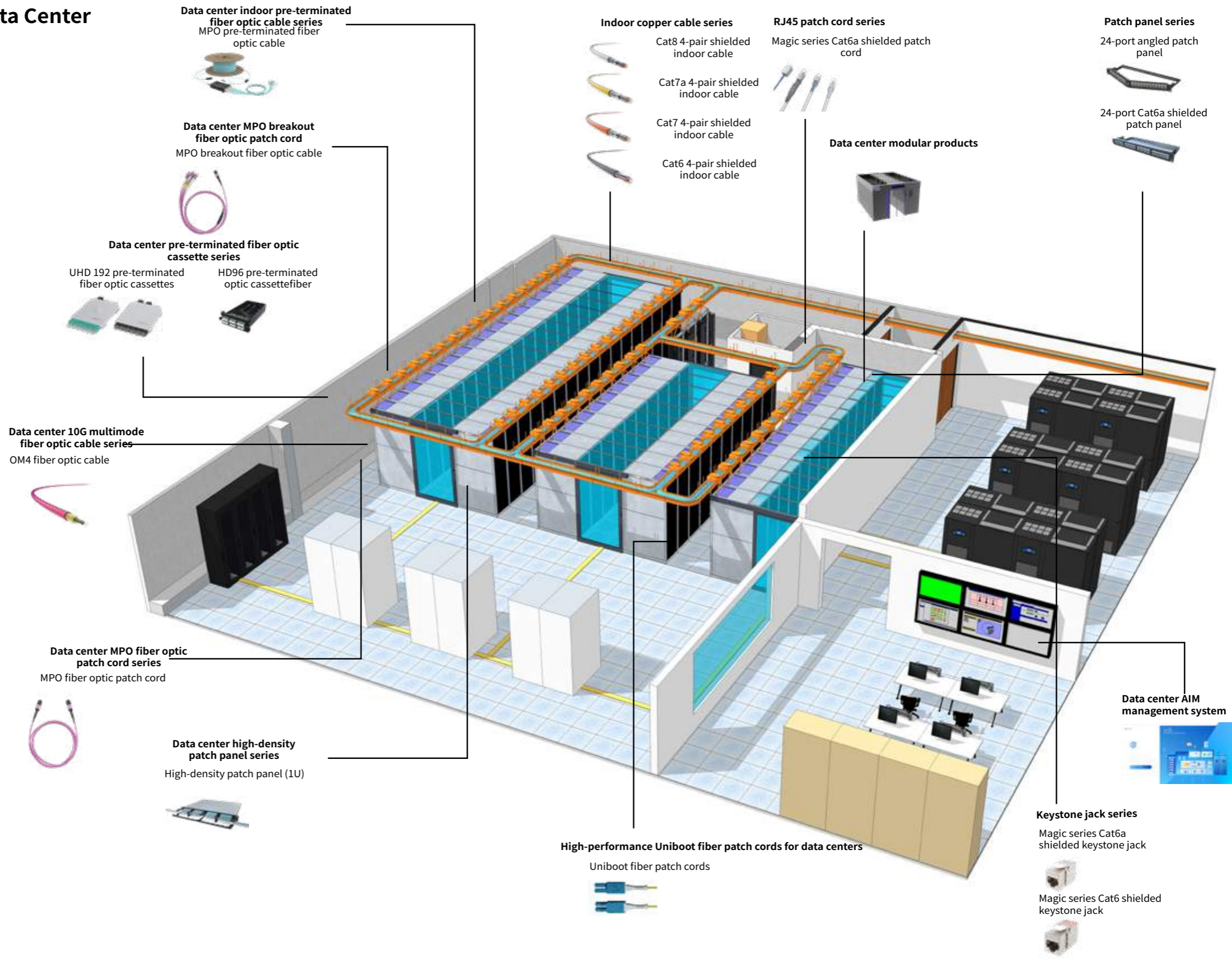
Product Overview - Finance

According to "Smart Building Design Standards", financial building is part of office building, but what differs from the traditional one is that it requires higher speed, confidentiality and stability. In finding an structured cabling solution, physical infrastructure for signal transmission, TC suggests the latest 5G Base-T shielded Cat6, OM3 10G multimode as a way for construction of financial informatization. If customers have special needs, TC offers a complete production line of structured cabling products, and thus provides tailored end-to-end full-link solutions.



Product Overview - Data Center

With fast growth of cloud computing, mobile internet, Internet of Things and big data, the trend toward data center construction is surging. Modern data center is the hub of electronic information storage, computing and transmission, inside which structured cabling system is the foundation for signal transmission. In data center construction, TC suggests high-core and high-density fiber optic patch panels, up to 96 cores within 1U or 288 cores within 4U in EDA ends, and up to 192 cores within 1U in HAD/MDA ends so as to increase space utilization and reduce energy consumption. Neat, factory-customized and qualified indoor OM5 multimode 10G fiber optic cable, pre-terminated fiber optic cable, pre-terminated copper cable as well as fan-out patch cord, provide end-to-end full-link solutions featuring multiple cores, easy construction and operation, excellent performance and sense of beauty. Meanwhile, the company also provides data center copper solutions with Cat6a to Cat8 copper products which can also meet the customers' requirements. If customers have special needs, TC offers a complete production line of structured cabling products, and thus provides tailored end-to-end full-link solutions.



Data center indoor pre-terminated fiber optic cable series
MPO pre-terminated fiber optic cable

Data center MPO breakout fiber optic patch cord
MPO breakout fiber optic cable

Data center pre-terminated fiber optic cassette series

UHD 192 pre-terminated fiber optic cassettes HD96 pre-terminated optic cassette fiber

Data center 10G multimode fiber optic cable series
OM4 fiber optic cable



Data center MPO fiber optic patch cord series
MPO fiber optic patch cord



Data center high-density patch panel series
High-density patch panel (1U)



Indoor copper cable series

- Cat8 4-pair shielded indoor cable
- Cat7a 4-pair shielded indoor cable
- Cat7 4-pair shielded indoor cable
- Cat6 4-pair shielded indoor cable



RJ45 patch cord series

Magic series Cat6a shielded patch cord



Patch panel series

- 24-port angled patch panel
- 24-port Cat6a shielded patch panel



Data center modular products



Data center AIM management system



Keystone jack series

Magic series Cat6a shielded keystone jack



Magic series Cat6 shielded keystone jack



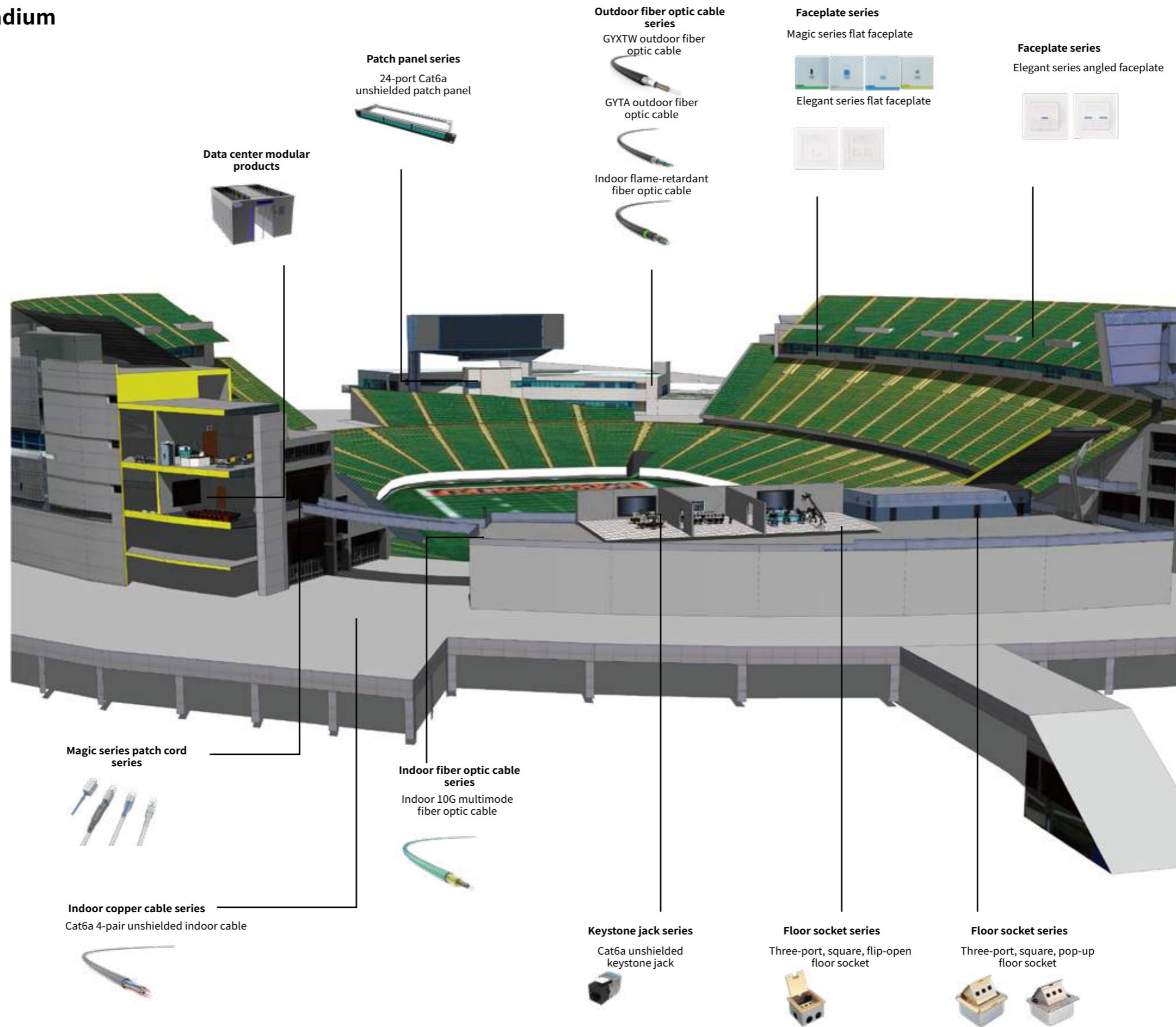
High-performance Uniboot fiber patch cords for data centers

Uniboot fiber patch cords



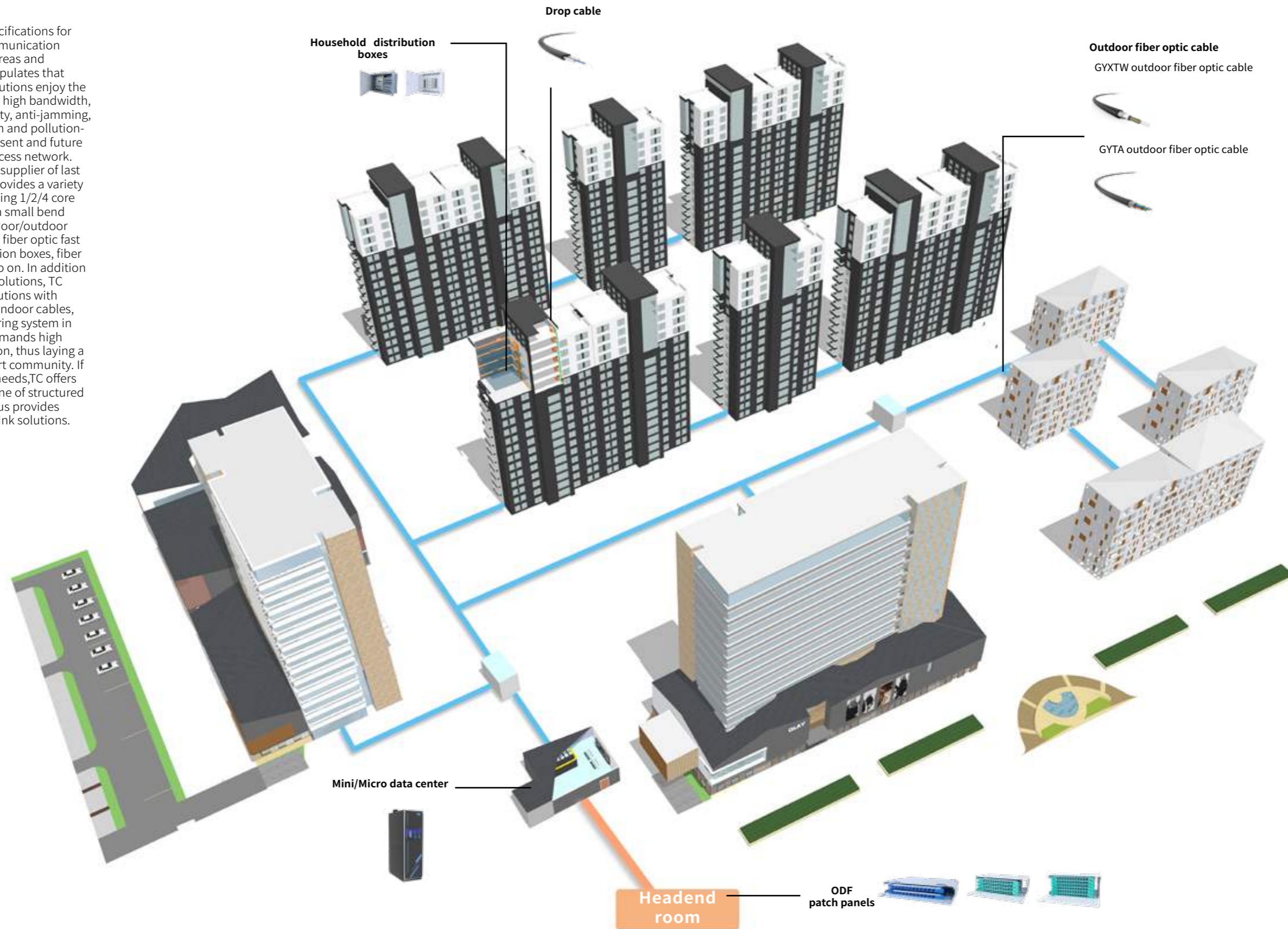
Product Overview- Stadium

Stadium, big or small, should boast smart information system to meet its professional requirements, that is, to ensure all-round, multi-angle, reliable, high-speed information transmission for future management, business operation and information publishing, and thus produce sound social and economic results. structured cabling, the transmission platform, provides high-efficiency, uninterrupted and stable transmission for large-scale competitions, concerts and other events, and also provides a good and stable platform for event management, score processing, news system and commercial activities to ensure the success of the games. To achieve it, TC suggests Cat6 shielded/unshielded, single/ multimode fiber optic solutions featuring low smoke zero halogen and flame resistance. If customers have special needs,TC offers a complete production line of structured cabling products, and thus provides tailored end-to-end full-link solutions.



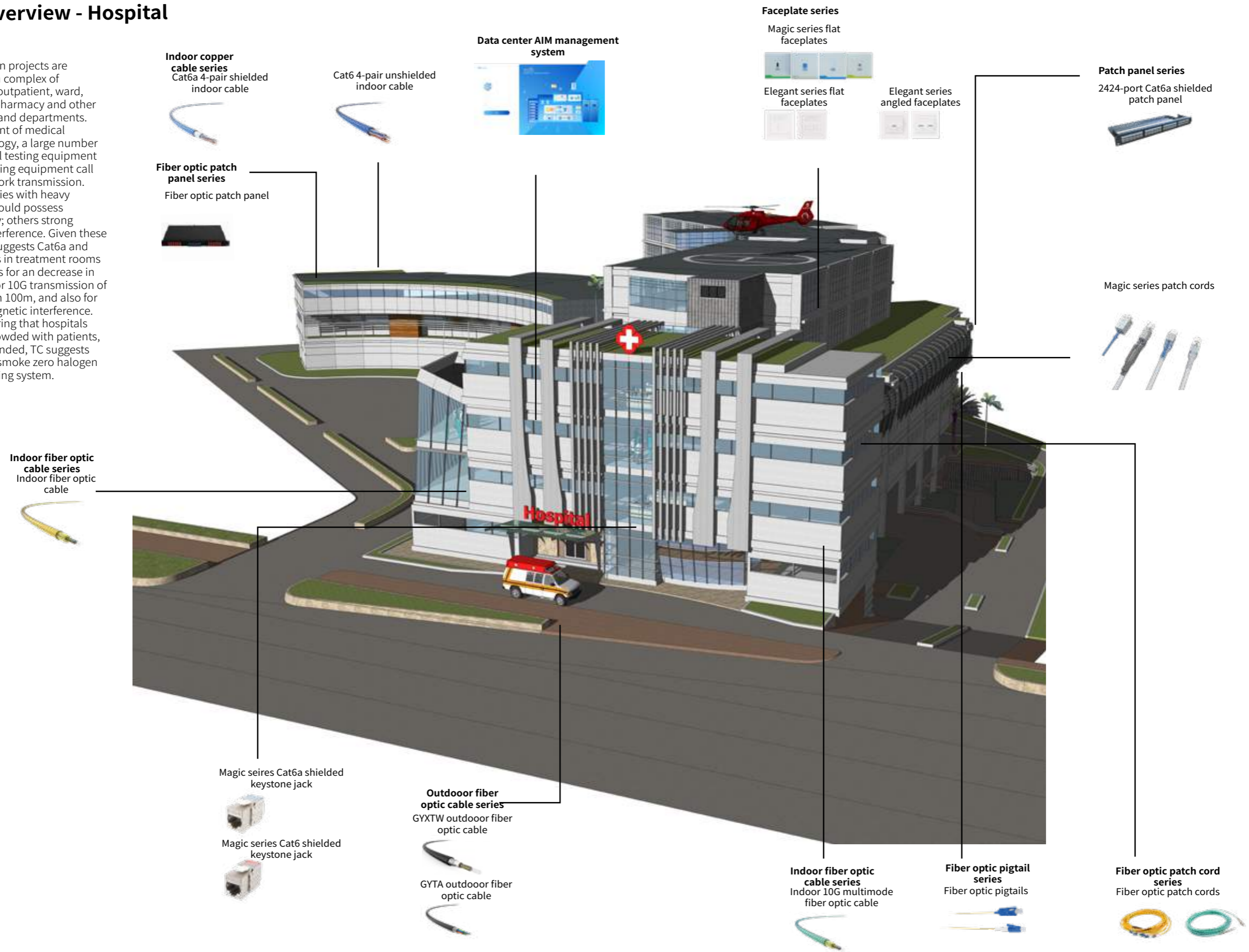
Product Overview - Real Estate

"Engineering Design Specifications for Fiber-to-the-Home Communication Facilities in Residential Areas and Residential Buildings" stipulates that FTTH access network solutions enjoy the advantages of symmetric high bandwidth, high stability and reliability, anti-jamming, environmental protection and pollution-free. That reflects the present and future development of FTTH access network. As the integrated service supplier of last mile of broadband, TC provides a variety of FTTH solutions, including 1/2/4 core G.657A2 drop cables with small bend radii, zero water peak indoor/outdoor G.652D fiber optic cables, fiber optic fast connectors, optical junction boxes, fiber optic splitter boxes and so on. In addition to modular data center solutions, TC also provides copper solutions with Cat6 24AWG unshielded indoor cables, ideal for security monitoring system in the communities that demands high quality signal transmission, thus laying a solid foundation for smart community. If customers have special needs, TC offers a complete production line of structured cabling products, and thus provides tailored end-to-end full-link solutions.



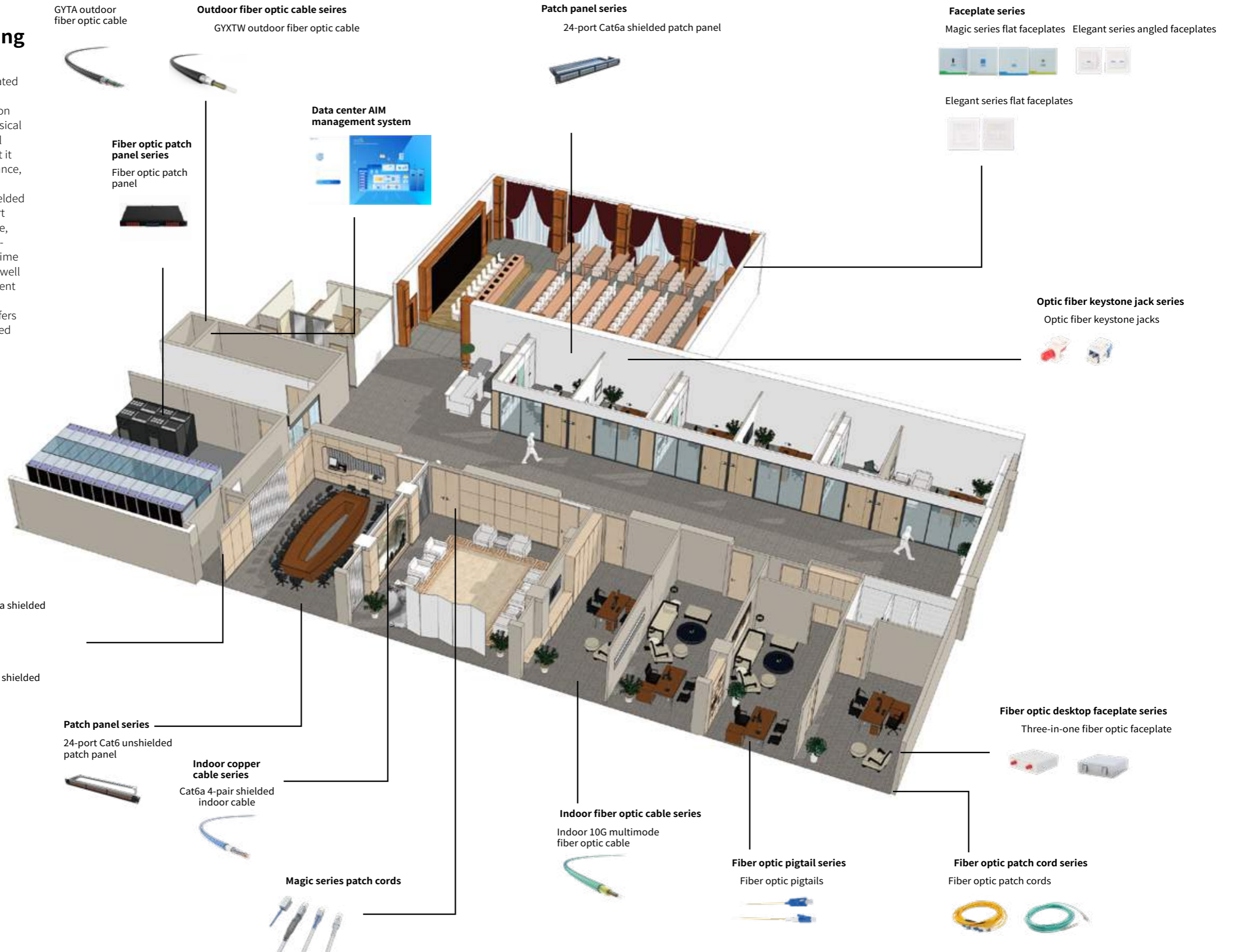
Product Overview - Hospital

Hospital construction projects are often composed of a complex of buildings, including outpatient, ward, diagnosis, surgery, pharmacy and other professional offices and departments. With the development of medical information technology, a large number of advanced medical testing equipment and diagnostic imaging equipment call for high-speed network transmission. Some of these facilities with heavy information flow, should possess security and stability; others strong electromagnetic interference. Given these characteristics, TC suggests Cat6a and Cat7 shielded cables in treatment rooms and operating rooms for an decrease in misdiagnosis rate, for 10G transmission of the whole link within 100m, and also for excellent electromagnetic interference. Meanwhile, considering that hospitals are public places crowded with patients, the dead or the wounded, TC suggests the cables with low smoke zero halogen outer jackets in cabling system.



Product Overview - Government Building

In structured cabling system, the government building is more complicated than that of other smart buildings. It requires higher standards in information security, high speed transmission, physical isolation, server host and other special requirements. The most difficult is that it should be not only superb in performance, but also simple and generous in construction. TC suggests a gigabit shielded FTTD (at least shielded Cat6, in support of 5G Base-T), and OM3 10G multimode, which ensures reliable and stable high-speed information transmission, real-time monitoring of the patch cord ports, as well as no failure of government management due to information transmission. If customers have special needs, TC offers a complete production line of structured cabling products, and thus provides tailored end-to-end full-link solutions.

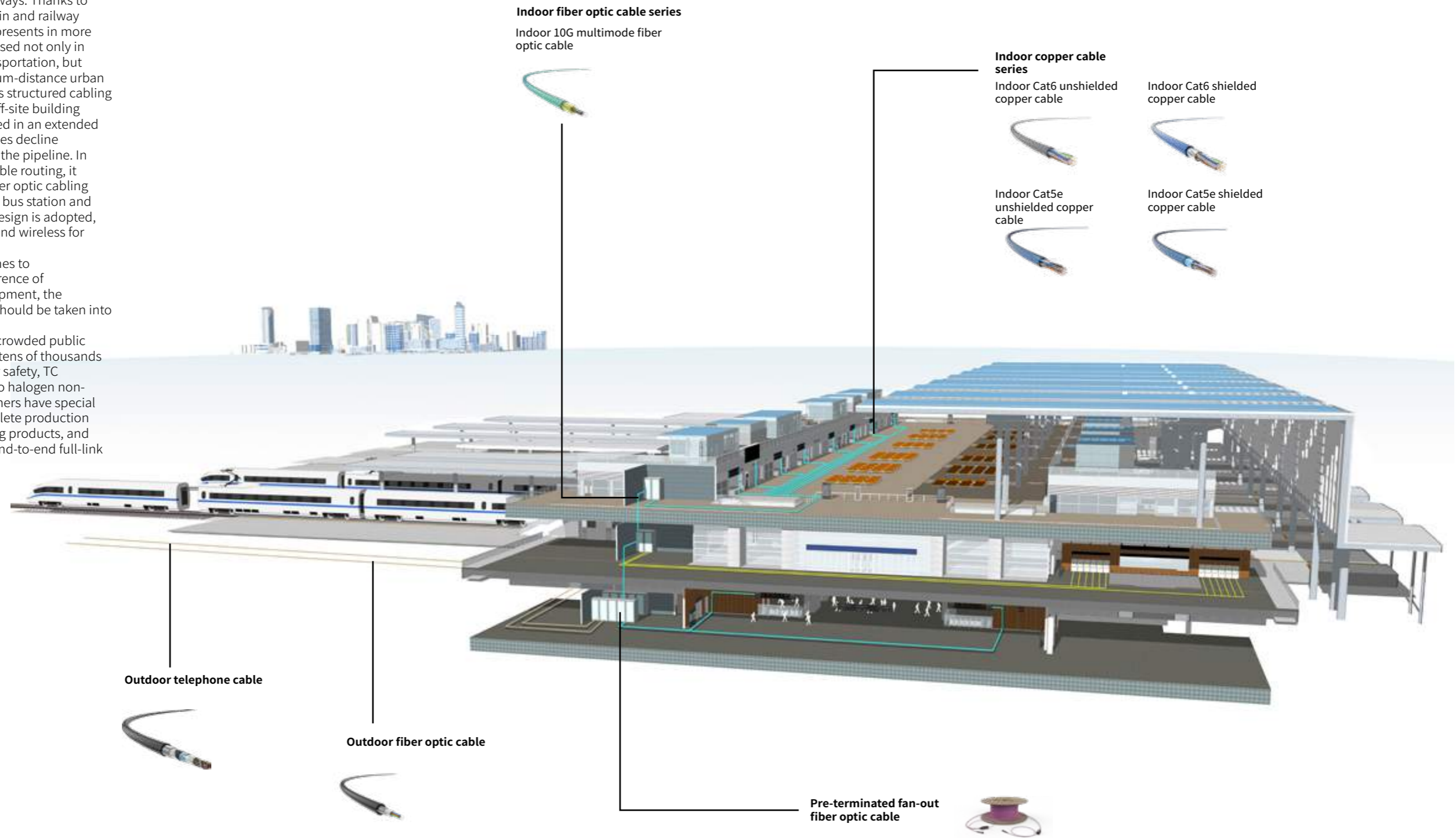


Product Overview - Rail Transit

Rail transit refers to a type of vehicle or transportation system in which an operating vehicle travels on a particular track. Railway system is the most typical one consisting of traditional trains and standard railways. Thanks to the diversification of train and railway technology, rail transit presents in more different ways, widely used not only in long-distance land transportation, but also in short- and medium-distance urban public transportation. Its structured cabling covers a large area. In off-site building connectivity, it is installed in an extended star network where cables decline progressively alongside the pipeline. In some long backbone cable routing, it is appropriate to use fiber optic cabling system. In between, like bus station and freight dock, CP point design is adopted, wired for service areas and wireless for public places.

In addition, when it comes to electromagnetic interference of electromechanical equipment, the shielding of the cables should be taken into account.

Rail transit, built in the crowded public place, often copes with tens of thousands of people every day. For safety, TC suggests low smoke zero halogen non-toxic products. If customers have special needs, TC offers a complete production line of structured cabling products, and thus provides tailored end-to-end full-link solutions.



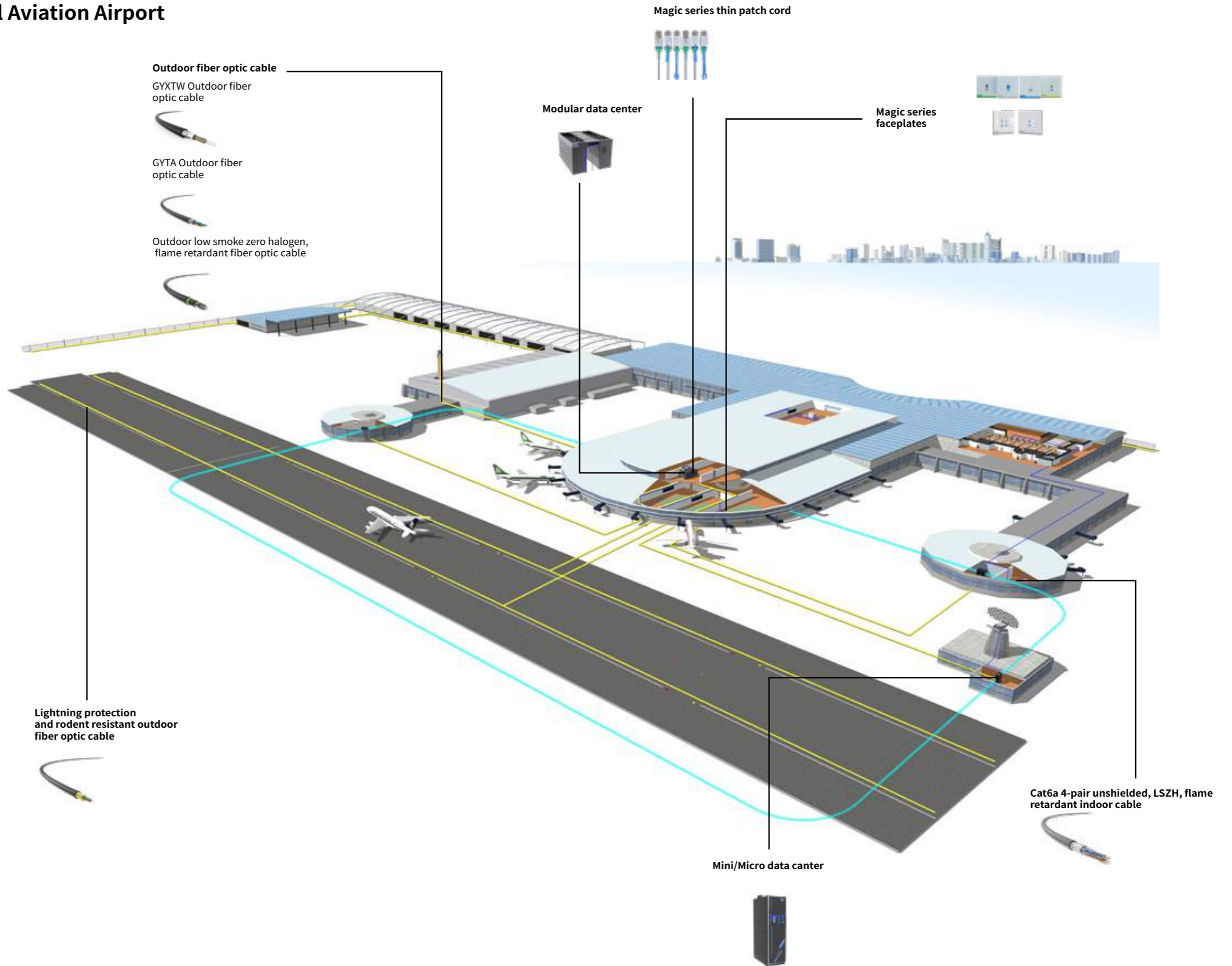
Product Overview - Civil Aviation Airport

Civil aviation airport is a demarcated area where aircrafts take off, land, taxi, park and do other activities, including ancillary buildings, installations and facilities. Airport covers a large area, and its integrated cabling system is very complicated. But only terminals and buildings are the most distinct. Others can refer to the corresponding smart architectural design methods. In the airport's core terminal, there is a star topology between telecommunication rooms and work areas; a ring topology among the core telecommunication rooms, that is, the convergence rooms in the network system; and a star topology in the main building distributors (BD) and the core floor distributors (FB). All these constitutes a hybrid topology of the airport's integrated cabling.

The length of airport runway is always up to 3 km or more, which means that the transmission line of campus subsystem must be greater than 2 km, and that it is inevitable to select OS2 singlemode zero-water peak fiber optic cables supporting 40G/100G Ethernet.

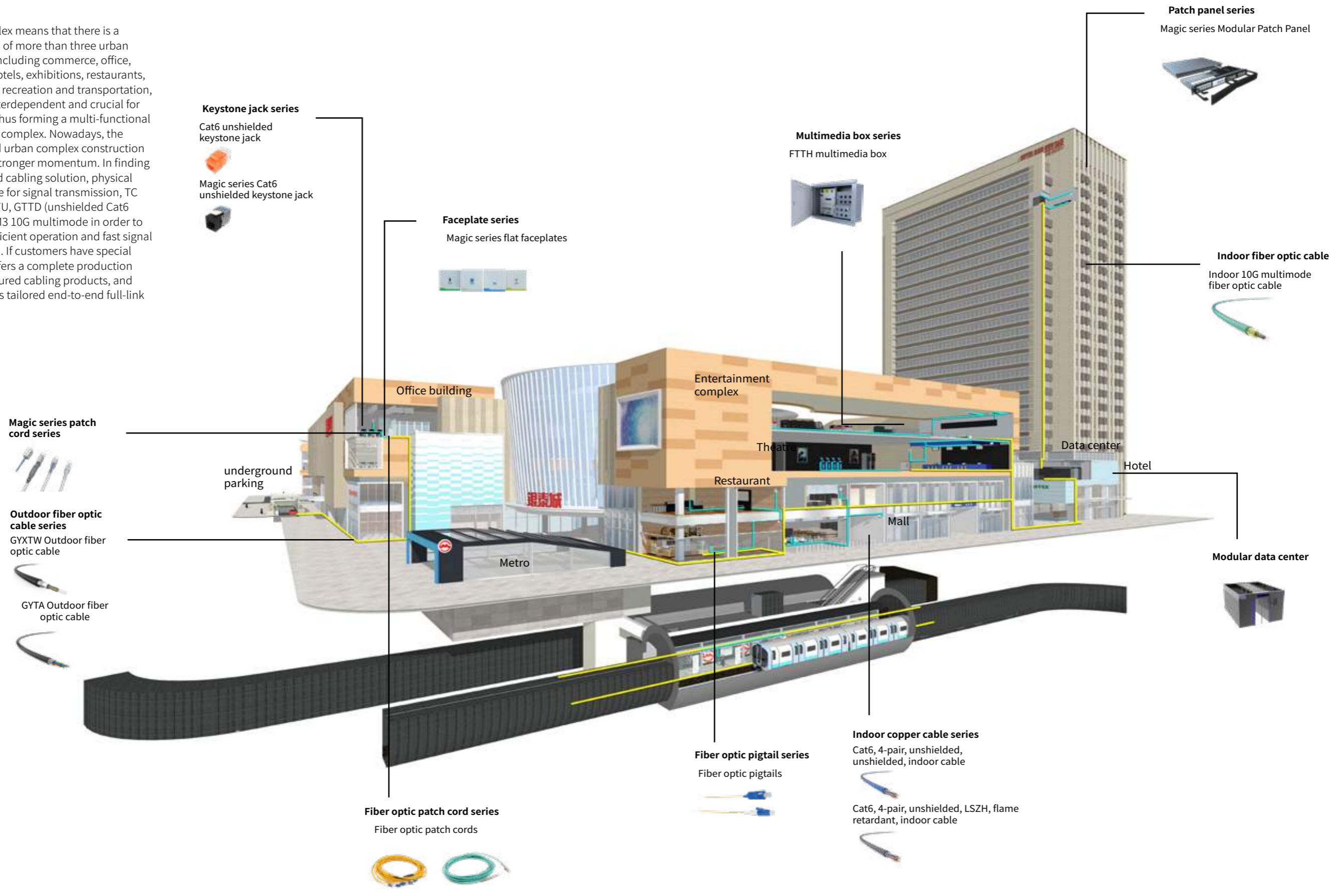
Airports are often located on the periphery of the city, so lightning protection and rodent resistance should always be taken into consideration. TC suggests non-metallic, reinforced and armored fiberglass cables for communication network transmission.

In addition, airport is built in the crowded public place. For safety, TC suggests low smoke zero halogen non-toxic products. If customers have special needs, TC offers a complete production line of integrated cabling products, and thus provides tailored end-to-end full-link solutions.



Product Overview - Urban Complex

Urban complex means that there is a combination of more than three urban life spaces, including commerce, office, residence, hotels, exhibitions, restaurants, conferences, recreation and transportation, which are interdependent and crucial for each other, thus forming a multi-functional and efficient complex. Nowadays, the trend toward urban complex construction has gained stronger momentum. In finding an structured cabling solution, physical infrastructure for signal transmission, TC suggests FTTH, GTTD (unshielded Cat6 UTP) and OM3 10G multimode in order to ensure its efficient operation and fast signal transmission. If customers have special needs, TC offers a complete production line of structured cabling products, and thus provides tailored end-to-end full-link solutions.



Keystone jack series

Cat6 unshielded keystone jack



Magic series Cat6 unshielded keystone jack



Faceplate series

Magic series flat faceplates



Multimedia box series

FTTH multimedia box



Patch panel series

Magic series Modular Patch Panel



Indoor fiber optic cable

Indoor 10G multimode fiber optic cable



Magic series patch cord series



Outdoor fiber optic cable series

GYXTW Outdoor fiber optic cable

GYTA Outdoor fiber optic cable



Fiber optic patch cord series

Fiber optic patch cords



Fiber optic pigtail series

Fiber optic pigtails



Indoor copper cable series

Cat6, 4-pair, unshielded, unshielded, indoor cable



Cat6, 4-pair, unshielded, LSZH, flame retardant, indoor cable

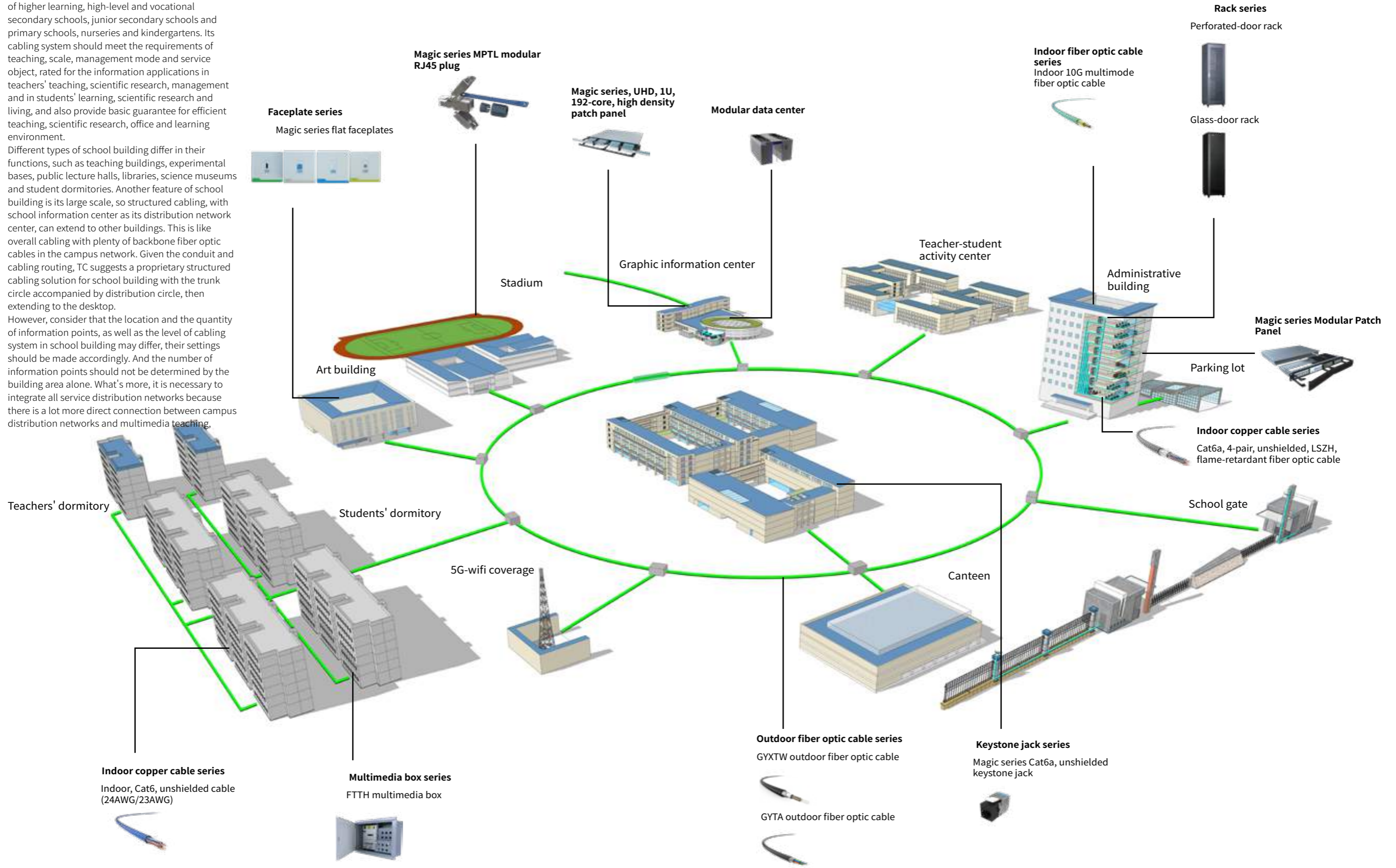


Product Overview - Education

School building contains general full-time institutions of higher learning, high-level and vocational secondary schools, junior secondary schools and primary schools, nurseries and kindergartens. Its cabling system should meet the requirements of teaching, scale, management mode and service object, rated for the information applications in teachers' teaching, scientific research, management and in students' learning, scientific research and living, and also provide basic guarantee for efficient teaching, scientific research, office and learning environment.

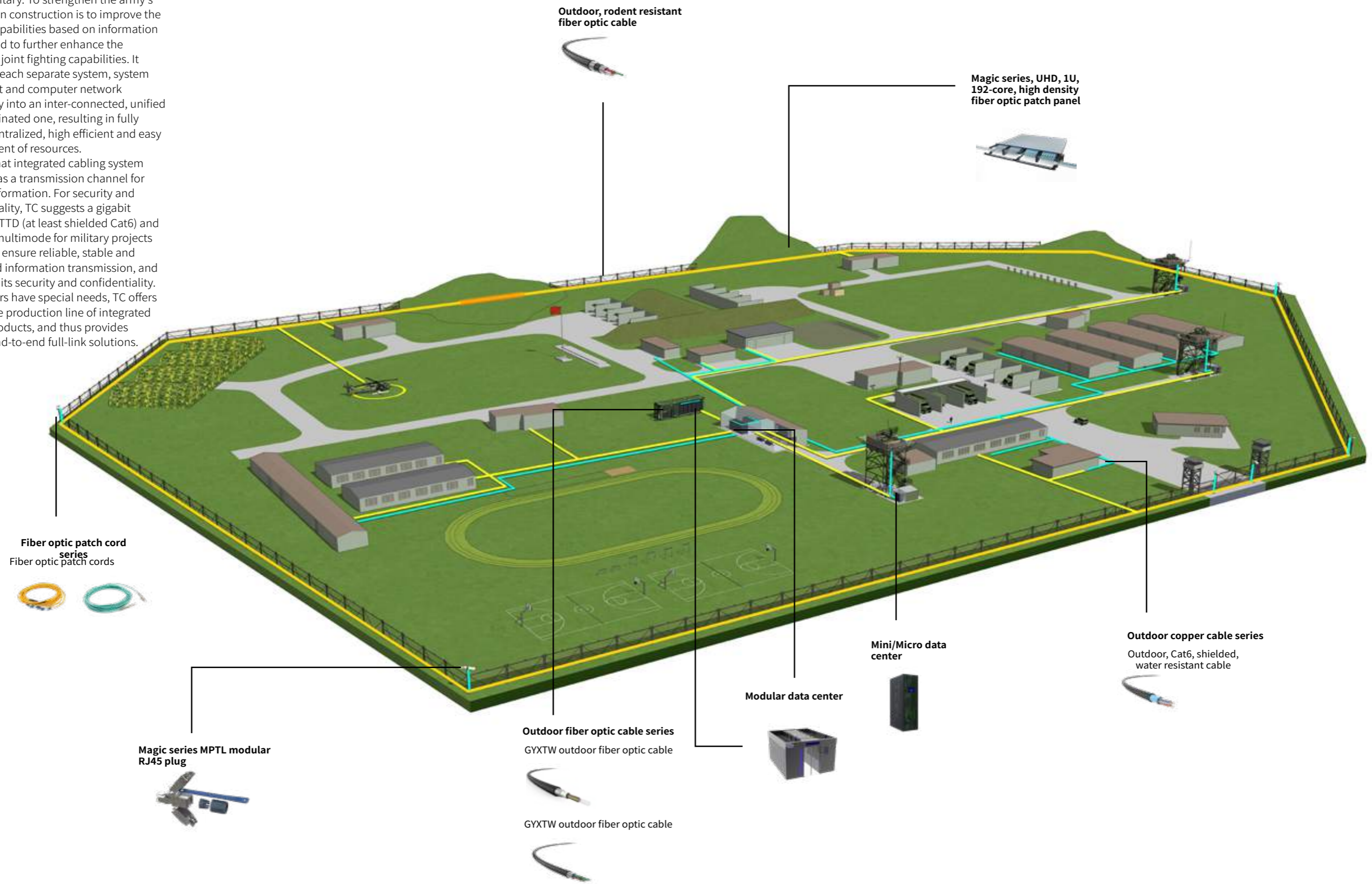
Different types of school building differ in their functions, such as teaching buildings, experimental bases, public lecture halls, libraries, science museums and student dormitories. Another feature of school building is its large scale, so structured cabling, with school information center as its distribution network center, can extend to other buildings. This is like overall cabling with plenty of backbone fiber optic cables in the campus network. Given the conduit and cabling routing, TC suggests a proprietary structured cabling solution for school building with the trunk circle accompanied by distribution circle, then extending to the desktop.

However, consider that the location and the quantity of information points, as well as the level of cabling system in school building may differ, their settings should be made accordingly. And the number of information points should not be determined by the building area alone. What's more, it is necessary to integrate all service distribution networks because there is a lot more direct connection between campus distribution networks and multimedia teaching.



Product Overview - Military

Informatization is the essence and core of new military. To strengthen the army's information construction is to improve the fighting capabilities based on information system, and to further enhance the integrated joint fighting capabilities. It integrates each separate system, system equipment and computer network technology into an inter-connected, unified and coordinated one, resulting in fully shared, centralized, high efficient and easy management of resources. It is vital that integrated cabling system functions as a transmission channel for military information. For security and confidentiality, TC suggests a gigabit shielded FTTH (at least shielded Cat6) and OM3 10G multimode for military projects in order to ensure reliable, stable and high speed information transmission, and guarantee its security and confidentiality. If customers have special needs, TC offers a complete production line of integrated cabling products, and thus provides tailored end-to-end full-link solutions.



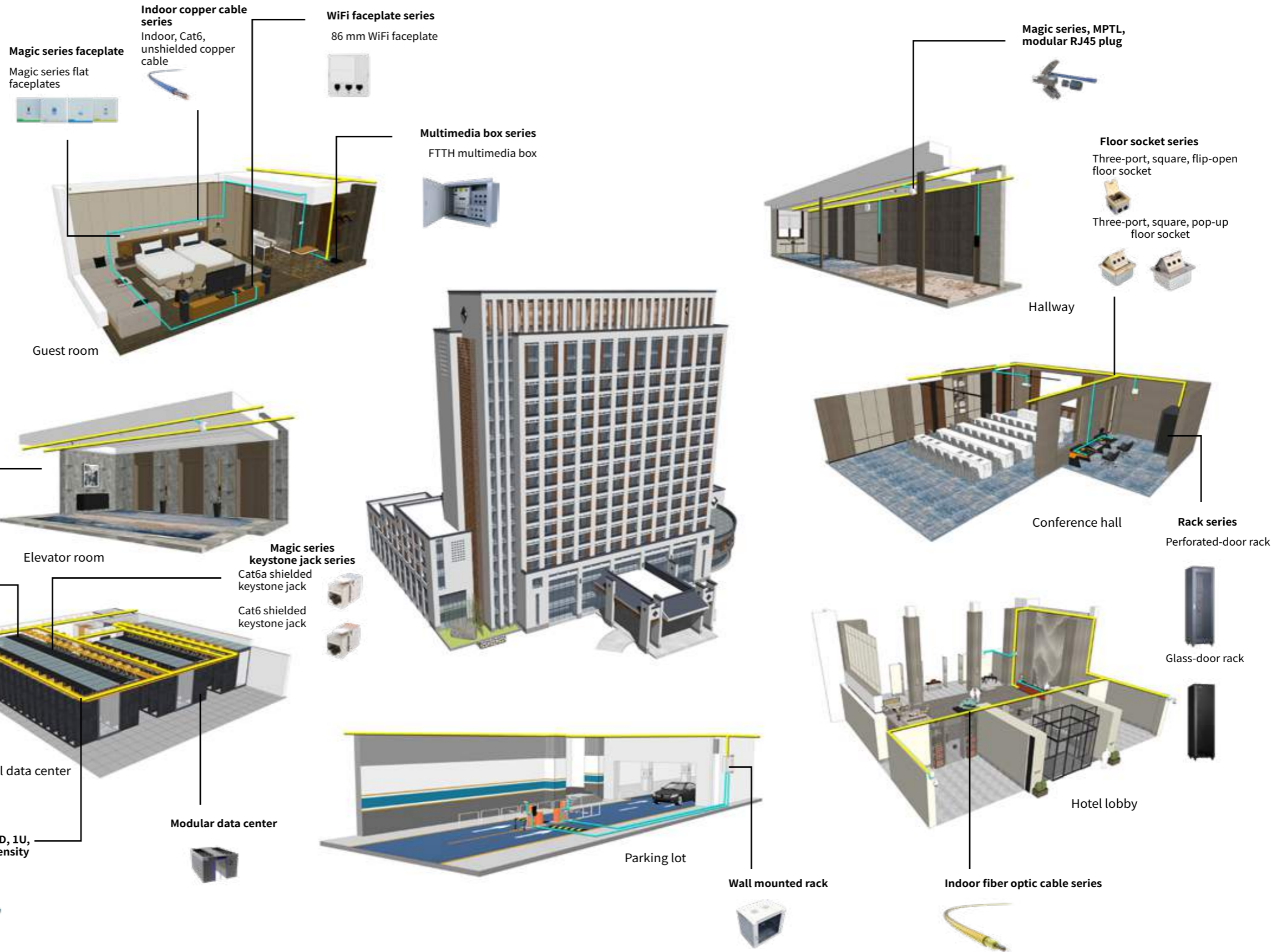
Product Overview - Hotel

Hotels are places where people often stay on business trips, tours and outings, and sometimes function as temporary offices. In the hotel, the lobby and rooms are the symbol of the hotel level, while catering, entertainment, fitness, business, parking and other services make it convenient for hotel life and temporary office. In the new era of information age, our life, tourism and work are closely related to information. And the structured cabling system has become one of the infrastructures in the hotel.

The hotel structured cabling system is room-centered. In order to facilitate room management, cable splitting / paralleling and testing, room distributors should be installed in the wardrobe (wall-mounted, like CP point). After termination of horizontal subsystem to room distributors, twisted pair cables should be laid, according to the actual location of each information point, into 86mm type bottom boxes.

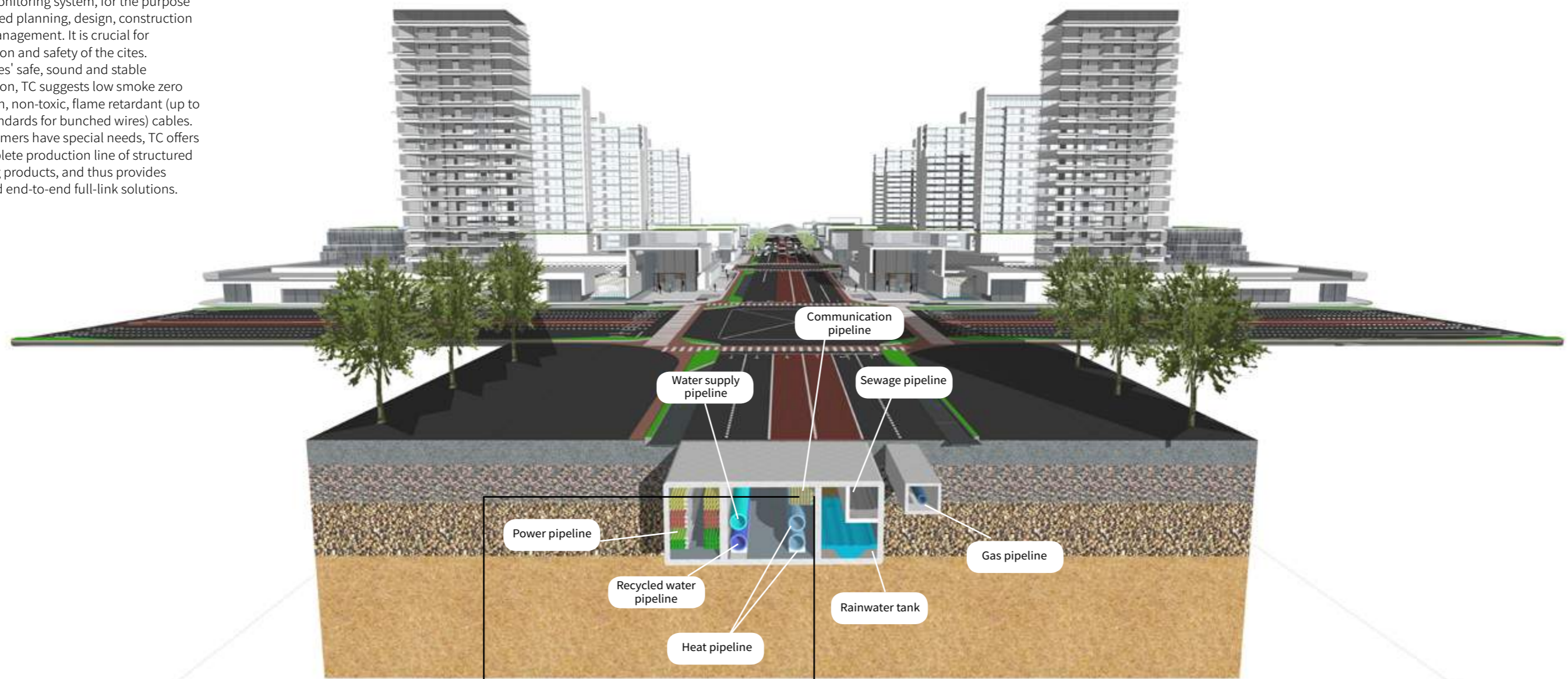
Hotel has a telephone room, broadband service room, video-on-demand room and control room. The first three can be merged into the information room (or equipment room), while the latter may be incorporated into the fire control room or room service department.

To help guests gain access to any information without delay, TC suggests GTTD and OM3 10G multimode; and for energy efficiency and environmental protection, the company suggests micro modular data center solutions. If customers have special needs, TC offers a complete production line of structured cabling products, and thus provides tailored end-to-end full-link solutions.



Product Overview - Urban Underground Utility Corridor

Utility corridor refers to urban underground pipeline, which is constructed under the city, equipped with electricity, communications, gas, heating, water supply and drainage and other engineering pipelines, with a special maintenance door and lifting port monitoring system, for the purpose of unified planning, design, construction and management. It is crucial for operation and safety of the cities. For cities' safe, sound and stable operation, TC suggests low smoke zero halogen, non-toxic, flame retardant (up to the standards for bunched wires) cables. If customers have special needs, TC offers a complete production line of structured cabling products, and thus provides tailored end-to-end full-link solutions.



Flame retardant fiber optic cable series

LSZH, flame retardant, singlemode fiber optic cable



Flame retardant copper cable series

Cat6, 4-piar, unshielded, LSZH, flame retardant, indoor cable

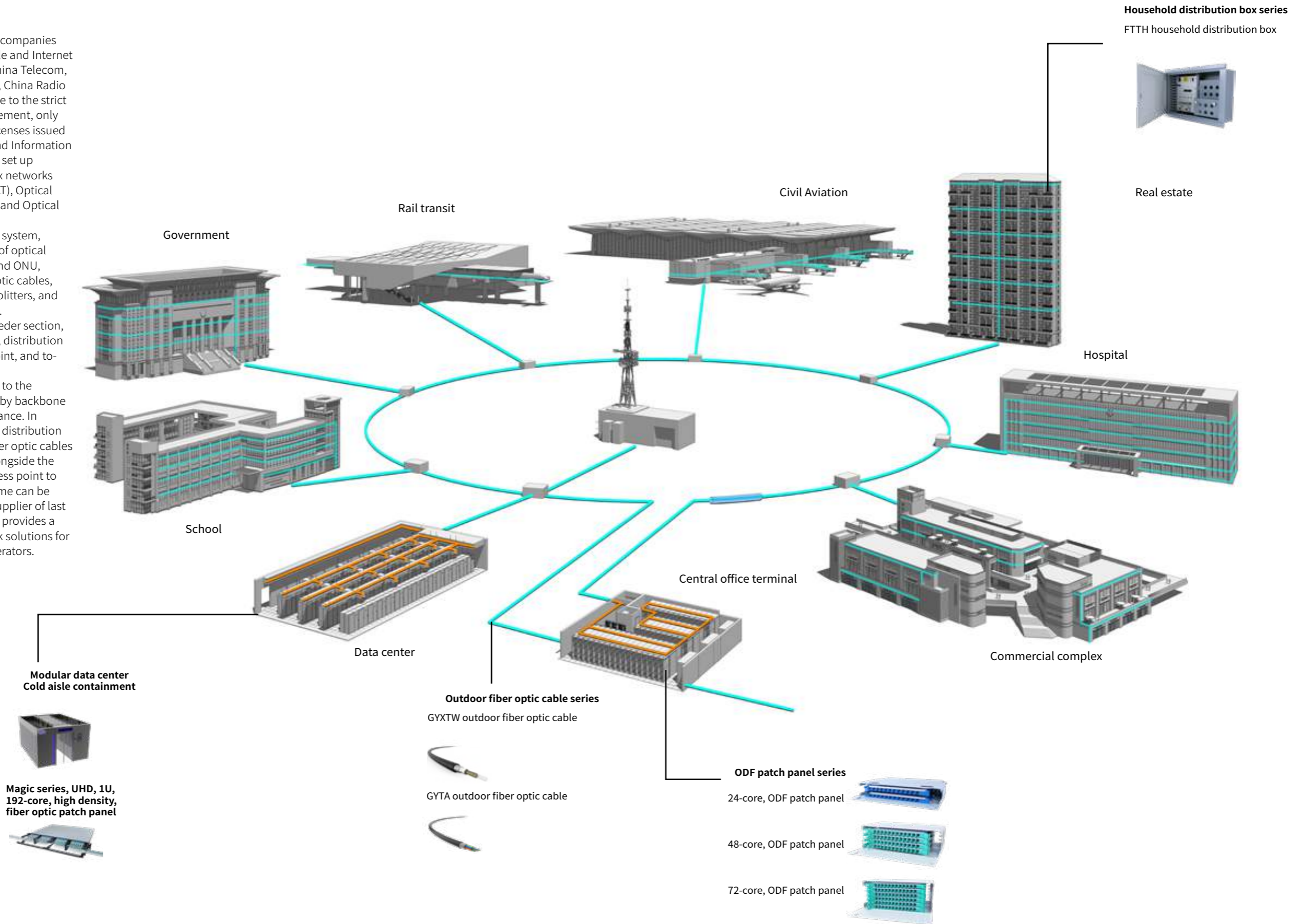


Cat6a, 4-piar, unshielded, LSZH, flame retardant, indoor cable



Product Overview - Telecom Operator

Telecom operator refers to telecommunications service companies that provide fixed-line, mobile and Internet access. In China, there are China Telecom, China Mobile, China Unicom, China Radio and Television and so on. Due to the strict telecommunications management, only companies with operating licenses issued by the Ministry of Industry and Information Technology have the right to set up networks. Included with FTTx networks are Optical Line Terminal (OLT), Optical Network Termination (ONT), and Optical Distribution Network (ODN). As an important part of FTTx system, ODN is the physical channel of optical transmission between OLT and ONU, usually composed of fiber optic cables, optical connectors, optical splitters, and other supporting equipment. ODN consists of five parts: feeder section, fiber optic distribution point, distribution section, fiber optic access point, and to-the-home section. The feeder section from ODF to the distribution point is covered by backbone cables, extending a long distance. In distribution section from the distribution point to the access point, fiber optic cables are allocated to the users alongside the feeder section. From the access point to the terminal, fiber-to-the-home can be achieved. As an integrated supplier of last mile of smart broadband, TC provides a complete end-to-end full-link solutions for FTTx networks set by the operators.





Modular Data Center

Magic DC™ RA Series Cabinets

RA*

19-inch standard cabinet, modular design, static load capacity of 1500 kg, dynamic load capacity of 600 kg.



Product Information

Product Application

With the development of Internet and cloud computing, large-scale Internet service providers have shown new changes in their demand for rack-mounted servers and customization. The RA series cabinets adopt a modular assembly design, aligning with the modern concept of modular data center design. Its modular framework structure comes with various dimensions and ventilation methods, allowing personalized configurations with limitless scalability. It can be used for installing data center servers as well as telecommunications network equipment, meeting the stringent requirements of diverse customers. These cabinets boast excellent structural stability, outstanding static and dynamic load-bearing capabilities, exceptional interchangeability, durability, and reliable safety features.

Product Features

The raw materials used are high-quality steel, processed using precision equipment such as laser cutting, CNC punching, bending, and welding, and can be easily and quickly assembled. The static load capacity can reach up to 1500KG, the dynamic load capacity is 600KG, and the protection level reaches IP20. The surface is coated with electrostatic black sand texture powder, providing a fine sandy texture while maintaining a metallic luster, which eliminates glare under lighting.

The front and rear doors with pre-punched ventilation holes are designed for tool-free installation and have an opening area ratio of over 80%. The front and rear doors can open up to 110°, facilitating the installation and debugging of large equipment. Both sides of the cabinet have segmented side panels that can be flexibly disassembled and interchanged horizontally and vertically.

The front and rear columns have "U" number position markings by silk-screen printing, making it convenient for rapid equipment installation. The positions of the columns can be adjusted with "half-inch" spacing to accommodate the shelving needs of IT equipment with different depths. The top cover of the cabinet can be removed without tools and has pre-drilled cable entry holes on the front, rear, left, and right sides to meet the demands of high-capacity cable usage. The cable entry holes are equipped with brushes to effectively prevent foreign objects and dust from entering the interior of the cabinet.

A complete and rich selection of installation accessories is available for users to choose from. The cabinet is designed with modularity and has the capability of flat-pack packaging for transportation, saving transportation costs and ensuring the safety of goods during transportation.

Compliance Information

The structure complies with GB/T 19520.16 (IEC 60297-3-100), ANSI/EIA/ECA-310-E standards, and is compatible with 19-inch international standards, metric standards, and EISI standards. The cabinet's seismic resistance meets the requirements of YD 5083-2005 and ETSI EN300019-2-3 standards.

Application Standards

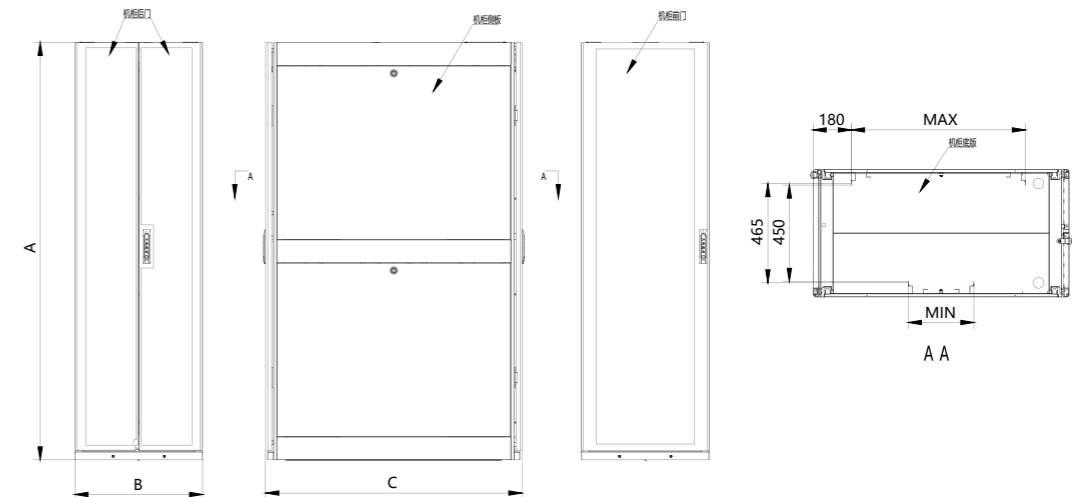
GB/T 18233 (ISO/IEC 11801); GB 50311; GB 50174; TIA/EIA568-C.2, TIA-569-D

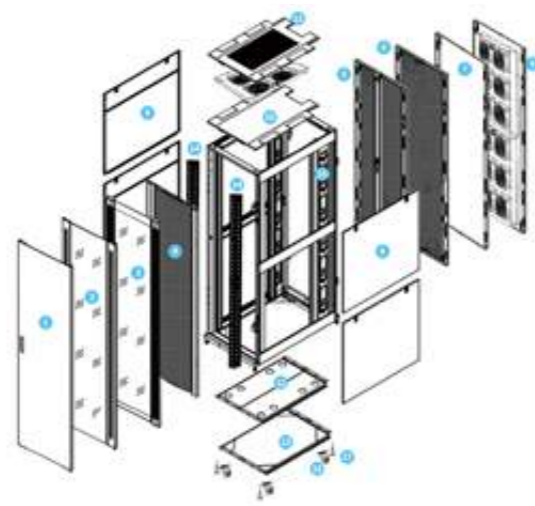
Ease of use

Lockable half-height side panel	The half-height quick-release side panel reduces size and weight, making it easy for transportation and accessing equipment.
Integrated hanging ring bolt supports within the framework	At the top of the cabinet frame, there are hanging ring bolt holes, which allow the use of lifting mechanisms and hanging ring bolts to hoist and move the cabinet. For specific requirements regarding the hanging ring bolts and detailed information on the cabinet's weight limitations, please refer to the cabinet user documentation.
Curved perforated front door and perforated rear door	The perforated front and rear doors provide ample ventilation for servers and networked equipment. The front door's perforated area is optimized with a curved design to offer a larger surface area, allowing for a higher opening area ratio ($\geq 80\%$) and greater transparency ($\geq 70\%$).
Quick-release design for front and rear doors	The front door can be moved to the other side or swapped with the rear door. Both front and rear doors utilize a simple lift-up design, making them easy to disassemble.
Cable access holes with pre-installed brushes	The large-sized cable access knockouts at the top provide a pathway for bridge cable entry and exit. The bottom design allows cables to pass through the raised floor unobstructed. The top section includes pre-installed brush strips positioned towards the front of the cabinet, allowing data cables to pass through while acting as an airflow suppressor.
Easy-to-disassemble cable access top panel	The top panel can be easily removed using simple removable pin-style hinges, allowing access to cables during equipment installation or even after cable routing is in place and passes through cable access holes. Once removed, the top panel can be flipped, allowing for larger cable access holes to reposition power plugs and connectors.
Optimization has been done for the high-capacity cable management system	The RA cabinet has been optimized to work seamlessly with high-capacity cable management systems. These high-capacity cable management systems are attached to the equipment mounting rails inside the cabinet, aligning with the U-space of the installed equipment. They provide pathways for cable routing and cable management, ensuring efficient organization and management of cables within the cabinet.
Universal key	All cabinets have a common key for the front, rear doors, and side panels.

Product parameters

19-inch equipment mounting columns	Compliant with GB/T 19520.16 (IEC 60297-3-100), IEC 60297-2, DIN 41491 PART 1, DIN 41494 PART 7, ANSI/EIARS-310-D, and ANSI/EIA/ECA-310-E standards; compatible with ETSI standards.							
Height A (mm)	48UR	45UR	42UR	37UR	32UR	27UR	22UR	17UR
Width B (mm)	600/800							
Depth C (mm)	600	800	1000	1100	1200			
Max. equipment installation depth (mm)	415	415	615	715	815			
Min. equipment installation depth (mm)	305	305	305	305	305			
Single open front door	Mesh front door / Tempered glass front door / Plexiglass front door							
Dual open rear door	Rear door with mesh / Solid door / Forced ventilation solid door with fans							
The door opening angle	$\geq 110^\circ$							
The top	Solid top cover / Forced ventilation top cover with fans							
Side panel	Removable with lock/Without lock							
Static load-bearing capacity	$\geq 1500\text{kg}$							
Dynamic load-bearing capacity	$\geq 600\text{kg}$							
Protection level	IP20							



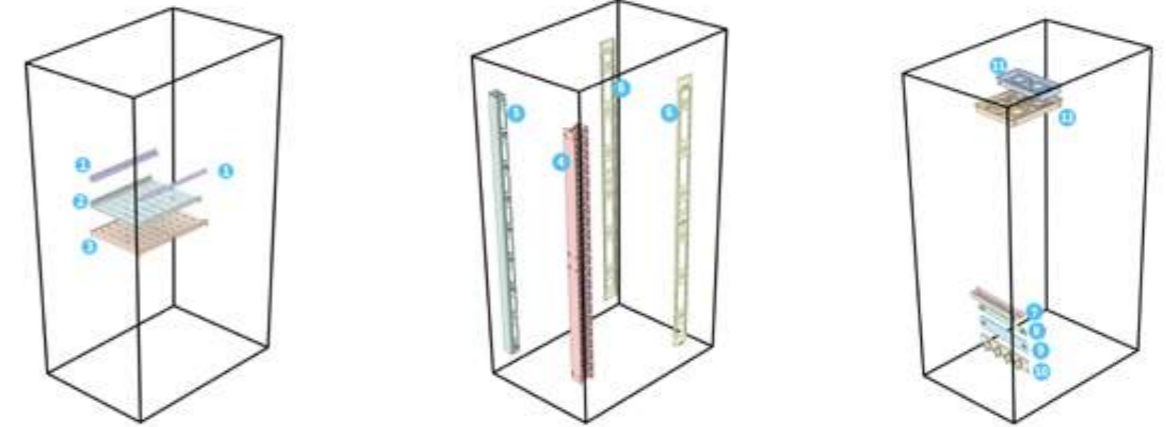


Cabinet accessories

RT*, RM*, RK*, RF*, CM-12-*
Accessories for 19-inch standard server cabinets

Model code rules RA

Series	Front door structure	Width	Depth	Height (U)	Side panel	Ventilation method	Color
RA	P: Perforated front door G: Tempered glass front door S: Solid door M: Acrylic glass front door	6: 600mm 8: 800mm	06: 600mm 08: 800mm 10: 1000mm 11: 1100mm 12: 1200mm	17: 17U 22: 22U 27: 27U 32: 32U 37: 37U 42: 42U 45: 45U 48: 48U	0: No side panel 1: Includes 1 side panel 2: Includes 2 side panels	N: Front air intake T: Top air intake B: Bottom air intake	B: RAL9005 W: RAL7035



Order Information/Configuration Information

Model	Product Description	Dimension (W×D×H)	Configuration Options																
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
RAP606422NB	RA Cabinet, perforated front and rear doors, front air intake, black	600×600 42U			●	●					○	○	○	○	×	●	●	●	
RAG606422BB	RA Cabinet, tempered glass front door, top forced ventilation, black	600×600 42U	●			●					○		●	○	×	●	●	●	
RAP606422TB	RA Cabinet, perforated front door, rear forced ventilation, black	600×600 42U			●			●	●	○		○		×	●	●	●		
RAP808422NB	RA Cabinet, perforated front and rear doors, front air intake, black	800×800 42U			●	●				●	○		○		●	●	●	●	
RAP808422TB	RA Cabinet, perforated front door, top forced ventilation, black	800×800 42U						●	○	○		○		●	●	●	●		
RAP808422BB	RA Cabinet, perforated front door, rear forced ventilation, black	800×800 42U						●	●	○		○		●	●	●	●		
RAP611420NB	RA Cabinet, perforated front and rear doors, front air intake, no side panel, black	600×1100 42U			●	●				○		○		×	●	●	●		
RAP612420NB	RA Cabinet, perforated front and rear doors, front air intake, no side panel, black	600×1200 42U			●	●				○		○		×	●	●	●		
RAS612450NB	RA Cabinet, solid front door, perforated rear door, bottom air intake, no side panel, black	600×1200 45U	●			●				○		○	○	●	×	●	●	●	
RAP812420NB	RA Cabinet, perforated front and rear doors, front air intake, no side panel, black	800×1200 42U			●	●				○		○		●	●	●	●		
RAP812450NB	RA Cabinet, perforated front and rear doors, front air intake, no side panel, black	800×1200 45U			●	●				○		○		●	●	●	●		
RAP612422NB	RA Cabinet, perforated front and rear doors, front air intake, with side panels, black	600×1200 42U			●	●				●	2	○		○	×	●	●	●	
RAP612452NB	RA Cabinet, perforated front and rear doors, front air intake, with side panels, black	600×1200 45U			●	●				●	2	○		○	×	●	●	●	
RAP812452NW	RA Cabinet, perforated front and rear doors, front air intake, with side panels, white	800×1200 45U			●	●				●	2	○		○	●	●	●	●	

Order Information

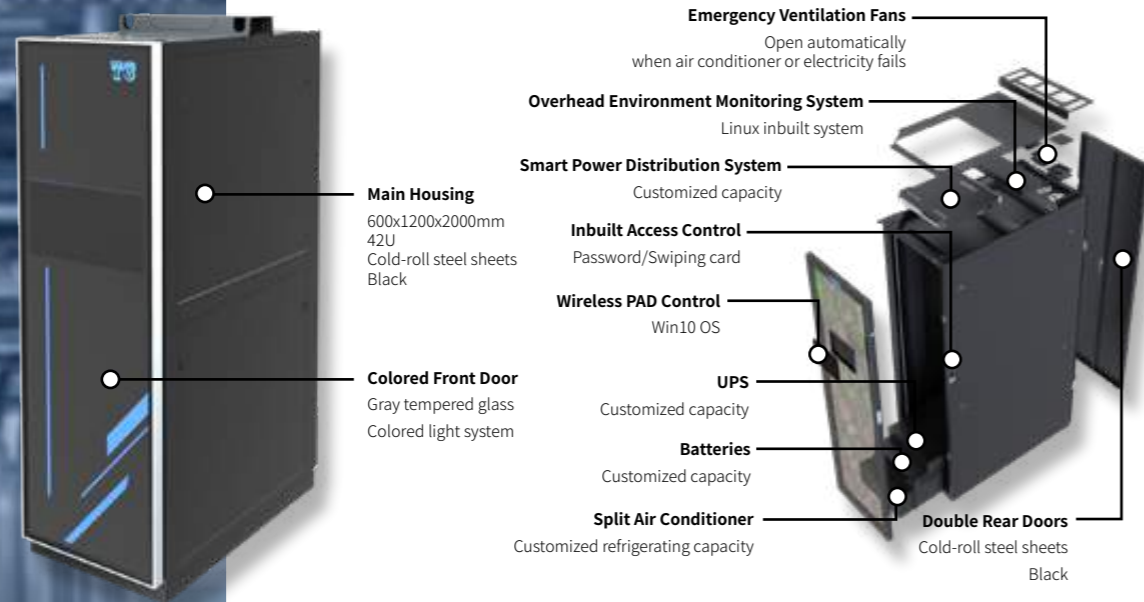
No.	Product Model	Product Description	Specifications	Package
1	RT1060501B	L-shaped mounting rail, depth 600mm, load capacity 50kg, black	—	2 per box
2	RT2061201B	Light-duty tray, depth 600mm, load capacity 120kg, black	—	1 per box
3	RT3121001B	Adjustable tray, depth 600-1200mm, load capacity 100kg, black	—	1 per box
4	RM3050421B	Vertical cable management duct, width 50mm, black color, suitable for 42U height cabinet	—	1 per box
5	RM3100421B	Vertical cable management duct, width 100mm, black color, suitable for 42U height cabinet	—	1 per box
6	RM1050421B	Vertical cable manager, width 50mm, black color, suitable for 42U height cabinet	—	—
7	CM-12-1U	1U horizontal cable manager, cold-rolled steel plate, surface electrostatic spraying	—	1 per box
8	RK021B	1U plastic blank panel, tool-less installation, flame-retardant ABS material, black	—	20 per box
9	RK022B	2U plastic blank panel, tool-less installation, flame-retardant ABS material, black	—	20 per box
10	CM-12-2U	1U horizontal cable manager, cold-rolled steel plate, surface electrostatic spraying	—	1 per box
11	RF02012	Fan unit, with tray, no temperature control, includes 2 fans	AC220V-230V	1 per box
12	RF02014	Fan unit, with tray, no temperature control, includes 4 fans	AC220V-230V	1 per box

Notes: TC Magic DC™ RA series cabinets have multiple models available for selection. For specific models, please consult local distributors.

Micro and Mini Data Center

GR-*, GW-*

19 inch, 2m, including overhead power distribution, environment monitoring system, colored glass door, split air conditioner and UPS



Product Information

Product Application

Micro and Mini Data Centers are designed for equipment rooms, small- and medium-size data centers, edge data centers (such as education, government institutions, bank outlets, gas stations, high-speed toll booths, smart communities, 5G base stations, Internet e-commerce and so on). Standardized components and de-engineering ensure data center production in factories and realize the overall delivery to customers. Customers can quickly acquire products as needed and expand capacity according to businesses.

Product Features

Highly integrated, the cabinet serves as a server room in which it boasts all facilities a standard large scale data center needs, such as UPS, air conditioner system, smart power distribution system, environment monitoring system, and access control system.

Modular design makes it easier to install and maintain. Standard ports, prefabrication inspection, field deployment and maintenance ensure a shorter online time.

Investment in infrastructure construction has been decreased due to high protection rating, low noise and easy-to-deploy under harsh environment conditions.

Thanks to high efficient green energy reduction, dual conversion online UPS, DC frequency conversion technology, smart power distribution as well as supervision and control system, the cabinet guarantees the uptime availability and stability. The PUE (Power Usage Effectiveness) rating drops to 1.3.

There is no need for either single cabinet or single-row multiple cabinets to build up a hot and cold aisle in between, resulting in a smaller coverage area (2 square meters for single cabinet).

Single cabinet has a capacity of 3-20KW, 15mins-4hrs (customized if necessary) for its UPS uptime.

Patent overhead power distribution unit and environment monitoring unit only cover a very small area. When refrigerating capacity of the integrated air conditioner reaches 4.2kw, its available inner space is up to 34U.

The front door can be customized for diverse colors and patterns as well as different light alarms according to working conditions. PAD is magnetically mounted, easy to get and charge.

Air conditioner can be arranged in rack-mounted way or in a sophisticated column order so as to meet different installation requirements and provide users with a comprehensive solution and best quality services.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; GB50174; TIA/EIA568-C.2



34U optimal space utilization



Patent overhead power distribution and environment monitoring system



Solutions for Mini Data Center and column air conditioning

Specifications

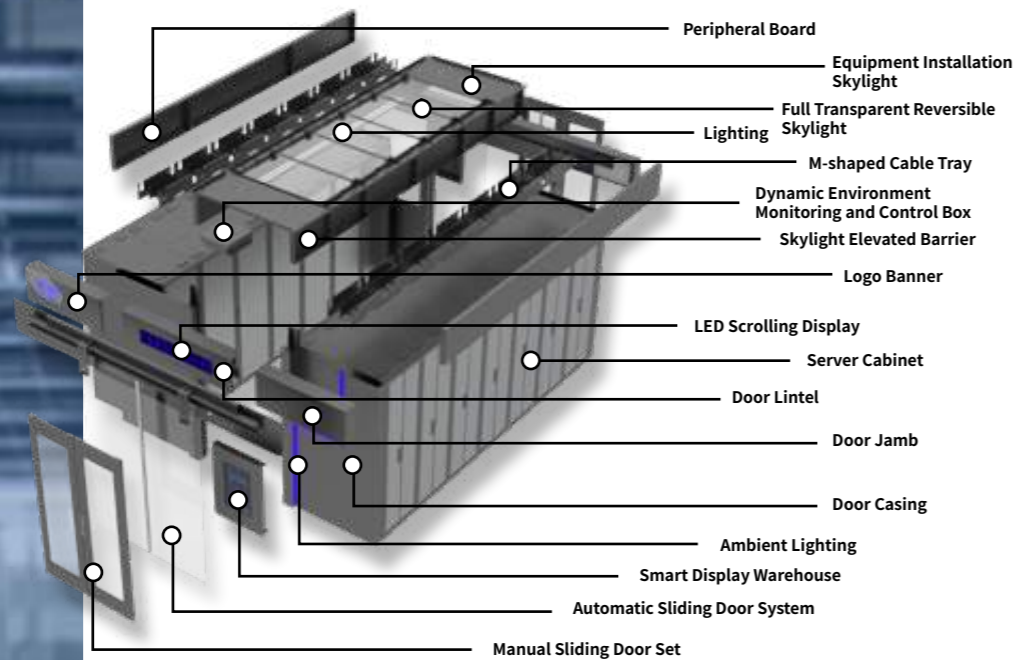
Protection Rating	IP5X
Noise	≤ 55d B
Range of Altitude	0-2000 m
Operating Temperature Range	-10°C to 45°C
Operating Humidity Range	5% to 85%
Electrostatic Protection	In accordance with GB50611
Power Supply and Distribution	In accordance with GB50052, GB50054
Lightning Protection	In accordance with GB50343
Air Conditioning	In accordance with GB50019, GB50243
Fire Extinction	In accordance with GB50263
Mounting Rails (PMA)	In accordance with GB3047.2, IEC297-2, DIN41491 PART1, DIN41494 PART7, ANSI/EIARS-310-D; compatible with ETSI

Notes: TC offers a complete range of products for micro/mini data center, available in a wide variety of models. For detailed product information, please contact local distributors.

Modular Data Center

GM-*

19 inch, modular design, cold & hot aisle containment, fire resistant retractable skylight, access control



Product Information

Product Application

Modular Data Center is designed for equipment rooms, medium- and large data centers. Standardized components, de-engineered, ensure data center production in factories and realize the overall delivery to customers. Customers can quickly acquire products as needed and expand capacity according to businesses.

Product Features

There contains a highly integrated design philosophy that the channel module serves as server room in which it boasts UPS, air conditioner system, smart power distribution system, environment monitoring system, access control system, etc.

Modular design makes it easier to install and maintain. Standard ports, prefabrication inspection, field deployment and maintenance ensure a shorter online time.

Investment in infrastructure construction has been decreased due to high protection rating, low noise and easy-to-deploy under harsh environment conditions.

Thanks to high efficient green energy reduction, dual conversion online UPS, DC frequency conversion fan, smart power distribution as well as supervision and control system, the cabinet guarantees the uptime availability and stability. The PUE rating drops to 1.4.

The front and rear door can be customized for various types of light alarms under different working conditions. Touch screen control panel can record condition-based information in real time.

Various enclosures, cable trays and fire resistant retractable skylights are available.

Sophisticated column air conditioner, smart power distribution cabinet, batteries and fire extinction system can all be flexibly configured according to different demands so as to provide users with a comprehensive solution and best quality services.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; GB50174; TIA/EIA568-C.2

Main Specifications

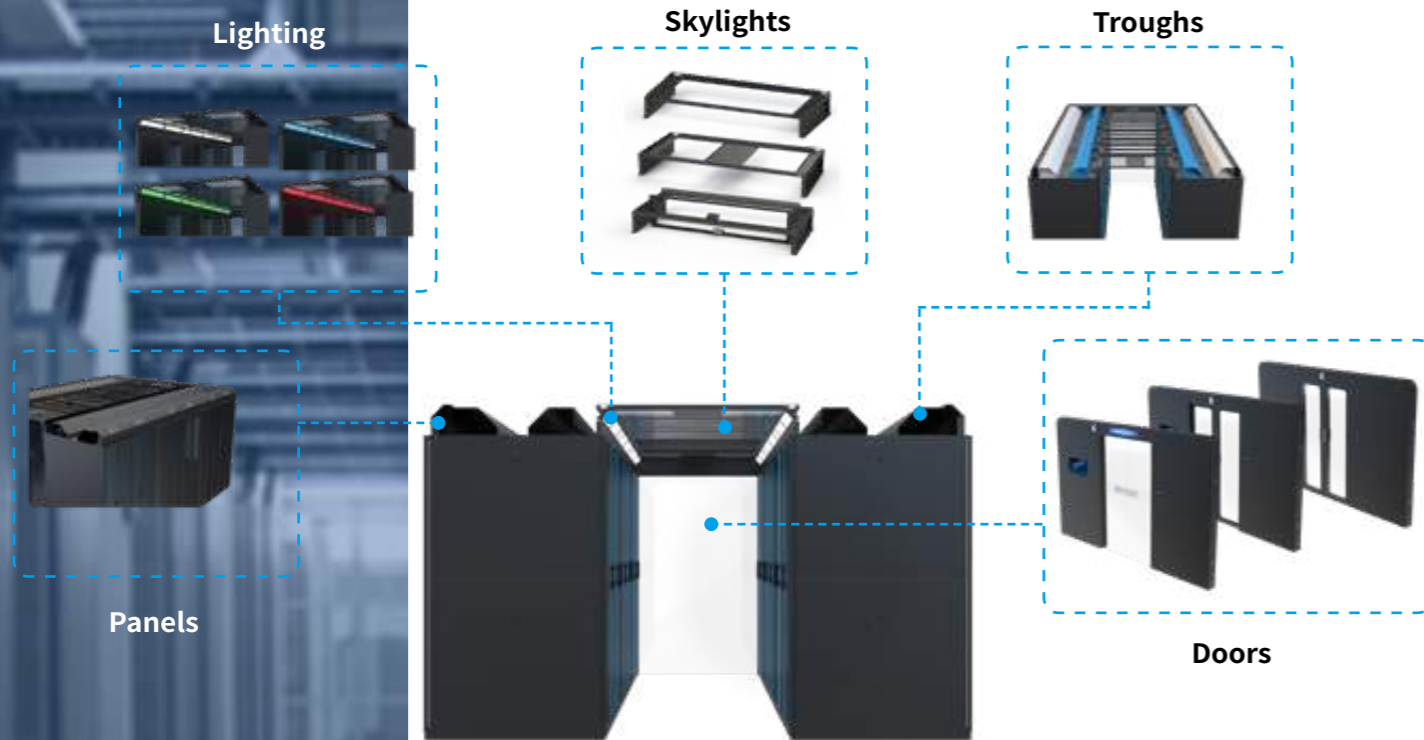
Type	Item	Specifications
Server Rack	Standards	In accordance with GB3047.2, IEC297-2, DIN41491 PART1, DIN41494 PART7, compatible with ETSI
	Size	600X1200X2000mm (42U) W x D x H
	Load-Bearing Capacity	Static load capacity 1,800 kg, dynamic load capacity 800 kg, 9.0 magnitude earthquake resistance
Power Distribution Units	Ventilation Rate of Perforated Door	Single-open perforated front door, double-open perforated rear door (hexagon hole, round hole, waist hole available), ventilation rate up to 85%
	Rated Power	Single- or three-phase input, 50/60 Hz, 20 to 300 KVA
	Brands of Moulded Case Circuit Breaker	Schneider, ABB, Siemens (customized)
Air Conditioning System	Size	600X1200X2000mm (42U) W x D x H (customized)
	Functions	Single/ two-way busbar, smart monitoring gauge in the backbone and the branch, anti-surge protection switch and protector
	Air Conditioning Type	Precision air conditioner, column-type air conditioner, rack-mounted air conditioner, air conditioner in small server room
UPS System	Cooling Type	Water cooling, air cooling, frozen water cooling
	Way of Isolation	Cool and hot aisle containment
	Rated Capacity	25 to 300KVA
Environment Monitoring System	Rated Input	3-phase, 5-wire 380Vac, 50/60Hz
	Working Capacity	Backbone 95%; ECO mode 98%
	Storage Battery	Maintenance-free, lead-acid batteries
Structured Cabling	Environment Monitoring	Hygrometer and thermometer, smoke alarm, water leakage alarm, door access, HD cameras
	Monitoring Equipment	Precision power distribution cabinets, UPS, air conditioning, storage batteries, fire fighting systems
	Alarming Methods	24-inch touch display, local sound and light alarm, voice alarm, SMS alert
Structured Cabling	Transmission Performance	Cat6/cat6a copper cable, OM3/OM4 multimode fiber optic cable, OS2 singlemode fiber optic cable
	Safety Performance	IEC60332-3 flame retardant, safe and environmentally friendly

Notes: TC offers a complete range of products for modular data center, available in a wide variety of models. For detailed product information, please contact local distributors.

Data Center Cold / Hot Aisle Containment

CA*

19-inch, modular design, cold/hot aisle containment, fire resistant retractable skylight, access control



Specifications

Range of Altitude	0-2000 m
Operating Temperature Range	-10°C to 45°C
Operating Humidity Range	5% to 85%
Electrostatic Protection	In accordance with GB50611
Power Supply and Distribution	In accordance with GB50052, GB50054
Lightning Protection	In accordance with GB50343
Air Conditioning	In accordance with GB50019, GB50243
Fire Extinction	In accordance with GB50263
19-inch Cabinet	In accordance with GB3047.2, IEC297-2, DIN41491 PART1, DIN41494 PART7, ANSI/EIARS-310-D; compatible with ETSI

Aisle Components



Functional Skylight

Installed in front and rear of the cold aisle, space reserved for hygrometer and thermometer, smoke alarm, surveillance cameras and other equipment



Fire Fighting Linkage Retractable Skylight

Installed in the middle of the cold aisle, in dual flip structure for a decrease in space utilization on top



Fully Transparent Fixed Skylight

Installed in the middle of the aisle, with a huge scale of tempered glass, for better light penetrability inside the aisle



Electric Sliding Door

Installed in front and rear of the aisle, with door access, anti-pinch, exit button, alarm and the screen



Double Flush Door

Install in front and rear of the aisle, with door access, exit button, alarm and automatically closed door



Double Manual Sliding Door

Installed in front and rear of the aisle, with door access, alarm and automatically closed door

Product Information

Product Application

Data center cabinets are facing a lot of challenges: higher heat density, greater electric energy consumption, lack of space, and cabinet layout not keeping up with the needs of business growth. There has always been increasingly requirements for cooling, though air conditioners are frequently replaced and added. However, there still exists the partial heat island problem, that is, direct mix of cold and hot air resulting in huge waste of cooling capacity. The equipment on top of the cabinet cannot acquire enough cooling capacity as needed, so the overall PUE value still remains high.

The cold/hot aisle containment system separates the cold inlet air and the hot exhaust air. The cold air is pushed under the raised floor and through the closed cold aisle. As the cold air concentrates in front of the cabinet and cools the equipment, it is heated and eventually dissipated into the hot aisle. The hot exhaust air is then routed back to the outlet of air conditioner.

Product Features

Thanks to the hot aisle and cold aisle, the cabinets are no longer placed in the same direction. The fronts of the racks face each other, which fits for the front-to-back heat dissipation of most IT equipment. In doing this, an unnecessary mix of cold and hot air is thus avoided for improved cooling efficiency.

Application Standards

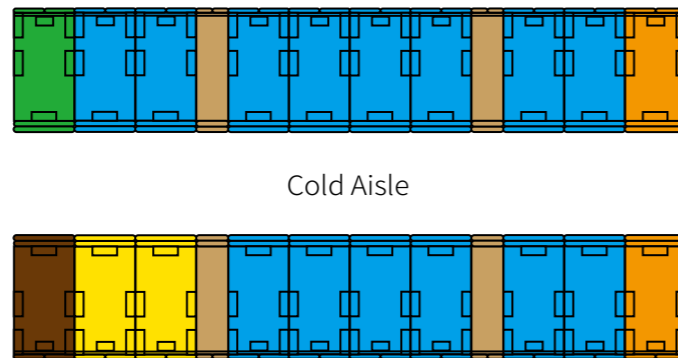
GB/T 18233 (ISO/IEC 11801); GB 50311; GB50174; TIA/EIA568-C.2

Notes: TC offers a complete range of products for cold/hot aisle containment, available in a wide variety of models. For detailed product information, please contact local distributors.

Airflow Management Methods



Classic Solution 1



Cold Aisle

- Precision Power Distribution ■ IT Racks ■ Cabinets ■
- Column Air Conditioners ■ Modular UPS ■ Batteries ■

Cooling System of Column Air Conditioners

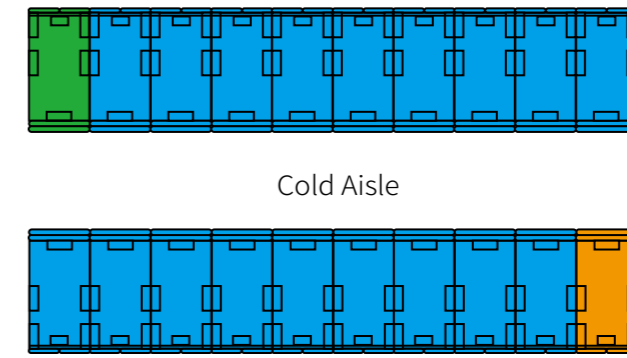
Intended for large, medium and small data centers, such as Internet data centers, Telecom operator data centers, government data centers, and other small and medium-sized data centers of each level and branch.

Classic Configuration

The single rack load is between 3-7 KW, using precision column-type air conditioners, with air pushed horizontally from the front. The number of power distribution cabinets is flexibly adjusted according to the total distribution circuit while the number of air conditioners is flexed by the total power and redundancy of the equipment.



Classic Solution 2



Cold Aisle

- Precision Power distribution ■ IT Racks ■ Cabling Cabinets ■

A Raised Floor Cooling System of Computer Room Air Conditioners (CRACs)

Intended for large, medium and small data centers, such as Internet data centers, Telecom operator data centers, government data centers, and other small and medium-sized data centers of each level and branch.

Classic Configuration

The single rack load is between 3-7 KW, using CRACs, with air pushed under the raised floor. The number of power distribution cabinets is flexibly adjusted according to the total distribution circuit while the number of air conditioners is flexed by the total power and redundancy of the equipment.

Notes: TC offers a complete range of products for cold/hot aisle containment, available in a wide variety of models. For detailed product information, please contact local distributors.

TCHX Series High-Frequency Tower UPS

60~180kVA high-frequency tower UPS, double conversion online



Product Information

Product Application

The "TCHX" series UPS power supply is a leading all-digital power product in the industry, incorporating the most advanced achievements in the fields of power electronics and automatic control. It possesses nearly thirty patents, resulting in a breakthrough improvement in the reliability, availability, and maintainability of critical equipment power supply.

The "TCHX" series UPS power supply can effectively address various power problems, such as power outage, high voltage, low voltage, voltage sag, amplitude oscillation, high voltage pulse, voltage fluctuation, surge voltage, harmonic distortion, noise interference, and frequency fluctuation. It is widely used in various industries, including government, finance, communication, education, transportation, meteorology, broadcasting, industrial and commercial taxation, medical healthcare, energy, and power.

Range of Power/Operating Methods

60 to 180kVA, 3 in - 3 out, online double conversion

Product Features

Intelligent Protection Solution

The TCRT series UPS adopts a dual protection design with both hardware and software. It provides fast and effective protection against voltage, current, thermal performance, and short-circuit anomalies, ensuring system safety and reliability.

Fully Digital Control

Utilizing a 32-bit high-speed DSP digital control and the most advanced CAN-BUS communication system, the TCRT series UPS offers enhanced stability, safety, and reliability.

Integrated Package IGBT Modules for Core Power Devices

The TCRT series UPS employs integrated package IGBT modules, greatly enhancing the reliability of core components. This design avoids the issues of current imbalance and voltage stress caused by discrete IGBT parallel connections. Additionally, the unique isolated airflow design significantly improves the product's environmental adaptability.

Intelligent Battery Management Solution

The charging and discharging circuits are all digitally controlled by DSP, achieving outstanding battery management and greatly extending the battery's service life.

Green and Energy-Efficient

The input power factor is greater than 0.99, and input harmonics are less than 3%, achieving a system efficiency of over 95%. The UPS also incorporates intelligent sleep mode to effectively improve the overall operating efficiency. The ECO working mode ensures efficient energy savings, reducing user operating costs.

Robust Remote Network Management Solution

With an SNMP network management card, users can remotely monitor and control the UPS system through the network. Remote monitoring is also possible through USB or RS485 communication interfaces.

Shared Battery Pack Feature

During parallel operation, the UPS can share the same battery pack.

Technical Specifications

Model	TCHX33060	TCHX33080	TCHX33100	TCHX33120	TCHX33150	TCHX33180	
Capacity	60kVA	80kVA	100kVA	120kVA	150kVA	180kVA	
Main Input	Wiring	3-phase + N+ PE					
	Voltage	380/400/415VAC					
	Frequency	50/60Hz					
	Power Factor	> 0.99					
	Current THDi	< 3%					
	Range of Voltage	305~485Vac at full load, 138~305Vac linear derating					
	Range of Frequency	40~70Hz					
Battery	Battery Voltage	±240VDC (30~50 cells adjustable)					
	Charging Power	20%					
Bypass	Input Voltage	380/400/415Vac					
	Range of Voltage	Default: -20% to +15%; Optional: -40% to +15%					
Output	Output Voltage	380/400/415VAC					
	Output Frequency	50/60Hz					
	Power Factor	0.8		1	0.8	1	0.8
	Voltage Accuracy	±1%					
	Dynamic Response	< 5% (20%-80%-20% load step)					
	Dynamic Recovery Time	< 20ms (0%-100%-0% load step)					
	Voltage THDv	≤ 2% (linear load); ≤ 4% (non-linear load)					
	Inverter Overload	110% transfer to bypass after 1 hour; 125% transfer to bypass after 10 minutes; 150% transfer to bypass after 1 minute; > 150% transfer to bypass after 200 ms					
	Frequency Tracking	Frequency tracking range can be set at ±0.5Hz~±5Hz, default is ±3Hz; tracking rate can be set at 0.5Hz/S~±3Hz/S, default is 0.5Hz/S.					
	Peak Ratio	3:1					
	Three-Phase Phase Accuracy	120° ±0.5°					
	System	Efficiency	Normal Mode 94.5%; Economy Mode: 98%				
		Screen	LCD				
		Protection Rating	IP20				
Communication Interface		CAN, RS485, FE, LBS, Parallel Card, SNMP Adapter (optional), Relay Card (optional)					
Operating Environment		0-40°C (working temperature); -25°C ~70°C (storage temperature); 0-95% (no condensation)					
Noise Level (dB)/m		< 58		< 60		< 65	
Size (W*D*H,mm)	250x840x865		440x850x1200				
Weight (kg)	80		140	149	190	199	

Order Information

Model	Description	Size	Package
TCHR1103S	3kVA, 1 in and 1 out, Input Power Factor ≥ 0.97, Output Power Factor 0.9, Efficiency 90%	440*480*173	1 per box
TCHR1103L	3kVA, 1 in and 1 out, Input Power Factor ≥ 0.97, Output Power Factor 0.9, Efficiency 90%	440*480*86	1 per box
TCHR1106XS	6kVA, 1 in and 1 out, Input Power Factor ≥ 0.99, Output Power Factor 1, Efficiency 95%	440*660*172	1 per box
TCHR1106XL	6kVA, 1 in and 1 out, Input Power Factor ≥ 0.99, Output Power Factor 1, Efficiency 95%	440*550*86	1 per box
TCHR1110XS	10kVA, 1 in and 1 out, Input Power Factor ≥ 0.99, Output Power Factor 1, Efficiency 95%	440*660*172	1 per box
TCHR1110XL	10kVA, 1 in and 1 out, Input Power Factor ≥ 0.99, Output Power Factor 1, Efficiency 95%	440*550*86	1 per box

Notes: Modular UPS offers a broad selection of models. For detailed product information, please contact local distributors.

TCRM Series Modular UPS

10~90kVA rack-mounted modular UPS, single module
10/15kVA



Product Information

Product Application

The "TCRM" Series Modular UPS is a leading digital power product in the industry, incorporating the most advanced achievements in power electronics and automatic control fields, with nearly thirty patents. It has significantly improved the power supply reliability, availability, and maintainability of critical equipment.

The "TCRM" Series Modular UPS combines the technical characteristics of traditional tower-type models with the requirements of modern data center modularity. It ensures high system reliability while achieving a modular design.

Range of Power/Operating Methods

10 to 90kVA, 3 in - 3 out/3 in - 1 out/1 in - 1 out, online double conversion

Product Features

Intelligent Protection Solution

The TCRM Series Modular UPS power modules and system are equipped with a dual protection design, combining hardware and software. This ensures quick and effective protection against voltage, current, thermal performance, and short-circuit abnormalities, thereby guaranteeing the safety and reliability of the system.

Fully Digital Control

Utilizing a 32-bit high-speed DSP digital control and the most advanced CAN-BUS communication system, the TCRM series UPS offers enhanced stability, safety, and reliability.

Integrated IGBT Module for Core Power Devices

The TCRM Series Modular UPS utilizes integrated IGBT modules, significantly improving the reliability of core components. This design avoids issues associated with discrete IGBT parallel connections, such as device uneven current distribution and voltage stress. Additionally, the unique isolated air duct design greatly enhances the product's environmental adaptability.

Intelligent Battery Management Solution

Each power module is equipped with an independent digital high-power charger, providing 20% charging capacity of the power capacity. Both charging and discharging circuits are controlled by DSP technology, ensuring excellent battery management and greatly extending the battery's lifespan.

Green and Energy-Efficient

The input power factor is more than 0.99, and the input harmonic distortion is less than 3%. The overall efficiency of the system is above 95%. The intelligent sleep mode is employed to effectively enhance the system's operational efficiency.

Powerful Remote Network Management Solution

Through the SNMP network management card, users can remotely monitor and control the UPS system over the network. Additionally, multiple devices can be simultaneously monitored using the supporting remote monitoring box.

"Zero Threshold" Maintenance

Maintenance is convenient and quick, taking only a few minutes to complete. The module ID self-recognition technology eliminates the need for manual settings, making the maintenance process straightforward. The critical waveform recording function provides great convenience for fault analysis.

Battery Cold Start Function

The system comes with a battery cold start function, allowing you to start the system directly from the battery in the absence of utility power (applicable to 20kVA/25kVA/30kVA/45kVA/50kVA power modules).

Hot-Swappable Static Bypass Monitoring Module

Both monitoring and static bypass modules can be hot-swapped online. Each power module operates independently, eliminating the risk of single-point failure.

Technical Specifications

Model	TCRM 020/10X	TCRM 040/10X	TCRM 060/10X	TCRM 030/15X	TCRM 045/15X	TCRM 090/15X		
Capacity	20kVA	40kVA	60kVA	30kVA	45kVA	90kVA		
Main Input	Wiring						3 phase + N + PE	
	Voltage						380/400/415Vac	
	Frequency						50/60Hz	
	Power Factor						> 0.99	
	Current THDi						< 4%	
	Range of Voltage						304~478Vac at full load, 304V~228Vac linear derating	
	Range of Frequency						40~70Hz	
Battery	Battery Voltage						±240VDC (32~44 cells adjustable)	
	Charging Power						20%	
Bypass	Input Voltage						380/400/415Vac	
	Range of Voltage						Default: -20% to +15%; Optional: -40% to +15%	
Output	Output Voltage						380/400/415VAC	
	Output Frequency						50/60Hz	
	Power Factor						1	
	Voltage Accuracy						±1.5%	
	Dynamic Response						< 5% (20%-80%-20% load step)	
	Dynamic Recovery Time						< 20ms (0%-100%-0% load step)	
	Voltage THDv						< 1% (linear load) , < 5.5% (nonlinear load)	
	Inverter Overload						110% transfer to bypass after 1 hour; 125% transfer to bypass after 10 minutes; 150% transfer to bypass after 1 minute; > 150% transfer to bypass after 200 ms	
	Frequency Tracking						Frequency tracking range can be set at ±0.5Hz~±5Hz, default is ±3Hz; tracking rate can be set at 0.5Hz/S~±3Hz/S, default is 0.5Hz/S.	
	Peak Ratio						3:1	
	Three-Phase Phase Accuracy						120° ±0.5°	
	System	Efficiency						Normal mode: 95% Economic mode: 98%
		Screen						LCD + LED + 7-inch Color Touchscreen
Protection Rating						IP20		
Communication Interface						RS232, RS485, Dry Contacts, SNMP Card (Optional), Emergency Shutdown		
Wiring Method		Rear and Bottom Entry (Optional)	Bottom Entry	Rear and Bottom Entry (Optional)	Bottom Entry			
Working Environment						0-40°C (working temperature); -25°C ~70°C (storage temperature); 0-95% (no condensation)		
Noise (dB) / m						< 56		
Size (W*D*H ,mm)	Type of Cabinet		2-modular cabinet	4-modular cabinet	6-modular cabinet	2-modular cabinet	3-modular cabinet	6-modular cabinet
	Main Body		485*697*398	485*697*575	485*751*1033	485*697*398	485*751*575	485*751*1033
	Main Body (Placed in Server Cabinet)		485*697*308	485*697*485	485*751*928	485*697*308	485*751*485	485*751*928
Weight (kg)	Module		436*590*85					
	Main Body (with modules)		73	113	175	73	119	175
	TCPM20 Module		15.3 (PM10X)				15.5 (PM15)	

Order Information

Model	Description	Size	Package
TCRM060/10X	60kVA, 3 in and 3 out/1 out, Input Power Factor > 0.99, Output Power Factor 1.7-inch color touchscreen	485*751*1033	1 per box
TCRM090/15X	90kVA, 3 in and 3 out/1 out, Input Power Factor > 0.99, Output Power Factor 1.7-inch color touchscreen	485*751*1033	1 per box

Notes: Modular UPS offers a broad selection of models. For detailed product information, please contact local distributors.

TCRM series Modular UPS

20 to 200kVA rack mounted modular UPS, single-module 20kVA



Product Information

Product Application

TCRM series modular UPS power, the industry leading, all-digital power distribution product, collects the most advanced technology in power electronics and automatic control, thus resulting in breakthrough improvements in power reliability, availability and maintainability of the critical equipment.

It integrates the technical features of traditional tower-type with the need of modern modular server rooms, ensuring modular design together with high reliability of the system.

It is widely used in government, finance, communications, education, transportation, meteorology, radio and television, industrial and commercial taxation, health care, energy and electricity and other sectors.

Range of Power/Operating Methods

20 to 200kVA, 3 in - 3 out, online double conversion

Product Features

Its core power device introduces an integrated packaging structure of IGBT modules for high input power factor. Its main body is equipped with a 5.7-inch LCD touchscreen for all-digital control, and with a hot-swapping static bypass monitoring module for remote EPO function. Highly efficient remote network management realizes "zero threshold" of maintenance. Smart battery management supports a cold start designed in redundancy module. Extra wide range of voltage input supports direct paralleling of cabinets.



Power Module

Technical Specifications

Model	TCRM 060/20	TCRM 120/20	TCRM 200/20	
Capacity	60kVA	120kVA	200kVA	
Main Input	Wiring	3 phase + N + PE		
	Voltage	380/400/415Vac		
	Frequency	50/60Hz		
	Power Factor	> 0.99		
	Current THDi	< 3%		
	Range of Voltage	304~478Vac at full load, 304V~228Vac linear derating		
	Range of Frequency	40~70Hz		
Battery	Battery Voltage	±240VDC (32~44 cells adjustable)		
	Charging Power	20%		
Bypass	Input Voltage	380/400/415Vac		
	Range of Voltage	Default: -20% to +15%; Optional: -40% to +15%		
Output	Output Voltage	380/400/415VAC		
	Output Frequency	50/60Hz		
	Power Factor	0.9		
	Voltage Accuracy	±1%		
	Dynamic Response	< 5% (20%-80%-20% load step)		
	Dynamic Recovery Time	< 20ms (0%-100%-0% load step)		
	Voltage THDv	< 1% (linear load) , < 5.5% (nonlinear load)		
	Inverter Overload	110% transfer to bypass after 1 hour; 125% transfer to bypass after 10 minutes; 150% transfer to bypass after 1 minute; > 150% transfer to bypass after 200 ms		
	Frequency Tracking	Frequency tracking range can be set at ±0.5Hz~±5Hz, default is ±3Hz; tracking rate can be set at 0.5Hz/S~±3Hz/S, default is 0.5Hz/S.		
	Peak Ratio	3:1		
Three-Phase Phase Accuracy	120° ±0.5°			
System	Efficiency	Normal mode: 95% Economic mode: 99%		
	Screen	LCD+LED, touchscreen + keyboard		
	Protection Rating	IP20		
	Communication Interface	RS232, RS485, dry contacts, SNMP cards, EPO, generator interface		
	Wiring Method	0-40°C (working temperature) ; -25°C ~70°C (storage temperature) ; 0-95% (no condensation)		
	Working Environment	< 66		
Size (W*D*H,mm)	Noise (dB) / m	SNMP cards, lightning protection, battery temperature compensation, SMS alarm, dust net, dual input unit, seismic assembly		
	Type of Cabinet	3-modular cabinet	6-modular cabinet	10-modular cabinet
	Main Body	600*900*1100	600*900*1600	600*900*2000
Weight (kg)	TCPM20 Module	440*590*134		
	Main Body (with modules)	171	277	399
	TCPM20 Module	22		

TCHF Series Small Data Center Air Conditioner

7.5KW to 12.5KW Small Data Center Air Conditioner



Product Information

Product Application

Suitable for operator communication base stations and small data centers, electrical control rooms in industries such as railways, power, banks, operation rooms, small data rooms, constant temperature and humidity laboratories, constant temperature and humidity process environments, and constant temperature and humidity storage environments.

Refrigeration capacity

7.5KW to 12.5KW

Product Features

High Efficiency and Energy Reduction

Equipped with R410A refrigerant as standard, which provides a 7% efficiency improvement compared to R22 systems for products of the same specifications. In long piping environments, the system's pressure loss is lower than R22 and R407C refrigerants, effectively reducing the energy loss caused by pressure drop.

Standard electronic expansion valve that couples the valve opening with indoor heat load and temperature-humidity parameters, achieving precise control of refrigerant flow and optimal cooling performance.

High-efficiency heat exchanger with innovative design and independent intellectual property rights, leading to industry-leading heat exchange efficiency.

Intelligent and efficient temperature-humidity control, using fuzzy control algorithms to predict temperature and humidity trends based on target values and detected readings. It proactively adjusts the air temperature and humidity operation trends

to reduce fluctuations, prevent frequent actions of core components, save energy, and extend the lifespan of components effectively.

High Reliability

The structure is compact with a small footprint. The critical components, safety protection devices, and control system are arranged rationally, enabling full front maintenance of the entire unit.

It has diagnostic capabilities to effectively prevent faults, providing comprehensive protection for the air conditioning unit and extending its lifespan.

Group control and grouping function

The unit is equipped with a built-in network group control module, enabling up to 16 units to be networked without external auxiliary control equipment. It can also be connected to a controller to achieve a network of up to 256 units, and supports RS485 remote monitoring.

Humidification type is optional

Optional humidification methods include electric heating humidification and far-infrared humidification, suitable for a wide range of water quality conditions. For projects without an external water source, a self-circulation humidification scheme is available, allowing for indoor humidity control for up to 180 days.

Technical Specifications

Model	TCHFE7.5	TCHFA7.5	TCHFA12.5	TCHFE12.5
Air supply mode	Upfront air supply and down front air return			
Cooling capacity (KW)	7.5	7.5	12.5	12.5
Refrigerant	R410A			
Air Volume m ³ /h	2700	2200	3800	3800
Heating capacity (KW)	3.8	4.9	4.5	4.5
Far infrared humidification capacity (Kg/h)	2.75	--	--	2.75
Condensate drainage pipe (mm)	25	16	25	25
Gas Pipe (mm)	9.52	12.7	12	12
Liquid Pipe (mm)	6.35	9.52	9.52	9.52
Input voltage (V)	380	380	380	380
Maximum current (A)	18.6	15.9	23.0	23.0
Corresponding outdoor unit model	TCHFE7.5W	TCHFA7.5W	TCHFA12.5W	TCHFE12.5W
Net weight (indoor/outdoor unit, kg)	145/37	108/37	152/50	152/50
Units Size (W*H*D,mm)	Indoor	760*1875*610	500*1875*500	760*1875*610
	Outdoor	950*840*340	950*840*340	950*1050*340

Notes: 1. The maximum current is the maximum current of the standard configuration of the unit, for power supply configuration use, excluding the outdoor unit current.

2. For any data not listed in the table, please contact our company.

Order Information

Model	Description	Indoor Unit Size	Package
TCMC25	25kW Refrigeration Capacity, Fixed-speed Compressor, EC Fan, Mechanical Thermostatic expansion valve, Air Volume 5000m ³ /h.	439*878*176	1 per box
TCMC40	38.1kW Refrigeration Capacity, Fixed-speed Compressor, EC Fan, mechanical thermostatic expansion valve, Air Volume 8200m ³ /h.	440*903*440	1 per box
TCMCE25	25kW Refrigeration Capacity, Frequency Conversion Compressor, EC Fan, electronic expansion valve, Air Volume 5000m ³ /h.	440*996*530	1 per box
TCMCE40	38.1kW Refrigeration Capacity, Frequency Conversion Compressor, EC Fan, electronic expansion valve, Air Volume 8200m ³ /h.	440*996*930	1 per box

Notes: Rack mounted Air Conditioner offers a broad selection of models. For detailed information, please contact local distributors.

TCMC series Column-type Air Conditioner

Air Conditioning/Air Cooling/Water Cooling/Ethylene Glycol

26kW to 100kW precision computer room air conditioner, EC fan/Frequency Conversion Compressor



Product Information

Product Application

Mainly used for cooling in industrial control rooms, high-precision instruments or equipment, high-demand environmental laboratories, large-scale internet data centers, and high-heat, high-density large data room facilities.

Refrigeration Capacity

26 to 100kW air-cooled/water-cooled/ethylene glycol

Product Features

High reliability, high energy efficiency, high adaptability and low lifetime cost
 Each unit undergoes strict operation testing before leaving the factory
 Precise water valve control and variable air volume control to adjust cooling capacity, air volume, and air pressure output based on cabinet temperature and air pressure conditions
 EVO control system ensures the best efficiency of the cooling system
 Efficient dehumidification design with absolute humidity control
 100% front maintenance, saving floor space in the data center
 Various air supply modes available, including top air supply and bottom air supply
 Standard EC fans, with the bottom air supply unit using a sinking fan design for high efficiency and energy saving. The fan system saves over 30% energy compared to conventional air conditioning units and meets different external pressure requirements
 Modular design with a "V" or "A"-shaped large evaporator, high air volume, and high sensible heat ratio
 Efficient electrode humidifier with large humidification capacity, suitable for harsh water quality, low maintenance requirements, and easy disassembly for cleaning
 Full-color oversized touch screen in Chinese language
 Powerful EVO control system, capable of controlling multiple units and easily networking
 Group control modes: demand energy efficiency management, trend energy efficiency management, scheduled rotation, and automatic fault switching, achieving adaptive energy saving for air conditioning groups

Various configurations available for bottom air supply and top air supply units.
 Multiple monitoring methods
 Air-cooled condenser provides configurations suitable for different temperature environments, including low-temperature startup
 Modular design for the unit
 Optional eco-friendly refrigerants
 Customizable design based on customer needs
 7-inch 800x480 dot matrix true-color large touch screen
 Intuitive display of temperature and humidity curves
 Visual display of the operating status of various components
 Multi-level password protection with hierarchical authorization management
 Combined with group control system, it can connect multiple temperature and humidity sensors to detect the temperature and humidity of multiple cabinets (racks)
 Based on the cooling requirements of the racks, various control modes can be selected, including maximum and average values, as the basis for cooling demand calculation, and can be combined with precise air supply to achieve energy savings in the data center
 Standard RS485 interface, supporting ModBus protocol
 Optional Ethernet interface, supporting TCP/IP and SNMP protocols
 Optional GPRS module, automatically sending SMS messages and notifying maintenance personnel of specific fault statuses, facilitating targeted maintenance with appropriate tools according to the prompts
 Provide standard communication protocols and can customize special formats of monitoring protocols according to customer requirements

Technical Specifications

Unit Return Air Condition: 24° C/50%RH

Model	TCMC526	TCMC530	TCMC535	TCMC540	TCMC546	TCMC740	TCMC746	TCMC755	TCMC765	TCMC770	TCMC780	TCMC790	TCMC799
Main power	3-phase 380Vac, 50Hz												

Unit Performance Parameters

Overall Cooling Capacity (kW)	26.8	30.9	35.9	40.3	46.9	40.7	47.6	55.6	65.8	71.6	80.2	92.6	100.2
Sensible Capacity (kW)	24.2	27.9	32.6	36.4	42.3	36.8	42.9	50.2	59.3	64.5	72.7	83.6	90.6
Crew FLA-A	28.3	31.3	38.7	41.2	48.0	43.6	48.0	51.3	58.5	62.9	69.3	82.5	84.3
Quantity of Compressors	1					2							

Indoor Fan Performance Parameters

Circulation air volume (m³/h)	8000	9000	10000	11000	13000	11000	13000	14000	17000	18000	21500	23000	25000
Quantity of Fans	1				2	1	2						

Electric Heating Performance Parameters

Overall Heating Capacity (kW)	6			9									
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Humidifier Performance Parameters

Overall Humidity Capacity (kg/h)	6				10	6	10						
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Connecting Pipe Parameters

Air Pipe for Refrigerant (mm)	16												
Liquid Pipe for Refrigerant (mm)	22												
Outlet Pipe for Condensate Water (mm)	25												
Inlet Pipe for Humidifier (only for humidification)	G1/2"												

Unit Size and Weight

Unit Length (mm)	1050	1050	1400	1400	1700	1400	1700	1700	2100	2100	2550	2550	2550
Unit Depth (mm)	890	890	890	890	890	890	890	890	890	890	890	890	890
Unit Height (mm)	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990	1990
Weight (kg)	365	370	450	460	480	415	535	550	720	730	800	820	825

Water-Cooled Unit Performance Parameters

Water	Water Inlet and Outlet pipes (mm)	35	42	42	42	54	42	54	54	54	63	63	70	70
	Water Flow (m³/h)	6.0	7.0	8.2	9.2	10.7	9.2	10.8	12.5	14.9	16.4	18.3	21.0	22.8
	Water side pressure drop (KPa)	86.0	99.2	76.0	83.1	94.7	82.8	95.4	75.1	85.6	93.1	71.0	77.6	82.5
40% Ethylene glycol	Water Inlet and Outlet pipes (mm)	35	42	42	54	54	42	54	54	54	63	63	70	70
	Water Flow (m³/h)	7.06	8.25	9.60	10.83	12.58	10.79	12.69	14.74	17.55	19.30	21.58	24.73	26.82
	Water side pressure drop (KPa)	99.8	76.6	86.0	95.8	75.3	95.4	112.9	84.8	99.3	73.3	79.1	88.2	95.0

Recommended Circuit Breaker and Cable Specifications

Indoor Unit	Air Switch Specification (A)	50	50	63	63	80	63	80	80	100	100	125	125	125
	Cable specification (mm²)	10	10	16	16	25	16	25	25	35	35	35	35	35
Outdoor Unit	Air Switch Specification (A)	20	20	20	20	20	20	20	20	20	20	20	20	20
	Cable specification (mm²)	4	4	4	4	4	4	4	4	4	4	4	4	4

Notes:

- Test conditions: return air temperature at 37°C, relative humidity of 24%; Air-cooled/water-cooled/glycol-cold condensation temperature at 45°C.
- Power distribution parameter shows the maximum current of the standard unit configuration, only for power supply, not for air-cooled outdoor unit current.
- Outdoor unit can be installed horizontally and vertically. The size in the data sheet does not contain the height of the support foot. Low temperature assembly should be added when the unit operating temperature is below -15°C.
- If the data is not listed in the table, please contact us.

Data Center Power Distribution System

Utility Power/ATS/UPS Input/UPS Output/Precision Power Distribution Cabinet



ATS Distribution Cabinet



Utility Distribution Cabinet



Precision Distribution Cabinet



UPS Input/Output Distribution Cabinet

Product Information

Product Application

Widely used in data center facilities across various industries, including IDC (Internet Data Center) rooms, MDC (Micro Data Center) modular rooms, government, finance, communication, education, transportation, meteorology, broadcasting and television, industry and commerce taxation, healthcare, energy, and power sectors.

Product Features

ATS Distribution Cabinet

The ATS distribution cabinet is primarily used to provide dual-redundant power supply switching for the load system. It is conventionally divided into two types: dual-utility power switching and utility power and generator power switching. In the event of a failure in one power source, it immediately switches to the backup power supply to ensure stable operation of the load equipment without any disruption. It is characterized by strong stability, comprehensive functionality, compact structure, and easy maintenance. It is suitable for environments with high demands on power supply reliability, such as finance, medical, aviation, control centers, and data center facilities.

Utility Distribution Cabinet

The utility distribution cabinet is mainly used in various industries' power distribution control rooms, including industrial control rooms and intelligent building distribution rooms. It is a low-voltage complete set of power distribution equipment used for distribution, control, and power compensation in power supply systems. The entire distribution system is designed with a standard network cabinet and modular structure, combined with a variety of optional accessories, to customize high-reliability products tailored to customers' actual needs.

Precision Power Distribution Cabinet

The precision power distribution cabinet, based on the HMI core, effectively controls the power supply of the column head cabinet through a modular structure with an RS485 bus. The cabinet is equipped with main circuit power measurement modules and branch circuit power measurement modules to measure the total electricity consumption of the column head cabinet, including current, voltage, active/reactive power, frequency, power factor, and energy. The HMI touch screen displays power parameters, current trends, voltage trends, and power trends.

UPS Input/Output Cabinet

The UPS Input-Output Cabinet is specifically designed for Uninterruptible Power Supply (UPS) characteristics. It consists of the UPS Input Distribution Cabinet and the UPS Output Distribution Cabinet. It features comprehensive functionality, compact structure, stability, reliability, flexible deployment, and convenient maintenance. It is best suited for power, hospital, government institutions, banks, communications, small and medium-sized enterprises, and large enterprises' data centers, among others.

Technical Specifications

Project	Utility Distribution Cabinet	UPS Input/Output Cabinet	Precision Power Distribution Cabinet
Input Wiring	3 phase+N+PE		
Input Voltage	380Vac		
Input Frequency	50/60Hz		
Functionality	Supports single bus, double bus, and multiple bus schemes		
Input Circuit Breaker	125A~630A		
Display Screen	7-inch/10-inch touch display screen		
Alarm Method	Audio and visual alarms, communication protocol alarms		
Monitoring Protocol	ModBus protocol, TCP/IP		
Communication Interface	Standard RS485, RS232, optional LAN port		
Main Circuit Monitoring Parameters	Voltage, current, frequency, zero-sequence current, power factor, active power, reactive power, apparent power, active energy, reactive energy load percentage, harmonic active power, etc.		
Main Circuit Alarm Items	Overvoltage, undervoltage, loss of voltage, phase loss, overload, overcurrent, switch status, etc.		
Branch Circuit Monitoring Parameters	Voltage, current, active power, reactive power, apparent power, power factor, active energy, reactive energy, load percentage		
Measurement Accuracy	Current: Accuracy 0.5%, range: 1%~120%; Voltage: Accuracy 0.5%, range: 5%~120%; Frequency: 45~60Hz±0.01Hz; Energy: Accuracy 1%; Temperature: ±1°C		
Branch Circuit Alarm Items	Overload, overcurrent, over/undervoltage, switch status, over-temperature		
Dry Contacts	DI/DO (Digital Input/Digital Output)		
Grounding/Form of Grounding	Separate ground bar/neutral bar		
Input-Output Method	Rear top/bottom incoming line		
Protection Level	IP20		
Operating Temperature	-10~+40°C		
Operating Humidity	0~95%RH		
Dimensions (mm)	W600*D1200*H2000 (customizable to other sizes)		
Packaging Method	Wooden case packaging		
Gross Weight (kg)	235	265	300
Compliance Standards	GB7251.1-2013; IEC61439-1; YD/T585-2010		

Data Center Power Distribution System

60KVA/90KVA/120KVA Precision UPS Distribution Integrated Cabinet



Precision UPS Distribution Integrated Cabinet

Precision UPS Distribution Integrated Cabinet

The "UPS Precision Distribution Integrated Cabinet" is a newly launched three-in-one intelligent power module that combines the input distribution cabinet, UPS, and output precision distribution cabinet into a single unit, saving 67% of space and installation time. Additionally, it features innovation, ultimate reliability, high efficiency, energy-saving capabilities, and flexible deployment.

Product Features

High Integration: Integrated input distribution, UPS, and output precision distribution in one unit.

High Reliability: The UPS power module uses an innovative bus parallel technology, providing better system current sharing characteristics, enhanced safety design, and strict environmental testing requirements to improve product reliability. The input and output wiring are independently partitioned to avoid safety hazards caused by cross-wiring.

Remote Operations and Maintenance: Equipped with a 7/10-inch touch display screen, which centrally presents equipment operating parameters. It integrates a unified monitoring network interface, enabling smooth integration with remote monitoring and maintenance platforms.

Intelligent Monitoring: Equipped with main circuit and branch circuit energy measurement modules, providing comprehensive electrical data for the input/output lines, including current, voltage, active/reactive power, frequency, power factor, and energy. The HMI touch screen displays energy parameters, current trends, voltage trends, and power trends.

High Efficiency and Energy Saving: Dual conversion online technology with an efficiency of up to 95%.

Flexible Deployment: Built-in 20KVA power modules occupying 3U height, allowing flexible expansion based on demand.

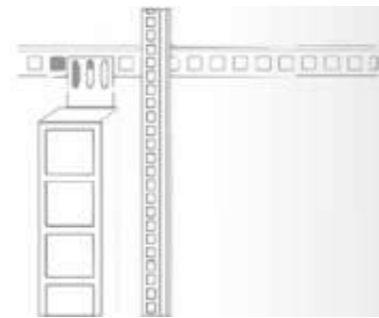
Elegant Appearance: Unified exterior design to create a perfect overall solution.

Technical Specifications

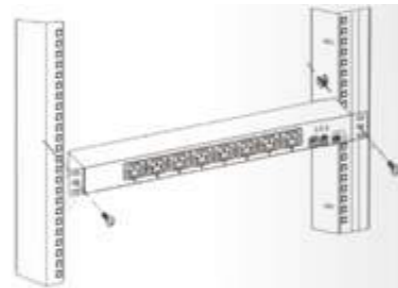
Project	60KVA	90KVA	120KVA
Input Wiring	3 phase+N+PE		
Input Voltage	380Vac		
Input Frequency	50/60Hz		
Functionality	Supports single bus, double bus, and multiple bus schemes		
Input Power Factor	0.99		
Output Power Factor	1		
Inverter Overload Capacity	110% transfer to bypass after 1 hour; 125% transfer to bypass after 10 minutes; 150% transfer to bypass after 1 minute; > 150% transfer to bypass after 200 ms		
Bypass Input Voltage	380/400/415Vac		
Bypass Voltage Range	Default: -20% to +15%; Optional: -40% to +25%		
Display Screen	7-inch/10-inch touch display screen		
Alarm Method	Audio and visual alarms, communication protocol alarms		
Monitoring Protocol	ModBus protocol, TCP/IP		
Communication Interface	Standard RS485, RS232, optional LAN port		
Main Circuit Monitoring Parameters	Voltage, current, frequency, zero-sequence current, power factor, active power, reactive power, apparent power, active energy, reactive energy		
Main Circuit Alarm Items	Main Circuit Alarm Items		
Branch Circuit Monitoring Parameters	Voltage, current, active power, reactive power, apparent power, power factor, active energy, reactive energy, load percentage		
Measurement Accuracy	Current: Accuracy 0.5%, range: 1%-120%; Voltage: Accuracy 0.5%, range: 5%-120%; Dry Contacts		
Branch Circuit Alarm Items	Overload, overcurrent, over/undervoltage, switch status, over-temperature		
Grounding/Form of Grounding	Separate ground bar/neutral bar		
Input-Output Method	Rear top/bottom incoming line		
Protection Level	IP20		
Operating Temperature	-10~+40°C		
Operating Humidity	0~95%RH		
Dimensions (mm)	W600*D1200*H2000 (customizable to other sizes)		
Packaging Method	Wooden case packaging		
Gross Weight (kg)	314	358	432
Compliance Standards	GB7251.1-2013; IEC61439-1; YD/T585-2010		

PDU Product

AC 220V/380V, High Voltage DC, Basic Type / Functional Type / Intelligent Type / Customized Type



Vertical Mounting



Horizontal Mounting

Product Information

Product Application

The "TCEL" brand Power Distribution Unit (PDU) is widely used in various types of IDC (Internet Data Center) rooms, MDC (Micro Data Center) modular rooms, network communications, telecommunications, power and electricity, financial insurance, aerospace, information processing, education and healthcare, e-government, transportation, and enterprise management fields.

Basic Type PDU

The Basic Type PDU (Power Distribution Unit) adopts a 1U industrial aluminum profile shell and is designed for standard 19-inch rack installation, providing a professional cabinet power distribution solution for electronic information equipment inside the rack.

It supports various customization requirements, such as socket types, socket functionalities, PDU color management, and compatibility with different manufacturers' service installation methods.

Functional Type PDU

On the basis of the Basic Type, the Functional Type PDU adds external ports and can be equipped with current, voltage, and power measurement modules. It can locally display parameters such as current, voltage, and power. The PDU can also remotely monitor operational and diagnostic parameters through Modbus 485 communication.

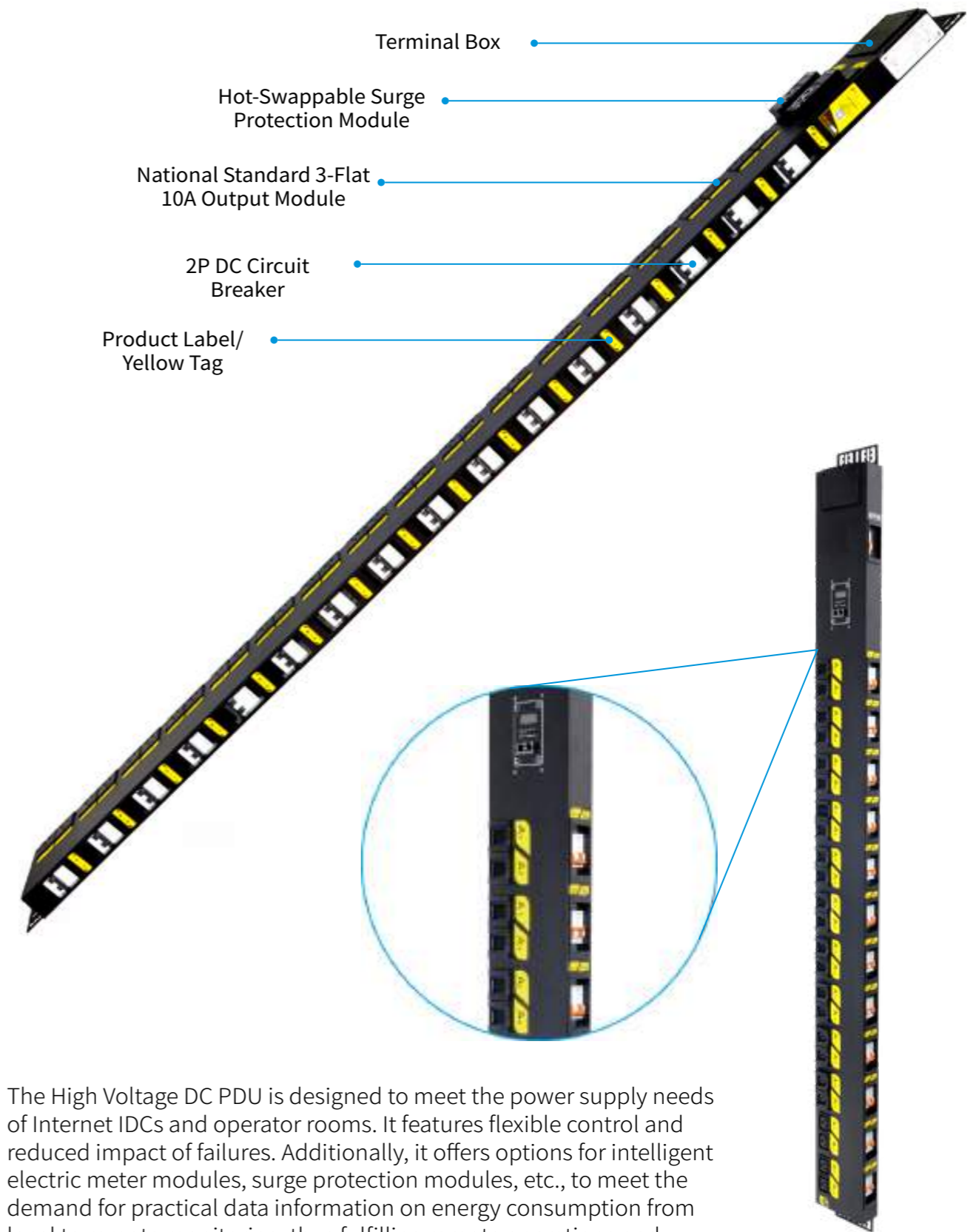
The Measurement Functional Type can perform real-time measurement of the total load of the power supply and monitor it through an Ethernet network to avoid overload situations. This helps achieve a balance between capacity and load, optimizing energy usage. It supports SNMP, HTTP, Modbus 485 protocols, ensuring good compatibility and saving network resources.

Intelligent Type PDU

This series can perform real-time monitoring of each output port and monitor them through an industrial Ethernet network to avoid overload situations. It also achieves a balance between capacity and load, optimizing energy usage. It supports standard SNMP, TCP/IP, and Modbus 485 protocols, ensuring good compatibility and saving network resources.

High Voltage DC PDU

Diversified Customization, Output Socket Modules



The High Voltage DC PDU is designed to meet the power supply needs of Internet IDCs and operator rooms. It features flexible control and reduced impact of failures. Additionally, it offers options for intelligent electric meter modules, surge protection modules, etc., to meet the demand for practical data information on energy consumption from local to remote monitoring, thus fulfilling remote operations and maintenance requirements.

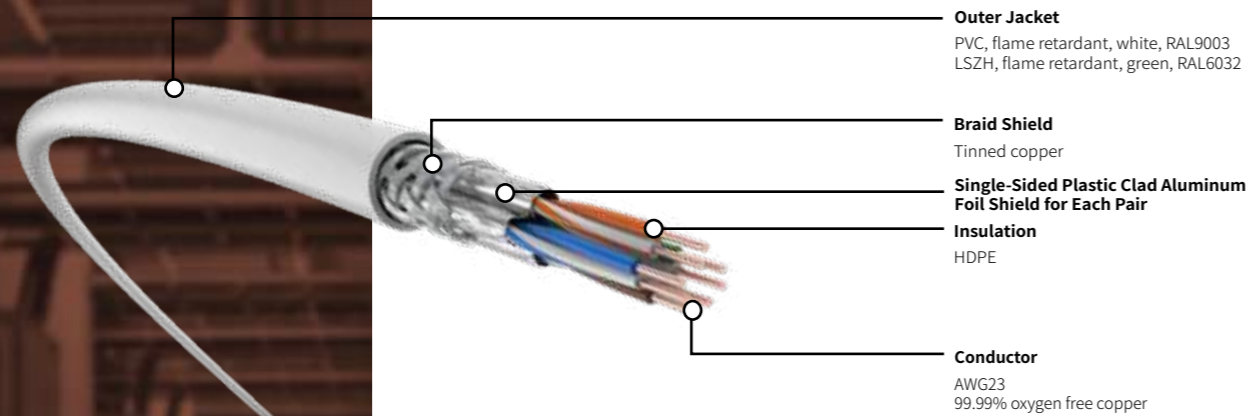


Copper Cable Product Series

Cat8, Shielded Twisted Pair Cable

S/FTP-11-8-4P, S/FTP-21-8-4P

S/FTP, Cat.8.1/8.2, Class I/II, AWG23, indoor



Product Information

Product Application

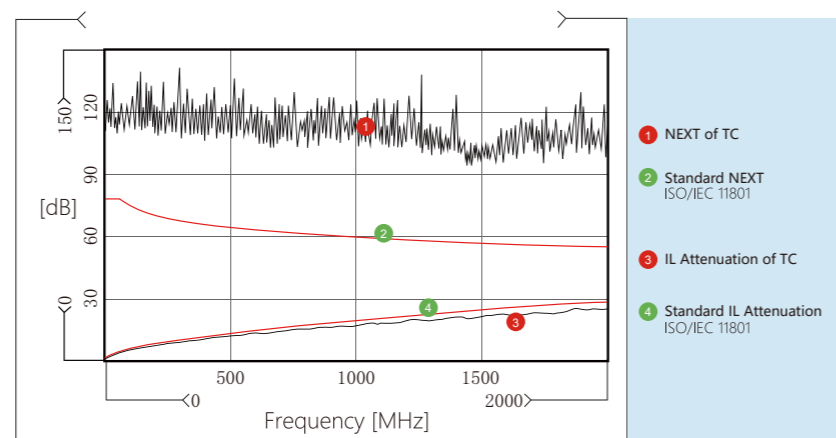
Cat8, the latest generation of dual shielded (S/FTP) network cable with 4 pairs, supports 2000MHz of bandwidth and reaches up to 40Gb/s at 30 m, especially useful for connecting servers, switches, patch panels, and other devices in the data center. Compatible with Cat.7/7a and Cat.6a, Cat.8.1/8.2 supports 25G Base-T at more than 30 m (tentatively) and 10G Base-T at 100 m, applies in high-speed and bandwidth-intensive locations outside the data center, and meanwhile supports Power Over Ethernet (POE/POE+).

Product Application

Cat.8.2, 8-core S/FTP shielded cable, uses pair shield and overall shield structure, with a separate aluminum foil shield for each pair and an overall tinned copper mesh braided shield. This optimizes Near End Crosstalk/Far End Crosstalk (NEXT/FEXT) and Alien Near End Crosstalk (ANEXT) performance, thus resulting in a maximum transmission frequency of 2000MHz.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance

Cat.8.2

Frequency (MHz)	4	300	600	1000	1600	2000
IL Attenuation (dB/100M)	3.7	10.7	15.1	17.9	22.0	28.5
Near End Crosstalk Attenuation (NEXT, dB)	115.0	125.2	110.7	122.4	99.3	92.9
NEXT Power and PS NEXT (dB)	80.0	80.0	75.8	72.5	69.4	68.0
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	75.0	50.8	44.7	40.3	36.2	34.6
ACR-F Power and PS ACR-F (dB)	80.0	52.7	46.6	42.2	38.1	36.2
Return Loss (RL, dB)	23.0	18.9	16.8	15.2	13.8	13.1

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.60 (AWG23)
Outer Diameter of Cable (nominal value)	8.2mm
Weight (305m, with package, nominal value)	22kg

Electrical Properties

DC resistance (20°C)	70Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±35Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-2000MHz)
Delay Skew	25ns/100m
NVP	74%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	34mm
Minimum Bend Radius (static)	68mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM/CMR	UL 1581/ UL 1666

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Flame Resistance (of bunched wires)	GB/T 18380.35 (IEC 60332-3-24)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

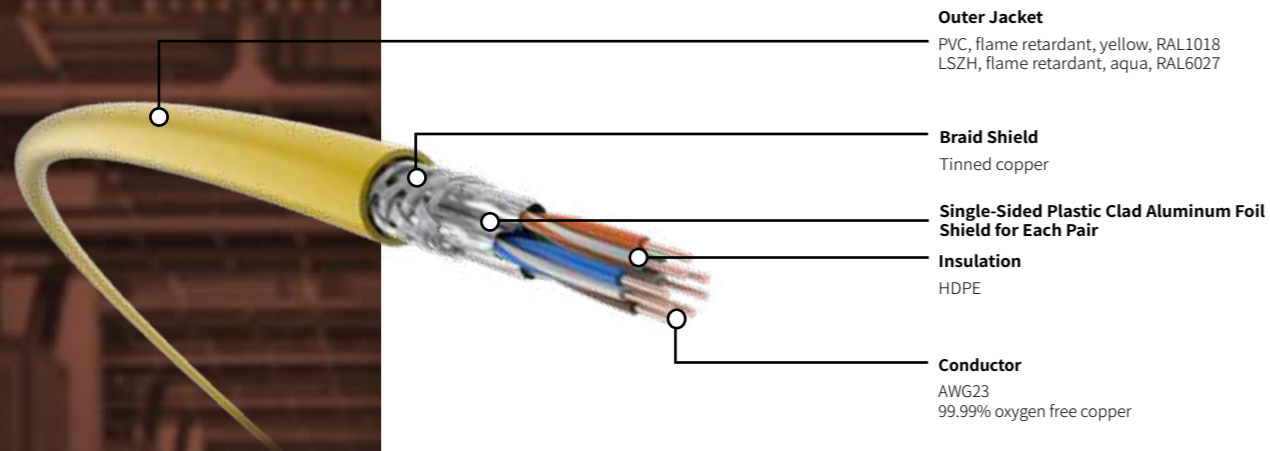
Order Information

Model	Description	Jacket Material	Jacket Color	Package
S/FTP-11-8-4P	Cat8, 4-Pair, Shielded, Indoor Twisted Pair Cable, PVC	PVC	White	305 m/reel
S/FTP-21-8-4P	Cat8, 4-Pair, Flame Retardant, Shielded, Indoor Twisted Pair Cable, LSZH	LSZH	Green	305 m/reel

Cat7a, Shielded Twisted Pair Cable

S/FTP-11-7A-4P, S/FTP-21-7A-4P

S/FTP, Cat.7A, AWG23, indoor



Product Information

Product Application

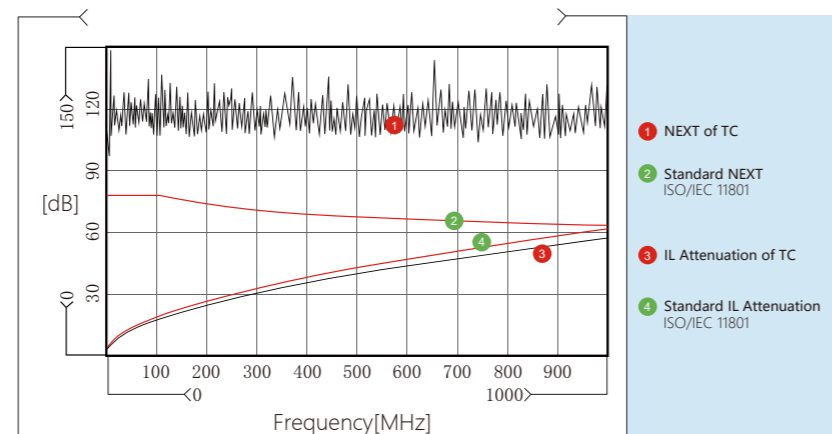
Cat7a, the dual shielded (S/FTP) network cable with 4 pairs, supports 1000MHz of bandwidth, 25G Base-T at more than 30 m (tentatively) and 10G Base-T at 100 m, especially useful for connecting servers, switches, patch panels, and other devices in the data center, as well as high-bandwidth structured cabling systems in smart buildings. It provides highly confidential transmission in high speed network applications, helps unify the cabling platform of current network applications, and also supports future new applications as well as Power Over Ethernet (POE/POE+) applications, so that all kinds of information from e-mail to multimedia video can be transmitted in the same set of high-speed system.

Product Features

Cat.7a, 8-core S/FTP shielded cable, uses pair shield and overall shield structure, with a separate aluminum foil shield for each pair and an overall tinned copper mesh braided shield. This optimizes Near End Crosstalk/Far End Crosstalk (NEXT/FEXT) and Alien Near End Crosstalk (ANEXT) performance, thus resulting in a maximum transmission frequency of 1000MHz. TC's Cat7a shielded indoor cable is fitting and exceeding the international standards, suitable for high-speed network applications.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	CATV	Cat.7 _A	TC
Frequency (MHz)	4	100	250
IL Attenuation (dB/100M)	3.7	10.2	14.5
Near End Crosstalk Attenuation (NEXT, dB)	95.0	125.2	110.7
NEXT Power and PS NEXT (dB)	75.0	75.0	65.2
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	78.0	65.4	59.4
ACR-F Power and PS ACR-F (dB)	75.0	62.4	56.4
Return Loss (RL, dB)	23.0	23.6	21.5

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.60 (AWG23)
Outer Diameter of Cable (nominal value)	7.8mm
Weight (305m, with package, nominal value)	19.2kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±35Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-1000MHz)
Delay Skew	25ns/100m
NVP	74%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	31mm
Minimum Bend Radius (static)	62mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM/CMR	UL 1581/ UL 1666

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Flame Resistance (of bunched wires)	GB/T 18380.35 (IEC 60332-3-24)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

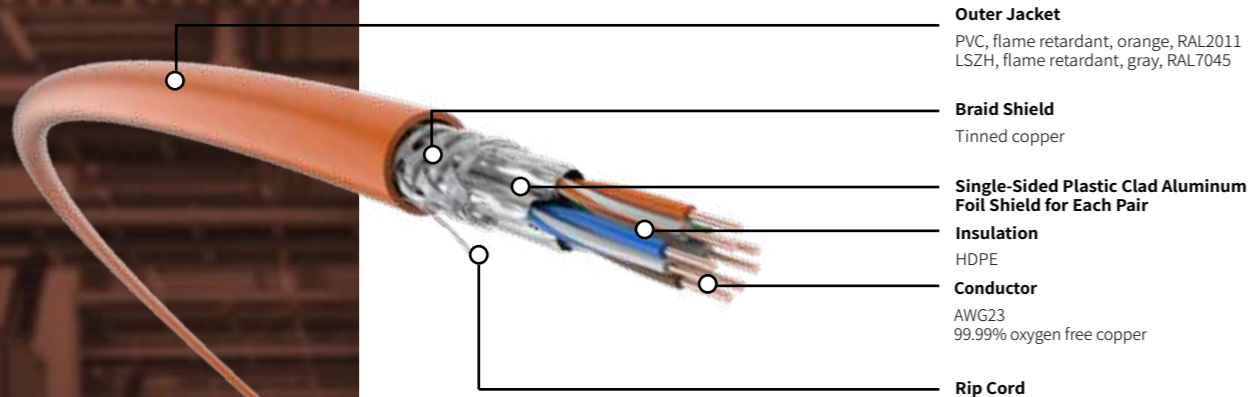
Order Information

Model	Description	Jacket Material	Jacket Color	Package
S/FTP-11-7A-4P	Cat7a, 4-Pair, Shielded, Indoor Twisted Pair Cable, PVC	PVC	Yellow	305 m/reel
S/FTP-21-7A-4P	Cat7a, 4-Pair, Flame retardant, Shielded, Indoor Twisted Pair Cable, LSZH	LSZH	Aqua	305 m/reel

Cat7, Shielded Twisted Pair Cable

S/FTP-11-7-4P, S/FTP-21-7-4P

S/FTP, Cat.7, AWG23, indoor



Product Information

Product Application

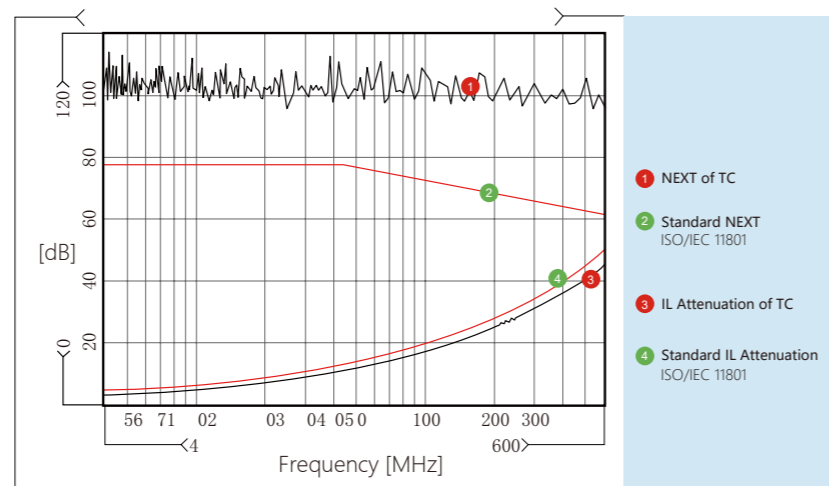
Cat7, the dual shielded (S/FTP) network cable with 4 pairs, supports 600MHz of bandwidth and 10G Base-T at 100 m, especially useful for connecting servers, switches, patch panels, and other devices in the data center, as well as high bandwidth structured cabling system. Compared to Cat6, Cat7 shielded cable has higher bandwidth due to S/FP shield design and provides higher NEXT and ANEXT performance than the common unshielded Cat6a. In the meantime, it supports Power Over Ethernet (POE/POE+).

Product Features

Cat7, 8-core shielded cable, uses pair shield and overall shield structure, with a separate aluminum foil shield for each pair and an overall tinned copper mesh braided shield. This optimizes Near End Crosstalk/Far End Crosstalk (NEXT/FEXT) and Alien Near End Crosstalk (ANEXT) performance, thus resulting in a maximum transmission frequency of 600MHz. TC's Cat7 shielded indoor cable is fitting and exceeding the international standards. It provides highly confidential transmission in high speed network applications, helps unify the cabling platform of current network applications, also supports future new applications as well as POE/POEs applications, so that all kinds of information from e-mail to multimedia video can be transmitted in the same set of high-speed system.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6 _A	Cat.7	TC
Frequency (MHz)	4	10	100
IL Attenuation (dB/100M)	3.6	5.6	17.9
Near End Crosstalk Attenuation (NEXT, dB)	100	100	100
NEXT Power and PS NEXT (dB)	97	97	97
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	98	98	78
ACR-F Power and PS ACR-F (dB)	95	95	75
Return Loss (RL, dB)	30	33	33

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.57 (AWG23)
Outer Diameter of Cable (nominal value)	7.5mm
Weight (305m, with package, nominal value)	21kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±25Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-600MHz)
Delay Skew	25ns/100m
NVP	74%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	30mm
Minimum Bend Radius (static)	60mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM/CMR	UL 1581/ UL 1666

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Flame Resistance (of bunched wires)	GB/T 18380.35 (IEC 60332-3-24)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

Order Information

Model	Description	Jacket Material	Jacket Color	Package
S/FTP-11-7-4P	Cat7, 4-Pair, Shielded, Indoor Twisted Pair Cable, PVC	PVC	Yellow	305 m/reel
S/FTP-21-7-4P	Cat7, 4-Pair, Flame retardant, Shielded, Indoor Twisted Pair Cable, LSZH	LSZH	Gray	305 m/reel

Cat6a, Shielded Twisted Pair Cable

U/FTP-11-6A-4P, U/FTP-21-6A-4P

U/FTP, Cat6_A, AWG23, indoor



- Outer Jacket**
PVC, flame retardant, blue, RAL5015
LSZH, flame retardant, gray, RAL7045
- Single-Sided Plastic Clad Aluminum Foil Shield for Each Pair**
- Insulation**
HDPE
- Conductor**
AWG23
99.99% oxygen free copper
- Drain Wire**
- Rip Cord**

Product Information

Product Application

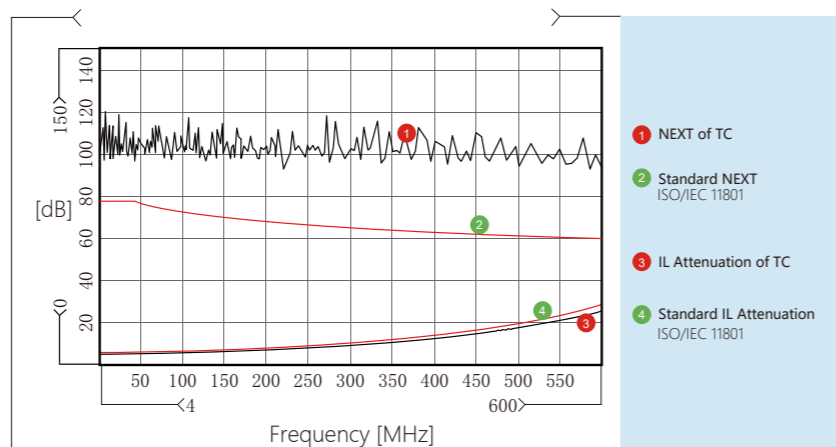
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. TC's U/FTP-11 series, indoor Cat6a shielded cabling system, has test frequency up to 600MHz, higher than other Cat6a cables with industry standard of 500MHz, especially useful for connecting servers, switches, patch panels, and other devices in the data center, as well as high bandwidth structured cabling system. In the meantime, it supports Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6a, 23 AWG, U/FTP shielded indoor cable adopts the excellent aluminum foil shield for each pair, optimized to greatly enhance technical indicators, including Attenuation, NEXT, and ANEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards. It is especially useful in some harsh electromagnetic environments where high-speed and stable cable transmission is required. At the same time, it acts on the requirements for high transmission in data center, and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6 _A		TC				
Frequency (MHz)	4	100	250	300	450	500	600
IL Attenuation (dB/100M)	3.5	3.8	8.4	11.2	17.8	19.4	23.1
Near End Crosstalk Attenuation (NEXT, dB)	101.1	104.7	105.3	103.2	110.4	95.6	96.6
NEXT Power and PS NEXT (dB)	98.2	99.3	100.3	99.1	102.8	93.2	92.6
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	95.8	91.5	87.0	84.1	76.4	71.6	72.6
ACR-F Power and PS ACR-F (dB)	91.4	88.1	85.4	86.3	76.9	69.1	67.9
Return Loss (RL, dB)	40.9	41.3	37.9	35.0	30.7	22.7	19.7

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.57 (AWG23)
Outer Diameter of Cable (nominal value)	7.5mm
Weight (305m, with package, nominal value)	21kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-500MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	30mm
Minimum Bend Radius (static)	60mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM/CMR	UL 1581/ UL 1666

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Flame Resistance (of bunched wires)	GB/T 18380.35 (IEC 60332-3-24)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

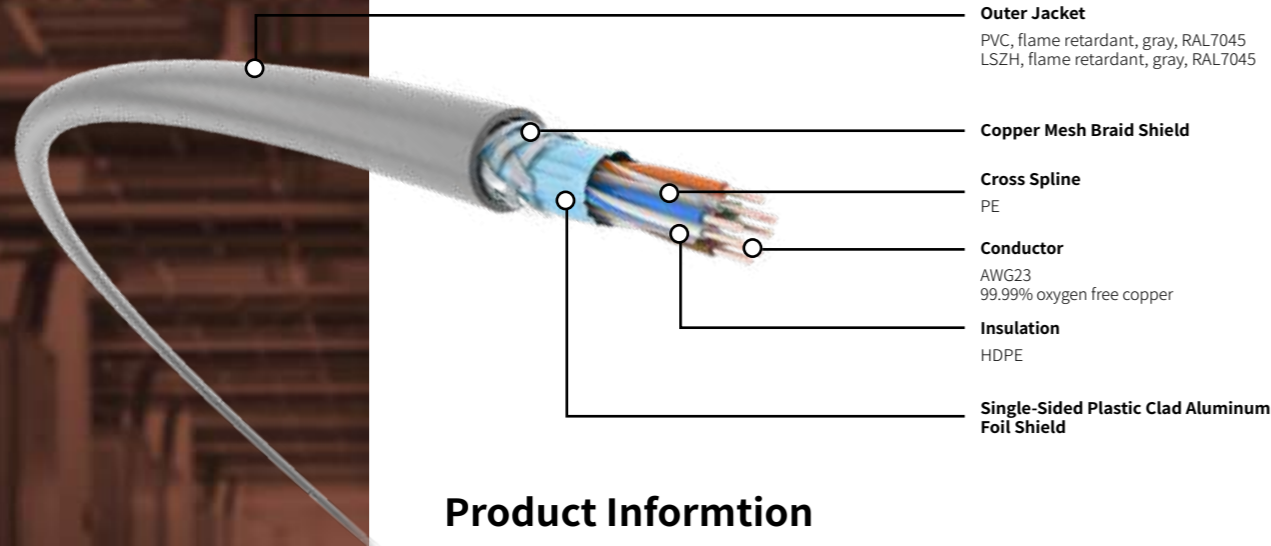
Order Information

Model	Description	Jacket Material	Jacket Color	Package
U/FTP-11-6A-4P	Cat6a Cable, 4-Pair, Shielded, Indoor Twisted Pair, PVC	PVC	Blue	305 m/reel
U/FTP-21-6A-4P	Cat6a, 4-Pair, Flame retardant, Shielded, Indoor Twisted Pair Cable, LSZH	LSZH	Gray	305 m/reel

Cat6a, Shielded Twisted Pair Cable

SFTP-11-6A-4P, SFTP-21-6A-4P

SF/UTP, Cat6_A, AWG23, indoor



Product Information

Product Application

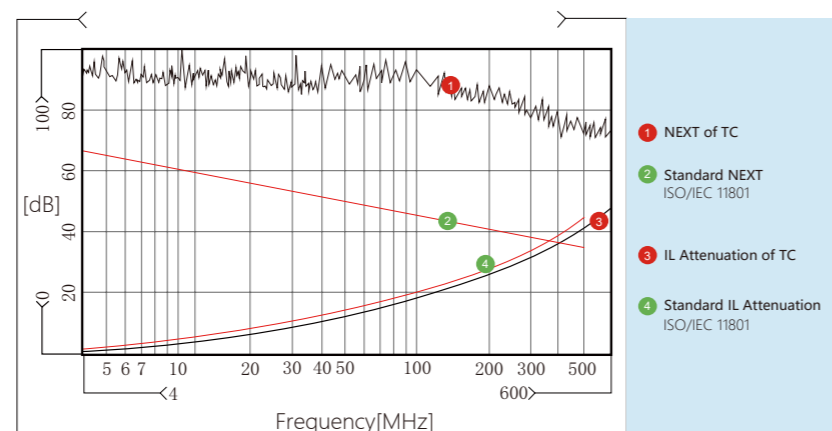
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. TC's SFTP-11 series, indoor Cat6a dual shielded cabling system has test frequency up to 600MHz, higher than other Cat6a cables with industry standard of 500MHz. In the meantime, it supports 10G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6a, 23 AWG, 4-pair, SF/UTP dual shielded indoor cable adopts cross-type spline, copper mesh braid and overall aluminum foil shield, optimized to greatly enhance technical indicators, including Attenuation, NEXT, and ANEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards. It is especially useful in some harsh electromagnetic environments where high-speed and stable cable transmission is required. At the same time, it acts on the requirements for high transmission in data center, and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6 _A		TC				
Frequency (MHz)	4	31.25	62.5	100	300	500	600
IL Attenuation (dB/100M)	3.5	10.1	14.4	18.2	32.0	42.4	49.4
Near End Crosstalk Attenuation (NEXT, dB)	92.1	98.7	89.0	93.1	77.4	73.6	75.6
NEXT Power and PS NEXT (dB)	90.4	89.1	85.4	88.6	73.9	69.8	70.2
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	95.8	91.5	87.0	84.1	76.4	71.6	72.6
ACR-F Power and PS ACR-F (dB)	91.4	88.1	85.4	86.3	76.9	69.1	67.9
Return Loss (RL, dB)	40.9	41.3	37.9	35.0	30.7	22.7	19.7

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.57 (AWG23)
Outer Diameter of Cable (nominal value)	8.2mm
Weight (305m, with package, nominal value)	21kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±20Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-500MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	33mm
Minimum Bend Radius (static)	66mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM/CMR	UL 1581/ UL 1666

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Flame Resistance (of bunched wires)	GB/T 18380.35 (IEC 60332-3-24)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/2 (IEC 60754-1/-2)

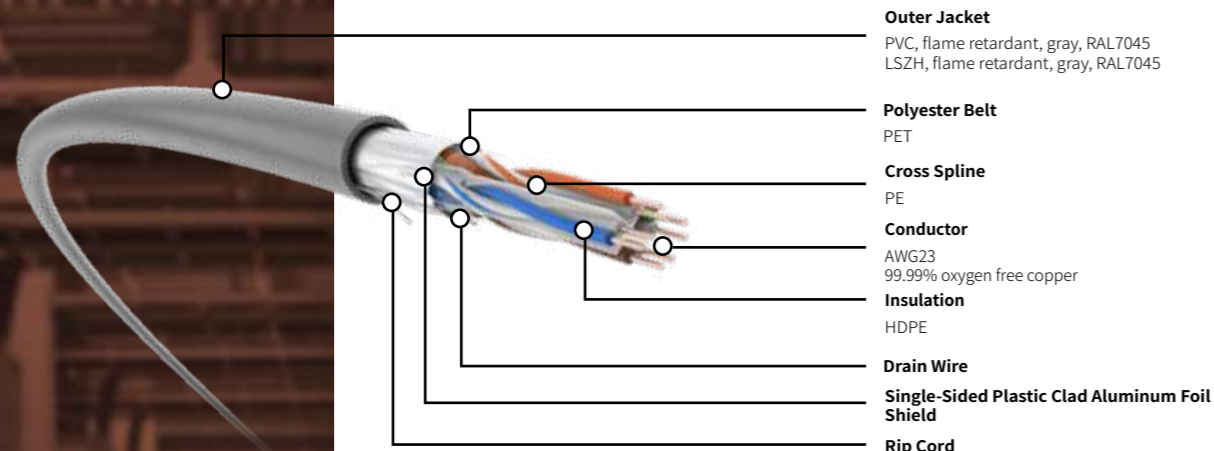
Order Information

Model	Description	Jacket Material	Jacket Color	Package
SFTP-11-6A-4P	Cat6a, 4-Pair, Dual Shielded, Indoor Twisted Pair Cable, PVC	PVC	Gray	305 m/reel
SFTP-21-6A-4P	Cat6a, 4-Pair, Dual Shielded, Indoor Twisted Pair Cable, LSZH	LSZH	Gray	305 m/reel

Cat6a, Shielded Twisted Pair Cable

FTP-11-6A-4P, FTP-21-6A-4P

F/UTP, Cat6_A, AWG23, indoor



Product Information

Product Application

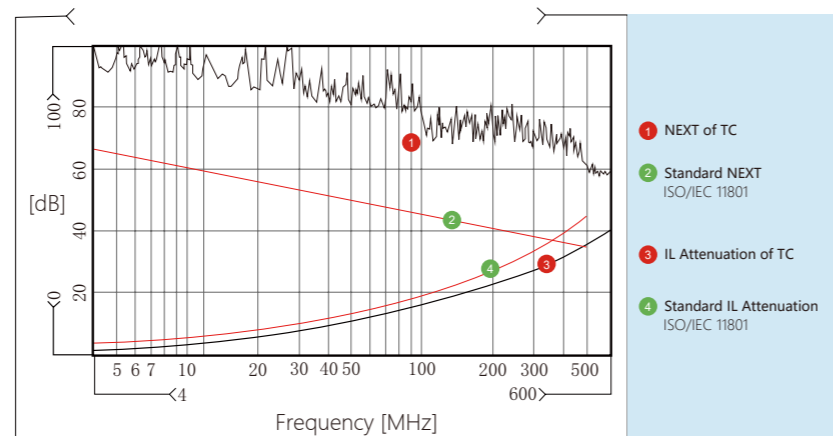
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. TC's FTP-11 series, indoor Cat6a shielded cabling system has test frequency up to 600MHz, higher than other Cat6a cables with industry standard of 500MHz. In the meantime, it supports 10G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6a, 23 AWG, 4-pair, U/FTP shielded indoor cable adopts cross-type spline and overall aluminum foil shield, optimized to greatly enhance technical indicators, including Attenuation, NEXT, and ANEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards. It is especially useful in some harsh electromagnetic environments where high-speed and stable cable transmission is required. At the same time, it acts on the requirements for high transmission in data center, and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6 _A	TC
Frequency (MHz)	4	31.25 62.5 100 300 500 600
IL Attenuation (dB/100M)	3.5	10.1 14.4 18.2 28.0 35.4 41.4
Near End Crosstalk Attenuation (NEXT, dB)	100.1	88.7 83.0 80.1 70.4 59.6 58.6
NEXT Power and PS NEXT (dB)	90.4	87.1 80.4 78.6 68.9 57.8 56.2
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	95.8	91.5 87.0 84.1 76.4 71.6 72.6
ACR-F Power and PS ACR-F (dB)	91.4	88.1 85.4 86.3 76.9 69.1 67.9
Return Loss (RL, dB)	40.9	41.3 37.9 35.0 30.7 22.7 19.7

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.57 (AWG23)
Outer Diameter of Cable (nominal value)	7.3mm
Weight (305m, with package, nominal value)	18kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-500MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	29mm
Minimum Bend Radius (static)	58mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM/CMR	UL 1581/ UL 1666

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Flame Resistance (of bunched wires)	GB/T 18380.35 (IEC 60332-3-24)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

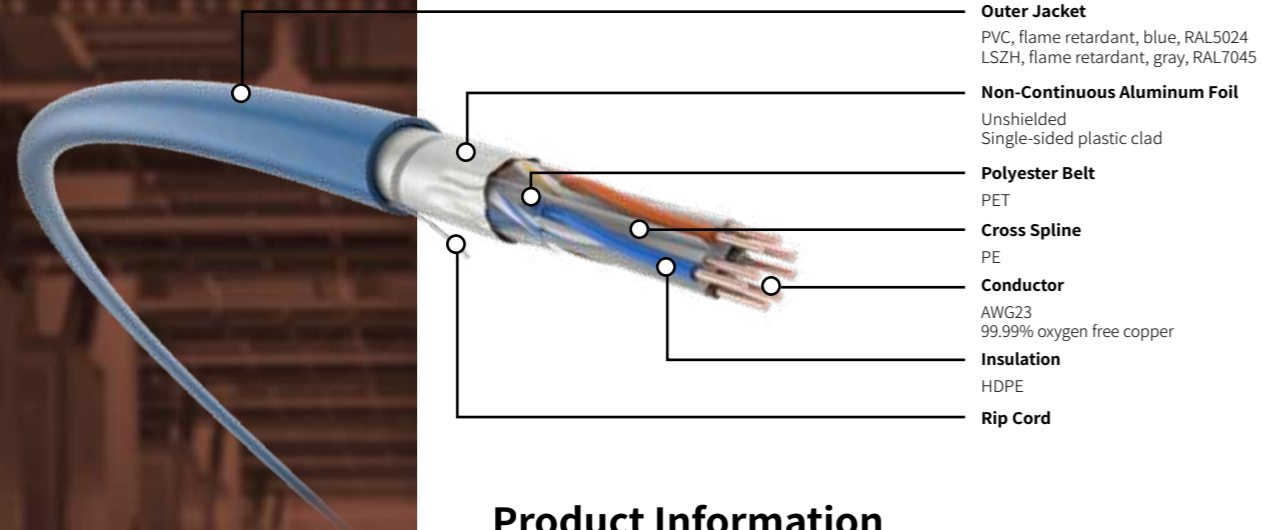
Order Information

Model	Description	Jacket Material	Jacket Color	Package
FTP-11-6A-4P	Cat6a, 4-Pair, Shielded, Indoor Twisted Pair Cable, PVC	PVC	Gray	305 m/reel
FTP-21-6A-4P	Cat6a, 4-Pair, Flame retardant, Shielded, Indoor Twisted Pair Cable, LSZH	LSZH	Gray	305 m/reel

Cat6a, Shielded Twisted Pair Cable

UTP-11-6A-4PA, UTP-21-6A-4PA

XTP, Cat6_A, AWG23, non-continuous aluminum foil, indoor



Product Information

Product Application

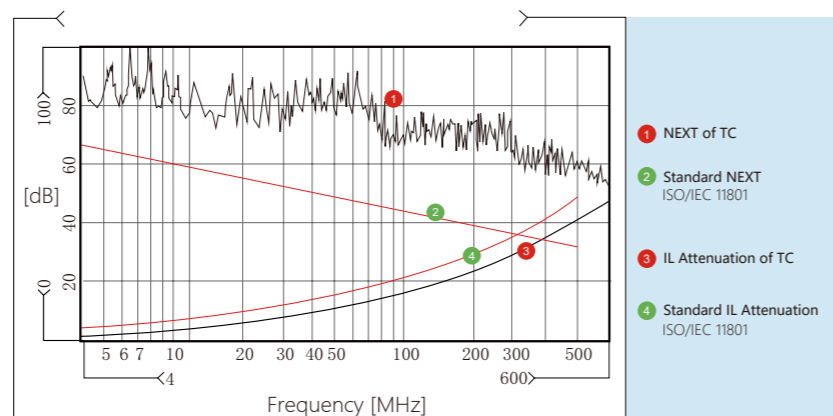
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. As a crucial part of structured cabling, horizontal cabling calls for higher reliability and compatibility. TC's UTP-11 series, indoor Cat6a non-continuous alu foil, unshielded cabling system, has test frequency up to 600MHz, higher than other Cat6a cables with industry standard of 500MHz. In the meantime, it supports 10G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6a, 23 AWG, 4-pair, non-continuous alu foil, unshielded indoor cable adopts cross-type spline featuring best performance and cost reduction. It upgrades the structure of the shielded cable for smaller outer diameter and conductor size, thus greatly enhancing technical indicators, including Attenuation, NEXT, and ANEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards. At the same time, it acts on the requirements for high transmission in data center, and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6 _A	TC
Frequency (MHz)	4	31.25 62.5 100 300 500 550
IL Attenuation (dB/100M)	3.4	9.7 13.9 17.7 32.2 43.0 46.0
Near End Crosstalk Attenuation (NEXT, dB)	89.4	77.9 78.0 72.5 63.4 58.6 54.3
NEXT Power and PS NEXT (dB)	77.6	72.0 63.2 61.3 51.3 49.9 46.8
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	88.4	85.0 81.5 79.9 66.3 52.0 48.9
ACR-F Power and PS ACR-F (dB)	77.6	71.5 64.9 61.3 51.3 48.4 43.0
Return Loss (RL, dB)	37.1	35.3 34.4 28.5 24.6 21.1 19.8

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.55 (AWG23)
Outer Diameter of Cable (nominal value)	7.4mm
Weight (305m, with package, nominal value)	15kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-500MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	30mm
Minimum Bend Radius (static)	60mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM	UL 1581

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

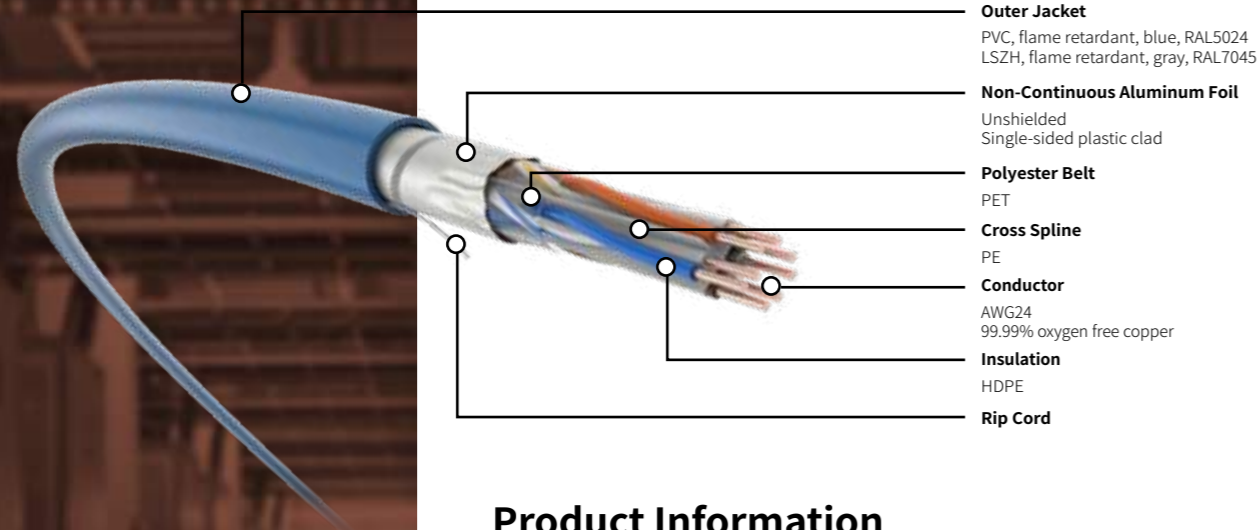
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-11-6A-4PA	Cat6a, 4-Pair, Non-Continuous Aluminum Foil, Unshielded, Indoor Twisted Pair Cable, PVC	PVC	Blue	305 m/reel
UTP-21-6A-4PA	Cat6a, 4-Pair, Flame-Retardant, Non-Continuous Aluminum Foil, Unshielded, Indoor Twisted Pair Cable, LSZH	LSZH	Gray	305 m/reel

Cat6a, Shielded Twisted Pair Cable

UTP-11-6A-4PX, UTP-21-6A-4PX

XTP, Cat6_A, AWG24, non-continuous aluminum foil, indoor



Product Information

Product Application

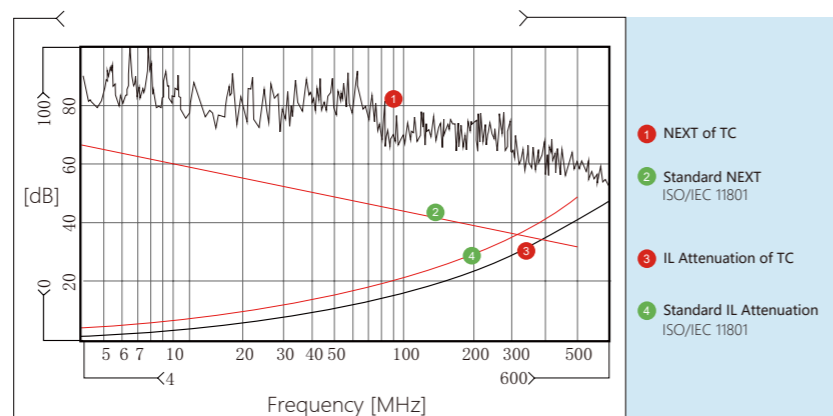
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. As a crucial part of structured cabling, horizontal cabling calls for higher reliability and compatibility. TC's UTP-11 series, indoor Cat6a non-continuous alu foil, unshielded cabling system, has test frequency up to 600MHz, higher than other Cat6a cables with industry standard of 500MHz. In the meantime, it supports 10G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6a, 24 AWG, 4-pair, non-continuous alu foil, unshielded indoor cable adopts cross-type spline featuring best performance and cost reduction. It upgrades the structure of the shielded cable for smaller outer diameter and conductor size, thus greatly enhancing technical indicators, including Attenuation, NEXT, and ANEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards. At the same time, it acts on the requirements for high transmission in data center, and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6 _A	TC
Frequency (MHz)	4	31.25 62.5 100 300 500 550
IL Attenuation (dB/100M)	3.4	9.7 13.9 17.7 32.2 43.0 46.0
Near End Crosstalk Attenuation (NEXT, dB)	89.4	77.9 78.0 72.5 63.4 58.6 54.3
NEXT Power and PS NEXT (dB)	77.6	72.0 63.2 61.3 51.3 49.9 46.8
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	88.4	85.0 81.5 79.9 66.3 52.0 48.9
ACR-F Power and PS ACR-F (dB)	77.6	71.5 64.9 61.3 51.3 48.4 43.0
Return Loss (RL, dB)	37.1	35.3 34.4 28.5 24.6 21.1 19.8

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.53 (AWG24)
Outer Diameter of Cable (nominal value)	7.4mm
Weight (305m, with package, nominal value)	15kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-500MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	30mm
Minimum Bend Radius (static)	60mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM	UL 1581

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

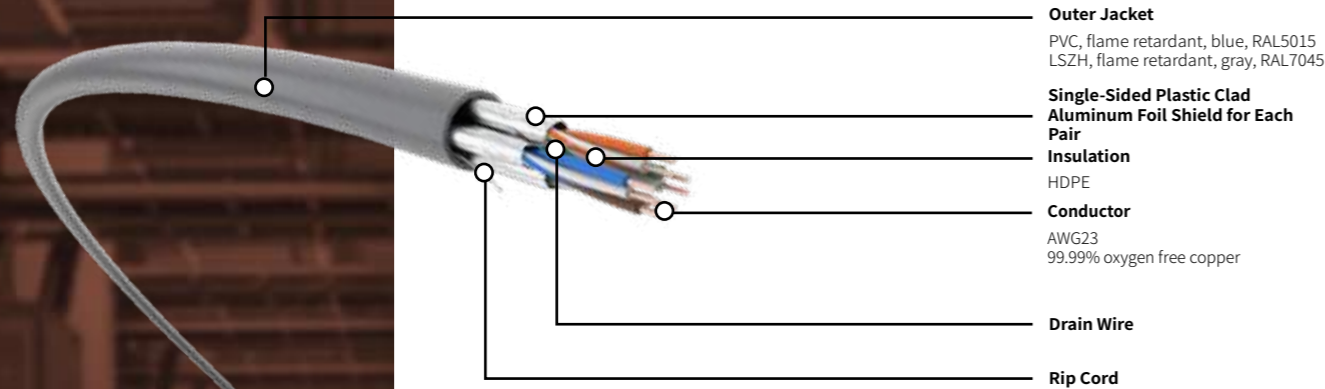
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-11-6A-4PX	Cat6a, 4-Pair, Non-Continuous Aluminum Foil, Unshielded, Indoor Twisted Pair Cable, PVC	PVC	Blue	305 m/reel
UTP-21-6A-4PX	Cat6a, 4-Pair, Flame-Retardant, Non-Continuous Aluminum Foil, Unshielded, Indoor Twisted Pair Cable, LSZH	LSZH	Gray	305 m/reel

Cat6, Shielded Twisted Pair Cable

U/FTP-11-6-4P, U/FTP-21-6-4P

U/FTP, Cat6, AWG23, indoor



Product Information

Product Application

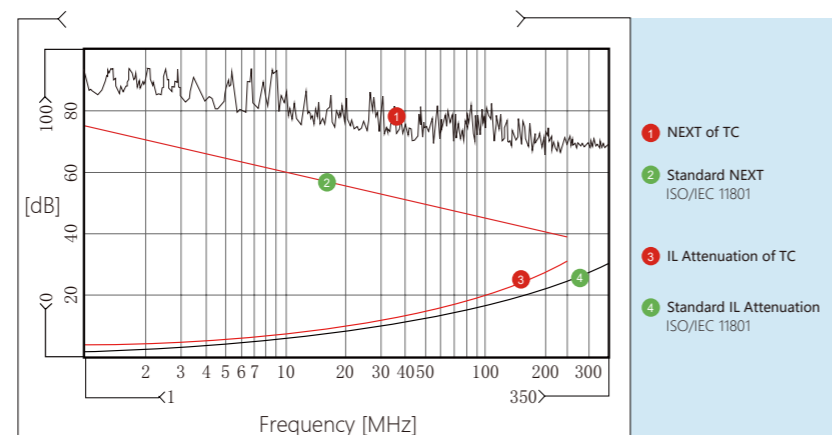
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. TC's U/FTP-11 series, indoor Cat6 shielded cabling system, has test frequency up to 350MHz, higher than other Cat6 cables with industry standard of 250MHz. In the meantime, it supports 5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6, 23 AWG, 4-pair, U/FTP, shielded indoor cable adopts the best aluminum foil shield for each pair, optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed all the parameters specified in GB/T 18015.5 (IEC 61156-5) standards. The shielded structure is designed for the best ANEXT performance and 5G Base-T applications, especially useful in some harsh electromagnetic environments where high-speed and stable cable transmission is required. At the same time, it acts on the requirements for structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance

	Cat.6	TC
Frequency (MHz)	4	31.25 62.5 100 200 250 350
IL Attenuation (dB/100M)	3.3	9.3 13.2 16.7 22.3 25.1 30.8
Near End Crosstalk Attenuation (NEXT, dB)	94.1	76.1 78.7 77.4 70.2 68.0 68.3
NEXT Power and PS NEXT (dB)	86.4	70.5 69.5 58.0 49.7 52.8 46.8
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	99.4	94.5 75.7 66.4 52.7 51.6 45.2
ACR-F Power and PS ACR-F (dB)	84.6	73.8 58.2 58.9 44.0 44.0 40.0
Return Loss (RL, dB)	40.8	43.4 33.9 42.6 30.0 21.8 18.8

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.57 (AWG23)
Outer Diameter of Cable (nominal value)	8.0mm
Weight (305m, with package, nominal value)	17kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-250MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	32mm
Minimum Bend Radius (static)	64mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM/CMR	UL 1581/ UL 1666

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Flame Resistance (of bunched wires)	GB/T 18380.35 (IEC 60332-3-24)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/2 (IEC 60754-1/-2)

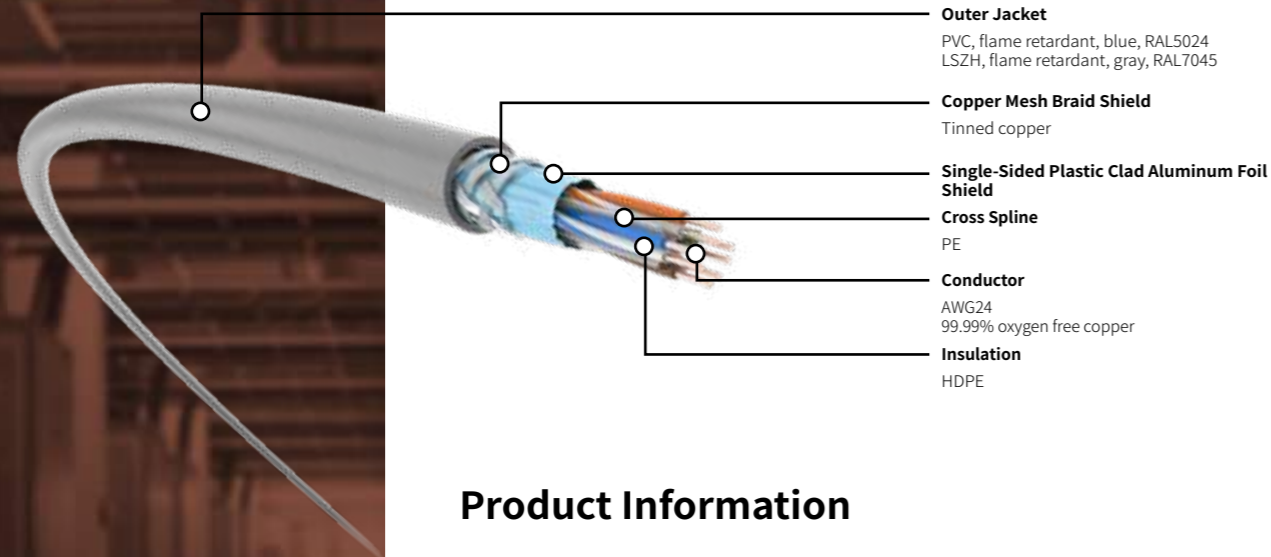
Order Information

Model	Description	Jacket Material	Jacket Color	Package
U/FTP-11-6-4P	Cat6, 4-Pair, Shielded, Indoor, PVC	PVC	Gray	305 m/reel
U/FTP-21-6-4P	Cat6, 4-Pair, Flame retardant, Shielded, Indoor, LSZH	LSZH	Gray	305 m/reel

Cat6, Shielded Twisted Pair Cable

SFTP-11-6-4P, SFTP-21-6-4P

SF/UTP, Cat6, AWG23, indoor



- Outer Jacket**
PVC, flame retardant, blue, RAL5024
LSZH, flame retardant, gray, RAL7045
- Copper Mesh Braid Shield**
Tinned copper
- Single-Sided Plastic Clad Aluminum Foil Shield**
- Cross Spline**
PE
- Conductor**
AWG24
99.99% oxygen free copper
- Insulation**
HDPE

Product Information

Product Application

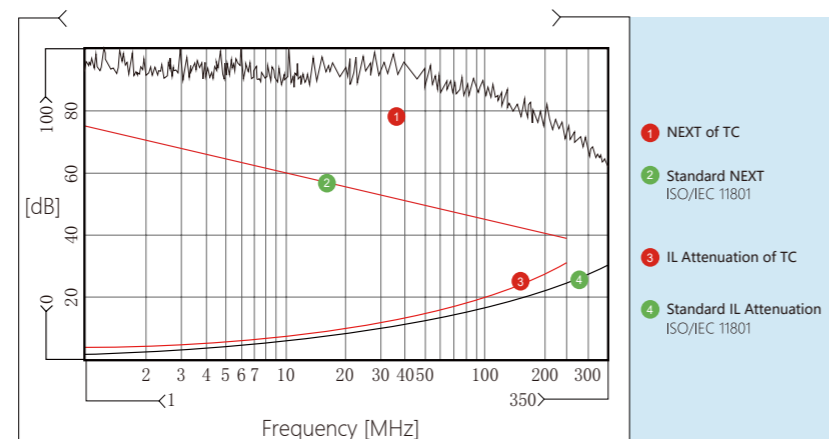
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. TC's SFTP-11 series, indoor Cat6 dual shielded cabling system has test frequency up to 350MHz, higher than other Cat6 cables with industry standard of 250MHz. In the meantime, it supports the latest 5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6, 23 AWG, 4-pair, dual shielded indoor cable adopts cross-type spline, copper mesh braid and overall aluminum foil shield, optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards. It is especially useful in some harsh electromagnetic environments where high-speed and stable cable transmission is required. At the same time, it acts on the requirements for high transmission in data center, and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6	TC
Frequency (MHz)	4	31.25 62.5 100 200 250 350
IL Attenuation (dB/100M)	3.4	9.5 13.5 17.2 24.8 28.0 31.0
Near End Crosstalk Attenuation (NEXT, dB)	94.0	92.4 90.5 87.9 78.8 74.9 62.4
NEXT Power and PS NEXT (dB)	73.9	69.9 61.7 64.3 59.6 61.0 58.6
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	108.9	99.2 90.7 107.2 82.8 77.2 74.6
ACR-F Power and PS ACR-F (dB)	94.4	91.2 87.9 90.5 77.0 73.8 70.5
Return Loss (RL, dB)	32.8	38.6 32.8 38.6 32.5 27.8 25.3

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.57 (AWG23)
Outer Diameter of Cable (nominal value)	8.0mm
Weight (305m, with package, nominal value)	17kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-250MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	32mm
Minimum Bend Radius (static)	64mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM/CMR	UL 1581/ UL 1666

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Flame Resistance (of bunched wires)	GB/T 18380.35 (IEC 60332-3-24)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

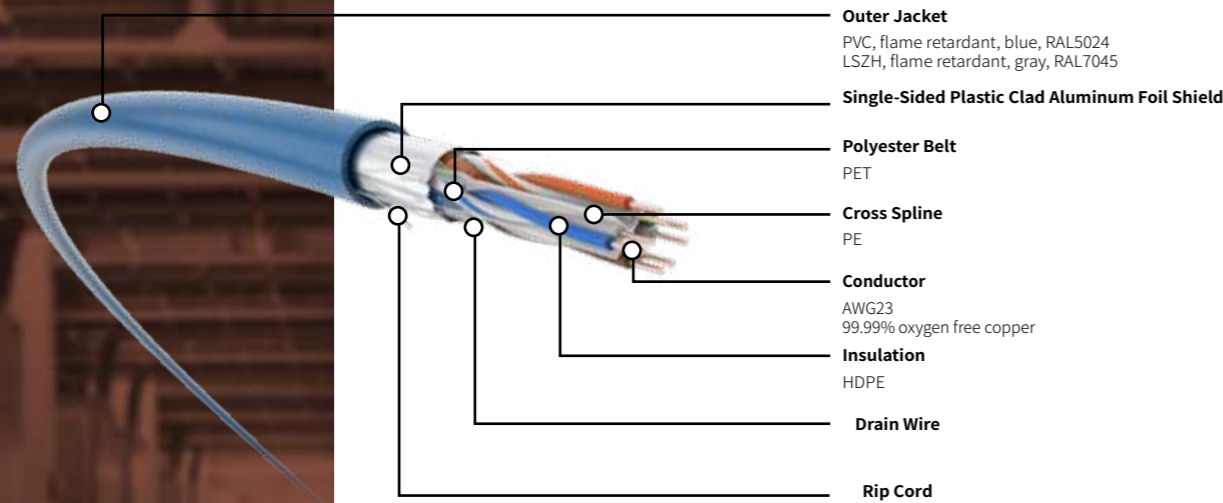
Order Information

Model	Description	Jacket Material	Jacket Color	Package
SFTP-11-6-4P	Cat6, 4-Pair, Dual Shielded, Indoor Twisted Pair Cable, PVC	PVC	Blue	305 m/reel
SFTP-21-6-4P	Cat6, 4-Pair, Flame retardant, Dual Shielded, Indoor Twisted Pair Cable, LSZH	LSZH	Gray	305 m/reel

Cat6, Shielded Twisted Pair Cable

FTP-11-6-4P, FTP-21-6-4P

F/UTP, Cat6, AWG23, indoor



Product Information

Product Application

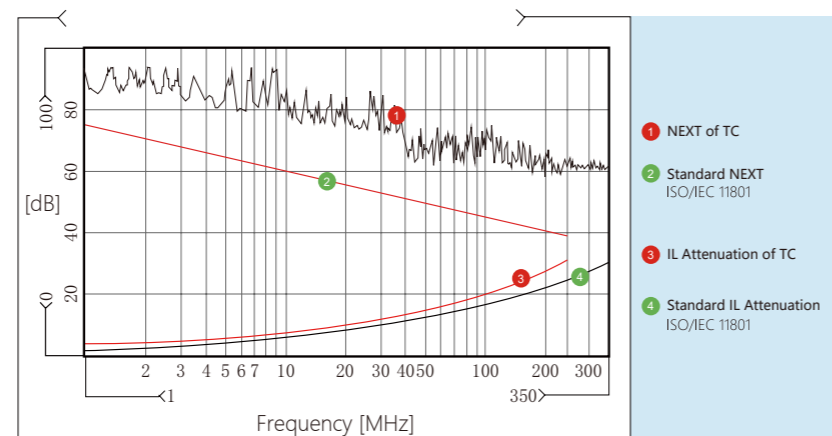
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. As a crucial part of structured cabling, horizontal cabling calls for higher reliability and compatibility. TC's FTP-11/21 series, indoor Cat6 shielded cabling system, has test frequency up to 350MHz, higher than other Cat6 cables with industry standard of 250MHz. In the meantime, it supports the latest 5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6, 23 AWG, 4-pair, shielded indoor cable adopts cross-type spline and overall aluminum foil shield, optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards. It is especially useful in some harsh electromagnetic environments where high-speed and stable cable transmission is required. At the same time, it acts on the requirements for high transmission in data center, and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6	TC
Frequency (MHz)	4	31.25 62.5 100 200 250 350
IL Attenuation (dB/100M)	3.4	9.5 13.5 17.2 24.8 28.0 31.0
Near End Crosstalk Attenuation (NEXT, dB)	94.0	77.4 69.5 72.9 65.3 61.9 62.4
NEXT Power and PS NEXT (dB)	73.9	69.9 61.7 64.3 59.6 61.0 58.6
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	108.9	99.2 90.7 107.2 82.8 77.2 74.6
ACR-F Power and PS ACR-F (dB)	94.4	91.2 87.9 90.5 77.0 73.8 70.5
Return Loss (RL, dB)	37.3	37.5 37.3 31.6 23.4 24.2 22.8

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.57 (AWG23)
Outer Diameter of Cable (nominal value)	7.6mm
Weight (305m, with package, nominal value)	20kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-250MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	30mm
Minimum Bend Radius (static)	60mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM/CMR	UL 1581/ UL 1666

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Flame Resistance (of bunched wires)	GB/T 18380.35 (IEC 60332-3-24)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

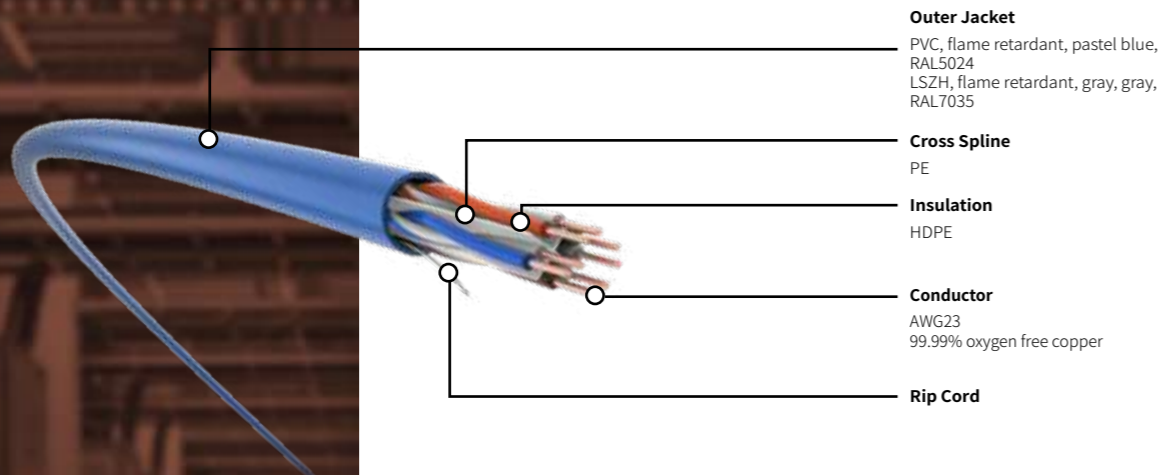
Order Information

Model	Description	Jacket Material	Jacket Color	Package
FTP-11-6-4P	Cat6, 4-Pair, Shielded, Indoor Twisted Pair Cable, PVC	PVC	Blue	305 m/reel
FTP-21-6-4P	Cat6, 4-Pair, Flame retardant, Shielded, Indoor Twisted Pair Cable, LSZH	LSZH	Gray	305 m/reel

Cat6 Plus, Unshielded Twisted Pair Cable

UTP-11-6-4P, UTP-21-6-4P

U/UTP, Cat6, AWG23, indoor



- Outer Jacket**
PVC, flame retardant, pastel blue, RAL5024
LSZH, flame retardant, gray, gray, RAL7035
- Cross Spline**
PE
- Insulation**
HDPE
- Conductor**
AWG23
99.99% oxygen free copper
- Rip Cord**

Product Information

Product Application

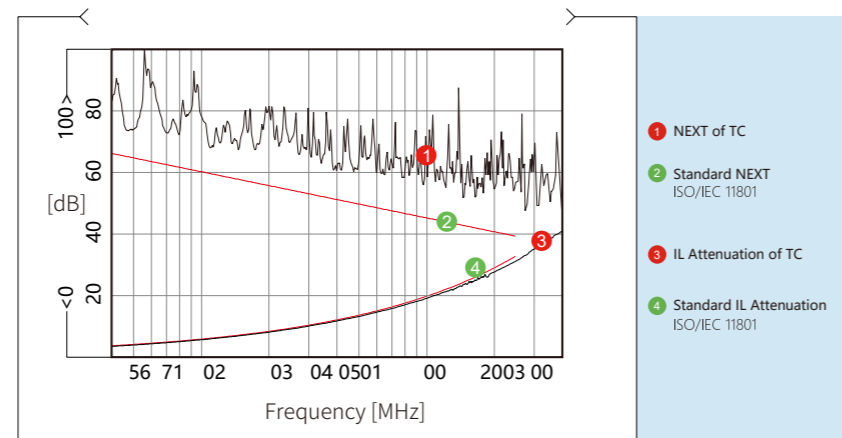
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. TC's UTP-11/21 series, indoor Cat6 unshielded cabling system has test frequency up to 350MHz, higher than other Cat6 cables with industry standard of 250MHz. In the meantime, it supports the latest 5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6 Plus, 23 AWG, 4-pair, unshielded indoor cable adopts the excellent cross-type spline. Compared to other TC brand unshielded Cat6 cables, it is optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards and ensure high-speed and stable cable transmission. At the same time, it acts on the requirements for high transmission in data center, and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6						TC
Frequency (MHz)	4	31.25	62.5	100	200	250	350
IL Attenuation (dB/100M)	3.2	10.5	14.7	20.5	28.5	32.9	41.0
Near End Crosstalk Attenuation (NEXT, dB)	86.7	70.0	67.3	67.7	55.9	59.8	55.2
NEXT Power and PS NEXT (dB)	78.0	63.3	57.4	61.2	54.3	51.9	46.9
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	77.0	78.9	84.5	83.8	84.9	62.9	60.0
ACR-F Power and PS ACR-F (dB)	72.8	62.8	72.4	70.9	69.7	62.3	58.9
Return Loss (RL, dB)	32.8	38.6	32.8	38.6	32.5	26.3	22.5

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.57 (AWG23)
Outer Diameter of Cable (nominal value)	6.2mm
Weight (305m, with package, nominal value)	14kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-250MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	24mm
Minimum Bend Radius (static)	48mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM	UL 1581

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/2 (IEC 60754-1/-2)

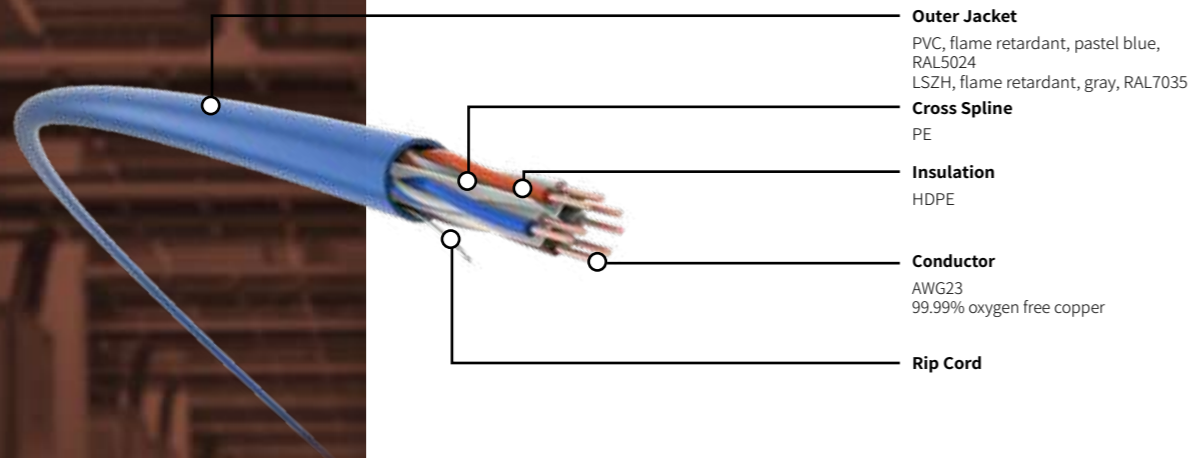
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-11-6-4P	Cat6, 4-Pair, Unshielded, Indoor Twisted Pair Cable, PVC	PVC	Pastel Blue	305 m/reel
UTP-21-6-4P	Cat6, 4-Pair, Flame retardant, Unshielded, Indoor Twisted Pair Cable, LSZH	LSZH	Gray	305 m/reel

Cat6, Unshielded Twisted Pair Cable

UTP-11-6-4PA, UTP-21-6-4PA

U/UTP, Cat6, AWG23, indoor



Product Information

Product Application

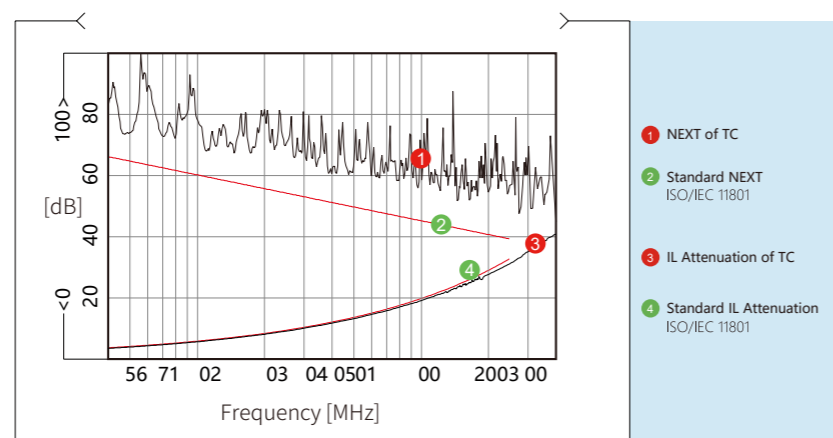
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. TC's UTP-11/21 series, indoor Cat6 unshielded cabling system has test frequency up to 350MHz, higher than other Cat6 cables with industry standard of 250MHz. In the meantime, it supports the latest 5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6, 23 AWG, unshielded indoor cable adopts the excellent cross-type spline, optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards and ensure high-speed and stable cable transmission. At the same time, it acts on the requirements for high transmission in data center, and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6	TC
Frequency (MHz)	4	31.25 62.5 100 200 250 350
IL Attenuation (dB/100M)	3.2	10.5 14.7 20.5 28.5 32.9 41.0
Near End Crosstalk Attenuation (NEXT, dB)	86.7	70.0 67.3 67.7 55.9 59.8 55.2
NEXT Power and PS NEXT (dB)	78.0	63.3 57.4 61.2 54.3 51.9 46.9
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	77.0	78.9 84.5 83.8 84.9 62.9 60.0
ACR-F Power and PS ACR-F (dB)	72.8	62.8 72.4 70.9 69.7 62.3 58.9
Return Loss (RL, dB)	32.8	38.6 32.8 38.6 32.5 26.3 22.5

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.55 (AWG23)
Outer Diameter of Cable (nominal value)	6.0mm
Weight (305m, with package, nominal value)	13kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-250MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	24mm
Minimum Bend Radius (static)	48mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM	UL 1581

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

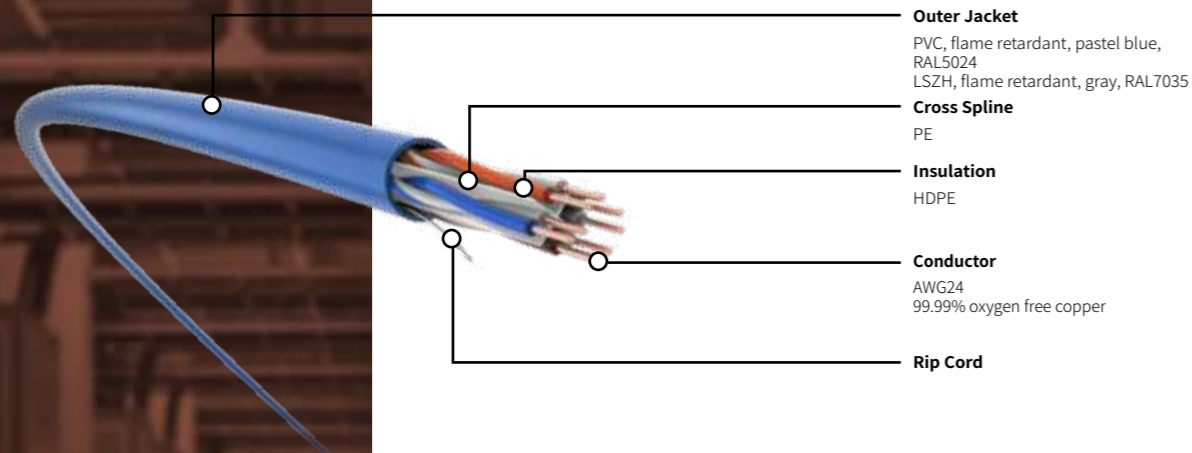
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-11-6-4PA	Cat6, 4-Pair, Unshielded, Indoor Twisted Pair Cable, 23 AWG, PVC	PVC	Pastel Blue	305 m/reel
UTP-21-6-4PA	Cat6, 4-Pair, Flame retardant, Unshielded, Indoor Twisted Pair Cable, 23 AWG, LSZH	LSZH	Gray	305 m/reel

Cat6, Unshielded Twisted Pair Cable

UTP-13-6-4P, UTP-23-6-4P

U/UTP, Cat6, AWG24, indoor



Product Information

Product Application

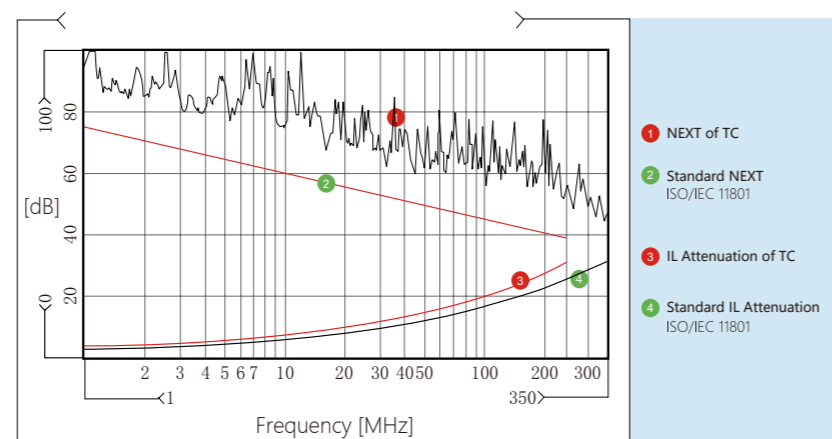
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. TC's UTP-13/23 series, indoor Cat6 unshielded cabling system invests in new AWG24 conductors with smaller diameter. Apart from ease of installation, it has test frequency up to 250MHz. In the meantime, it supports the latest 5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6, 24 AWG, 4-pair, unshielded indoor cable adopts the excellent cross-type spline, optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards and ensure high-speed and stable cable transmission. Its smaller size makes it easier for field construction. At the same time, it acts on the requirements for high transmission in data center, and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6	TC
Frequency (MHz)	4	31.25 62.5 100 200 250 350
IL Attenuation (dB/100M)	3.2	9.5 13.7 17.5 23.1 27.9 31.0
Near End Crosstalk Attenuation (NEXT, dB)	94.7	63.2 67.3 62.7 63.9 55.8 48.2
NEXT Power and PS NEXT (dB)	78.0	63.3 67.4 61.2 54.3 52.9 50.9
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	77.0	78.9 84.5 83.8 84.9 70.5 60.9
ACR-F Power and PS ACR-F (dB)	72.8	62.8 72.4 70.9 69.7 65.3 60.3
Return Loss (RL, dB)	32.8	38.6 32.8 38.6 32.5 27.8 25.3

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.53 (AWG24)
Outer Diameter of Cable (nominal value)	6.0mm
Weight (305m, with package, nominal value)	13kg

Electrical Properties

DC resistance (20°C)	95Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-250MHz)
Delay Skew	25ns/100m
NVP	65%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	24mm
Minimum Bend Radius (static)	48mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM	UL 1581

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

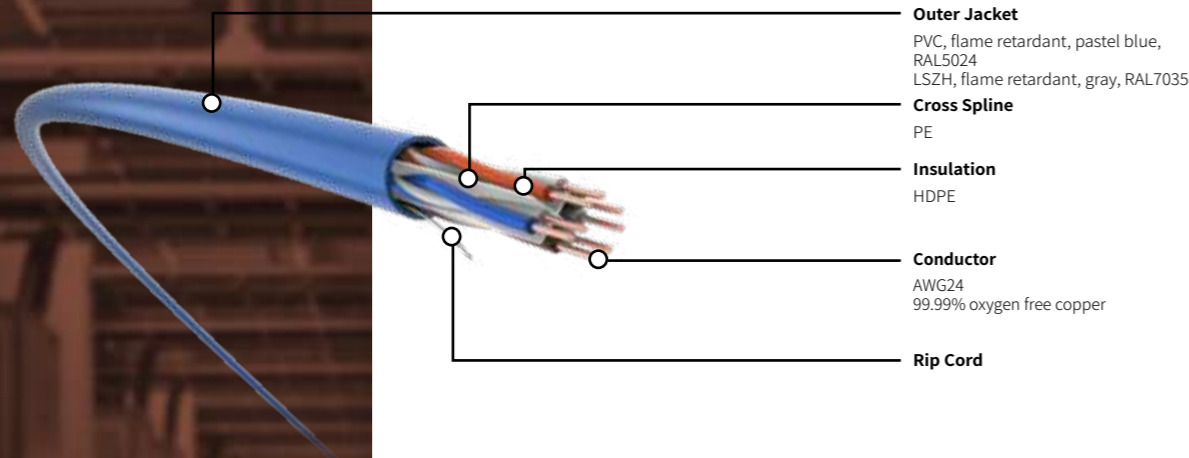
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-13-6-4P	Cat6, 4-Pair, Unshielded, Indoor Twisted Pair Cable, 24AWG, PVC	PVC	Pastel Blue	305 m/reel
UTP-23-6-4P	Cat6, 4-Pair, Flame retardant, Unshielded, Indoor Twisted Pair Cable, 24AWG, LSZH	LSZH	Gray	305 m/reel

Cat6, Unshielded Twisted Pair Cable

UTP-13-6-4PA, UTP-23-6-4PA

U/UTP, Cat6, AWG24, indoor



Product Information

Product Application

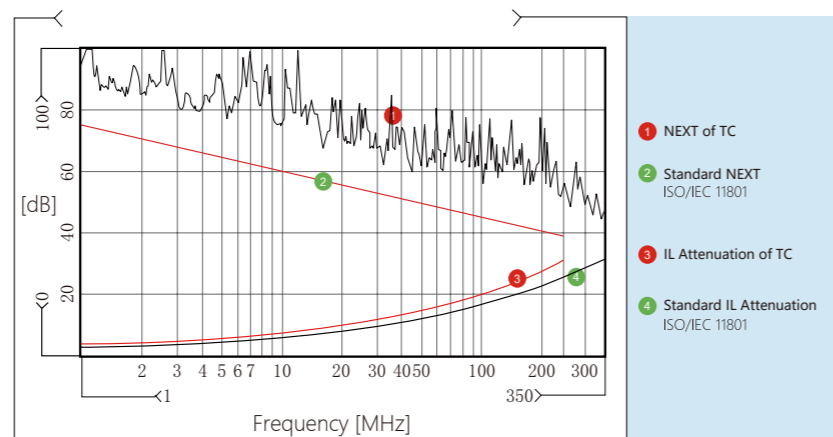
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. TC's UTP-13/23 series, indoor Cat6 unshielded cabling system invests in new AWG24 conductors with smaller diameter. Apart from ease of installation, it has test frequency up to 250MHz. In the meantime, it supports the latest 5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6, 24 AWG, 4-pair, unshielded indoor cable adopts the excellent cross-type spline, optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards and ensure high-speed and stable cable transmission. Its smaller size makes it easier for field construction. At the same time, it acts on the requirements for high transmission in data center, and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6	TC
Frequency (MHz)	4	31.25 62.5 100 200 250 350
IL Attenuation (dB/100M)	3.2	9.5 13.7 17.5 23.1 27.9 31.0
Near End Crosstalk Attenuation (NEXT, dB)	94.7	63.2 67.3 62.7 63.9 55.8 48.2
NEXT Power and PS NEXT (dB)	78.0	63.3 67.4 61.2 54.3 52.9 50.9
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	77.0	78.9 84.5 83.8 84.9 70.5 60.9
ACR-F Power and PS ACR-F (dB)	72.8	62.8 72.4 70.9 69.7 65.3 60.3
Return Loss (RL, dB)	32.8	38.6 32.8 38.6 32.5 27.8 25.3

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.51 (AWG24)
Outer Diameter of Cable (nominal value)	6.0mm
Weight (305m, with package, nominal value)	13kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-250MHz)
Delay Skew	25ns/100m
NVP	65%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	24mm
Minimum Bend Radius (static)	48mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM	UL 1581

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

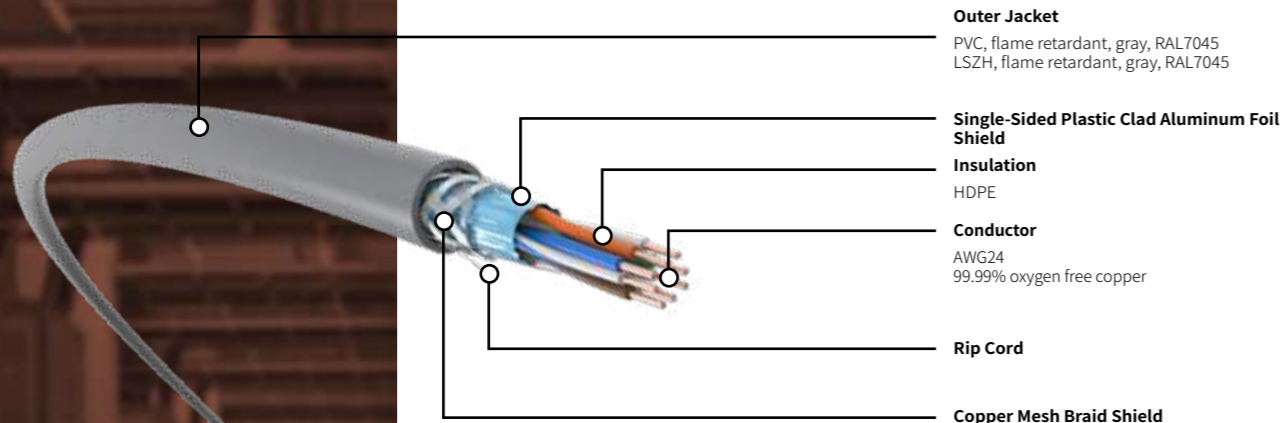
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-13-6-4PA	Cat6, 4-Pair, Unshielded, Indoor Twisted Pair Cable, 24AWG, PVC	PVC	Pastel Blue	305 m/reel
UTP-23-6-4PA	Cat6, 4-Pair, Flame retardant, Unshielded, Indoor Twisted Pair Cable, 24AWG, LSZH	LSZH	Gray	305 m/reel

Cat5e, Shielded Twisted Pair Cable

SFTP-11-5E-4P, SFTP-21-5E-4P

SF/UTP, Cat5E, AWG24, indoor



Product Information

Product Application

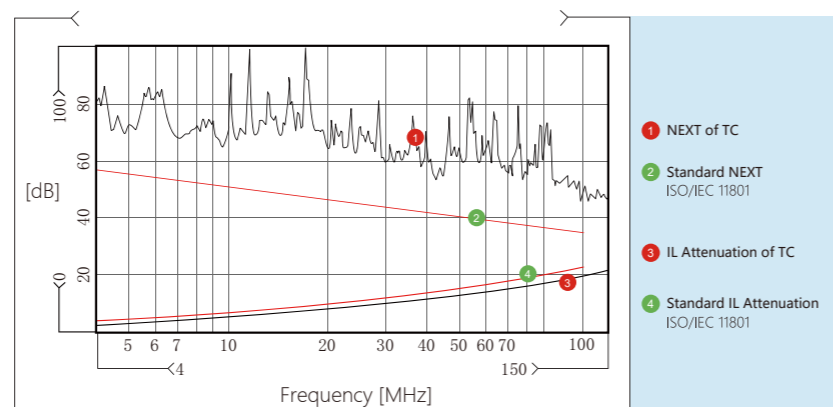
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. TC's SFTP-11/21 series, indoor Cat5e shielded cabling system has test frequency up to 150MHz, higher than other Cat5e cables with industry standard of 100MHz. In the meantime, it supports the latest 2.5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat5e, 24 AWG, 4-pair, dual shielded indoor cable adopts copper mesh braid shield and overall aluminum foil shield, optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards and ensure high-speed and stable cable transmission. At the same time, it acts on the requirements for renovation projects and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance

	Cat.5E	TC
Frequency (MHz)	4	10
IL Attenuation (dB/100M)	3.9	5.8
Near End Crosstalk Attenuation (NEXT, dB)	82.1	85.0
NEXT Power and PS NEXT (dB)	76.0	58.3
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	91.7	99.3
ACR-F Power and PS ACR-F (dB)	80.1	75.8
Return Loss (RL, dB)	31.2	32.9

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.52 (AWG24)
Outer Diameter of Cable (nominal value)	7.0mm
Weight (305m, with package, nominal value)	16kg

Electrical Properties

DC resistance (20°C)	95Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB(30-100MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	28mm
Minimum Bend Radius (static)	56mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM/CMR	UL 1581/ UL 1666

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Flame Resistance (of bunched wires)	GB/T 18380.35 (IEC 60332-3-24)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

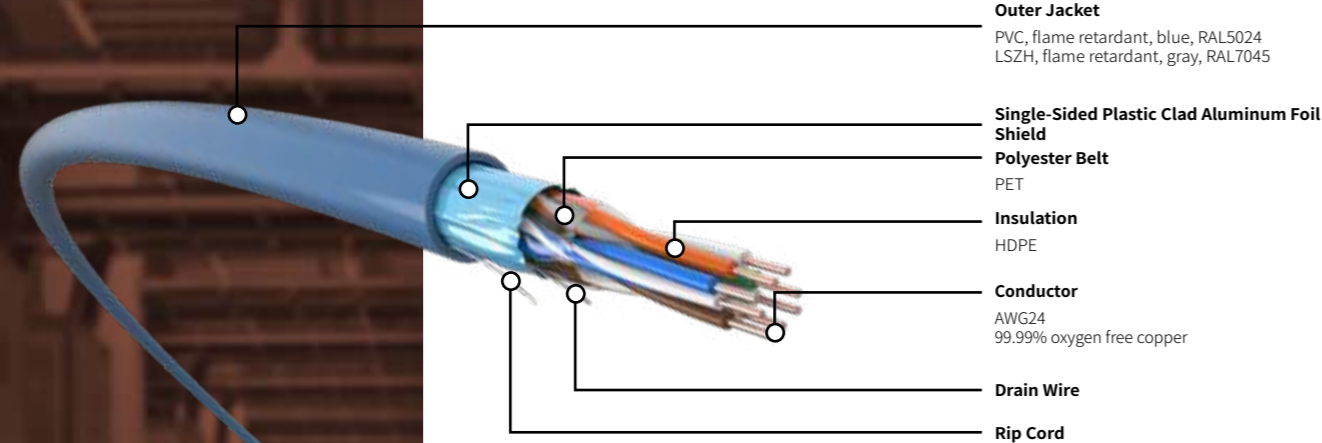
Order Information

Model	Description	Jacket Material	Jacket Color	Package
SFTP-11-5E-4P	Cat5e, 4-Pair, Dual Shielded, Indoor Twisted Pair Cable, PVC	PVC	Gray	305 m/reel
SFTP-21-5E-4P	Cat5e, 4-Pair, Flame retardant, Dual Shielded, Indoor Twisted Pair Cable, LSZH	LSZH	Gray	305 m/reel

Cat5e, Shielded Twisted Pair Cable

FTP-11-5E-4P, FTP-21-5E-4P

F/UTP, Cat5E, AWG24, indoor



Product Information

Product Application

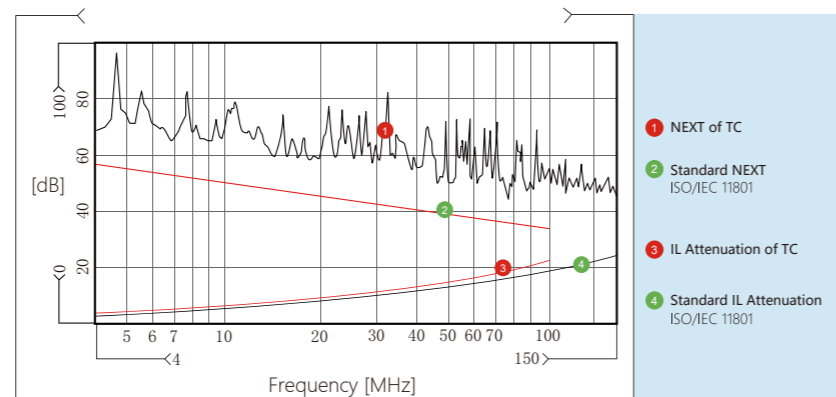
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. TC's FTP-11/21 series, indoor Cat5e shielded cabling system has test frequency up to 150MHz, higher than other Cat5e cables with industry standard of 100MHz. In the meantime, it supports the latest 2.5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat5e, 24 AWG, 4-pair, shielded indoor cable adopts overall aluminum foil shield, optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards and ensure high-speed and stable cable transmission. At the same time, it acts on the requirements for renovation projects and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.5E	TC
Frequency (MHz)	4	10
IL Attenuation (dB/100M)	3.6	5.7
Near End Crosstalk Attenuation (NEXT, dB)	70.0	74.0
NEXT Power and PS NEXT (dB)	72.3	61.4
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	91.7	99.3
ACR-F Power and PS ACR-F (dB)	80.1	75.8
Return Loss (RL, dB)	31.2	32.9

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.52 (AWG24)
Outer Diameter of Cable (nominal value)	6.5mm
Weight (305m, with package, nominal value)	15kg

Electrical Properties

DC resistance (20°C)	95Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB(30-100MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	26mm
Minimum Bend Radius (static)	52mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM/CMR	UL 1581/ UL 1666

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Flame Resistance (of bunched wires)	GB/T 18380.35 (IEC 60332-3-24)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

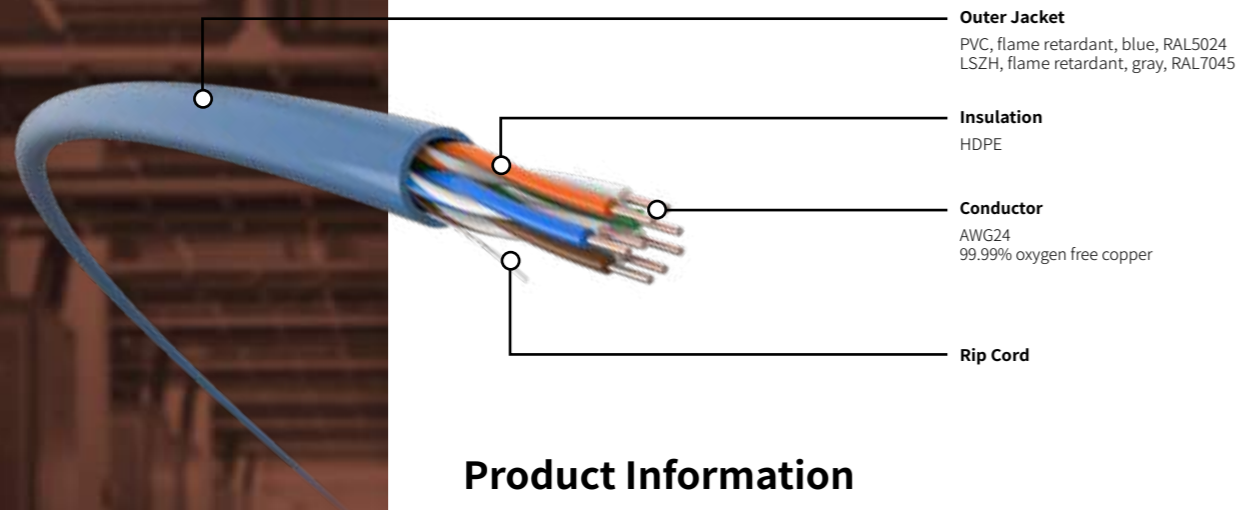
Order Information

Model	Description	Jacket Material	Jacket Color	Package
FTP-11-5E-4P	Cat5e, 4-Pair, Shielded, Indoor Twisted Pair Cable, PVC	PVC	Blue	305 m/reel
FTP-21-5E-4P	Cat5e, 4-Pair, Flame retardant, Shielded, Indoor Twisted Pair Cable, LSZH	LSZH	Gray	305 m/reel

Cat5e, Unshielded Twisted Pair Cable

UTP-11-5E-4P, UTP-21-5E-4P

UTP, Cat5E, AWG24, indoor



- Outer Jacket**
PVC, flame retardant, blue, RAL5024
LSZH, flame retardant, gray, RAL7045
- Insulation**
HDPE
- Conductor**
AWG24
99.99% oxygen free copper
- Rip Cord**

Product Information

Product Application

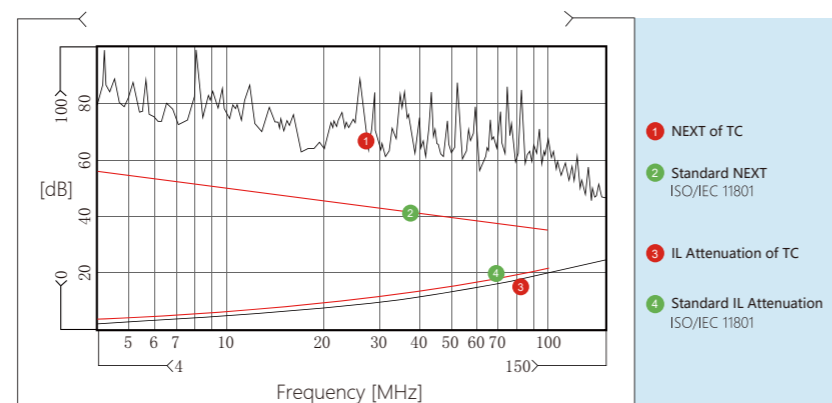
It can be applied in horizontal cabling, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels. TC's UTP-11/21 series, indoor Cat5e unshielded cabling system has test frequency up to 150MHz, higher than other Cat5e cables with industry standard of 100MHz. In the meantime, it supports the latest 2.5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat5e, 24 AWG, 4-pair, unshielded indoor cable is optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards and ensure high-speed and stable cable transmission. At the same time, it acts on the requirements for renovation projects and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.5E	TC
Frequency (MHz)	4	10
IL Attenuation (dB/100M)	3.8	6.1
Near End Crosstalk Attenuation (NEXT, dB)	80.0	77.0
NEXT Power and PS NEXT (dB)	68.8	60.3
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	82.2	72.7
ACR-F Power and PS ACR-F (dB)	68.7	64.2
Return Loss (RL, dB)	46.0	66.6

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.51 (AWG24)
Outer Diameter of Cable (nominal value)	5.3mm
Weight (305m, with package, nominal value)	10kg

Electrical Properties

DC resistance (20°C)	95Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB(30-100MHz)
Delay Skew	25ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	20mm
Minimum Bend Radius (static)	40mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM	UL 1581

Flammability (LSZH)

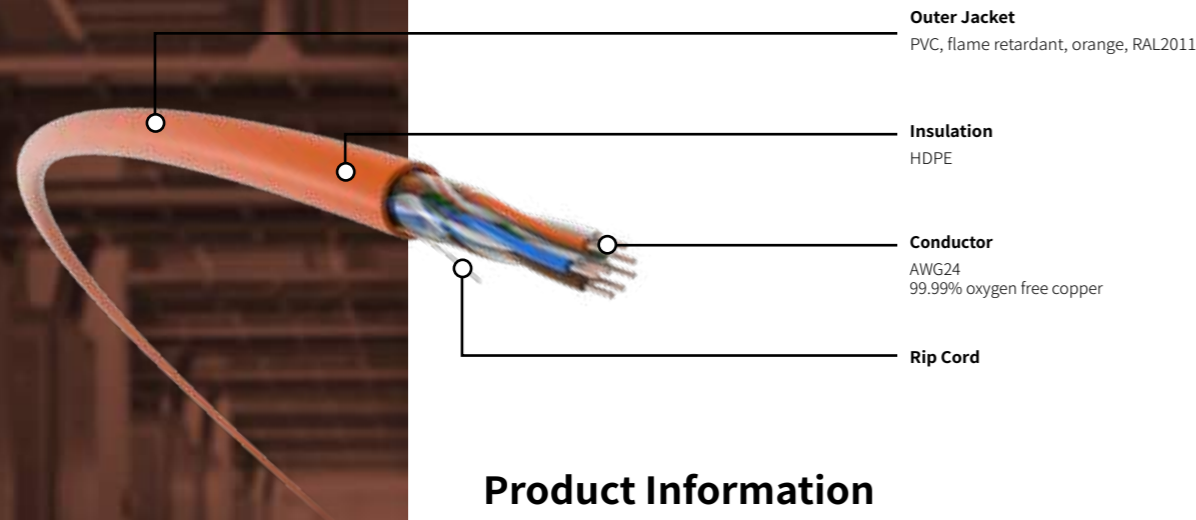
Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-11-5E-4P	Cat5e, 4-Pair, Unshielded, Indoor Twisted Pair Cable, PVC	PVC	Blue	305 m/reel
UTP-21-5E-4P	Cat5e, 4-Pair, Flame retardant, Unshielded Twisted Pair Cable, Indoor, LSZH	LSZH	Gray	305 m/reel

1Gbps, Unshielded Twisted Pair Cable for Security

U/UTP, 10M/100M/1G bps, AWG24, indoor



Product Information

Product Application

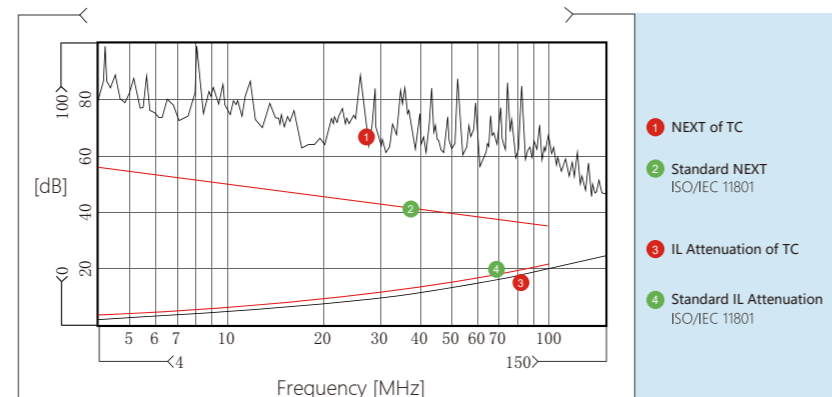
It can be applied in horizontal cabling, as the portion of the building digital security system that extends from the work area (cameras, etc.) telecommunications outlet to the patch panels in the distribution room. As a crucial part of digital security system, horizontal cabling calls for higher reliability and compatibility. TC's UTP-15 series, indoor security unshielded cabling system has test frequency up to 100MHz. In the meantime, it supports 100 Base-T/1G Base-T applications and long range POE/POE+.

Product Features

TC's 24 AWG, 4-pair, unshielded indoor security cable has a smaller diameter, optimized to greatly enhance technical indicators, including Attenuation and NEXT. It meets the requirements of Q TC J1.1-2018 standards by Shanghai Tiancheng Communication Technology Corp. and "Security Cable Standards" (provisionally named, still in the making) by the Ministry of Public Security. The cable ensures high-speed and stable cable transmission, mainly used for video surveillance, access control, building intercom in building security system.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.5E		TC				
Frequency (MHz)	4	10	20	31.25	62.5	100	150
IL Attenuation (dB/100M)	3.8	6.1	11.0	15.8	17.9	20.0	23.6
Near End Crosstalk Attenuation (NEXT, dB)	80.0	77.0	61.1	58.2	62.0	66.3	47.7
NEXT Power and PS NEXT (dB)	68.8	60.3	52.9	50.5	46.9	41.9	40.1
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	82.2	72.7	76.3	75.7	69.6	71.3	68.7
ACR-F Power and PS ACR-F (dB)	68.7	64.2	69.5	69.2	66.5	61.0	56.3
Return Loss (RL, dB)	46.0	66.6	37.5	41.5	36.9	32.2	28.9

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.48 (AWG24)
Outer Diameter of Cable (nominal value)	5.0mm
Weight (305m, with package, nominal value)	9kg

Electrical Properties

DC resistance (20°C)	100Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 50dB-10×lgf (4-100MHz)
Delay Skew	None required
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	20mm
Minimum Bend Radius (static)	40mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM	UL 1581

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

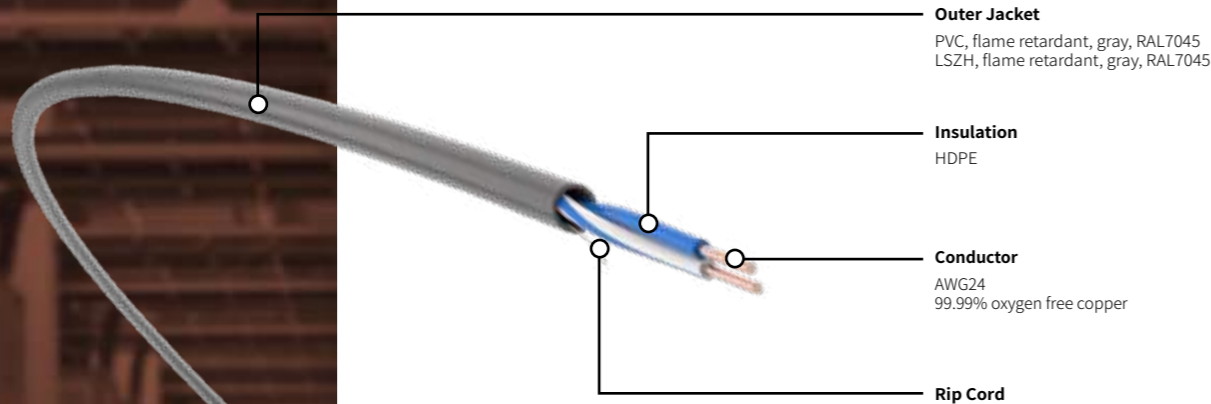
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-15-5E-4P-AF	1Gbps, Unshielded Indoor Twisted Pair Cable, for security use, PVC	PVC	Orange	305 m/reel

Cat5, Unshielded Twisted Pair Cable

UTP-11-5-1P, UTP-21-5-1P

U/UTP, Cat.5, AWG24, indoor



Product Information

Product Application

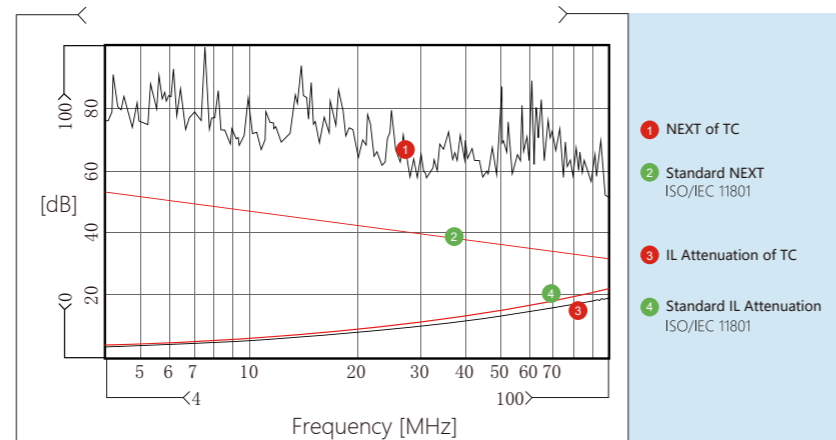
It can be applied in voice communications and video communications, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels.

Product Features

TC's Cat5 cable increases the lay length, invests a high quality insulation material in the jacket, and has working frequency of 100MHz, mainly used for voice transmission.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance

	Cat.5					
Frequency (MHz)	4	10	20	31.25	62.5	100
IL Attenuation (dB/100M)	3.7	6.0	8.8	11.6	15.9	19.9
Near End Crosstalk Attenuation (NEXT, dB)	76.0	79.0	65.1	58.2	62.9	52.9
NEXT Power and PS NEXT (dB)	68.8	60.3	52.9	50.5	46.9	41.9
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	82.2	72.7	76.3	75.7	69.6	71.3
ACR-F Power and PS ACR-F (dB)	68.7	64.2	69.5	69.2	66.5	61.0
Return Loss (RL, dB)	46.0	66.6	37.5	41.5	36.9	32.2

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	1×2×0.5 (AWG24)
Outer Diameter of Cable (nominal value)	3.0mm
Weight (1000m, with package, nominal value)	15kg

Electrical Properties

DC resistance (20°C)	95Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	None required
Delay Skew	45ns/100m
NVP	69%

Mechanical Properties

Minimum Bend Radius (dynamic)	12mm
Minimum Bend Radius (static)	24mm
Maximum Installation Tension	25N
Anti-Extrusion Capacity	500N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM	UL 1581

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

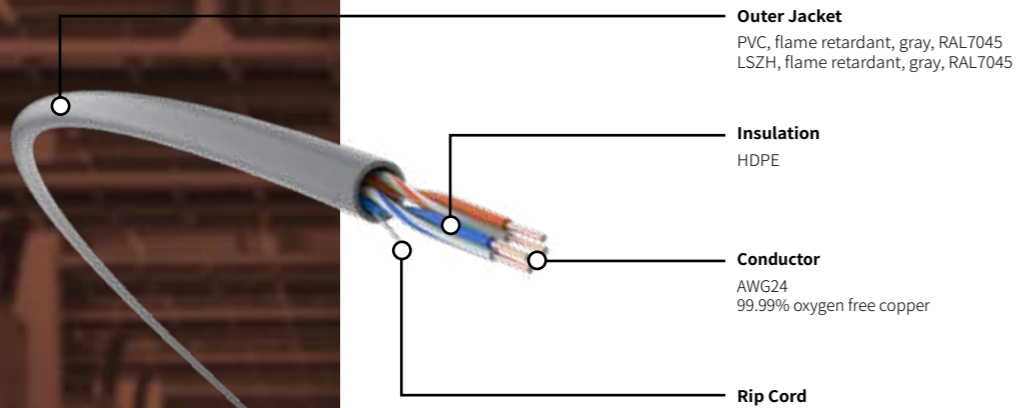
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-11-5-1P	Cat5, 1-Pair, Unshielded Indoor Twisted Pair Cable, PVC	PVC	Gray	1000 m/reel
UTP-21-5-1P	Cat5, 1-Pair, Flame retardant, Unshielded Indoor Twisted Pair Cable, LSZH	LSZH	Gray	1000 m/reel

Cat5, Unshielded Twisted Pair Cable

UTP-11-5-2P, UTP-21-5-2P

U/UTP, Cat.5, AWG24, indoor



Product Information

Product Application

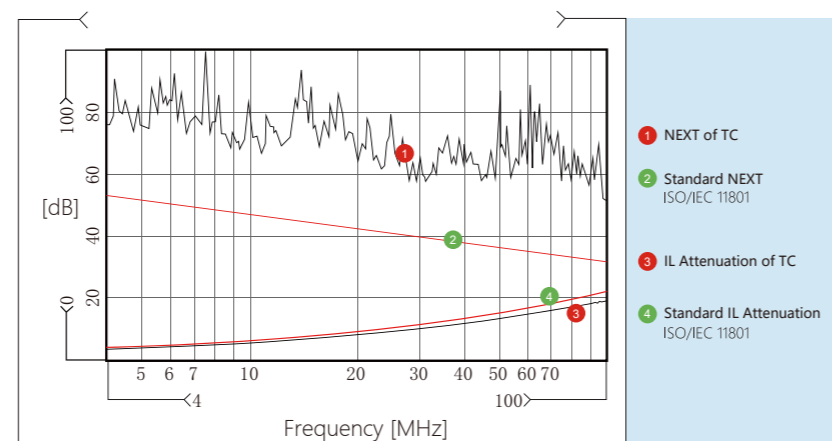
It can be applied in voice communications and video communications, as the portion of a telecommunications cabling system that extends from the work area telecommunications outlet to the patch panels in the distribution room, and in residential cabling that extends from the user telecommunications outlet to the patch panels.

Product Features

TC's Cat5 cable increases the lay length, invests a high quality insulation material in the jacket, and has working frequency of 100MHz, mainly used for voice transmission.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance

Cat.5

Frequency (MHz)	4	10	20	31.25	62.5	100
IL Attenuation (dB/100M)	3.7	6.0	8.8	11.6	15.9	19.9
Near End Crosstalk Attenuation (NEXT, dB)	76.0	79.0	65.1	58.2	62.9	52.9
NEXT Power and PS NEXT (dB)	68.8	60.3	52.9	50.5	46.9	41.9
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	82.2	72.7	76.3	75.7	69.6	71.3
ACR-F Power and PS ACR-F (dB)	68.7	64.2	69.5	69.2	66.5	61.0
Return Loss (RL, dB)	46.0	66.6	37.5	41.5	36.9	32.2

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	2×2×0.5 (AWG24)
Outer Diameter of Cable (nominal value)	4.5mm
Weight (500m, with package, nominal value)	10kg

Electrical Properties

DC resistance (20°C)	95Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	None required
Delay Skew	45ns/100m
NVP	69%

Mechanical Properties

Minimum Bend Radius (dynamic)	18mm
Minimum Bend Radius (static)	36mm
Maximum Installation Tension	50N
Anti-Extrusion Capacity	500N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance	GB/T 18380.12 (IEC 60332-1-2)
Fire Rating CM	UL 1581

Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

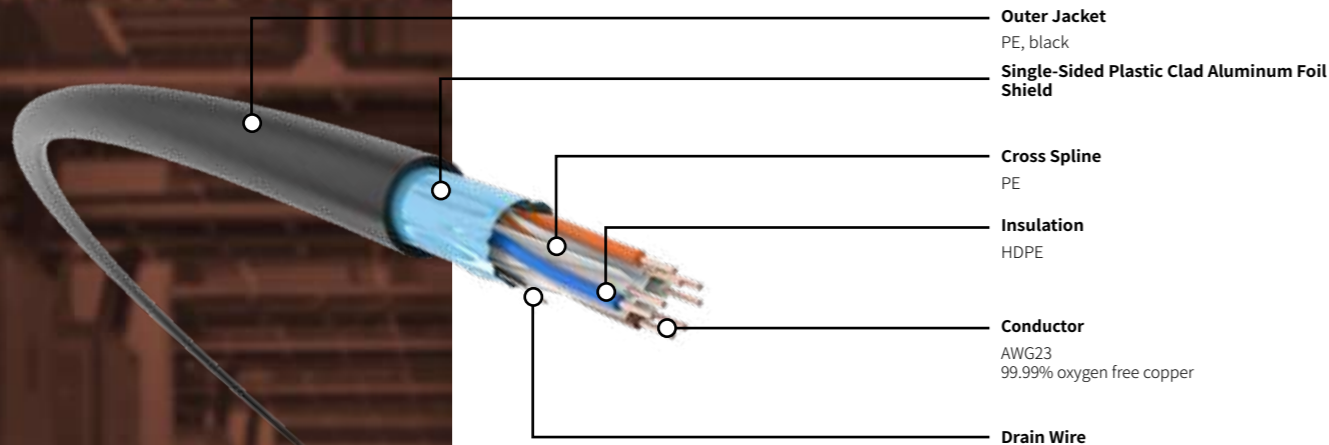
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-11-5-2P	Cat5, 2-Pair, Unshielded Indoor Twisted Pair Cable, PVC	PVC	Gray	500 m/reel
UTP-21-5-2P	Cat5, 2-Pair, Flame retardant, Unshielded Indoor Twisted Pair Cable, LSZH	LSZH	Gray	500 m/reel

Cat6, Outdoor Unshielded Twisted Pair Cable

FTP-31-6-4P

F/UTP, Cat.6, AWG23, outdoor



Product Information

Product Application

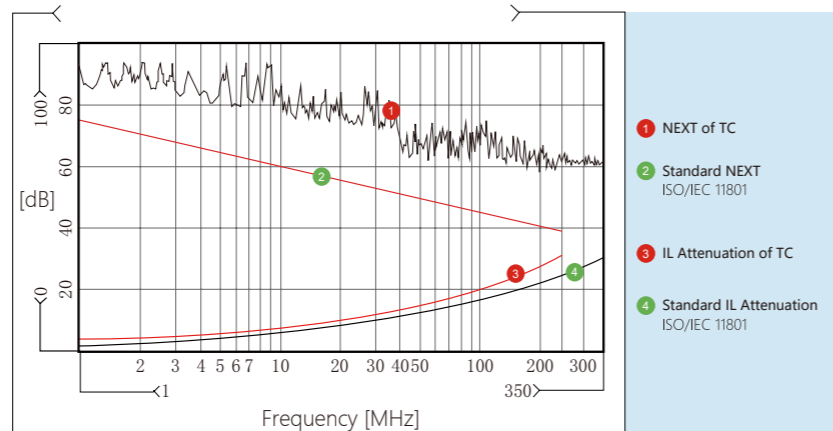
It can be applied in outdoor horizontal cabling, the portion of a telecommunications cabling system. TC's FTP-31 series, outdoor Cat6 shielded cabling system has test frequency up to 350MHz, higher than other Cat6 cables with industry standard of 250MHz. In the meantime, it supports the latest 5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6, 23 AWG, 4-pair, shielded outdoor cable adopts the excellent cross spline and overall aluminum foil shield, optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards and ensure high-speed and stable cable transmission. At the same time, it acts on the requirements for renovation projects and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6		TC				
Frequency (MHz)	4	31.25	62.5	100	200	250	350
IL Attenuation (dB/100M)	3.4	9.5	13.5	17.2	24.8	28.0	31.0
Near End Crosstalk Attenuation (NEXT, dB)	94.0	85.4	69.5	81.9	70.8	67.9	62.4
NEXT Power and PS NEXT (dB)	73.9	69.9	61.7	64.3	59.6	61.0	58.6
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	108.9	99.2	90.7	107.2	82.8	77.2	74.6
ACR-F Power and PS ACR-F (dB)	94.4	91.2	87.9	90.5	77.0	73.8	70.5
Return Loss (RL, dB)	37.3	37.5	37.3	31.6	23.4	24.2	22.8

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.58 (AWG23)
Outer Diameter of Cable (nominal value)	7.5mm
Weight (305m, with package, nominal value)	18kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-250MHz)
Delay Skew	45ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	30mm
Minimum Bend Radius (static)	60mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-40°C ~+60°C

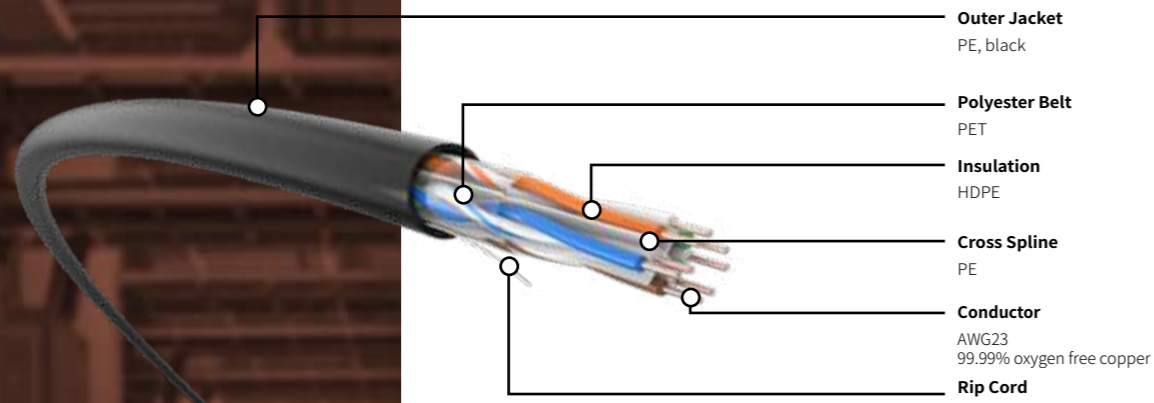
Order Information

Model	Description	Jacket Material	Jacket Color	Package
FTP-31-6-4P	Cat6, 4-Pair, Outdoor, Shielded Twisted Pair Cable, PE	PE	Black	305 m/reel

Cat6, Outdoor Unshielded Twisted Pair Cable

UTP-31-6-4P

U/UTP, Cat.6, AWG23, outdoor



Product Information

Product Application

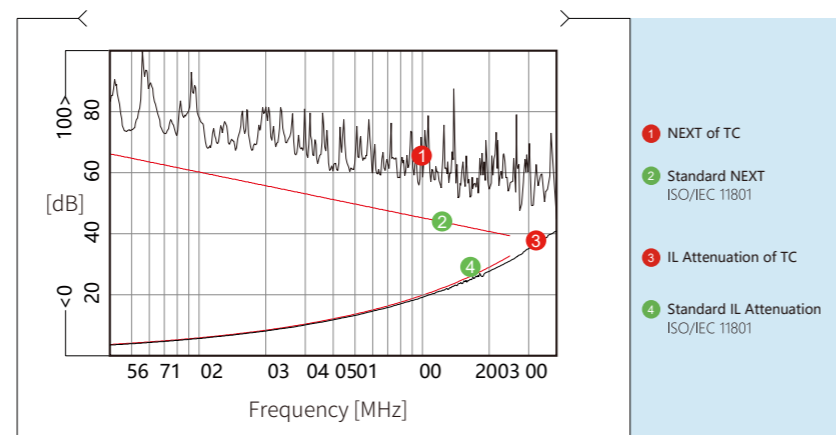
It can be applied in outdoor horizontal cabling, the portion of a telecommunications cabling system. TC's UTP-31 series, outdoor Cat6 unshielded cabling system has test frequency up to 350MHz, higher than other Cat6 cables with industry standard of 250MHz. In the meantime, it supports the latest 5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat6, 23 AWG, 4-pair, unshielded outdoor cable adopts the excellent cross spline, optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards and ensure high-speed and stable cable transmission. At the same time, it acts on the requirements for renovation projects and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.6	TC
Frequency (MHz)	4	31.25 62.5 100 200 250 350
IL Attenuation (dB/100M)	3.2	10.5 14.7 20.5 28.5 32.9 41.0
Near End Crosstalk Attenuation (NEXT, dB)	86.7	70.0 67.3 67.7 55.9 59.8 55.2
NEXT Power and PS NEXT (dB)	78.0	63.3 57.4 61.2 54.3 51.9 46.9
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	77.0	78.9 84.5 83.8 84.9 62.9 60.0
ACR-F Power and PS ACR-F (dB)	72.8	62.8 72.4 70.9 69.7 62.3 58.9
Return Loss (RL, dB)	32.8	38.6 32.8 38.6 32.5 26.3 22.5

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.57 (AWG23)
Outer Diameter of Cable (nominal value)	6.2mm
Weight (305m, with package, nominal value)	13kg

Electrical Properties

DC resistance (20°C)	93.8Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB-20×lgf (100-250MHz)
Delay Skew	45ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	24mm
Minimum Bend Radius (static)	48mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-40°C ~+60°C

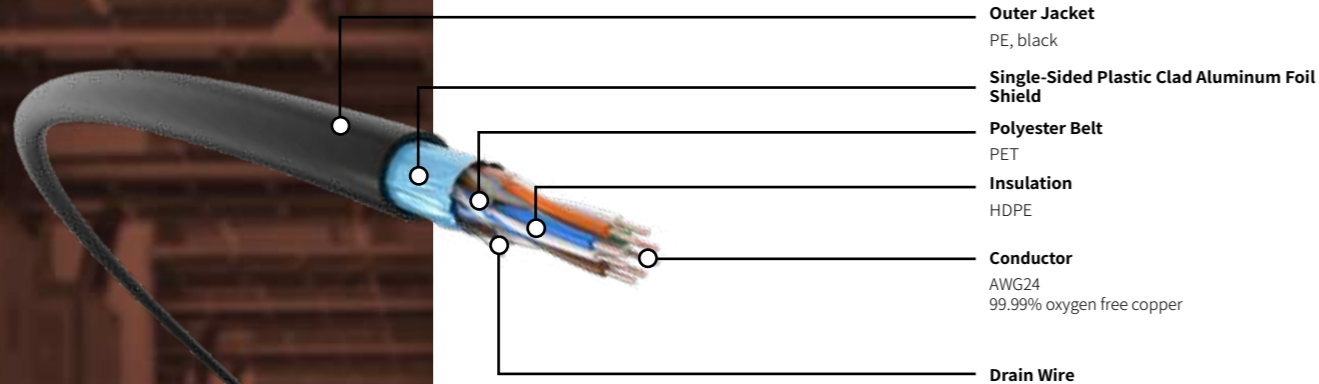
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-31-6-4P	Cat6, 4-Pair, Outdoor, Shielded Twisted Pair Cable, PE	PE	Black	305 m/reel

Cat5e, Outdoor Unshielded Twisted Pair Cable

FTP-31-5E-4P

F/UTP, Cat.5E, AWG24, outdoor



Product Information

Product Application

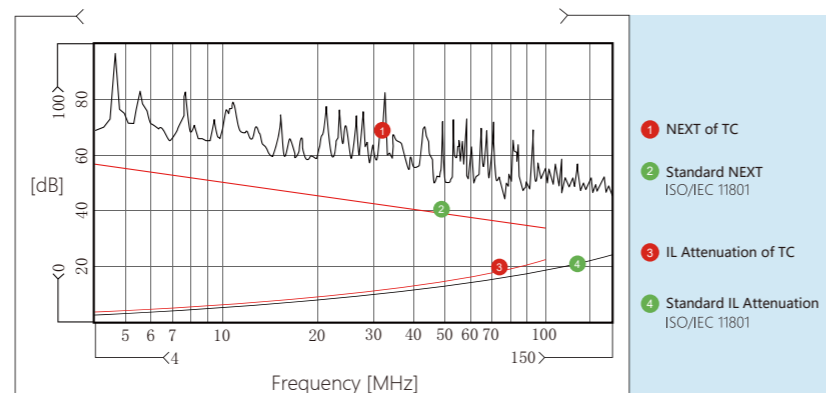
It can be applied in outdoor horizontal cabling, the portion of a telecommunications cabling system. TC's FTP-31 series, outdoor Cat5e shielded cabling system has test frequency up to 150MHz, higher than other Cat5e cables with industry standard of 100MHz. In the meantime, it supports the latest 2.5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat5e, 24 AWG, 4-pair, shielded outdoor cable adopts overall aluminum foil shield, optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards and ensure high-speed and stable cable transmission. At the same time, it acts on the requirements for renovation projects and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.5E	TC
Frequency (MHz)	4	10
IL Attenuation (dB/100M)	3.6	5.7
Near End Crosstalk Attenuation (NEXT, dB)	70.0	74.0
NEXT Power and PS NEXT (dB)	72.3	61.4
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	91.7	99.3
ACR-F Power and PS ACR-F (dB)	80.1	75.8
Return Loss (RL, dB)	31.2	32.9

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.52 (AWG24)
Outer Diameter of Cable (nominal value)	6.2mm
Weight (305m, with package, nominal value)	12kg

Electrical Properties

DC resistance (20°C)	95Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB(30-100MHz)
Delay Skew	45ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	24mm
Minimum Bend Radius (static)	48mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-40°C ~+60°C

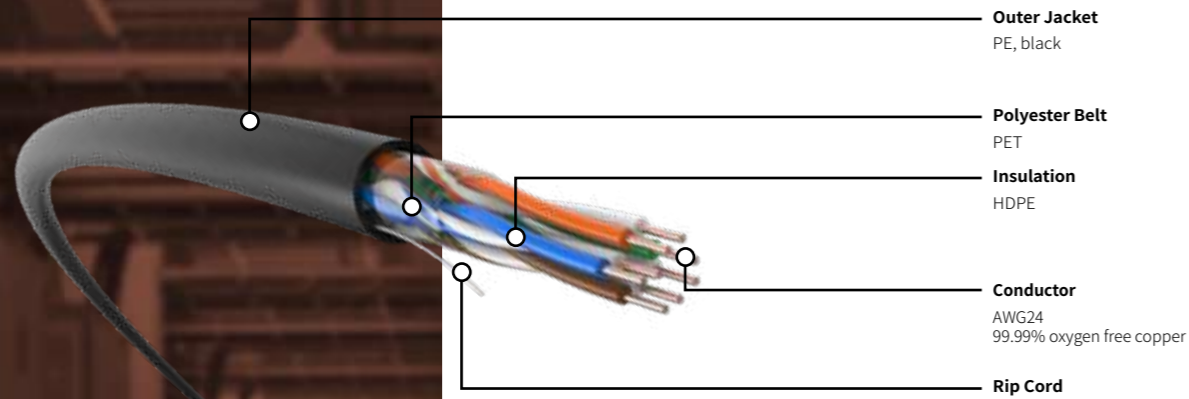
Order Information

Model	Description	Jacket Material	Jacket Color	Package
FTP-31-5E-4P	Cat5e, 4-Pair, Outdoor, Shielded Twisted Pair Cable, PE	PE	Black	305 m/reel

Cat5e, Outdoor Shielded Twisted Pair Cable

UTP-31-5E-4P

U/UTP, Cat.5E, AWG24, outdoor



Product Information

Product Application

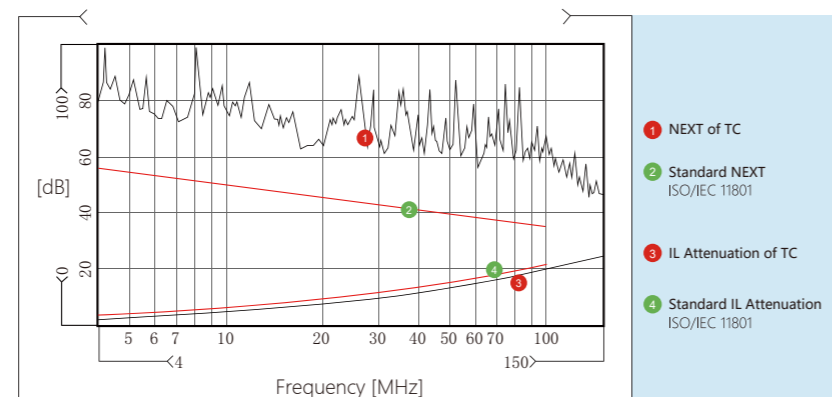
It can be applied in outdoor horizontal cabling, the portion of a telecommunications cabling system. TC's UTP-31 series, outdoor Cat5e unshielded cabling system has test frequency up to 150MHz, higher than other Cat5e cables with industry standard of 100MHz. In the meantime, it supports the latest 2.5G Base-T applications and Power Over Ethernet (POE/POE+).

Product Features

TC's Cat5e, 24 AWG, 4-pair, unshielded outdoor cable is optimized to greatly enhance technical indicators, including Attenuation and NEXT, which exceed the parameters specified in GB/T 18015.5 (IEC 61156-5) standards and ensure high-speed and stable cable transmission. At the same time, it acts on the requirements for renovation projects and structured cabling in new buildings.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.5E		TC				
Frequency (MHz)	4	10	31.25	62.5	75	100	150
IL Attenuation (dB/100M)	3.8	6.1	11.0	15.8	17.9	20.0	23.6
Near End Crosstalk Attenuation (NEXT, dB)	80.0	77.0	61.1	58.2	62.0	66.3	47.7
NEXT Power and PS NEXT (dB)	68.8	60.3	52.9	50.5	46.9	41.9	40.1
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	82.2	72.7	76.3	75.7	69.6	71.3	68.7
ACR-F Power and PS ACR-F (dB)	68.7	64.2	69.5	69.2	66.5	61.0	56.3
Return Loss (RL, dB)	46.0	66.6	37.5	41.5	36.9	32.2	28.9

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.50 (AWG24)
Outer Diameter of Cable (nominal value)	5.2mm
Weight (305m, with package, nominal value)	8.5kg

Electrical Properties

DC resistance (20°C)	95Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 55dB(30-100MHz)
Delay Skew	45ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	24mm
Minimum Bend Radius (static)	48mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-40°C ~+60°C

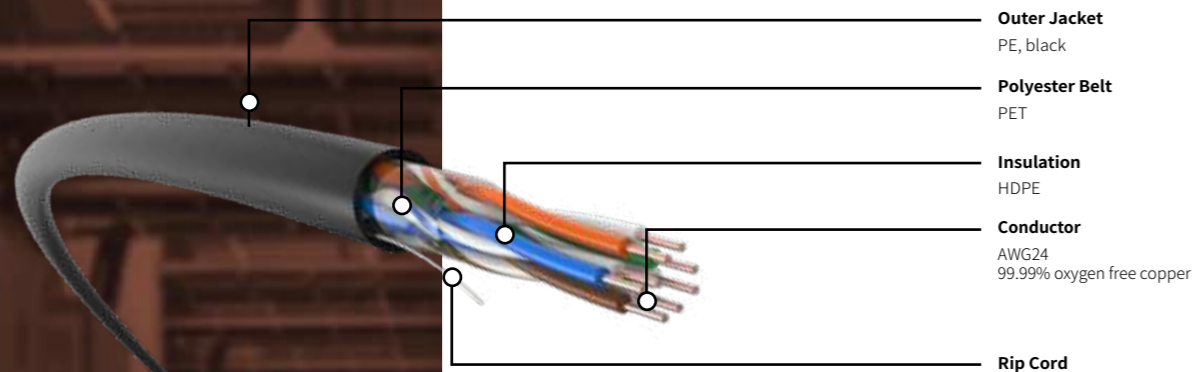
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-31-5E-4P	Cat5e, 4-Pair, Outdoor, Unshielded Twisted Pair Cable, PE	PE	Black	305 m/reel

1Gbps, Outdoor Unshielded Twisted Pair Cable for Security

UTP-35-5E-4P-AF

U/UTP, 10M/100M/1G bps, AWG24, outdoor



Product Information

Product Application

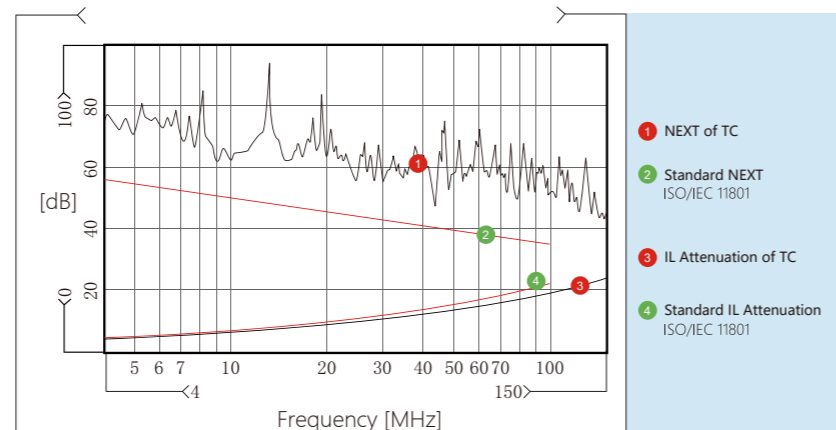
It can be applied in outdoor horizontal cabling, the portion of the work area (cameras, etc.) telecommunications outlet in the building digital security system. As a crucial part of digital security system, horizontal cabling calls for higher reliability and compatibility. TC's UTP-35 series, outdoor security unshielded cabling system has test frequency up to 100MHz. In the meantime, it supports 100 Base-T/1G Base-T applications and long range Power Over Ethernet (POE/POE+).

Product Features

TC's 24 AWG, 4-pair, outdoor unshielded security cable has a smaller diameter, optimized to greatly enhance technical indicators, including Attenuation and NEXT. It meets the requirements of Q TC J1.1-2018 standards by Shanghai Tiancheng Communication Technology Corp. and "Security Cable Standards" (temporarily named, still in the making) by The Ministry of Public Security. The cable ensures high-speed and stable cable transmission, mainly used for video surveillance, access control, building intercom in building security system.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Notes: In accordance with GB/T18233 (ISO/IEC 11801), after operating temperature reaches 20°C, the maximum length of permanent link cable decreases by 0.2% for every 1°C increase, providing appropriate performance and redundancy for the deviation caused by insertion loss.

Transmission Performance	Cat.5E		TC				
Frequency (MHz)	4	10	20	31.25	62.5	100	150
IL Attenuation (dB/100M)	3.8	6.1	8.7	10.9	15.5	19.9	22.4
Near End Crosstalk Attenuation (NEXT, dB)	76.5	62.8	64.2	58.5	58.6	51.2	44.8
NEXT Power and PS NEXT (dB)	69.0	60.3	62.5	54.1	49.1	46.9	44.3
Equal Level Far-end Crosstalk Attenuation (ACR-F, dB)	75.0	84.5	64.9	63.1	68.4	79.1	69.8
ACR-F Power and PS ACR-F (dB)	71.2	67.9	63.0	58.4	58.9	66.5	60.2
Return Loss (RL, dB)	32.0	36.1	36.6	34.5	41.1	33.4	39.0

Notes: The values reflected in the table above are typically measured, in accordance with IEC 61156-9.

Physical Specifications

Conductor Size (nominal value)	4×2×0.48 (AWG24)
Outer Diameter of Cable (nominal value)	5.0mm
Weight (305m, with package, nominal value)	9.0kg

Electrical Properties

DC resistance (20°C)	100Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	≥ 50dB-10×lgf (4-100MHz)
Delay Skew	None required
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	20mm
Minimum Bend Radius (static)	40mm
Maximum Installation Tension	100N
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-40°C ~+60°C

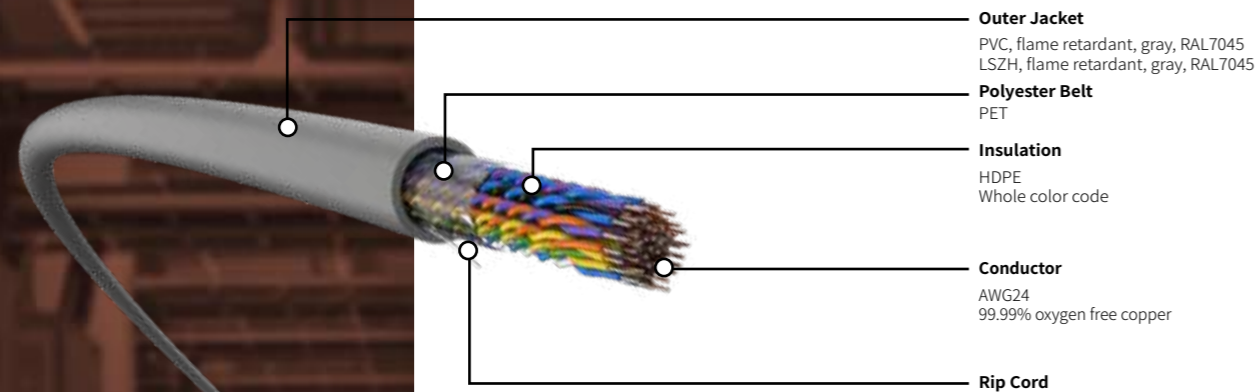
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-35-5E-4P-AF	1Gbps, Outdoor, Unshielded Twisted Pair Cable, for security use, PE	PE	Black	305 m/reel

Cat3, Unshielded Multi-Pair Cable

UTP-11-3-**P

U/UTP, Cat.3, AWG24, indoor



Product Information

Product Application

It provides transmission for backbone voice and data signals in the telecommunications cabling system, mainly used in the backbone voice system. Multi-pair cable, crucial to building backbones, when connected to 110 patch panels, can achieve 16MHz of voice and data transmission and distribution.

Product Features

TC's Cat3 unshielded multi-pair cable increases the lay density, invests a high quality HDPE material in the insulation layer jacket, and has working frequency of 16MHz, mainly used for voice transmission, 10 Base-T network applications.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Physical Specifications

Conductor Size (nominal value)	0.5mm(AWG24)
Cable Configuration	Providing standard 16-pair, 25-pair, 50-pair, 100-pair

Electrical Properties

DC resistance (20°C)	95Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	None required
Delay Skew	45ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	4D (D= Outer Diameter)
Minimum Bend Radius (static)	8D (D= Outer Diameter)
Maximum Installation Tension	25N*P (P= Pair Quantity)
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-20°C ~+75°C

Flammability (PVC)

PVC Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
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Flammability (LSZH)

Flame Resistance (of single wire)	GB/T 18380.12 (IEC 60332-1-2)
Smoke Density	GB/T 17651 (IEC 61034-1/-2)
Hazardous Halogen Gas	GB/T 17650.1/.2 (IEC 60754-1/-2)

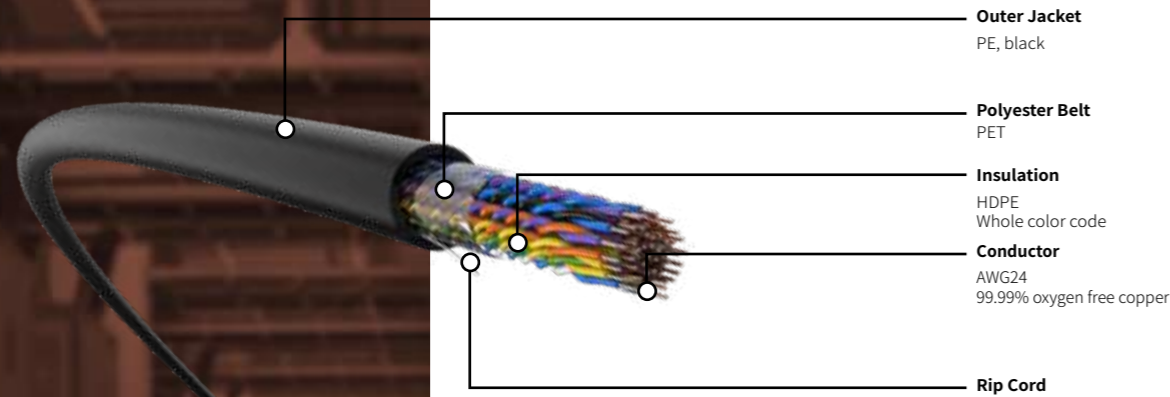
Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-11-3-16P	Cat3, 16-Pair, Unshielded, Indoor, Multi-pair Cable, PVC	PVC	Gray	305 m/reel
UTP-11-3-25P	Cat3, 25-Pair, Unshielded, Indoor, Multi-pair Cable, PVC	PVC	Gray	305 m/reel
UTP-11-3-50P	Cat3, 50-Pair, Unshielded, Indoor, Multi-pair Cable, PVC	PVC	Gray	305 m/reel
UTP-11-3-100P	Cat3, 100-Pair, Unshielded, Indoor, Multi-pair Cable, PVC	PVC	Gray	305 m/reel
UTP-21-3-16P	Cat3, 16-Pair, Flame retardant, Unshielded, Indoor, Multi-pair Cable, LSZH	LSZH	Gray	305 m/reel
UTP-21-3-25P	Cat3, 25-Pair, Flame retardant, Unshielded, Indoor, Multi-pair Cable, LSZH	LSZH	Gray	305 m/reel
UTP-21-3-50P	Cat3, 50-Pair, Flame retardant, Unshielded, Indoor, Multi-pair Cable, LSZH	LSZH	Gray	305 m/reel
UTP-21-3-100P	Cat3, 100-Pair, Flame retardant, Unshielded, Indoor, Multi-pair Cable, LSZH	LSZH	Gray	305 m/reel

Cat3, Unshielded Multi-Pair Cable

UTP-31-3-**P

U/UTP, Cat.3, AWG24, outdoor



Product Information

Product Application

It provides transmission for backbone voice and data signals in the telecommunications cabling system, mainly used in the backbone voice system. multi-pair cable, crucial to building backbones, when connected to 110 patch panels, can achieve 16MHz of voice and data transmission and distribution.

Product Features

TC's Cat3 unshielded multi-pair cable increases the lay density, invests a high quality HDPE material in the insulation layer jacket, and has working frequency of 16MHz, mainly used for voice transmission, 10 Base-T network applications.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Physical Specifications

Conductor Size (nominal value)	Cat 5: 0.5mm(AWG24) ; Cat 3: 0.5mm(AWG24)
Cable Configuration	Providing standard 16-pair, 25-pair, 50-pair, 100-pair for Cat3

Electrical Properties

DC resistance (20°C)	95Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	None required
Delay Skew	45ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	4D (D= Outer Diameter)
Minimum Bend Radius (static)	8D (D= Outer Diameter)
Maximum Installation Tension	25N*P (P= Pair Quantity)
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-40°C ~+60°C

Order Information

Model	Description	Jacket Material	Jacket Color	Package
UTP-31-5-16P	Cat5, 16-Pair, Unshielded, Outdoor Multi-pair Cable, PE	PE	Black	305 m/reel
UTP-31-5-25P	Cat5, 25-Pair, Unshielded, Outdoor Multi-pair Cable, PE	PE	Black	305 m/reel
UTP-31-3-16P	Cat3, 16-Pair, Unshielded, Outdoor Multi-pair Cable, PE	PE	Black	305 m/reel
UTP-31-3-25P	Cat3, 25-Pair, Unshielded, Outdoor Multi-pair Cable, PE	PE	Black	305 m/reel
UTP-31-3-50P	Cat3, 50-Pair, Unshielded, Outdoor Multi-pair Cable, PE	PE	Black	305 m/reel
UTP-31-3-100P	Cat3, 100-Pair, Unshielded, Outdoor Multi-pair Cable, PE	PE	Black	305 m/reel

Outdoor Communication Telephone Cables HYA/HYAT/HYAT53



Notes: From left are HYA telephone cable, HYAT oil filled telephone cable, HYA53 dual armored telephone cable, HYAT53 dual armored, oil filled telephone cable

Product Information

Product Application

They provide audio connections between general patch panels and exchange users in the SPC exchange, or between other communication devices. They support voice application, digital telephone, fax, SPC exchange, connection to data devices, branch and backbone for structured telecommunications cabling. TC's telephone cables allow audio analog signals transferred at less than 150KHz, and digital signals at less than 2048Kbit/s, but in some conditions the digital signal transmission can reach more than 2048Kbit/s. When connected to the building backbone cabling and 110 patch panels, they can achieve voice transmission and distribution.

Product Features

TC's outdoor communication telephone cables conform to National YD/T 322, offering aluminum armored cable (HYA), oil filled, aluminum armored cable (HYAT), oil filled, dual armored telephone cable (HYAT53), and other customized telephone cables. The company also provided tailored services for many different types of telephone cables with flame retardant grade (single wire and bunched wires) rated in Class A-D. For detailed information, please contact our technicians.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Physical Specifications

Conductor Size (nominal value)	0.4mm~0.8mm
Cable Configuration	5 to 300 pair

Electrical Properties

DC resistance (20°C)	95Ω/km
Earth Capacity	≤ 5.6 nF/100m (@1kHz)
100MHz Characteristic Impedance	100Ω±15Ω
Transverse Conversion Loss (TCL)	None required
Delay Skew	45ns/100m
NVP	69%
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Mechanical Properties

Minimum Bend Radius (dynamic)	4D (D= Outer Diameter)
Minimum Bend Radius (static)	8D (D= Outer Diameter)
Maximum Installation Tension	25N*P (P= Pair Quantity)
Anti-Extrusion Capacity	1000N/10cm
Anti-Shock Capacity	≥ 10 times
Installation Temperature Range	-0°C ~+40°C
Working Temperature Range	-40°C ~+60°C

Order Information

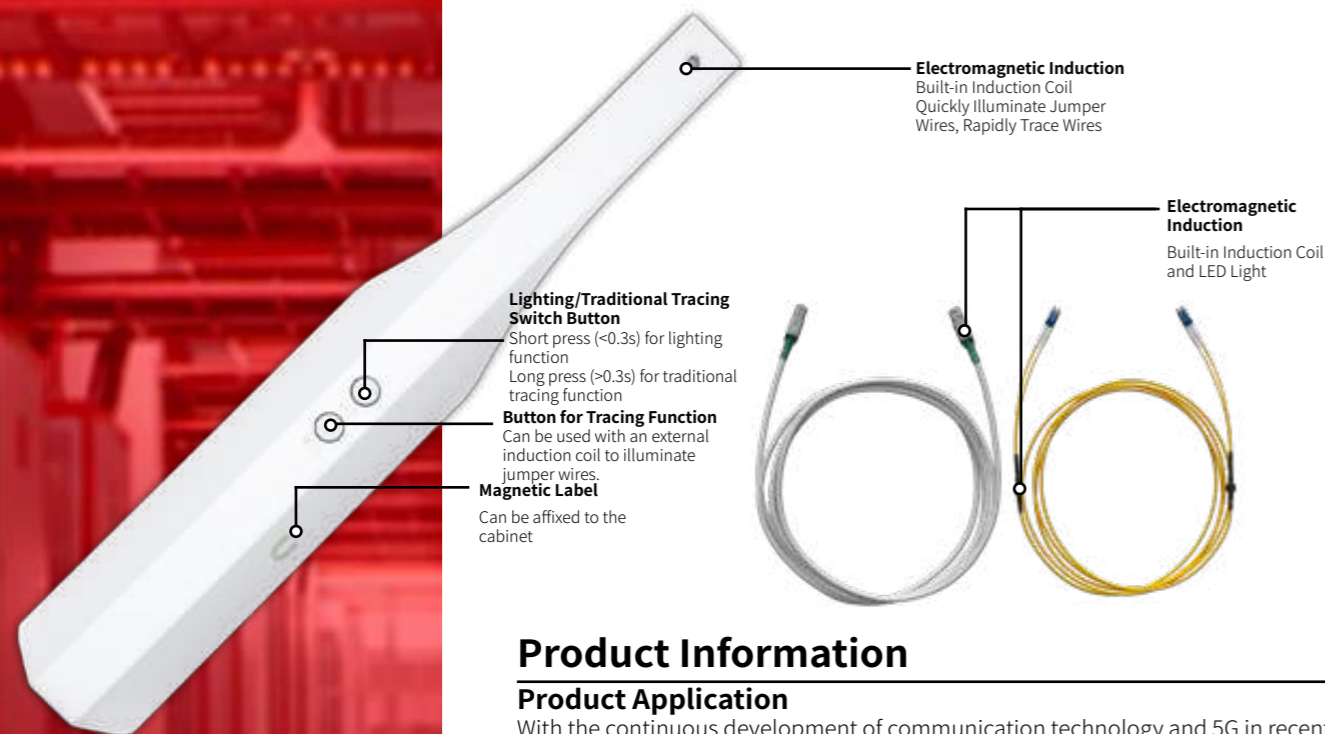
Model	Description	Jacket Material	Jacket Color	Package
HYA (5~300)*2*(0.4~0.8)	5 to 300 Pair, Outdoor Communication Telephone Cable (with 0.4mm to 0.8mm conductors)	PE	Black	customized
HYAT (5~300)*2*(0.4~0.8)	5 to 300 Pair, Oil Filled, Outdoor Communication Telephone Cable (with 0.4mm to 0.8mm conductors)	PE	Black	customized
HYAT53(5~300)*2*(0.4~0.8)	5 to 300 Pair, Oil Filled, Steel-Clad, Outdoor Communication Telephone Cable (with 0.4mm to 0.8mm conductors)	PE	Black	customized

Notes: Cable length can be customized. Additionally, TC provides tailored services for telephone cables with fire rating (for single wire or bunched wires) at Class A-D. For detailed information, please contact our technicians.



Copper Connector

High-Speed Tracing Series JS*



Product Information

Product Application

With the continuous development of communication technology and 5G in recent years in our country, the demand for high-quality networks has been increasing. Consequently, the maintenance workload of corresponding network base stations and data centers has become increasingly burdensome. Currently, during operation and maintenance processes, the search for jumper cables often requires significant human and material resources. The traditional pulse audio mode used in line finders requires network disconnection, has low sensitivity, and is inefficient. Therefore, Tiancheng's high-speed line locating solution has emerged. The product utilizes electromagnetic induction and photoelectric line tracing, providing a simple and efficient method that can improve cable locating efficiency by over 80%. It is suitable for traditional data centers, structured cabling projects, and other applications.

Product Features

Innovative Wire Tracing Method

Using electromagnetic induction principles, wireless coils and LEDs are installed at both ends of the jumper wire. The wire tracer charges the induction coils to illuminate the LEDs at both ends of the jumper wire. The transmitting coil generates a magnetic field with a certain frequency alternating current. The receiving end generates a certain amount of current in the coil through electromagnetic induction, transferring energy from the transmitting end to the receiving end and lighting up the LED at the receiving end.

Hands-Free Wire Tracing Mode

The wire tracer is equipped with a built-in magnet, allowing it to be attached to metal cabinets. Wire tracing is performed using an external coil, which can be securely fixed to the jumper wire using a card slot structure. This hands-free feature enables technicians to move freely to distant locations to trace target jumper wires.

Support for Conventional Copper Wire Tracing

By connecting one end to an audio transmission device (such as Fluke or other testing equipment), the wire tracer can use its audio detection function to detect audio signals on the other end of the cable and locate the corresponding wire.

Illumination Feature

The wire tracer incorporates LED lighting.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568.2-D etc.

Notes: Fluke is a registered trademark of the Danaher Corporation's subsidiary, Fluke Corporation.



High-speed cable locator and dedicated jumper cable



Supported audio cable tracing method



External coil cable tracing with the cable locator



Free your hands, single-person cable tracing

High-speed Copper Jumper Cable Tracing

Number of insertions and withdrawals	≥ 750 times
Insulation strength	DC 1000V, no breakdown for 1 minute
Insulation resistance	≥ 500MΩ (+20°C, DC 100V)

High-speed Fiber Optic Jumper Cable Tracing

Insertion loss	≤ 0.3dB
Interchangeability	≤ 0.2dB
Minimum bending radius	Dynamic: 20 times the diameter of the optical cable Static: 10 times the diameter of the optical cable

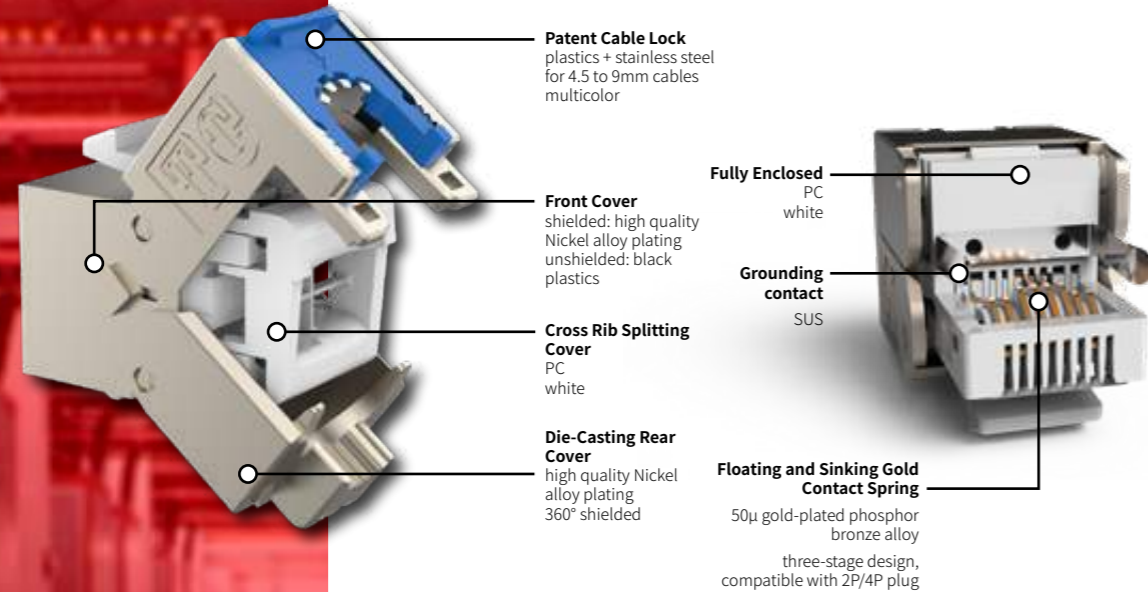
Order Information

Model	Description	Color	Package
JS-001	High-speed Cable Locator	White	1 per box
FJ-LCD-LCD-B1-3M-JS	High-speed Fiber Optic Jumper, LC Single-mode, 2-core, 3 meters	Yellow	1 per bag
PC-13-6-10-JS	High-speed Category 6 Unshielded Jumper, 1 meter	Gray	1 per bag

Magic series, RJ45 Jacks

KJ-21-*, KJ-12-*

Keystone Tool-less, Cat6a/Cat6 (IEC), shielded/unshielded



Product Information

Product Application

Magic series, RJ45 Jack provides signal transmission in the telecommunications cabling, such as data, voice, audio and images. When integrated with patch panels, faceplates and other security components, it helps form the information inlet/outlet for management rooms, equipment rooms and work areas. TC's Magic series Cat6/Cat6a shielded/unshielded jack meets and even exceeds the International Standard IEC 60603-7 for the connectors. With bandwidth up to 350MHz (for Cat6 jack), and 600MHz (for Cat6a jack), terminated with shielded Cat6/Cat6a/Cat7/Cat7a and unshielded Cat6/Cat6a cables, it supports Class D/E/E_A standard (for Cat6a jack) applications as well as Ethernet applications, such as 10G Base-T, 5G Base-T, 2.5G Base-T, 1G Base-T, 1G Base-TX, and 100 Base-T. It also supports enhanced Power Over Ethernet (POE+) under IEEE 802.3at.

Product Features

Features for shielded jack include high quality nickel-based die-cast alloys with a touch of metallic and a sense of beauty. Unshielded jack shares the same die-casting rear cover with the shielded one for improvement of ANEXT capability that meets all requirements in 10G Base-T, 5G Base-T, 2.5G Base-T applications.

The patent industry-leading structure has a small diameter of 31mm, designed for high density wiring which means easy deployment even in narrow groundings.

With a dog clutch attached firmly to the cable shield, the patent multicolor cable lock replaces the cable tie, compatible with 4.5 to 9mm copper cables of many different types.

Three-stage floating and sinking design helps the gold springs fully bounce back when accommodating different kinds of RJ series plugs, which ensures a more stable transmission performance.

The unique cross rib splitting structure guarantees minimum crosstalk among wire pairs and maximum network performance.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



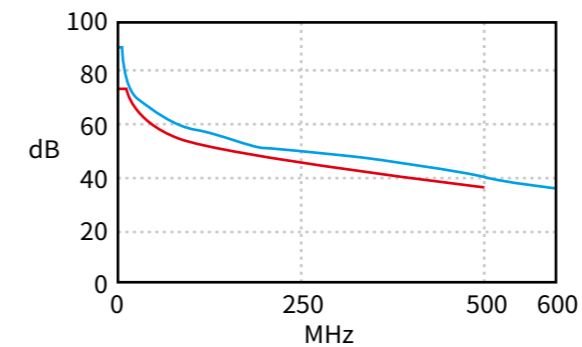
Shielded Jack



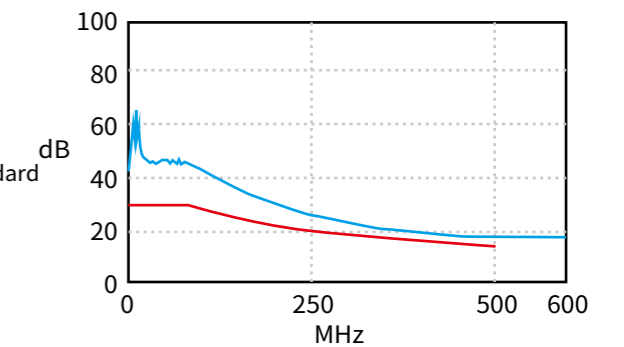
Unshielded Jack

Mechanical Properties

Size	31mm (Length) × 17mm (Width) × 18.9mm (Height, Key excluded)
Weight (20pcs, with package)	Shielded: 480g, Unshielded: 350g
Applicability of Solid Single Wire	0.5mm (AWG24) ~0.65mm (AWG22)
Repeated Termination Ability	≥ 20 times, terminated with the same or larger AWG22, 23, 24 solid single wire
Applicability of Stranded Wire	AWG26/7, repeated termination for one time
Suitable Insulation Diameter	0.7mm to 1.3mm (foamed 1.5mm)
Life cycle	≥ 750 times
Storage Temperature Range	-40°C to +70°C
Installation Temperature Range	-10°C to +60°C
Operation Temperature Range	-20°C to +60°C



NEXT of Cat6a Jack



RL of Cat6a Jack

Electrical Properties

Dielectric Strength	DC 1000V (AC 750V), no breakdown or flashover for 1 minute
High Frequency Performance	IEC60603-7-4 (Cat.6 unshielded, 250MHz), IEC 60603-7-5 (Cat.6 shielded, 250MHz), IEC 60603-7-41 (Cat.6 _A unshielded, 500MHz), IEC 60603-7-51 (Cat.6 _A shielded, 500MHz)
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

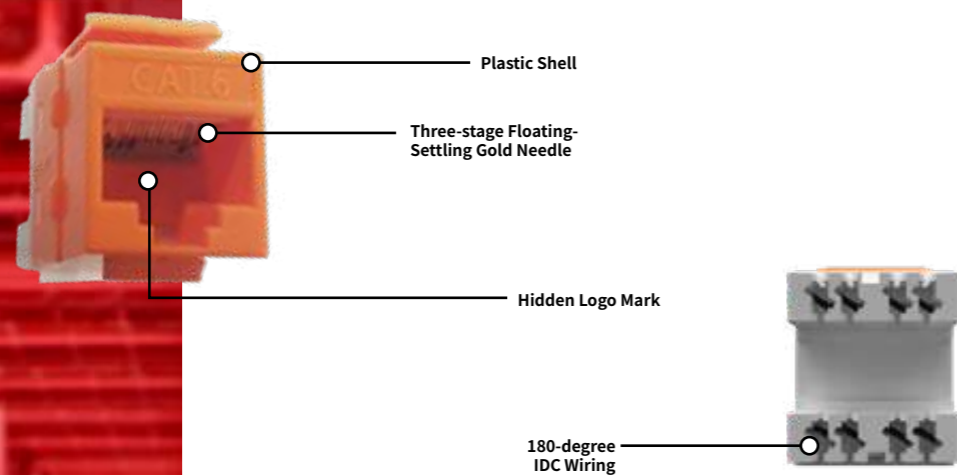
Order Information

Model	Description	Material	Lock Color	Package
KJ-21-6A-B	Magic series Cat6a, Tool-less Shielded Jack	Nickel Alloy Plated	Blue	20 per box
KJ-21-6-R	Magic series Cat6, Tool-less Shielded Jack	Nickel Alloy Plated	Red	20 per box
KJ-21-5E-O	Magic series Cat5e, Tool-less Shielded Jack	Nickel Alloy Plated	Orange	20 per box
KJ-12-6A-B	Magic series Cat6a, Tool-less Unshielded Jack	Plastics + Nickel Alloy Plated	Blue	20 per box
KJ-12-6-R	Magic series Cat6, Tool-less Unshielded Jack	Plastics + Nickel Alloy Plated	Red	20 per box
KJ-12-5E-O	Magic series Cat5e, Tool-less Unshielded Jack	Plastics + Nickel Alloy Plated	Orange	20 per box

KJ-12 RJ45 Unshielded Jacks

KJ-12-*

Keystone, Cat.6A/Cat.6/Cat.5E, unshielded



Product Information

Product Application

KJ-12 RJ45 Unshielded Jack provides signal transmission in the telecommunications cabling, such as data, voice, audio and images. When integrated with patch panels, faceplates and other security components, it helps form the information inlet/outlet for management rooms, equipment rooms and work areas. TC's Cat6 unshielded jack meets and even exceeds the International Standard IEC 60603-7 for the connectors. With bandwidth up to 250MHz (for Cat6 jack), and 600MHz (for Cat6a jack), terminated with unshielded cables, it supports Class D/E standard applications as well as the Ethernet applications, such as 5G Base-T, 2.5G Base-T, 1G Base-T. It also supports enhanced Power Over Ethernet (POE+) under IEEE 802.3at.

Product Features

TC's high performance unshielded jack supports 180 degree IDC cable assembly to ensure the shortest lay length; it selects UL94V-0 high-strength PC materials for long-term stability of transmission; it houses all TC's patch panels, faceplates, table plugs, multimedia boxes that can install the jacks; and its unique Cat6 PCB results in less Near End Crosstalk (NEXT) and Return Loss (RL).

Its three-stage floating and sinking design helps the gold springs fully bounce back when accommodating different kinds of RJ series plugs, which ensures a more stable transmission performance.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Cat5e module



Cat6 module



Cat6e module

Mechanical Properties

Size	31mm (Length, no rear cover) x 15mm (Width) x 18mm (Height, no Key)
Weight (30pcs, with package)	400g
Applicability of Solid Single Wire	0.55mm (AWG23) ~0.65mm (AWG22)
Repeated Termination Ability	≥ 20 times, terminated with the same or bigger AWG22, 23 solid single wire
Applicability of Stranded Wire	AWG24/5, repeated termination for one time
Suitable Insulation Diameter	1.0mm~1.3mm (foamed 1.5mm)
Life cycle	≥ 750 times
Storage Temperature Range	-40°C ~+70°C
Installation Temperature Range	-10°C ~+60°C
Operation Temperature Range	-20°C ~+60°C

Electrical Properties

Dielectric Strength	DC 1000V (AC 750V), no breakdown or flashover for 1 minute
High Frequency Performance	IEC 60603-7-41 (unshielded Cat6a, 500MHz) IEC 60603-7-4 (unshielded Cat6, 250MHz) IEC 60603-7-2 (unshielded Cat5e, 100MHz)
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

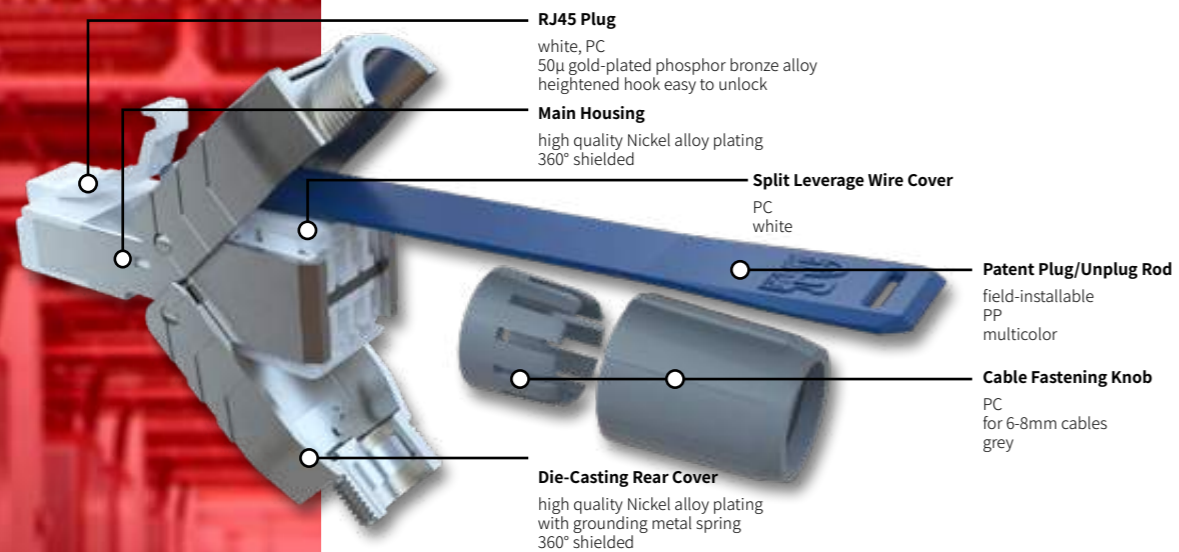
Order Information

Model	Description	Material	Lock Color	Package
KJ-12-5E	Cat5e, Unshielded Jack	PC	White	30 per box
KJ-12-6	Cat6, Unshielded Jack	PC	Orange	30 per box
KJ-12-6	Cat6, Unshielded Jack	PC	水绿色	30 per box

Magic series, MPTL Modular RJ45 Plugs

KP-MPTL-*

Field-installable modular plug, RJ45, Tool-less, Cat6a/Cat6 (IEC), shielded



Product Information

Product Application

Magic series, MPTL Modular RJ45 Plug provides signal transmission in the telecommunications cabling, such as data, voice, audio and images, especially useful for 5G base stations, Wi-Fi access points, as well as direct connections to Internet of Things (IoT) and industrial Ethernet devices. It features a modular design that protects field termination in the work area horizontal cabling and forms Modular Plug Terminated Link (MPTL) together with the patch panels and patch cords in management rooms. The testing of MPTL links under ANSI-TIA568.2-D and IEC TR 11801-99xx (provisionally named, still in the making) requires far higher requirements than the traditional "Channel" testing. TC's Magic series Cat6/Cat6a shielded plug fully meets and even exceeds the above standard and draft. With bandwidth up to 350MHz (for Cat6 plug), and 600MHz (for Cat6a plug), terminated with shielded Cat6/Cat6a/Cat7/Cat7a and unshielded Cat6/Cat6a cables, it supports Class D/E/E_A standard (for Cat6a plug) applications as well as the Ethernet applications, such as 10G Base-T, 5G Base-T, 2.5G Base-T, 1G Base-T, 1G Base-TX, and 100 Base-T. It also supports enhanced Power Over Ethernet (POE+) under IEEE 802.3at.

Product Features

Magic series, high-performance shielded modular RJ45 plug features high quality nickel-based die cast alloys with a touch of metallic and a sense of beauty.

The patent industry-leading structure ensures that plug/unplug pull rod is easily deployed in the field and accommodates to various high density wiring conditions. The pull rod has multiple colors required to easily distinguish information ports of different types.

With attached metal spring clinging to the cable shield, the patent cable lock replaces the cable tie, compatible with 4.5-9mm copper cables of different specifications.

The unique split leverage wire cover effectively weakens pressure during installation, improves success of cable termination and guarantees maximized network performance.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568.2D

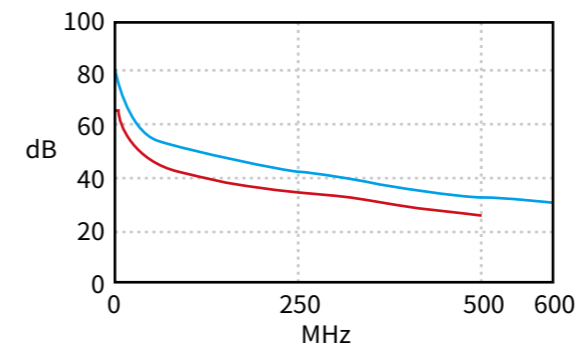


Easy-to-deploy plug/unplug pull rod, patented, optional

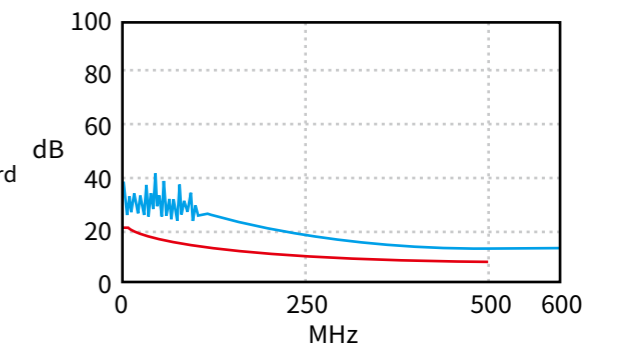


Mechanical Properties

Size	55mm (Length, no pull rod) x 144mm (Width) x 20mm (Height, no Key)
Weight (20pcs, with package)	480g
Applicability of Solid Single Wire	0.5mm (AWG24) ~0.65mm (AWG22)
Repeated Termination Ability	≥ 20 times, terminated with the same or bigger AWG22, 23, 24 solid single wire
Applicability of Stranded Wire	AWG26/7, repeated termination for one time
Suitable Insulation Diameter	0.7mm~1.3mm (foamed 1.5mm)
Life cycle	≥ 750 times
Storage Temperature Range	-40°C ~+70°C
Installation Temperature Range	-10°C ~+60°C
Operation Temperature Range	-20°C ~+60°C



Near End Crosstalk (NEXT) of Cat6a MPTL



Return Loss (RL) of Cat6a MPTL

Electrical Properties

Dielectric Strength	DC 1000V (AC 750V), no breakdown or flashover for 1 minute
High Frequency Performance	MPTL link testing standards under ANSI-TIA568.2-D and IEC TR 11801-99xx (provisionally named, still in the making)
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

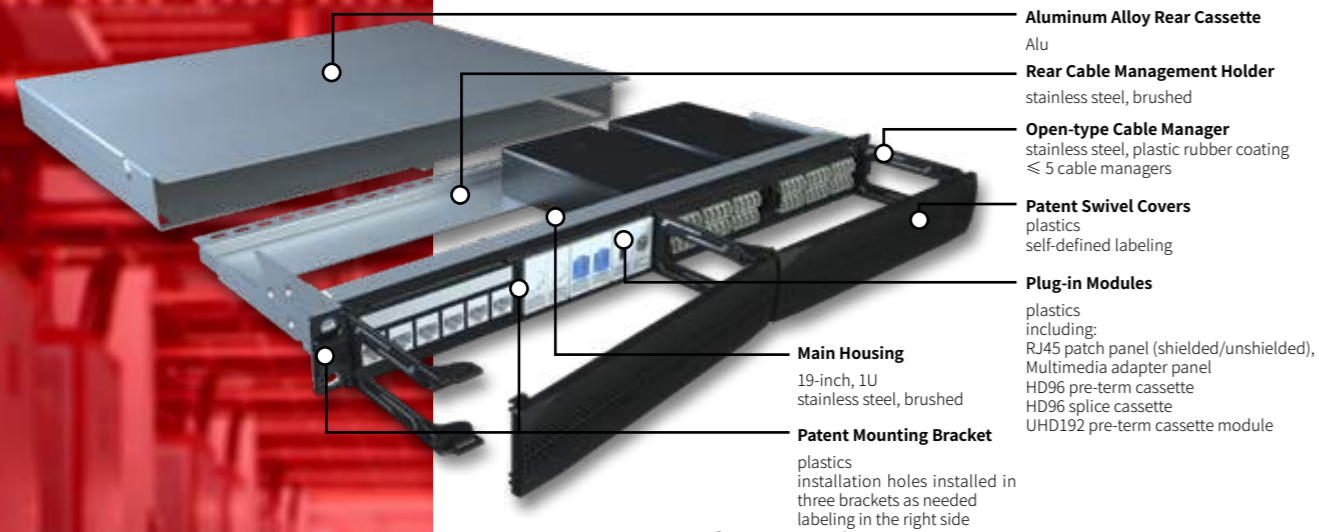
Order Information

Model	Description	Material	Pull Rod Color	Package
KP-MPTL-6A	Cat6a, MPTL Modular Plug, Tool-less, Plug/Unplug	Nickel alloy plated	Blue	20 per box

Magic series Modular Patch Panel

PP-*, FB-*

19-inch, modular, front detachable, stainless steel, aluminum alloy rear cassette or 0U cable management (optional)



Aluminum Alloy Rear Cassette

Alu

Rear Cable Management Holder

stainless steel, brushed

Open-type Cable Manager

stainless steel, plastic rubber coating

≤ 5 cable managers

Patent Swivel Covers

plastics

self-defined labeling

Plug-in Modules

plastics

including:

RJ45 patch panel (shielded/unshielded),

Multimedia adapter panel

HD96 pre-term cassette

HD96 splice cassette

UHD192 pre-term cassette module

Main Housing

19-inch, 1U

stainless steel, brushed

Patent Mounting Bracket

plastics

installation holes installed in

three brackets as needed

labeling in the right side

Product Information

Product Application

Magic series Modular Patch Panel provides a centered cable distribution to management rooms, equipment rooms and data center information points in smart building structured cabling system. The panel, in combination with information modules, fiber optic adapters, copper and fiber optic patch cords as well as other terminating plug-ins, provides inlets and outlets for horizontal and vertical cabling (data, voice, etc.). It supports 19-inch installation, and its modular design makes it easier to for hybrid installation among multiple modules. Its 0U cable management realizes optimal space utilization, providing a strong guarantee for structured cabling installation, maintenance and management.

Product Features

Features include 19-inch mount, 1U height, SUS main housing, high corrosion resistance, and modular design. The panel, allied with different kinds of components can accept up to 24-port RJ45 copper cables and 192-core fiber optic cables within 1U rack height. QR codes in the labels can be scanned to recognize different patch panels.

All modular components can be detached from the front so that technicians can remove components, replace jacks or fiber optic cassettes in front of the cabinets, greatly simplifying routine maintenance.

The front detachable multimedia adapter panel supports the installation of a variety of module frames, compatible with RJ45, fiber optic cables, cable TV, HDMI and other multi-function integrated devices, for both copper and optical fiber. RJ45 modules house all unshielded jacks from TC, and have a self-closed dust cover that effectively protects unused ports. Each modular port can set high-definition marks for real-time use. The fiber optic module framework houses SC, LCD, MPO and other fiber optic adapters, with a shuttered dust door to help avoid the impact of external dust on the fiber interface.

The front detachable RJ45 patch panel with grounding components in rear supports all shielded and unshielded jacks from TC, and the front labels can be also used for intelligent patch panels.

HD96 fiber optic cassettes support both splicing and pre-terminated type, compatible with SC/LC/MPO adapters. With LC adapter in use, each cassette accommodates up to 24 fibers and 96 fibers within 1U.

HD192 cassette modules occupy two slots (one plug-in module should be removed). Each module accommodates not more than eight 12-core pre-term cassettes. The patent layered-drawer design coupled with quick plug/unplug design guarantees easier routine maintenance and minimum impact caused by the maintenance.

The optional alu alloy enclosure assembled backwards makes extra room for splicing and coiling. Its unique design supports different inlets of wiring.

The patch panel supports open- and closed type of 0U cable management. Its matching swivel covers contain self-defined labels to mark different ports.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



RJ45 Patch Panel (shielded/ unshielded)



Front Detachable Multimedia Adapter Panel, compatible with cable TV, HDMI, SC/LCD/MPO, RJ45 and other multi-function modules



HD96 Pre-term Cassette



HD96 Splice Cassette



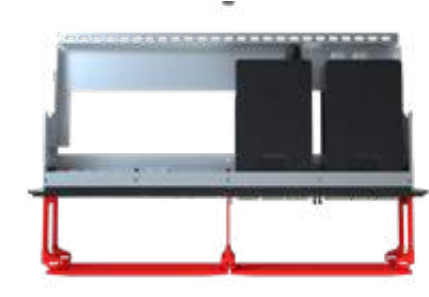
Blank Plate for Modular Patch Panel

Product Specifications

Dimensions	19-inch, 1U, Rear cable management holder in 200mm depth, aluminum alloy rear cassette in 370mm depth
Material	Main frame and rear cable management holder in stainless steel and plastics, rear cassette in alu alloy
Flammability	GB/T 5169.11
Compatibility	RJ45 modules compatible with all standard keystone jacks, fiber optic modules compatible with SC, LCD, MPO (SC type)
Weight (with package)	Standard (empty main frame + rear cable management holder): 0.8 kg Fiber optic version (empty main frame + alu alloy rear cassette): 19 kg



Front detachable, easy to remove and replace



Optional 0U cable management, with swivel covers

Order Information

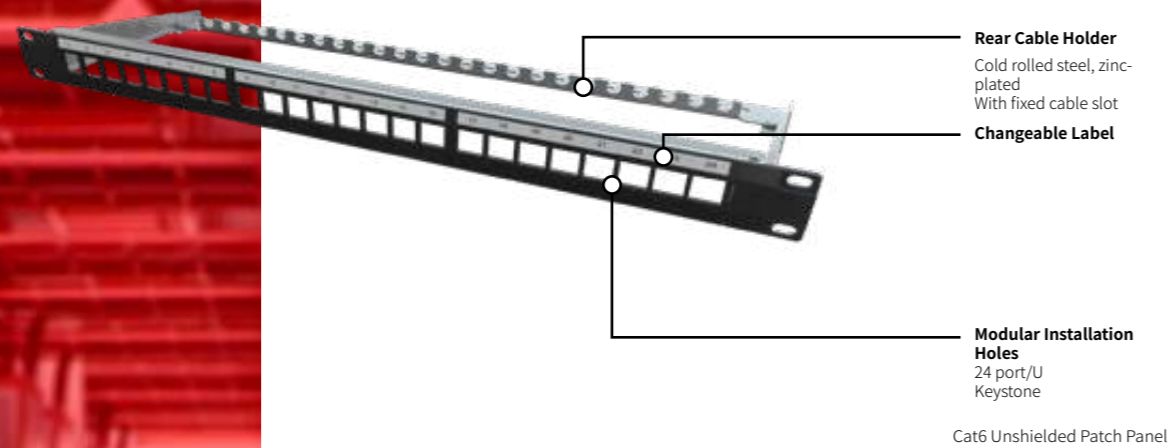
Model	Description	Color	Package
FB-12-1U-T2	Magic series Modular Patch Panel (empty), open frame, without modules or splice cassettes, front detachable, SUS	Black RAL9005	1 per box
FB-11-1U-T2	Magic series Fiber Patch Panel (empty), closed type, without modules or splice cassettes, front detachable, SUS	Black RAL9005	1 per box
FB-11-1U-T1	Magic series Fiber Patch Panel (empty), closed type, without modules, with splice cassettes, front detachable, SUS	Black RAL9005	1 per box
PP-12-6-24-T	Magic series 24-Port Cat6 Unshielded Patch Panel, (with 24* magic series Cat6 tool-less unshielded modules), front detachable (integrally), SUS	Black RAL9005	1 per box
PP-12-6A-24-T	Magic series 24-Port Cat6a Unshielded Patch Panel, (with 24* magic series Cat6a tool-less unshielded modules), front detachable (integrally), SUS	Black RAL9005	1 per box
PP-22-6-24-T	Magic series 24-Port Cat6 Shielded Patch Panel, (with 24* magic series Cat6 tool-less shielded modules), front detachable (integrally), SUS	Black RAL9005	1 per box
PP-22-6A-24-T	Magic series 24-Port Cat6a Shielded Patch Panel, (with 24* magic series Cat6a tool-less shielded modules), ifront detachable (integrally), SUS	Black RAL9005	1 per box
PP-12-MB-6-K-KS	Unshielded 6-port separated mounting panel, without modules, with dust door, front detachable - separately or integrally	Black RAL9005	1 per box
FB-11-MB-K-KS	Magic series 6-Port Fiber Optic Panel, with dust door, without adapters, front detachable (separately)	Black RAL9005	4 per box
PP-12-MB-6-6	Cat6 unshielded 6-port integrated mounting panel (with 6* magic series Cat6 tool-less unshielded modules), without dust door, front detachable (integrally)	Black RAL9005	4 per box
PP-12-MB-6-6A	Cat6a unshielded 6-port integrated mounting panel (with 6* magic series Cat6a tool-less unshielded modules), without dust door, front detachable (integrally)	Black RAL9005	4 per box
PP-22-MB-6-6	Cat6 shielded 6-port integrated mounting panel (with 6* magic series Cat6 tool-less shielded modules), without dust door, front detachable (integrally)	Black RAL9005	4 per box
PP-22-MB-6-6A	Cat6a shielded 6-port integrated mounting panel (with 6* magic series Cat6a tool-less shielded modules), without dust door, front detachable (integrally)	Black RAL9005	4 per box
FB-12-MB-KB	Magic series Blank Plate for Modular Patch Panel	Black RAL9005	4 per box

Notes: Magic series Front Detachable General Patch Panel offers a broad selection of models. For detailed information, please contact local distributors.

Modular Unshielded Copper Patch Panel

PP-12-*

19 inch, 1U, Unshielded, Modular Type



Product Information

Product Application

Modular Unshielded Copper Patch Panel provides a centered cable distribution to management rooms, equipment rooms and data center information points in smart building structured cabling system. Coupled with information modules, copper patch cords and other terminating plug-ins, it provides inlets and outlets for horizontal and vertical cabling (data, voice, etc.). The patch panel supports 19-inch cabinet installation, and its modular design realizes optimal space utilization, providing a strong guarantee for structured cabling installation, maintenance and management.

Product Features

The patch panel features 19-inch mount and 1U height, rear frame in high-grade zinc-plated material that has excellent corrosion resistance. It houses all TC's unshielded jacks and accommodates at most 24 RJ45 copper patch cords in 1U height. Labeling is provided for port identification and each modular port can set high-definition labels for real-time use.

The RJ45 module frame is compatible with all TC Keystone-style unshielded information modules. Each modular port can be labeled with high visibility according to its actual function.

The back-end frame comes with a foldable cable management slot, which makes the appearance more compact and exquisite while retaining its previous functionality. This feature allows for neat and orderly cable management of the copper cables without the need for any additional accessories on the patch panel, reducing the impact of cable weight on the module connections.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Specifications

Dimensions	19-inch, 1U, rear cable management holder in 154mm depth
Material	Front frame and rear cable management holder: plastics + zinc-plated
Flammability	GB/T 5169.11
Compatibility	RJ45 modules compatible with standard keystone jacks
Weight (with package)	1.2kg per piece, 15kg per box (12pcs)

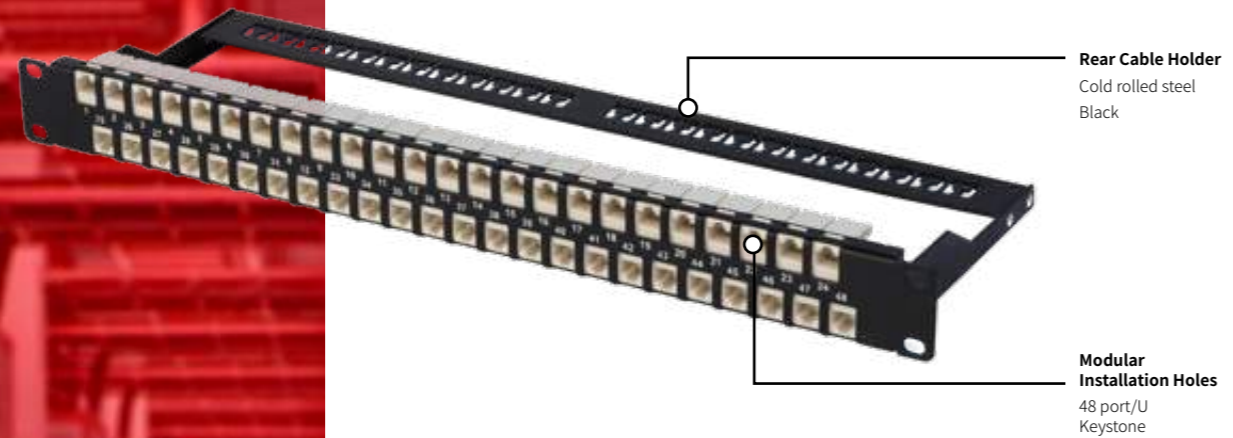
Order Information

Model	Description	Color	Package
PP-12-6A-24	24 Port, Cat6a, Unshielded Patch Panel	Black RAL9005	1 per bpx
PP-12-6-24	24 Port, Cat6, Unshielded Patch Panel	Black RAL9005	1 per bpx
PP-12-5E-24	24 Port, Cat5e, Unshielded Patch Panel	Black RAL9005	1 per bpx

1U, 48-port, Modular Unshielded High Density Copper Patch Panel

PP-12-***-48**

19-inch, 1U, 48-port, unshielded, modular



Rear Cable Holder
Cold rolled steel
Black

Modular Installation Holes
48 port/U
Keystone

Cat5e Unshielded Patch Panel

Product Information

Product Application

Modular Unshielded High Density Copper Patch Panel provides a centered cable distribution to management rooms, equipment rooms and data center information points in smart building structured cabling system. Coupled with information modules, copper patch cords and other terminating plug-ins, it provides inlets and outlets for horizontal and vertical cabling (data, voice, etc.). The patch panel supports 19-inch cabinet installation, and its modular design realizes optimal space utilization, providing a strong guarantee for structured cabling installation, maintenance and management.

Product Features

The patch panel features 19-inch and 1U height, rear frame in high-grade cold rolled steel material that has excellent corrosion resistance. Designed in modular structure, it houses all TC's unshielded jacks and accommodates at most 48 RJ45 copper patch cords in 1U height.

RJ45 modules are compatible with all TC's jacks.

The rear frame has built-in cable management holder to ensure rear cables clean and tidy, reducing the impact of cable weight on field termination.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



48 Port, Cat5e, Unshielded Patch Panel

48 Port, Cat6, Unshielded Patch Panel

48 Port, Cat6a, Unshielded Patch Panel

Specifications

Dimensions	19-inch, 1U, rear cable management holder in 200mm depth
Material	Front frame and rear cable management holder: Plastics + zinc-plated
Flammability	GB/T 5169.11
Compatibility	RJ45 modules compatible with standard keystone jacks
Weight (with package)	1.2 kg per piece, 15 kg per box (12pcs)

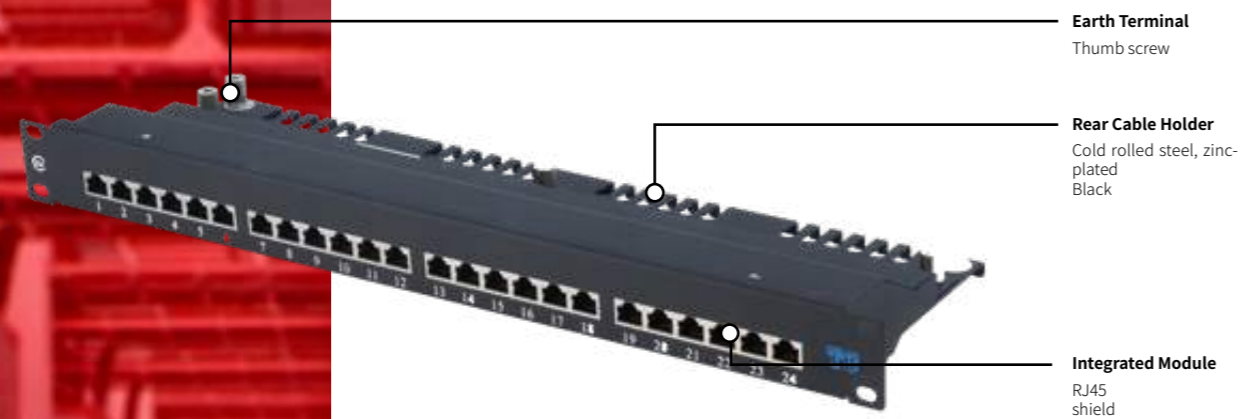
Order Information

Model	Description	Color	Package
PP-12-6A-48	48 Port, Cat6a, Unshielded Patch Panel	Black RAL9005	1 per box
PP-12-6-48	48 Port, Cat6, Unshielded Patch Panel	Black RAL9005	1 per box
PP-12-5E-48	48 Port, Cat5e, Unshielded Patch Panel	Black RAL9005	1 per box

Integrated Shielded Copper Patch Panel

PP-21-*

19-inch, 1U, shielded, integrated



Product Information

Product Application

Integrated Shielded Copper Patch Panel provides a centered cable distribution to management rooms, equipment rooms and data center information points in smart building structured cabling system. Coupled with information modules, copper patch cords and other terminating plug-ins, it provides inlets and outlets for horizontal and vertical cabling (data, voice, etc.). The patch panel supports 19-inch cabinet installation, and its modular design realizes optimal space utilization, providing a strong guarantee for structured cabling installation, maintenance and management.

Product Features

The patch panel features 19-inch and 1U height, rear frame in high-grade zinc-plated steel material that has excellent corrosion resistance. Designed in integrated structure, it accommodates at most 24 RJ45 copper patch cords in 1U height.

The rear frame has built-in cable management to ensure rear cables clean and tidy, reducing the impact of cable weight on field termination.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



24 Port, Integrated, Cat5e, Shielded Patch Panel



24 Port, Integrated, Cat6, Shielded Patch Panel

Specifications

Dimensions	19-inch, 1U, rear cable management holder in 200mm depth
Material	Front frame and rear cable management holder: zinc-plated spraying
Flammability	GB/T 5169.11
Compatibility	RJ45 modules compatible with standard keystone jacks
Weight (with package)	1.2 kg per piece, 17 kg per box (14pcs)

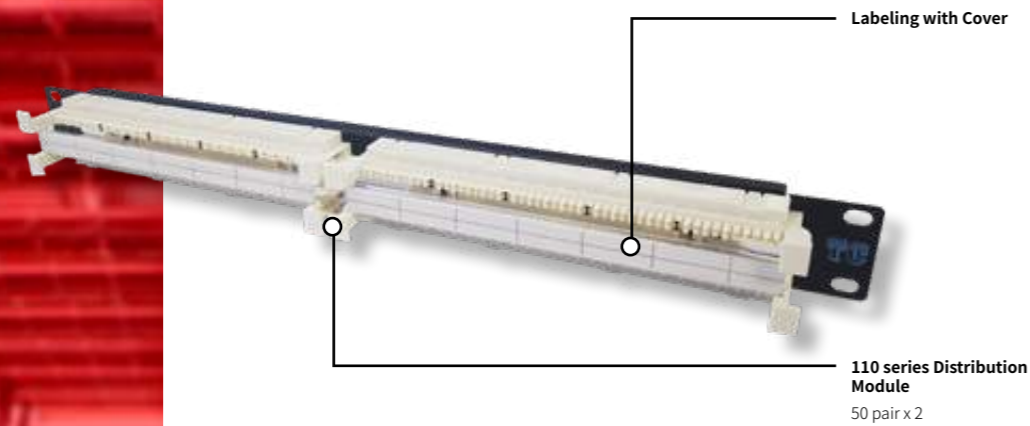
Order Information

Model	Description	Color	Package
PP-21-6-24	24 Port, Integrated, Cat6, Shielded Patch Panel	Black RAL9005	1 per box
PP-21-5E-24	24 Port, Integrated, Cat5e, Shielded Patch Panel	Black RAL9005	1 per box

110 series Patch Panel

110P-*

19 inch, 1U, modular



Product Information

Product Application

110 series Patch Panel provides a centered cable distribution to management rooms, equipment rooms and data center information points in smart building structured cabling system, offers voice cable termination, installation and management in the distribution rooms and equipment rooms, and provides inlets and outlets for horizontal and vertical cabling (voice). The patch panel supports 19-inch cabinet installation, and its modular design realizes optimal space utilization, providing a strong guarantee for structured cabling installation, maintenance and management.

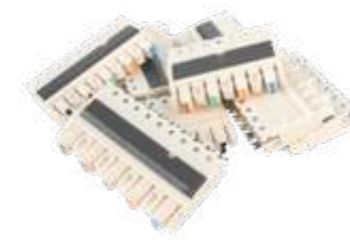
Product Features

The patch panel features 19-inch and 1U height, rear frame in cold rolled steel material and powder coating that has excellent corrosion resistance. Designed in modular structure, it houses all TC's 110 series connectors and accommodates at most 20 of them (each in 5 pairs) in 1U height.

The rear frame has built-in cable slots, simple extra accessories needed for tidy cable management, reducing the impact of cable weight on field termination.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



110 series Connectors, 4/5 Pair



RJ11 to 110 Patch Cords

Specifications

Dimensions	19 inch, 1U
Material	Front frame and rear cable management holder: plastics + zinc-plated
Flammability	GB/T 5169.11
Compatibility	Compatible with all TC's 110 series connectors
Weight (with package)	0.5 kg per piece, 21 kg per box (36pcs)

Order Information

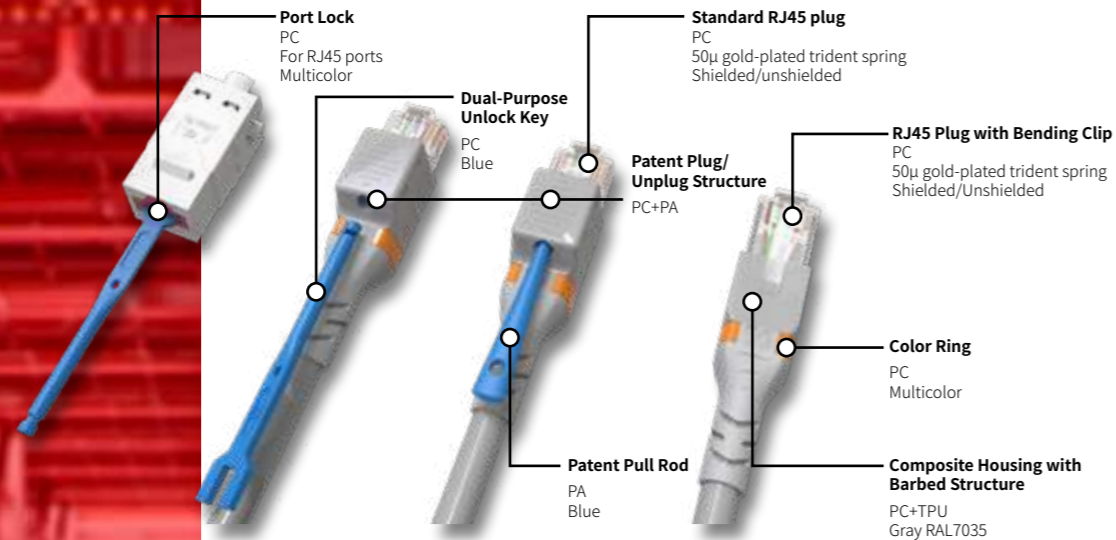
Model	Description	Color	Package
110P-3-50	50-Pair, Rack Mounted 110 series Patch Panel, no connectors, with labels	White, black panel	1 per box
110P-3-100	100-Pair, Rack Mounted 110 series Patch Panel, no connectors, with labels	White, black panel	1 per box
110L-4	4-Pair, 110 series Connectors	White	100 per pack
110L-5	5-Pair, 110 series Connectors	White	100 per pack
PC-110-1	1-Pair, 110 series Patch Cords	Gray	1 per pack
PC-110-2	2-Pair, 110 series Patch Cords	Gray	1 per pack
PC-RJ11/RJ11-1	1-Pair, RJ11 Patch Cords	Gray	1 per pack
PC-RJ11/RJ11-2	2-Pair, RJ11 Patch Cords	Gray	1 per pack

Notes: TC's RJ11, RJ45, 110 patch panels offer a broad selection of types and lengths. For detailed information, please contact local distributors.

Magic series, RJ45 Composite Patch Cords

PC-21-*, PC-13-*

Hard & Soft Composite Housing, RJ45, Cat6a/Cat6 (IEC), Shielded/Unshielded



Product Information

Product Application

Magic series, RJ45 Composite Patch Cord provides signal transmission in the telecommunications cabling, such as data, voice, audio and images. When integrated with copper cables and jacks, it helps form the transmission channel for the structured cabling system and connect the information inlet/outlet and active devices (switches, computers, etc.). TC's Magic series composite patch cord can be categorized as standard one and ultrafine one, including but not limited to high-performance general patch cord, patch cord with pull rod, patch cord with lock, matched port lock.

The Cat6/Cat6a copper patch cord meets and even exceeds IEC 61935-2 standards. With bandwidth up to 350MHz (for Cat6 patch cord) and 600MHz (for Cat6a patch cord), coupled with Cat6/Cat6a links, it supports Class D/E/E_A standard (for Cat6a patch cord) applications as well as the Ethernet applications, such as 10G Base-T, 5G Base-T, 2.5G Base-T, 1G Base-T, 1G Base-TX, and 100 Base-T. It also supports enhanced Power Over Ethernet (POE+) under IEEE 802.3at.

Product Features

Magic series composite patch cord invests PC & TPU molding technology in both outer housing and rear jacket. Hardness in front and softness at back ensure the minimum bend radius.

General patch cord houses RJ45 ports of different depths and its bending clip helps maintain and manage LAN cables.

Patch cord with pull rod has a standard RJ45 plug and a patent pull rod which unlocks quickly and useful in the high density data center environments where there have extremely dense ports.

Patch cord with lock shares the same design with patch cord with pull rod, yet it uses a special unlock key rather than a pull rod. The matching port lock manages and protects the unused RJ45 ports, while the patent unlock key integrates the function of unlocking both the patch cord and the port.

Ultrafine patch cord with 28AWG soft cable features an ultrafine diameter which provides high space utilization and flexibility, greatly easing space pressure from cable managers and even the cabinets, and making it convenient to install and maintain. All ultrafine patch cords support a variety of specifications which means the pull rod and the port lock are all available if needed.

The special interior is designed in a barbed structure for cable stability after installation. All patch cords contain detachable color rings for port identification.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Mechanical Properties

Type/Length of Patch Cord	Stranded cable, standard length of 0.5m-20m, tailored product
Life Cycle	≥ 750 times
Storage Temperature Range	-40°C to +70°C
Installation Temperature Range	-10°C to +60°C
Working Temperature Range	-20°C to +60°C



Patent pull rod designed to unlock quickly, barbed structure to secure cable connections

The matching port lock with restricted access to the unused ports, the patent unlock key unlocking both the patch cord and the port

Ultrafine patch cord using 28AWG ultrafine-diameter cables with high flexibility Supporting a variety of specifications which means the pull rod and the port lock are all available if needed

Electrical Properties

Dielectric Strength	DC 1000V (AC 750V), no breakdown or flashover for 1 minute
High Frequency Performance	IEC 61935-2, 100% pass in channel testing
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Order Information

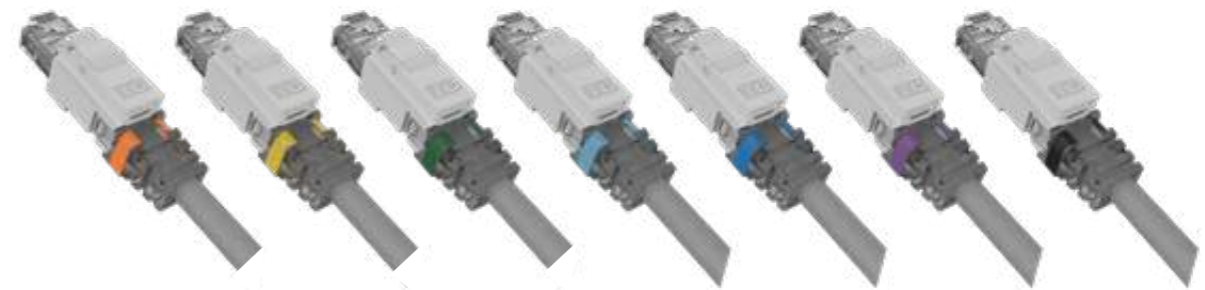
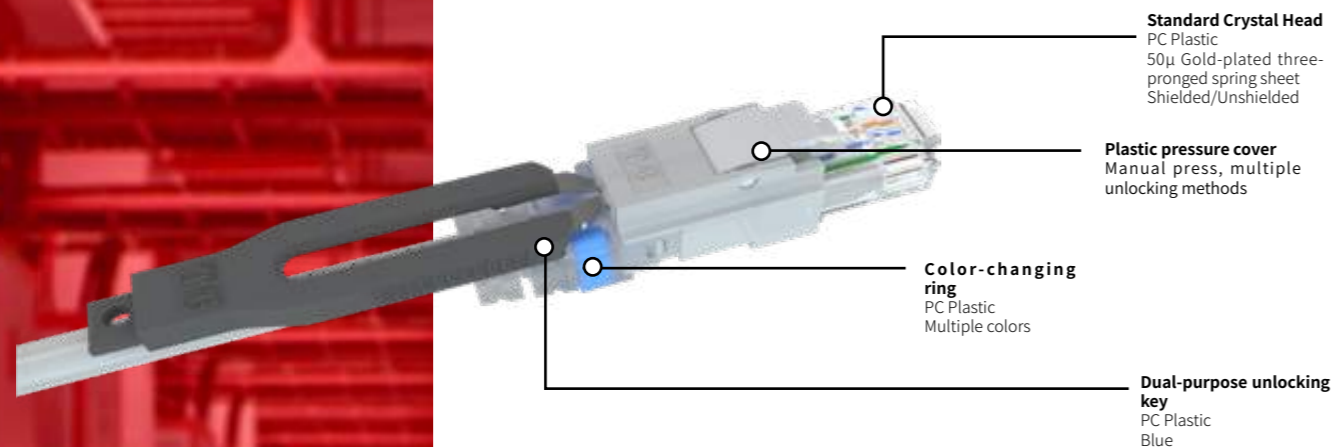
Model	Description	Jacket Material	Color	Color of Color Ring	Package
PC-21-6A-20-T-B	RJ45 General Patch Cord, Cat6a, Shielded, PVC, Gray, 2m	PVC	Gray RAL7035	Blue	1 per pack
PC-21-6A-20-TL-B	RJ45 General Patch Cord, Cat6a, Shielded, LSZH, Gray, 2m	LSZH	Gray RAL7035	Blue	1 per pack
PC-21-6A-20-Y-B	RJ45 Patch Cord with Pull Rod, Cat6a, Shielded, PVC, Gray, 2m	PVC	Gray RAL7035	Blue	1 per pack
PC-21-6A-20-YL-B	RJ45 Patch Cord with Pull Rod, Cat6a, Shielded, LSZH, Gray, 2m	LSZH	Gray RAL7035	Blue	1 per pack
PC-21-6A-20-S-B	RJ45 Patch Cord with Lock, Cat6a, Shielded, PVC, Gray, 2m	PVC	Gray RAL7035	Blue	1 per pack
PC-21-6A-20-SL-B	RJ45 Patch Cord with Lock, Cat6a, Shielded, LSZH, Gray, 2m	LSZH	Gray RAL7035	Blue	1 per pack
PC-13-6-20-T-B	RJ45 General Patch Cord, Cat6, Unshielded, PVC, Gray, 2m	PVC	Gray RAL7035	Blue	1 per pack
PC-13-6-20-TL-B	RJ45 General Patch Cord, Cat6, Unshielded, LSZH, Gray, 2m	LSZH	Gray RAL7035	Blue	1 per pack
PC-13-6-20-T-B28	RJ45 Ultrafine Patch Cord, Cat6, Unshielded, PVC, Gray, 2m	PVC	Gray RAL7035	Blue	1 per pack
PC-13-6-20-Y-B28	RJ45 Ultrafine Patch Cord with Pull Rod, Cat6, Unshielded, PVC, Gray, 2m	PVC	Gray RAL7035	Blue	1 per pack
PC-13-6-20-S-B28	RJ45 Ultrafine Patch Cord with Lock, Cat6, Unshielded, PVC, Gray, 2M	PVC	Gray RAL7035	Blue	1 per pack
PC309-L	Port Lock	PC	Gray	-	50 per pack
PC309-K	Unlock Key	PC	Blue	-	10 per pack
PC309-R-R	Magic series, Color Ring for Patch Cord	PC		Red	50 per pack
PC309-R-Y	Magic series, Color Ring for Patch Cord	PC		Yellow	50 per pack
PC309-R-N	Magic series, Color Ring for Patch Cord	PC		Green	50 per pack

Notes: Magic Series Patch Cord offers a broad selection of colors and lengths. For detailed information, please contact local distributors.

Magic II Generation RJ45 Lockable Jumper Cable

PC-21-*, PC-13-*

RJ45, Cat.6_A/Cat.6(IEC),shielded/unshielded



Product Information

Product Application

It is used for the transmission of data, voice, audio and video, image and other signals in the communication integrated wiring system of the building. Together with copper cables, modules and other components, it forms an integrated wiring information transmission channel, and connects the information entrance and exit with active equipment (switches, computers, etc.). TC Magic II generation RJ45 jumper with lock products include Category 6 and Category 6e copper cable jumpers. The performance fully meets and exceeds the copper cable jumper monomer standard specified in IEC 61935-2, and the bandwidth reaches 350MHz (Cat. 6 jumper)/600MHz (Cat.6A jumper), with Cat.6/6A link, applicable to all applications supported by Class D, E and EA (requires Cat.6A jumper), including Ethernet applications, such as: 10GBase-T, 5GBase-T, 2.5GBase-T, 1GBase-T, 1GBase-TX, 100Base-T, etc. It can be used in IEEE 802.3at-compliant Power over Ethernet Plus applications (POE+).

Product Features

Magic II generation RJ45 lockable patch cords have been comprehensively upgraded from the first generation while retaining the highly praised front hard, rear soft composite design, effectively ensuring the bending radius of the patch cords. It solves the issues of "big nose" lock cores and long port insertion dimensions, making it suitable for panels and distribution frames with dust doors, featuring a compact design for high-density switch environments

Multiple plug-and-play methods, suitable for various complex environments

Magic II generation RJ45 lockable patch cords support two plug-and-play methods: the traditional manual press-and-release method, suitable for general structured cabling in data centers, and a key-locked mechanism for direct extraction, suitable for high-density applications. The key integrates the unlocking function for LC Uniboot lockable patch cords and fiber adapter ports.

Lockable structure, providing security, confidentiality, and convenience

Data security design is achieved through optimized structural design, effectively preventing intrusion by blade-type tools, as well as thwarting unlocking attempts using tools like paper clips and tweezers. This prevents unauthorized personnel from easily disconnecting network equipment or related connections, ensuring uninterrupted information transmission and preventing the infiltration of malware. It enhances network equipment security and reduces the risk of information leakage.

Patented detachable pull rod

It is both a rod and a key. The patented key with a rod can be used to easily insert and remove the jumper even in a high-density environment.

The color recognition feature ensures clear and distinct identification

The internally specially designed reverse tooth buckle can increase the stability of the cable after installation. All jumpers are equipped with easy-to-detach color rings, meeting the requirements for visual color identification.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2 etc.

Mechanical performance

Jumpers Type and Length	Multi-strand flexible cable, standard length 0.5m to 20m, customizable.
Insertion and Extraction Cycles	≥ 750 times
Storage Temperature	-40°C ~+70°C
Installation Temperature	-10°C ~+60°C
Operating Temperature	-20°C ~+60°C



Electrical performance

Insulation strength	DC 1000V (AC 750V) withstands no breakdown and arc phenomena for 1 minute
High-frequency performance	IEC 61935-2 compliant, 100% pass jumpers monotype testing
Power over Ethernet (POE)	Complies with IEEE 802.3at Enhanced Ethernet Power Supply

Order Information

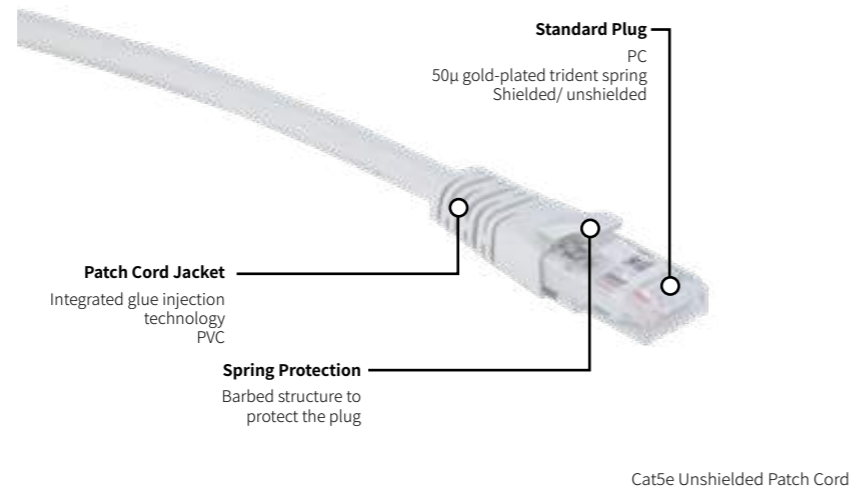
Model	Description	Jacket Material	Color	Ring Color	Package
PC-21-6A-20-S-B	Magic Series Category 6 Shielded Locking Patch Cord, Gray, 2m, Blue Ring	PVC	Gray RAL7035	Blue	1 per bag
PC-21-6A-20-SL-B	Magic Series Category 6 Low Smoke Zero Halogen Shielded Locking Patch Cord, Gray, 2m, Blue Ring	LSZH	Gray RAL7035	Blue	1 per bag
PC-21-6A-20-S-B	Magic Series Category 6 Shielded Locking Patch Cord, Gray, 2m, Blue Ring	PVC	Gray RAL7035	Blue	1 per bag
PC-21-6A-20-SL-B	Magic Series Category 6 Low Smoke Zero Halogen Shielded Locking Patch Cord, Gray, 2m, Blue Ring	LSZH	Gray RAL7035	Blue	1 per bag
FJ309-K	Unlocking Key	PC	Gray	-	10 per bag
PC309-R-R	MAGIC Patch Cord Ring	PC		Red	50 per bag
PC309-R-Y	MAGIC Patch Cord Ring	PC		Yellow	50 per bag
PC309-R-N	MAGIC Patch Cord Ring	PC		Green	50 per bag

Notes: The Magic series patch cords come in various colors and lengths for you to choose from. For more models, please consult local distributors.

Cat5e, Shielded/Unshielded Patch Cords

PC-21/11-5E-*

RJ45, Cat5e (IEC), shielded/unshielded



Product Information

Product Application

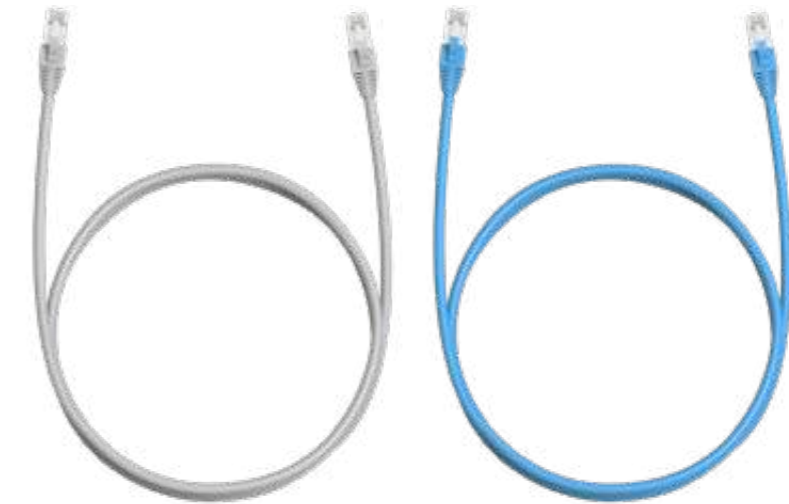
It provides signal transmission in the telecommunications cabling, such as data, voice, audio and images. When integrated with copper cables and jacks, it helps form the transmission channel for the structured cabling system and connect the information inlet/outlet and active devices (switches, computers, etc.). TC's Cat5e shielded/unshielded patch cord meets and even exceeds the International Standard IEC 61935-2. With bandwidth up to 150MHz, coupled with Cat5e links, it supports Class C/D standard applications as well as the Ethernet applications, such as 2.5G Base-T, 1G Base-T, and 100 Base-T. It also supports enhanced Power Over Ethernet (POE+) under IEEE 802.3at.

Product Features

TC's Cat5e patch cord has its jacket invested in glue injection technology and integrated with the plug which ensures its bend radius. Its small size supports different depths of RJ45 ports and high density termination with switches, thus resulting in easier maintenance and cable management. The standard plug accommodates all standard RJ45 jacks. The patch cord has bandwidth up to 150MHz, a 100% pass in Fluke channel testing, useful for Power Over Ethernet (POE/POE+) application that transmits both data and power supply.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Mechanical Properties

Type/Length of Patch Cord	Stranded cable, standard length of 0.5m-20m, tailored product
Life Cycle	≥ 750 times
Storage Temperature Range	-40°C ~+70°C
Installation Temperature Range	-10°C ~+60°C
Working Temperature Range	-20°C ~+60°C

Electrical Properties

Dielectric Strength	DC 1000V (AC 750V), no breakdown or flashover for 1 minute
High Frequency Performance	IEC 61935-2, 100% pass in channel testing
Power Over Ethernet (POE)	Enhanced Power Over Ethernet under IEEE 802.3at

Order Information

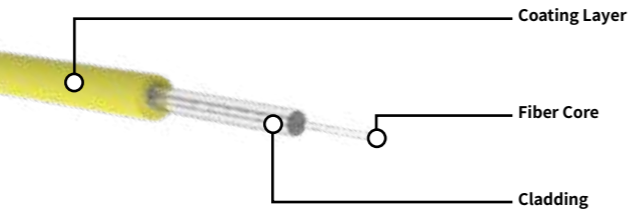
Model	Description	Jacket Material	Color	Package
PC-21-5E-10	Shielded Patch Cord, Cat5e, 1m	PVC	Blue, Orange, Gray	1 per pack
PC-21-5E-20	Shielded Patch Cord, Cat5e, 2m	PVC	Blue, Orange, Gray	1 per pack
PC-21-5E-30	Shielded Patch Cord, Cat5e, 3m	PVC	Blue, Orange, Gray	1 per pack
PC-21-5E-50	Shielded Patch Cord, Cat5e, 5m	PVC	Blue, Orange, Gray	1 per pack
PC-11-5E-10	Unshielded Patch Cord, Cat5e, 1m	PVC	Blue, Orange, Gray	1 per pack
PC-11-5E-20	Unshielded Patch Cord, Cat5e, 2m	PVC	Blue, Orange, Gray	1 per pack
PC-11-5E-30	Unshielded Patch Cord, Cat5e, 3m	PVC	Blue, Orange, Gray	1 per pack
PC-11-5E-50	Unshielded Patch Cord, Cat5e, 5m	PVC	Blue, Orange, Gray	1 per pack

Notes: TC's Cat5e Patch Cord offers a broad selection of colors and lengths. For detailed information, please contact local distributors.



Fiber Cables Product Series

Singlemode Fiber, Non-Dispersion Shifted, Zero Water Peak, G.652D Standards



Product Information

Product Application

Zero water peak, non-dispersion shifted, singlemode fiber adapts to the full wavelength from 1260nm to 1625nm, remaining both low dispersion at 1310nm and low loss at 1383nm so as to make the most of E-band (1360nm -1460nm). It upgrades the loss and dispersion of 1260nm-1625nm wavelength and reduces the bending loss of 1625nm in order that bandwidth resources can be provided for trunk network, metro area network and access network, while bandwidth requirements for voice, image, data and other services, can be satisfied. This fiber boasts very wide spectrum bandwidth and excellent transmission performance, the optimal choice for Ethernet, Internet, trunk communication network, CATV and Wavelength Division Multiplexing (WDM). It can replace the traditional singlemode fiber and suit for different structures of fiber optic cables, such as ribbon fiber cable, slotted core fiber cable, stranded fiber cable, central-tube fiber optic cable, ADSS fiber optic cable, OPGW fiber optic cable, tight buffered indoor fiber optic cable, etc.

Product Features

Zero water peak, no-dispersion shifted, singlemode fiber exceeds the parameters specified in ITU-T Recommendation G.652.D and IEC60973-2-50 B1.3 Standards. It invests in VAD technology which results in singlemode fibers' stable refractive-index profile, precise geometric size and extremely low loss. The singlemode fiber has completely eliminated water absorption around 1383nm, providing expanded transmission wavelengths from 1260nm to 1625nm; its superior optical performance meets the requirements of high speed DWDM and CWDM transmission; the fiber is compatible with the existing devices at 1310nm; its precise geometric size ensures low loss and high strength splice; what's more, its PMD contributes a lot to the long- and medium distance high data rate transmission.

Mechanical Properties	Conditions	Unit	Value
Tension Testing		%	≥ 1.02
		N	≥ 9.1
		Gpa	≥ 0.704
Coating Stripping Force	Peak value	N	1.3-8.9
	Typical average value	N	1.9
Tensile Strength	Weibull Probability 50%	Mpa	≥ 4000
	Weibull Probability 15%	Mpa	≥ 3050
Dynamic Fatigue Parameter (Nd)			≥ 20

Macrobend Loss

1 circle Φ32mm	1310nm	dB	≤ 0.05
100 circles Φ60mm	1550nm, 1625nm	dB	≤ 0.05
Fiber Length Per Reel		Km	2.1-61

Optical Properties

Attenuation	1310nm	dB/km	≤ 0.35
	1550nm	dB/km	≤ 0.21
	1625nm	dB/km	≤ 0.24
	1383nm	dB/km	≤ 0.32
Relative Wavelength Attenuation Change	1285-1330nm	dB/km	≤ 0.04
	1525-1575nm	dB/km	≤ 0.03
	1480-1580nm	dB/km	≤ 0.04
Dispersion within Wavelength Range	1288-1339nm	ps/(nm·km)	≥ - 3.5, ≤ 3.5
	1271-1360nm	ps/(nm·km)	≥ - 5.3, ≤ 5.3
	1480-1580nm	ps/(nm·km)	≤ 20
	1550nm	ps/(nm·km)	≤ 18
	1625nm	ps/(nm·km)	≤ 22
Zero Dispersion Wavelength		nm	1300-1322
Zero Dispersion Slope		ps/(nm·km)	≤ 0.091
Typical Value of Zero Dispersion Slope		ps/(nm·km)	0.086

Polarization Mode Dispersion (PMD)

Single Fiber Max. Value		PS/√ km	0.2
PMD Link Value (M = 20, Q = 0.01%)		PS/√ km	0.1
Typical Value		PS/√ km	0.04
Cutoff Wavelength λ		nm	≤ 1260
Cutoff Wavelength λc		nm	1150 – 1330
Mode Field Diameter (MFD)	1310nm	μm	9.2±0.4
	1550nm	μm	10.4±0.5
Effective Refractive Index	1310nm		1.4672
	1550nm		1.4683
Attenuation Discontinuity	1310nm	dB	≤ 0.03
	1550nm	dB	≤ 0.03
Attenuation Bi-Direction Difference	1310nm	dB/km	≤ 0.05
	1550nm	dB	≤ 0.05
Attenuation Inhomogeneity	1310nm	dB	≤ 0.05
	1550nm	dB	≤ 0.05
Average Value of Splice Loss	1310nm/1550nm	dB	≤ 0.05
Max. Value of Splice Loss	1310nm/1550nm	dB	≤ 0.1

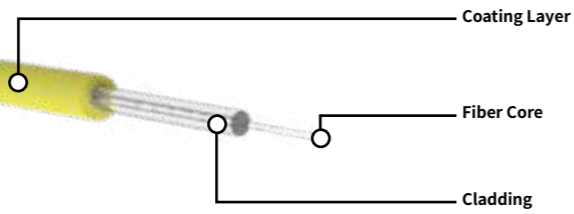
Geometric Properties

Cladding Diameter		μm	125±1
Cladding Non-Circularity		%	≤ 1.0
Core/Cladding Concentricity Deviation		μm	≤ 0.6
Coating Diameter		μm	245±5
Cladding/Coating Concentricity Deviation		μm	≤ 12
Coating Non-Circularity		%	≤ 3.0
Warp Degree		m	≥ 4

Environment Properties

Additional Attenuation of Temperature Cycle	- 60°C to + 85°C	dB/km	≤ 0.03
Additional Attenuation of Heat Humidity Aging	85°C , RH85%, 30 days	dB/km	≤ 0.03
Additional Attenuation of Immersion Aging	23°C , 30 days	dB/km	≤ 0.03
Additional Attenuation of Dry Heat Aging	85°C , 30 days	dB/km	≤ 0.03

Singlemode Fiber, for Access Network, Bend Insensitive, G.657A1 Standards



Product Information

Product Application

Bend insensitive singlemode fiber for access network boasts all the features that the non-dispersion shifted one has, and enjoys even more excellent bending performance at 1260nm-1625nm transmission wavelength. In conditions that long wavelength bending is required, its bend radius can be minimized to 10mm.

The fiber applies for different structures of fiber optic cables, especially for tight buffered cable and drop cable, ideal for Fiber to the Home (FTTH) and Fiber to the Building (FTTB).

Product Features

Bend insensitive singlemode fiber for access network exceeds the parameters specified in ITU-T Recommendation G.652.D/G.657.A and IEC60973-2-50 B1.3 standards. It invests in VAD technology which results in singlemode fibers' stable refractive-index profile, precise geometric size and extremely good bending performance. The singlemode fiber has completely eliminated water absorption around 1383nm, providing expanded transmission wavelengths from 1260nm to 1625nm; its superior bending performance can meet the special demands on the bend radius; it is compatible with the existing fibers under G.652.D Standards; its precise geometric size ensures low loss and high strength splice; what's more, its PMD contributes a lot to the long- and medium distance high data rate transmission.

Mechanical Properties	Conditions	Unit	Value
Tension Testing		%	≥ 1.02
		N	≥ 9.1
		Gpa	≥ 0.704
Coating Stripping Force	Peak value	N	1.3-8.9
	Typical average value	N	1.9
Tensile Strength	Weibull Probability 50%	Mpa	≥ 4000
	Weibull Probability 15%	Mpa	≥ 3050
Dynamic Fatigue Parameter (Nd)			≥ 20

Macrobend Loss

10 Circles Φ30mm	1550nm	dB	≤ 0.25
10 Circles Φ30mm	1625nm	dB	≤ 1.0
10 Circles Φ20mm	1550nm	dB	≤ 0.75
10 Circles Φ20mm	1625	dB	≤ 1.5

Optical Properties

Attenuation	1310nm	dB/km	≤ 0.36
	1550nm	dB/km	≤ 0.22
	1383nm	dB/km	≤ 0.35
	1310-1625nm	dB/km	≤ 0.36
Zero Dispersion Wavelength		nm	1300-1322
Zero Dispersion Slope		ps/(nm·km)	≤ 0.091
Typical Value of Zero Dispersion Slope		ps/(nm·km)	0.086

Polarization Mode Dispersion (PMD)

Single Fiber Max. Value		PS/√km	0.2
PMD Link Value (M = 20, Q = 0.01%)		PS/√km	0.1
Typical Value		PS/√km	0.04
Cutoff Wavelength λ		nm	≤ 1260
Cutoff Wavelength λc		nm	1150 – 1330
Mode Field Diameter (MFD)	1310nm	μm	8.7±0.4
	1550nm	μm	9.8±0.5
Effective Refractive Index	1310nm		1.4672
	1550nm		1.4683
Attenuation Discontinuity	1310nm	dB	≤ 0.03
	1550nm	dB	≤ 0.03

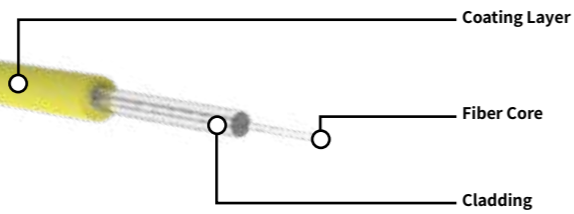
Geometric Properties

Cladding Diameter		μm	125±0.7
Cladding Non-Circularity		%	≤ .8
Core/Cladding Concentricity Deviation		μm	≤ 0.5
Coating Diameter		μm	245±5
Cladding/Coating Concentricity Deviation		μm	≤ 12
Coating Non-Circularity		%	≤ 3.0
Warp Degree		m	≥ 4

Environment Properties

Additional Attenuation of Temperature Cycle	- 60°C to + 85°C	dB/km	≤ 0.05
Additional Attenuation of Heat Humidity Aging	85°C , RH85%, 30 days	dB/km	≤ 0.05
Additional Attenuation of Immersion Aging	23°C , 30 days	dB/km	≤ 0.05
Additional Attenuation of Dry Heat Aging	85°C , 30 days	dB/km	≤ 0.05

Singlemode Fiber, for Access Network, Bend Insensitive, G.657A2 Standards



Product Information

Product Application

Bend insensitive singlemode fiber for access network boasts all the features that the non-dispersion shifted one has, and enjoys even more excellent bending performance at 1260nm-1625nm transmission wavelength. In conditions that long wavelength bending is required, its bend radius is minimized to 7.5mm, while its additional attenuation at 1625nm wavelength is 0.8dB. The fiber applies for different structures of fiber optic cables, especially for tight buffered cable and drop cable, ideal for Fiber to the Home (FTTH) and Fiber to the Building (FTTB).

Product Features

Bend insensitive singlemode fiber for access network exceeds the parameters specified in ITU-T Recommendation G.652.D/G.657.A2 and IEC60973-2-50 B1.3/B6 Standards. It invests in VAD technology which results in singlemode fibers' stable refractive-index profile, precise geometric size and extremely good bending performance. The singlemode fiber has completely eliminated water absorption around 1383nm, providing expanded transmission wavelengths from 1260nm to 1625nm; its superior bending performance can meet the special demands on the bend radius; it is compatible with the existing fibers under G.652.D Standards; its precise geometric size ensures low loss and high strength splice; what's more, its PMD contributes a lot to the long- and medium distance high data rate transmission.

Mechanical Properties	Conditions	Unit	Value
Tension Testing		%	≥ 1.02
		N	≥ 9.1
		Gpa	≥ 0.704
Coating Stripping Force	Peak Value	N	1.3-8.9
	Typical Average Value	N	1.9
Tensile Strength	Weibull Probability 50%	Mpa	≥ 4000
	Weibull Probability 15%	Mpa	≥ 3050
Dynamic Fatigue Parameter (Nd)			≥ 20

Macrobend Loss

10 circles Φ30mm	1550nm	dB	≤ 0.3
10 circles Φ30mm	1625nm	dB	≤ 0.1
10 circles Φ20mm	1550nm	dB	≤ 0.1
10 circles Φ20mm	1625nm	dB	≤ 0.2
10 circles Φ15mm	1550	dB	≤ 0.4
10 circles Φ15mm	1625	dB	≤ 0.8

Optical Properties

Attenuation	1310nm	dB/km	≤ 0.36
	1550nm	dB/km	≤ 0.22
	1383nm	dB/km	≤ 0.35
	1310-1625nm	dB/km	≤ 0.36
Zero Dispersion Wavelength		nm	1300-1322
Zero Dispersion Slope		ps/(nm·km)	≤ 0.091
Typical Value Of Zero Dispersion Slope		ps/(nm·km)	0.086

Polarization Mode Dispersion (PMD)

Single Fiber Max. Value		PS/√km	0.2
PMD Link Value (M = 20, Q = 0.01%)		PS/√km	0.1
Typical Value		PS/√km	0.04
Cutoff Wavelength λ		nm	≤ 1260
Cutoff Wavelength λ _c		nm	1150 – 1330
Mode Field Diameter (MFD)	1310nm	μm	8.6±0.4
	1550nm	μm	9.6±0.5
Effective refractive index	1310nm		1.4672
	1550nm		1.4683
Attenuation Discontinuity	1310nm	dB	≤ 0.05
	1550nm	dB	≤ 0.05

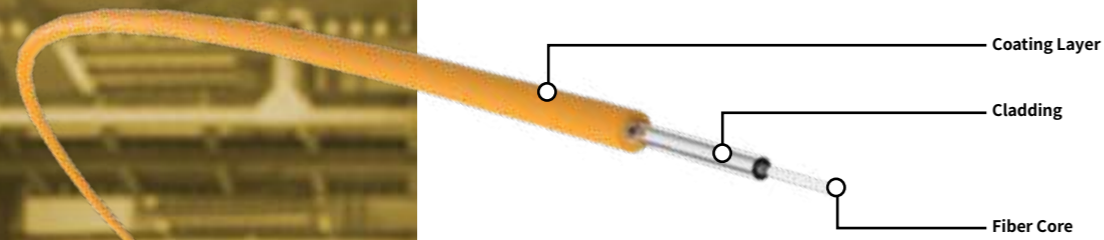
Geometric Properties

Cladding Diameter		μm	125±0.7
Cladding Non-Circularity		%	≤ 0.8
Core/Cladding Concentricity Deviation		μm	≤ 0.5
Coating Diameter		μm	245±5
Cladding/Coating Concentricity Deviation		μm	≤ 12
Coating Non-Circularity		%	≤ 3.0
Warp Degree		m	≥ 4

Environment Properties

Additional Attenuation of Temperature Cycle	- 60°C to + 85°C	dB/km	≤ 0.05
Additional Attenuation of Heat Humidity Aging	85°C , RH85%, 30 Days	dB/km	≤ 0.05
Additional Attenuation of Immersion Aging	23°C , 30 Days	dB/km	≤ 0.05
Additional Attenuation of Dry Heat Aging	85°C , 30 Days	dB/km	≤ 0.05

62.5/125μm OM1 Multimode Fiber



Product Information

Product Application

62.5/125μm multimode fiber features a 62.5μm core diameter and a 125μm cladding diameter, comprehensively optimized for performance at the 850nm and 1300nm operating wavelengths. All indicators of the fiber have reached the world's advanced level. Thanks to its higher bandwidth and lower attenuation, it is satisfying the use at 850nm and 1300nm, and widely used in Local Area Network (LAN), video transmission, audio transmission, data transmission and many other sectors. With the laser and Light Emitting Diode (LED) as its light source, the fiber is quite practical for IEEE802.3z Gigabit Ethernet. In addition, its MCVD manufacturing technology ensures better stability and more precise control over refractive index distribution. The fiber applies for different structures of fiber optic cables, such as ribbon fiber cable, stranded loose tube cable, slotted core fiber cable, central-tube fiber optic cable, tight buffered fiber optic cable, etc.

Product Features

The fiber is suitable for 850nm and 1300nm operating wavelengths; its low attenuation and high bandwidth are optimized for IEEE802.3z Gigabit Ethernet transmission; its coating protection and glass property enjoys excellent performance.

Optical Properties	Conditions	Unit	Value
Attenuation	850nm	≤ 2.80	dB/km
	1300nm	≤ 0.60	dB/km
Injection Bandwidth	850nm	≥ 200	MHz.km
	1300nm	≥ 500	MHz.km
Numerical Aperture (NA)		0.275±0.015	
Group Refractive Index	850nm	1.496	
	1300nm	1.491	
Zero Dispersion Wavelength	1320-1365nm		
Zero Dispersion Slope	1320nm -1348nm	≤ 0.01	ps/(nm · km)
	1348nm-1365nm	≤ 0.001	ps/(nm · km)
Macrobend Loss, 100 Circles, 37.5mm Radius	850nm	≤ 0.50	dB
	1300nm	≤ 0.50	dB

Back Scattering (1300nm)

Partial Discontinuity	≤ 0.1	dB
Attenuation Inhomogeneity	≤ 0.1	dB
Different Values of Bi-Direction and Back Scattering	≤ 0.1	dB/km

Geometric Properties

Core Diameter	62.5±2.5	μm
Core Non-Circularity	≤ 6.0	%
Cladding Diameter	125±1	μm
Cladding Non-Circularity	≤ 2.0	%
Core/Cladding Concentricity Deviation	≤ 1.5	μm
Coating Diameter	245±10	μm
Cladding/Coating Concentricity Deviation	≤ 12.0	μm

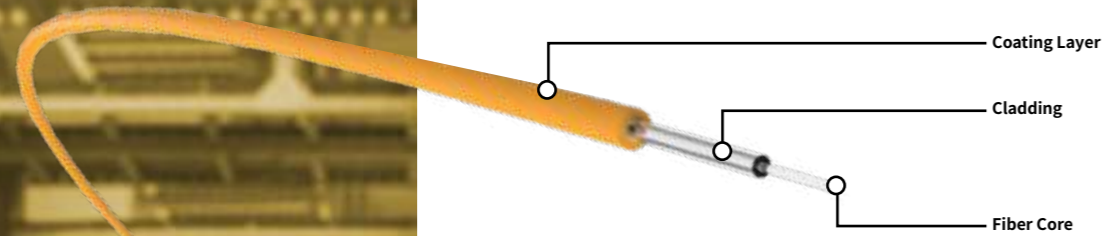
Environment Properties (850nm and 1300nm)

Additional Attenuation of Temperature	≤ 0.15	dB/km
Additional Attenuation of Temperature and Humidity Circle	≤ 0.20	dB/km
Additional Attenuation of Immersion Aging	≤ 0.20	dB/km
Additional Attenuation of Hydrothermal Heating	≤ 0.20	dB/km
Dry Heat Aging	≤ 0.20	dB/km

Mechanical Properties

Tension Testing	≥ 9.0	N	
Macrobend Additional Loss	850nm	≤ 0.5	dB
Coating Stripping Force	Typical average value	1.4	N
	Peak value	≥ 1.3 ≤ 8.9	N
Dynamic Fatigue Parameter (Nd)	≥ 25		

50/125μm OM2 Multimode Fiber



Product Information

Product Application

50/125μm OM2 fiber is a graded-index multimode type featuring a 50μm core diameter and a 125μm cladding diameter, comprehensively optimized for performance at the 850nm and 1300nm operating wavelengths. All indicators of the fiber have reached the world's advanced level. Thanks to its higher bandwidth and lower attenuation, it is satisfying the use at 850nm and 1300nm, and widely used in Local Area Network (LAN), video transmission, audio transmission, data transmission and many other sectors. With the laser and Light Emitting Diode (LED) as its light source, the fiber is quite practical for IEEE802.3z Gigabit Ethernet. In addition, its MCVD manufacturing technology ensures better stability and more precise control over refractive index distribution. The fiber applies for different structures of fiber optic cables, such as ribbon fiber cable, stranded loose tube cable, slotted core fiber cable, central-tube fiber optic cable, tight buffered fiber optic cable, etc., and it is compatible with other fibers with different manufacturing technologies.

Product Features

The fiber is suitable for 850nm and 1300nm operating wavelengths; its low attenuation and high bandwidth are optimized for IEEE802.3z Gigabit Ethernet transmission; its coating protection and glass property enjoys excellent performance.

Optical Properties	Conditions	Unit	Value
Attenuation	850nm	≤ 2.80	dB/km
	1300nm	≤ 0.60	dB/km
Injection Bandwidth	850nm	≥ 700	MHz.km
	1300nm	≥ 500	MHz.km
Numerical Aperture (NA)		0.200 ± 0.015	
Group Refractive Index	850nm	1.482	
	1300nm	1.477	
Zero Dispersion Wavelength	1295-1320nm		
Zero Dispersion Slope	1295nm -1300nm	≤ 0.001	ps/(nm · km)
	1300nm-1320nm	≤ 0.11	ps/(nm · km)
Macrobend Loss, 100 Circles, 30mm Radius	850nm	≤ 0.50	dB
	1300nm	≤ 0.50	dB

Back Scattering (1300nm)

Partial Discontinuity		≤ 0.1	dB
Attenuation Inhomogeneity		≤ 0.1	dB
Different Values of Bi-Direction and Back Scattering		≤ 0.1	dB/km

Geometric Properties

Core Diameter		50±2.5	μm
Core Non-Circularity		≤ 6.0	%
Cladding Diameter		125±1	μm
Cladding Non-Circularity		≤ 2.0	%
Core/Cladding Concentricity Deviation		≤ 1.5	μm
Coating Diameter		245±10	μm
Cladding/Coating Concentricity Deviation		≤ 12.0	μm

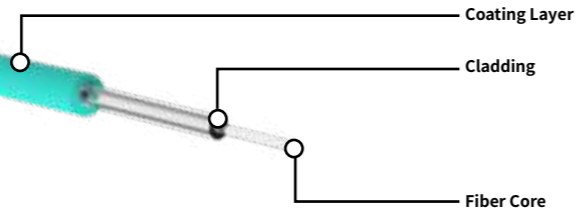
Environment Properties (850nm and 1300nm)

Additional Attenuation of Temperature		≤ 0.15	dB/km
Additional Attenuation of Temperature and Humidity Circle		≤ 0.20	dB/km
Additional Attenuation of Immersion Aging		≤ 0.20	dB/km
Additional Attenuation of Hydrothermal Heating		≤ 0.20	dB/km
Dry Heat Aging		≤ 0.20	dB/km

Mechanical Properties

Tension Testing		≥ 9.0	N
Macrobend Additional Loss	850nm	≤ 0.5	dB
Coating Stripping Force	Typical average value	1.4	N
	Peak value	≥ 1.3 ≤ 8.9	N
Dynamic Fatigue Parameter (Nd)		≥ 25	

50/125μm OM3 Multimode Fiber



Product Information

Product Application

50/125μm OM3 fiber is a graded-index multimode type featuring a 50μm core diameter and a 125μm cladding diameter. It is comprehensively optimized Vertical-Cavity Surface-Emitting Laser (VCSEL) at the 850nm wavelength on the basis of OM2 fiber, and passes Differential Modal Delay (DMD) test so as to attain the higher bandwidth and lower attenuation, and realize short distance high data rate transmission (OM3 fiber in support of 10GBase-SR 300m, 40GBase-SR4 and 100GBase-SR10 100m). The fiber is suitable for different structures of fiber optic cables, such as ribbon fiber cable, stranded loose tube cable, slotted core fiber cable, central-tube fiber optic cable, tight buffered fiber optic cable, etc., and it is compatible with other fibers that use different manufacturing technologies.

Product Features

The fiber is ideal for 850nm and 1300nm operating wavelengths; it optimizes Vertical-Cavity Surface-Emitting Laser (VCSEL) with low attenuation and high bandwidth; its coating protection and glass property enjoys excellent performance.

Optical Properties	Conditions	Data	Unit
Attenuation	850nm	≤ 2.80	dB/km
	1300nm	≤ 0.60	dB/km
Injection Bandwidth	850nm	≥ 1500	MHz.km
	1300nm	≥ 500	MHz.km
Length of 100Gb/s Ethernet		100	m
Numerical Aperture (NA)		0.200 ± 0.015	
Group Refractive Index	850nm	1.482	
	1300nm	1.477	
Zero Dispersion Wavelength		1295-1320nm	
Zero Dispersion Slope	1295nm -1300nm	≤ 0.001	ps/(nm · km)
	1300nm-1320nm	≤ 0.11	ps/(nm · km)
Macrobend Loss, 100 Circles, 30mm Radius	850nm	≤ 0.50	dB
	1300nm	≤ 0.50	dB

Back Scattering (1300nm)

Partial Discontinuity		≤ 0.1	dB
Attenuation Inhomogeneity		≤ 0.1	dB
Different Values of Bi-Direction and Back Scattering		≤ 0.1	dB/km

Geometric Properties

Core Diameter		50±2.5	μm
Core Non-Circularity		≤ 6.0	%
Cladding Diameter		125±1	μm
Cladding Non-Circularity		≤ 2.0	%
Core/Cladding Concentricity Deviation		≤ 1.5	μm
Coating Diameter		245±10	μm
Cladding/Coating Concentricity Deviation		≤ 12.0	μm

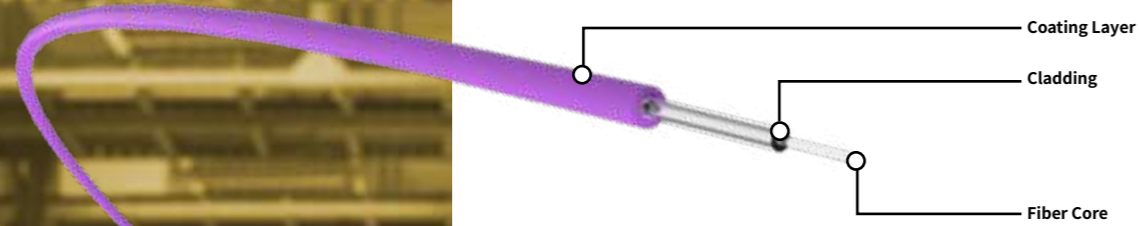
Environment Properties (850nm and 1300nm)

Additional Attenuation of Temperature		≤ 0.15	dB/km
Additional Attenuation of Temperature and Humidity Circle		≤ 0.20	dB/km
Additional Attenuation of Immersion Aging		≤ 0.20	dB/km
Additional Attenuation of Hydrothermal Heating		≤ 0.20	dB/km
Additional Attenuation of Dry Heat Aging		≤ 0.20	dB/km

Mechanical Properties

Tension Testing		≥ 9.0	N
Macrobend Additional Loss	850nm	≤ 0.5	dB
Coating Stripping Force	Typical average value	1.4	N
	Peak value	≥ 1.3 ≤ 8.9	N
Dynamic Fatigue Parameter (Nd)		≥ 25	

50/125μm OM4 Multimode Fiber



Product Information

Product Application

50/125μm OM4 fiber is a graded-index multimode type featuring a 50μm core diameter and a 125μm cladding diameter. Compared with OM3 fiber, it is further optimized Vertical-Cavity Surface-Emitting Laser (VCSEL) at the 850nm wavelength and supports 10GBase-SR 550m, 40GBase-SR4 and 100GBase-SR10 150m. OM4 fiber is more ideal for 40G/100G transmission, since its transmission distance increases by 50% compared to OM3. OM4 multimode fiber applies for different structures of fiber optic cables, such as ribbon fiber cable, stranded loose tube cable, slotted core fiber cable, central-tube fiber optic cable, tight buffered fiber optic cable, etc., and it is compatible with other fibers with different manufacturing technologies.

Product Features

The fiber is ideal for 850nm and 1300nm operating wavelengths; it optimizes Vertical-Cavity Surface-Emitting Laser (VCSEL) with low attenuation and high bandwidth; its coating protection and glass property enjoys excellent performance.

Optical Properties	Conditions	Data	Unit
Attenuation	850nm	≤ 2.80	dB/km
	1300nm	≤ 0.60	dB/km
Injection Bandwidth	850nm	≥ 3500	MHz.km
	1300nm	≥ 500	MHz.km
Length of 100Gb/s Ethernet		150	m
Numerical Aperture (NA)		0.200 ±0.015	
Group Refractive Index	850nm	1.482	
	1300nm	1.477	
Zero Dispersion Wavelength		1295-1320nm	
Zero Dispersion Slope	1295nm -1300nm	≤ 0.001	ps/(nm·km)
	1300nm-1320nm	≤ 0.11	ps/(nm·km)
Macrobend Loss, 100 Circles, 30mm Radius	850nm	≤ 0.50	dB
	1300nm	≤ 0.50	dB

Back Scattering (1300nm)

Partial Discontinuity		≤ 0.1	dB
Attenuation Inhomogeneity		≤ 0.1	dB
Different Values of Bi-Direction and Back Scattering		≤ 0.1	dB/km

Geometric Properties

Core Diameter		50±2.5	μm
Core Non-Circularity		≤ 6.0	%
Cladding Diameter		125±1	μm
Cladding Non-Circularity		≤ 2.0	%
Core/Cladding Concentricity Deviation		≤ 1.5	μm
Coating Diameter		245±10	μm
Cladding/Coating Concentricity Deviation		≤ 12.0	μm

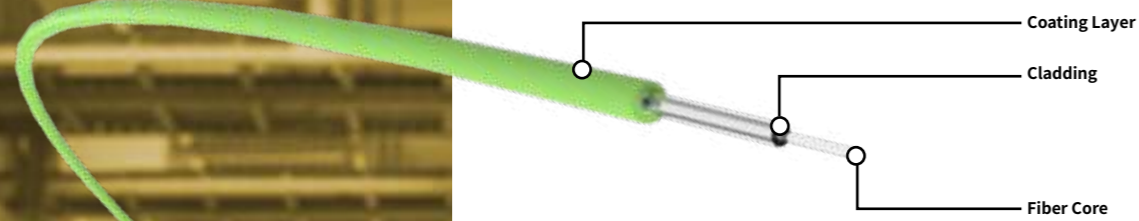
Environment Properties (850nm and 1300nm)

Additional Attenuation of Temperature		≤ 0.15	dB/km
Additional Attenuation of Temperature and Humidity Circle		≤ 0.20	dB/km
Additional Attenuation of Immersion Aging		≤ 0.20	dB/km
Additional Attenuation of Hydrothermal Heating		≤ 0.20	dB/km
Additional Attenuation of Dry Heat Aging		≤ 0.20	dB/km

Mechanical Properties

Tension Testing		≥ 9.0	N
Macrobend Additional Loss	850nm	≤ 0.5	dB
Coating Stripping Force	Typical average value	1.4	N
	Peak value	≥ 1.3 ≤ 8.9	N
Dynamic Fatigue Parameter (Nd)		≥ 25	

50/125μm OM5 Multimode Fiber



Product Information

Product Application

50/125μm OM5 fiber is the latest graded-index multimode type featuring a 50μm core diameter and a 125μm cladding diameter. Its Effective Modal Bandwidth (EMB) requirement of 953nm wavelength has been increased. OM5, known as wideband multimode fiber (WBMMF), supports 150m transmission based on SWDM technology (at 850nm, 880nm, 910nm, 940nm wavelengths).

Product Features

The fiber is ideal for 850nm, 880nm, 910nm, 940nm (SWDM) as well as 1300nm operating wavelengths; its low attenuation and high bandwidth are optimized for IEEE802.3z Gigabit Ethernet transmission; its coating protection and glass property enjoys excellent performance.

Optical Properties	Conditions	Data	Unit
Attenuation	850nm	≤ 2.30	dB/km
	953nm	≤ 1.70	dB/km
	1300nm	≤ 0.60	dB/km
Injection Bandwidth	850nm	≥ 3500	MHz.km
	953nm	≥ 1850	MHz.km
	1300nm	≥ 500	MHz.km
Length of 400Gb/s Ethernet		150	m
Numerical Aperture (NA)		0.200 ± 0.015	
Group Refractive Index	850nm	1.482	
	1300nm	1.477	
Zero Dispersion Wavelength		1295-1320nm	
Zero Dispersion Slope	1295nm -1300nm	≤ 0.001	ps/(nm · km)
	1300nm-1320nm	≤ 0.11	ps/(nm · km)
Macrobend Loss, 2 Circles, 15mm Radius	850nm	≤ 0.10	dB
	1300nm	≤ 0.11	dB

Back Scattering (1300nm)

Partial Discontinuity Attenuation		≤ 0.1	dB
Inhomogeneity		≤ 0.1	dB
Different Values of Bi-Direction and Back Scattering		≤ 0.1	dB/km

Geometric Properties

Core Diameter		50±2.5	μm
Core Non-Circularity		≤ 5.0	%
Cladding Diameter		125±1	μm
Cladding Non-Circularity		≤ 2.0	%
Core/Cladding Concentricity Deviation		≤ 1.5	μm
Coating Diameter		245±10	μm
Cladding/Coating Concentricity Deviation		≤ 12.0	μm

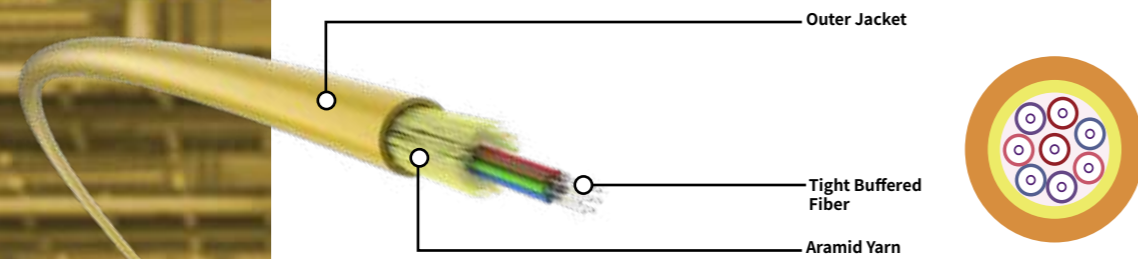
Environment Properties (850nm and 1300nm)

Additional Attenuation of Temperature		≤ 0.1	dB/km
Additional Attenuation of Temperature and Humidity Circle		≤ 0.1	dB/km
Additional Attenuation of Immersion Aging		≤ 0.20	dB/km
Additional Attenuation of Hydrothermal Heating		≤ 0.20	dB/km
Additional Attenuation of Dry Heat Aging		≤ 0.20	dB/km

Mechanical Properties

Tension Testing		≥ 9.0	N
Macrobend Additional Loss	850nm	≤ 0.5	dB
Coating Stripping Force	Typical average value	1.4	N
	Peak value	≥ 1.3 ≤ 8.9	N
Dynamic Fatigue Parameter (Nd)		≥ 25	

Optical Fiber Tight Buffered Cable, Indoor GJFJV-*, GJFJZY-*



Product Information

Product Application

Optical Fiber Tight Buffered Cable is mainly used for indoor cabling, for connections among indoor telecommunication rooms, between equipment rooms and instrument rooms, as well as among instrument rooms. The cable is constructed of several $\phi 900\mu\text{m}$ (singlemode or multimode) tight buffered fibers surrounded by aramid yarn strength members jacketed in a PVC or LSZH outer jacket.

Product Features

The cable, with a small diameter, provides an excellent bending performance; it is surrounded by aramid yarn strength members for better tensile strength, designed for Fiber to the Desk (FTTD) and building backbone cabling applications; the cable has 62.5/125 multimode, 50/125 multimode and many other singlemode specifications available; its tight buffer provides fibers with great mechanical protection; it is structured in flame retardant, LSZH outer jacket and has a high crush resistance and excellent bending performance so as to avoid the impact in the outside environments; the cable meets the industry-regulated requirements of optical transmission, mechanical protection and flammability.

Application Standards

IEC 60793, ISO/IEC11801

Color Code	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

Flame resistance	Flammability standard for single wire	GB/T 18380.12-2022	Flammability standard for bunched wires	GB/T 18380.35-2022
	Jacket: Peel off 50mm-long cable, place the empty jacket horizontally and burn for 4-5 seconds, using alcohol lamp; after the fire source is taken away, it extinguishes less than 2 seconds; Aramid yarn: it is burnt into powder and extinguishes right after the fire source is taken away.			

Optical Properties

Type of Optical Fiber	Attenuation		Injection Bandwidth (OFL)	Effective Modal Bandwidth	10 Ethernet Link Length SX	Min. Bend Radius (mm)
	Typical Value (dB/km)	Max. Value (dB/km)	MHz·km	MHz·km		
SM 9/125	1310nm/1550nm		850/1300nm	850nm	850nm	
	0.36/0.22	0.4/0.3	/	/	/	16
MM62.5/125 OM1	850nm/1300nm					
	3.0/1.0	3.5/1.5	$\geq 200/500$	/	/	30
MM50/125 OM2	3.0/1.0	3.5/1.5	$\geq 500/500$	/	≥ 150	30
MM50/125 OM3	3.0/1.0	3.5/1.5	$\geq 1500/500$	≥ 2000	≥ 300	30
MM50/125 OM4	3.0/1.0	3.5/1.5	$\geq 3500/500$	≥ 4700	≥ 550	30

Mechanical Properties

Type of Fiber Optic Cable	Diameter (mm)	Weight (kg/km)	Tensile Strength (N)		Crush Resistance (N/100mm)		Bend Radius		Jacket Thickness (mm)
			Long Term	Short Term	Long Term	Short Term	Dynamic	Static	
GJFJV-2 core	3.6 ± 0.2	12.5	180	440	300	1000	20D	10D	0.45 ± 0.05
GJFJV-4 core	4.7 ± 0.2	17.6	180	440	300	1000	20D	10D	0.8 ± 0.1
GJFJV-6 core	5.2 ± 0.2	22.8	180	440	300	1000	20D	10D	0.9 ± 0.1
GJFJV-8 core	5.8 ± 0.2	26.7	180	440	300	1000	20D	10D	0.9 ± 0.1
GJFJV-12 core	6.3 ± 0.2	32.7	180	440	300	1000	20D	10D	0.9 ± 0.1
GJFJV-24 core	8.0 ± 0.2	53	200	660	300	1000	20D	10D	1.0 ± 0.1

Jacket Specifications

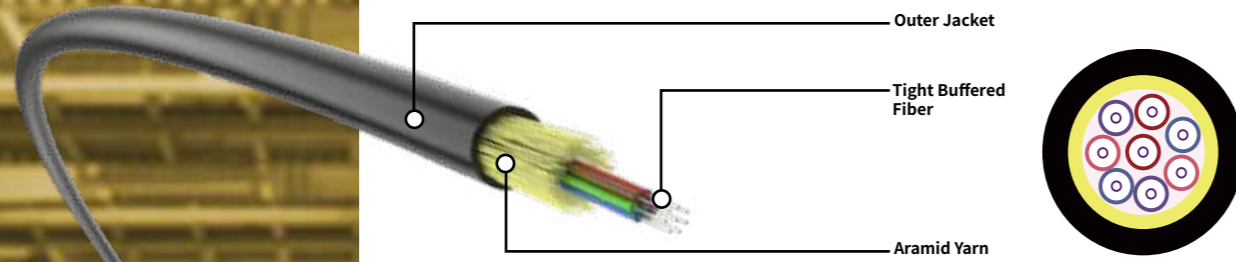
Type of Optical Fiber	Color	Surface	Material
B1	Yellow RAL 1018	Bright color, no sand, raw skin or scratch on the surface	PVC/LSZH
A1a	Orange RAL 2008	Bright color, no sand, raw skin or scratch on the surface	PVC/LSZH
A1a OM3	Aqua RAL 6027	Bright color, no sand, raw skin or scratch on the surface	PVC/LSZH
A1a OM4	Violet RAL 4003	Bright color, no sand, raw skin or scratch on the surface	PVC/LSZH

Order Information

Model	Description	Color	Package
GJFJV-xxB1	Fiber Optic Cable, Indoor, -xx Core, Singlemode	Yellow	2000 m/reel
GJFJV-xxA1b	Fiber Optic Cable, Indoor, -xx Core, Multimode	Orange	2000 m/reel
GJFJV-xxA1a	Fiber Optic Cable, Indoor, -xx Core, Multimode	Orange	2000 m/reel
GJFJV-xxA1a-OM3-300	Fiber Optic Cable, Indoor, -xx Core, 10G Multimode (50/125/300M)	Light green	2000 m/reel
GJFJV-xxA1a-OM4-550	Fiber Optic Cable, Indoor, -xx Core, 10G Multimode, (50/125/550M)	Violet	2000 m/reel
GJFJZY-xxB1 ZC	Fiber Optic Cable, Indoor, -xx Core, Singlemode, LSZH, Flame retardant (bunched wires)	Yellow	2000 m/reel
GJFJZY-xxA1b ZC	Fiber Optic Cable, Indoor, -xx Core, Multimode, LSZH, Flame retardant (bunched wires)	Orange	2000 m/reel
GJFJZY-xxA1a ZC	Fiber Optic Cable, Indoor, -xx Core, Multimode, LSZH, Flame retardant (bunched wires)	Orange	2000 m/reel
GJFJZY-xxA1a-OM3-300 ZC	Fiber Optic Cable, -xx Core, 10G Multimode (50/125/300M), LSZH, Flame retardant (bunched wires)	Light green	2000 m/reel
GJFJZY-xxA1a-OM4-550 ZC	Fiber Optic Cable, -xx Core, 10G Multimode (50/125/550M), LSZH, Flame retardant (bunched wires)	Violet	2000 m/reel

Optical Fiber Non-Metallic Tactical Cable, Indoor/Outdoor

GJFJU-*



Product Information

Product Application

Optical Fiber Non-Metallic Tactical Cable is mainly used for indoor and tactical cabling, for connections among telecommunication rooms, between equipment rooms and instrument rooms, as well as among instrument rooms. The cable is constructed of several $\phi 900\mu\text{m}$ (singlemode or multimode) tight buffered fibers surrounded by aramid yarn strength members jacketed in a TPU outer jacket. Its non metallic strength member provides lightning protection.

Product Features

- The cable, with a small diameter, provides an excellent bending performance;
- It is surrounded by aramid yarn strength members for better tensile strength;
- The cable has 62.5/125 multimode, 50/125 multimode and many other singlemode specifications available;
- Its tight buffer provides the fiber with great mechanical protection;
- It provides a high crush resistance coupled with excellent bending performance so as to avoid the impact from the outside environments;
- Its all dielectric structure effectively resists electromagnetic interference;
- The cable meets the industry-regulated requirements of optical transmission, mechanical protection and flammability.

Application Standards

YD/T 1258.3-2009; YD/T 1258.4-2005; GB/T 13993.3-2014

Color Code	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

Flame resistance	Flammability standard for single wire	GB/T 18380.12-2022	Flammability standard for bunched wires	GB/T 18380.35-2022
	Jacket: Peel off 50mm-long cable, place the empty jacket horizontally and burn for 4-5 seconds, using alcohol lamp; after the fire source is taken away, it extinguishes less than 2 seconds; Aramid yarn: it is burnt into powder and extinguishes right after the fire source is taken away.			

Optical Properties

Type of Optical Fiber	Attenuation		Injection Bandwidth (OFL)	Effective Modal Bandwidth	10 Ethernet Link Length SX	Min. Bend Radius (mm)
	1310nm/1550nm	850nm/1300nm	850nm	850nm		
	Typical Value (dB/km)	Max. Value (dB/km)	MHz · km	MHz · km		
SM 9/125	0.36/0.22	0.4/0.3	/	/	/	16
	850nm/1300nm					
	Typical Value (dB/km)	Max. Value (dB/km)				
MM62.5/125 OM1	3.0/1.0	3.5/1.5	$\geq 200/500$	/	/	30
MM50/125 OM2	3.0/1.0	3.5/1.5	$\geq 500/500$	/	≥ 150	30
MM50/125 OM3	3.0/1.0	3.5/1.5	$\geq 1500/500$	≥ 2000	≥ 300	30
MM50/125 OM4	3.0/1.0	3.5/1.5	$\geq 3500/500$	≥ 4700	≥ 550	30

Mechanical Properties

Type of Fiber Optic Cable	Diameter (mm)	Weight (kg/km)	Tensile Strength (N)		Crush Resistance (N/100mm)		Bend Radius		Jacket Thickness (mm)
			Long Term	Short Term	Long Term	Short Term	Dynamic	Static	
GJFJU-2 core	6.0±0.3	30	500	1500	1000	5000	20D	10D	1.0±0.1
GJFJU-4 core	6.0±0.3	30	500	1500	1000	5000	20D	10D	1.0±0.1
GJFJU-6 core	6.6±0.3	35	500	1500	1000	5000	20D	10D	1.0±0.1

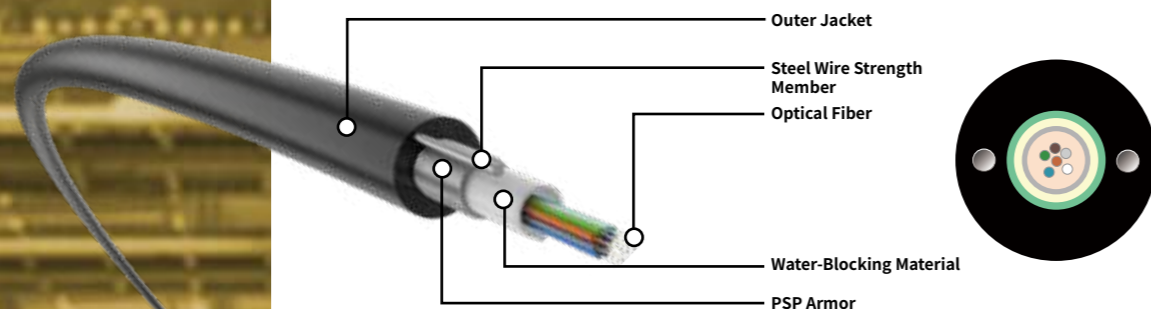
Jacket Specifications

Type of Optical Fiber	Color	Surface	Material
B1	Black	Bright color, no sand, raw skin or scratch on the surface	TPU
A1b	Black	Bright color, no sand, raw skin or scratch on the surface	TPU
A1a	Black	Bright color, no sand, raw skin or scratch on the surface	TPU
A1a OM3	Black	Bright color, no sand, raw skin or scratch on the surface	TPU
A1a OM4	Black	Bright color, no sand, raw skin or scratch on the surface	TPU

Order Information

Model	Description	Color	Package
GJFJU-xxB1	Optical Fiber Tactical Cable, -xx core, Singlemode (GJFJU-xxB1)	Black	2000 m/reel
GJFJU-xxA1b	Optical Fiber Tactical Cable, -xx core, Multimode	Black	2000 m/reel
GJFJU-xxA1a	Optical Fiber Tactical Cable, -xx core, Multimode	Black	2000 m/reel
GJFJU-xxA1a-OM3-300	Optical Fiber Tactical Cable, -xx core, 10G Multimode	Black	2000 m/reel
GJFJU-xxA1a-OM4-550	Optical Fiber Tactical Cable, -xx core, 10G Multimode	Black	2000 m/reel

Optical Fiber Central Tube Cable, Outdoor GYXTW-*, GYXTZW-*



Product Information

Product Application

Optical Fiber Central Tube Cable is mainly used for outdoor fiber connection along with building backbone application networks and link bridges. Inside the central tube cable, 250μm (singlemode or multimode) fibers are positioned in loose tubes made of high modulus polyester material. The tubes, filled with water-resistant compounds, are wrapped double chromium-plated PSP armor. Between the armor and the tubes, water-blocking material is applied to keep the cable watertight. Two parallel steel wires are placed at the two sides of the cable core and then a polyethylene (PE) jacket is extruded over it.

Product Features

- Central tube structure is designed for excellent mechanical performance and temperature performance;
- The loose tube material has good resistance to hydrolysis performance and high strength;
- The cable has 62.5/125 singlemode/multimode, 50/125 multimode, 2-24 cores, and many other specifications available;
- It provides a high crush resistance coupled with excellent bending performance and flexibility so as to avoid the impact from the outside environments;
- Its PSP armor improves moisture resistance;
- The two parallel steel wires ensures the cable's tensile strength;
- The cable meets the industry-regulated requirements of optical transmission, mechanical protection and flammability.

Application Standards

YD/T 769; IEC 60793; ISO/IEC11801

Color Code (2-12 core)	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

Color Code (2-24 core)	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua	Blue + Color Ring	Orange + Color Ring	Green + Color Ring	Brown + Color Ring	Slate + Color Ring	White + Color Ring	Red + Color Ring	Black + Color Ring	Yellow + Color Ring	Violet + Color Ring	Rose + Color Ring	Aqua + Color Ring

Flame resistance	Flammability standard for single wire	GB/T 18380.12-2022	Flammability standard for bunched wires	GB/T 18380.35-2022
	Jacket: Peel off 50mm-long cable, place the empty jacket horizontally and burn for 4-5 seconds, using alcohol lamp; after the fire source is taken away, it extinguishes less than 2 seconds; Aramid yarn: it is burnt into powder and extinguishes right after the fire source is taken away.			

Optical Properties

Type of Optical Fiber	Attenuation		Injection Bandwidth (OFL)	Effective Modal Bandwidth	10 Ethernet Link Length SX	Min. Bend Radius (mm)
	1310nm/1550nm	850nm/1300nm	850nm	850nm		
	Typical Value (dB/km)	Max. Value (dB/km)	MHz · km	MHz · km		
SM 9/125	0.36/0.22	0.4/0.3	/	/	/	16
	850nm/1300nm					
	Typical Value (dB/km)	Max. Value (dB/km)				
MM62.5/125 OM1	3.0/1.0	3.5/1.5	≥ 200/500	/	/	30
MM50/125 OM2	3.0/1.0	3.5/1.5	≥ 500/500	/	≥ 150	30
MM50/125 OM3	3.0/1.0	3.5/1.5	≥ 1500/500	≥ 2000	≥ 300	30
MM50/125 OM4	3.0/1.0	3.5/1.5	≥ 3500/500	≥ 4700	≥ 550	30

Structure Specifications

Name	Material	Parameter	Configuration (2-12 core)	Configuration (13-24 core)
Loose Tube	PBT	Outer diameter	2.5±0.1mm	3.0±0.1mm
		Thickness	0.40±0.05 mm	0.45±0.05 mm
Strength Member	Phosphatized steel wire	Diameter	1.0mm*2	1.0mm*2
Steel-Plastic Composite Belt	PSP/EGE	Thickness	0.205mm	0.205mm
Steel Wire Outer Jacket	GYXTW:PE GYXTZW:LSZH	Min. distance between outer jacket and steel wire	≥ 0.8mm	≥ 0.8mm
Fiber Optic Outer Jacket	GYXTW:PE GYXTZW:LSZH	Outer diameter	φ7.3±0.3mm	φ7.8±0.3mm
Temperature Range for Outer Jacket	-40°C ~+60°C	Additional attenuation at 20°C		≤ 0.1

Mechanical Properties

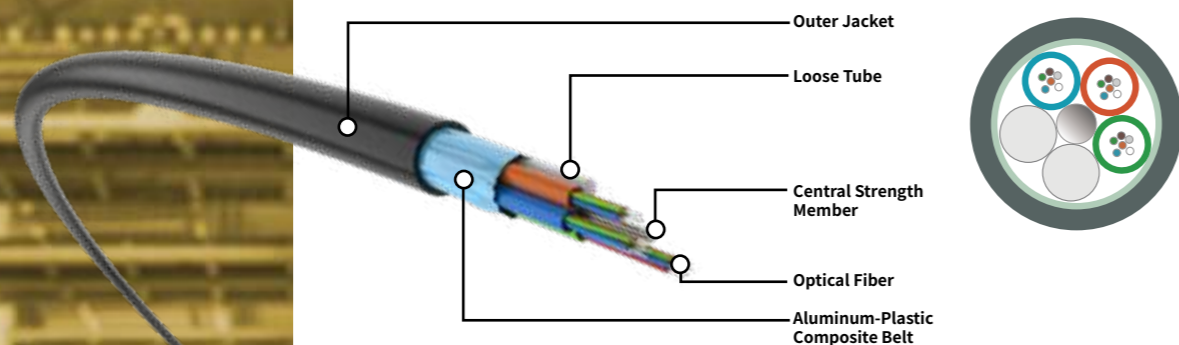
No.	Name	Requirements	
1	Allowed Tensile Strength, N	Short Term	1500
		Long Term	600
2	Allowed Crush Resistance, N/100mm	Short Term	1000
		Long Term	300
3	Bend Radius, mm	Static	10D
		Dynamic	20D
4	Water Permeability	In accordance with YD/T 769-2018	

Order Information

Model	Description	Color	Package
GYXTW	Optical fiber central tube cable, outdoor	Black	2000 m/reel
GYXTZW	Optical fiber central tube cable, LSZH, flame retardant	Black	2000 m/reel

Optical Fiber Aluminum Armored, Stranded Cable, Outdoor

GYTA-*, GYTZA-*



Product Information

Product Application

Optical Fiber Aluminum Armored, Stranded Cable is mainly used for outdoor fiber connection as well as building backbone conduit and link bridge connection. Inside the optical fiber aluminum armored cable, 250µm (singlemode or multimode) fibers are positioned in loose tubes made of high modulus polyester material, filled with water-resistant compounds. The optical fiber cable is centered by a metal strength member. For some optical fiber cables with multiple cores, a PE layer should be added outside. Loose tubes (and the fillers) are stranded around the strength member into a compact and circular cable core inside which is filled with water-resistant components. APL armor is longitudinally applied before a polyethylene (PE) jacket is extruded over it.

Product Features

- Stranded structure is designed for excellent mechanical performance and temperature performance;
- The cable has 62.5/125 singlemode/multimode, 50/125 multimode, 4-192 cores, and many other specifications available;
- The loose tube material has good resistance to hydrolysis performance and high strength;
- The loose tube is identified by color for fast and correct construction;
- Compact structure is required to prevent contraction of the loose tube;
- There is a central strength member made of a single steel wire;
- Its outer jacket is made of aluminum-PE material;
- It provides a high crush resistance coupled with excellent bending performance so as to avoid the impact from the outside environments;
- The cable meets the industry-regulated requirements of optical transmission, mechanical protection and flammability.

Application Standards

YD/T 901, IEC 60793, SO/IEC11801

Color Code (2-12 core)	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

Flame Resistance	Flammability standard for single wire	GB/T 18380.12-2022	Flammability standard for bunched wires	GB/T 18380.35-2022
	Jacket: Peel off 50mm-long cable, place the empty jacket horizontally and burn for 4-5 seconds, using alcohol lamp; after the fire source is taken away, it extinguishes less than 2 seconds; Aramid yarn: it is burnt into powder and extinguishes right after the fire source is taken away.			

Optical Properties

Type of Optical Fiber	Attenuation		Injection Bandwidth (OFL)	Effective Modal Bandwidth	10 Ethernet Link Length SX	Min. Bend Radius (mm)
	1310nm/1550nm	850nm/1300nm	850nm	850nm		
	Typical Value (dB/km)	Max. Value (dB/km)	MHz·km	MHz·km		
SM 9/125	0.36/0.22	0.4/0.3	/	/	/	16
	850nm/1300nm					
	Typical Value (dB/km)	Max. Value (dB/km)				
MM62.5/125 OM1	3.0/1.0	3.5/1.5	≥ 200/500	/	/	30
MM50/125 OM2	3.0/1.0	3.5/1.5	≥ 500/500	/	≥ 150	30
MM50/125 OM3	3.0/1.0	3.5/1.5	≥ 1500/500	≥ 2000	≥ 300	30
MM50/125 OM4	3.0/1.0	3.5/1.5	≥ 3500/500	≥ 4700	≥ 550	30

Structure Specifications

Quantity of Cores	Cores of Loose Tube	Strength Member	Outer Diameter of Loose Tube	Thickness of Loose Tube	Aluminum Belt	Thickness of Jacket (mm)	Outer jacket of Optical Fiber (mm)
2 ~ 30	6	1.30*1±0.1	≥ 1.60	≥ 0.28	0.20±0.01	≥ 1.50	8.3±0.3
32 ~ 36	6	1.60*1±0.1	≥ 1.60	≥ 0.28	0.20±0.01	≥ 1.50	8.6±0.3
38 ~ 60	12	1.50*1±0.1	≥ 1.60	≥ 0.28	0.20±0.01	≥ 1.50	8.8±0.3
72	12	1.80*1±0.1	≥ 1.60	≥ 0.28	0.20±0.01	≥ 1.50	9.2±0.3
96	12	2.0/3.3*1±0.2	≥ 1.60	≥ 0.28	0.20±0.01	≥ 1.50	10.8±0.3
120	12	2.0/4.4*1±0.2	≥ 1.60	≥ 0.28	0.22±0.01	≥ 1.50	12.1±0.3
144	12	2.0/5.8*1±0.2	≥ 1.60	≥ 0.28	0.22±0.01	≥ 1.50	13.5±0.3

Mechanical Properties

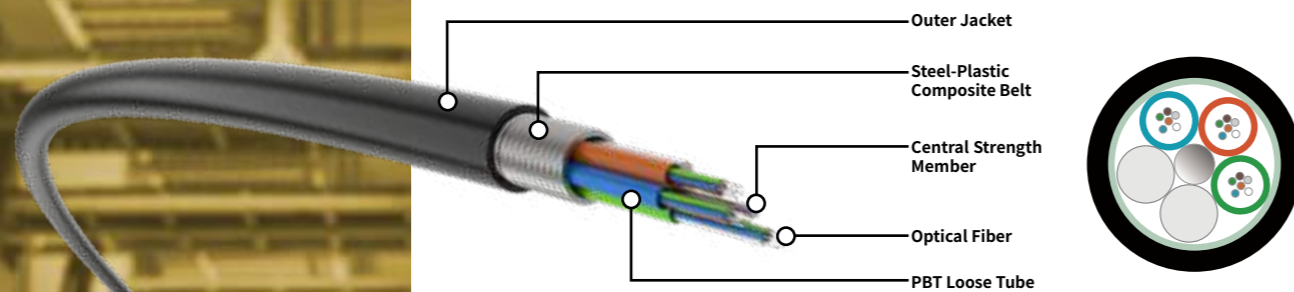
No.	Name	Requirements	
1	Allowed Tensile Strength, N	Short Term	1500
		Long Term	600
2	Allowed Crush Resistance, N/100mm	Short Term	1000
		Long Term	300
3	Bend Radius, mm	Static	10D
		Dynamic	20D

Order Information

Model	Description	Color	Package
GYTA	Optical Fiber Aluminum Armored, Stranded Cable, Outdoor	Black	2000 m/reel
GYTZA	Optical Fiber Aluminum Armored, Stranded Cable, Outdoor, LSZH, Flame retardant	Black	2000 m/reel

Optical Fiber Steel Armored, Stranded Cable, Outdoor

GYTS-*, GYTZS-*



Product Information

Product Application

Optical Fiber Steel Armored, Stranded Cable is mainly used for outdoor fiber connection as well as building backbone conduit and link bridge connection. Inside the optical fiber steel armored cable, 250 μ m (singlemode or multimode) fibers are positioned in loose tubes made of high modulus polyester material, filled with water-resistant compounds. The optical fiber cable is centered by a metal strength member. For some optical fiber cables with multiple cores, a PE layer should be added outside. Loose tubes (and the fillers) are stranded around the strength member into a compact and circular cable core inside which is filled with water-resistant components. PSP armor is longitudinally applied and then a polyethylene (PE) jacket is extruded over it.

Product Features

- Stranded structures is designed for excellent mechanical performance and temperature performance;
- The cable has 62.5/125 singlemode/multimode, 50/125 multimode, 4-192 cores, and many other specifications available;
- The loose tube material has good resistance to hydrolysis performance and high strength;
- The loose tube is identified by color for fast and correct construction;
- Compact structure is required to prevent the contraction of the loose tube;
- There is a central strength member made of a single steel wire;
- Its outer jacket is made of steel-PE material;
- It provides a high crush resistance coupled with excellent bending performance so as to avoid the impact from the outside environments;
- The cable meets the industry-regulated requirements of optical transmission, mechanical protection and flammability.

Application Standards

YD/T 901; IEC 60793; ISO/IEC11801

Color Code (2-12 core)	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

Flame Resistance	Flammability standard for single wire	GB/T 18380.12-2022	Flammability standard for bunched wires	GB/T 18380.35-2022
	Jacket: Peel off 50mm-long cable, place the empty jacket horizontally and burn for 4-5 seconds, using alcohol lamp; after the fire source is taken away, it extinguishes less than 2 seconds; Aramid yarn: it is burnt into powder and extinguishes right after the fire source is taken away.			

Optical Properties

Type of Optical Fiber	Attenuation		Injection Bandwidth (OFL)	Effective Modal Bandwidth	10 Ethernet Link Length SX	Min. Bend Radius (mm)
	1310nm/1550nm	850nm/1300nm	850nm	850nm		
	Typical Value (dB/km)	Max. Value (dB/km)	MHz · km	MHz · km		
SM 9/125	0.36/0.22	0.4/0.3	/	/	/	16
	850nm/1300nm					
	Typical Value (dB/km)	Max. Value (dB/km)				
MM62.5/125 OM1	3.0/1.0	3.5/1.5	$\geq 200/500$	/	/	30
MM50/125 OM2	3.0/1.0	3.5/1.5	$\geq 500/500$	/	≥ 150	30
MM50/125 OM3	3.0/1.0	3.5/1.5	$\geq 1500/500$	≥ 2000	≥ 300	30
MM50/125 OM4	3.0/1.0	3.5/1.5	$\geq 3500/500$	≥ 4700	≥ 550	30

Structure Specifications

Quantity of Cores	Cores of Loose Tube	Strength Member	Outer Diameter of Loose Tube	Thickness of Loose Tube	SteeBelt	Thickness of Jacket (mm)	Outer jacket of Optical Fiber (mm)
2 ~ 30	6	1.30*1 \pm 0.1	≥ 1.60	≥ 0.28	0.20 \pm 0.01	≥ 1.50	8.3 \pm 0.3
32 ~ 36	6	1.60*1 \pm 0.1	≥ 1.60	≥ 0.28	0.20 \pm 0.01	≥ 1.50	8.6 \pm 0.3
38 ~ 60	12	1.50*1 \pm 0.1	≥ 1.60	≥ 0.28	0.20 \pm 0.01	≥ 1.50	8.8 \pm 0.3
72	12	1.80*1 \pm 0.1	≥ 1.60	≥ 0.28	0.20 \pm 0.01	≥ 1.50	9.2 \pm 0.3
96	12	2.0/3.3*1 \pm 0.2	≥ 1.60	≥ 0.28	0.20 \pm 0.01	≥ 1.50	10.8 \pm 0.3
120	12	2.0/4.4*1 \pm 0.2	≥ 1.60	≥ 0.28	0.22 \pm 0.01	≥ 1.50	12.1 \pm 0.3
144	12	2.0/5.8*1 \pm 0.2	≥ 1.60	≥ 0.28	0.22 \pm 0.01	≥ 1.50	13.5 \pm 0.3

Mechanical Properties

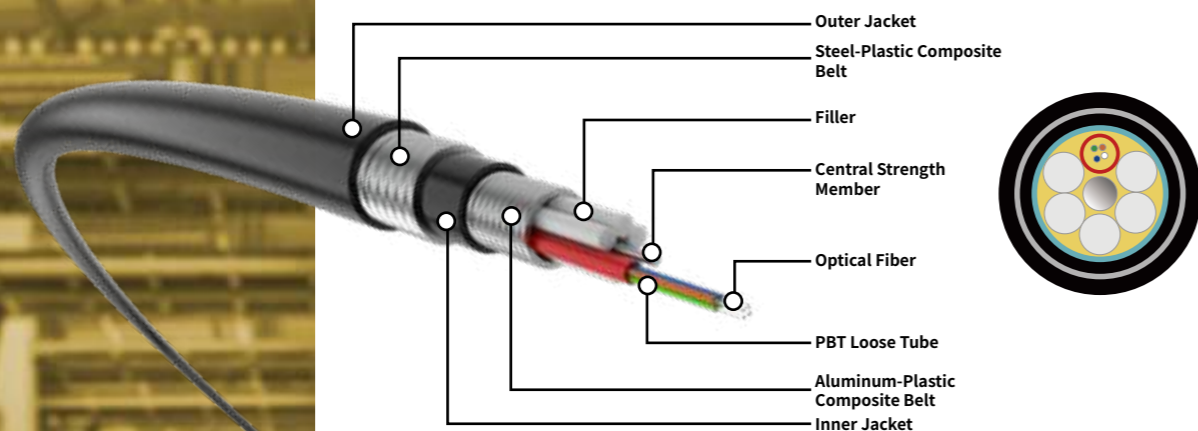
No.	Name	Requirements	
1	Allowed Tensile Strength, N	Short Term	1500
		Long Term	600
2	Allowed Crush Resistance, N/100mm	Short Term	1000
		Long Term	300
3	Bend Radius, mm	Static	10D
		Dynamic	20D

Order Information

Model	Description	Color	Package
GYTS	Optical Fiber Steel Armored, Stranded Cable, Outdoor	Black	2000 m/reel
GYTZS	Optical Fiber Steel Armored, Stranded Cable, Outdoor, LSZH, Flame retardant	Black	2000 m/reel

Optical Fiber Heavy Armored, Stranded Cable, Outdoor

GYTA53-*, GYTZA53-*



Product Information

Product Application

Optical Fiber Heavy Armored, Stranded Cable is mainly used for outdoor fiber connection as well as building backbone conduit and link bridge connection. Inside the optical fiber heavy armored cable, 250µm (singlemode or multimode) fibers are positioned in loose tubes made of high modulus polyester material, filled with water-resistant compounds. The optical fiber cable is centered by a metal strength member. For some fiber optic cables with multiple cores, a PE layer should be added outside. The loose tube (and fillers) is stranded around the strength member into a compact and circular cable core inside which is filled with water-resistant components. APL armor is longitudinally applied and then a polyethylene (PE) inner jacket is extruded. Over the inner jacket, PSP armor is also longitudinally applied before a polyethylene (PE) outer jacket is extruded over it.

Product Features

- Stranded structures is designed for excellent mechanical performance and temperature performance;
- The cable has 62.5/125 singlemode/multimode, 50/125 multimode, 4-192 cores, and many other specifications available;
- The loose tube material has good resistance to hydrolysis performance and high strength;
- The loose tube is identified by color for fast and correct construction;
- Compact structure is required to prevent the contraction of the loose tube;
- There is a central strength member made of a single steel wire;
- The cable features an inner jacket in aluminum armor together with a outer jacket in steel armor, thus providing a high crush resistance;
- It provides a high crush resistance coupled with excellent bending performance so as to avoid the impact from the outside environments;
- The cable meets the industry-regulated requirements of optical transmission, mechanical protection and flammability.

Application Standards

YD/T 901-2018; GB/T 18380.12-2022; GB/T 17651; GB/T 17650.2

Color Code (2-12 core)	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

Flame Resistance	Flammability standard for single wire	GB/T 18380.12-2022	Flammability standard for bunched wires	GB/T 18380.35-2022
	Jacket: Peel off 50mm-long cable, place the empty jacket horizontally and burn for 4-5 seconds, using alcohol lamp; after the fire source is taken away, it extinguishes less than 2 seconds; Aramid yarn: it is burnt into powder and extinguishes right after the fire source is taken away.			

Optical Properties

Type of Optical Fiber	Attenuation		Injection Bandwidth (OFL)	Effective Modal Bandwidth	10 Ethernet Link Length SX	Min. Bend Radius (mm)
	1310nm/1550nm	Typical Value (dB/km)	Max. Value (dB/km)	MHz·km	MHz·km	
SM 9/125	0.36/0.22	0.4/0.3	/	/	/	16
	850nm/1300nm					
	Typical Value (dB/km)	Max. Value (dB/km)				
MM62.5/125 OM1	3.0/1.0	3.5/1.5	≥ 200/500	/	/	30
MM50/125 OM2	3.0/1.0	3.5/1.5	≥ 500/500	/	≥ 150	30
MM50/125 OM3	3.0/1.0	3.5/1.5	≥ 1500/500	≥ 2000	≥ 300	30
MM50/125 OM4	3.0/1.0	3.5/1.5	≥ 3500/500	≥ 4700	≥ 550	30

Structure Specifications

Quantity of Cores	Cores of Loose Tube	Strength Member	Outer Diameter of Loose Tube	Thickness of Loose Tube	Aluminum Belt	SteeBelt	Thickness of Jacket (mm)	Outer jacket of Optical Fiber (mm)
2 ~ 36	6	1.60*1±0.1	≥ 1.60	≥ 0.28	0.20±0.01	0.205±0.01	0.8±0.1/ ≥ 1.5	11.0±0.3
48 ~ 60	12	1.40*1±0.1	≥ 1.60	≥ 0.28	0.20±0.01	0.205±0.01		11.2±0.3
62 ~ 72	12	1.80*1±0.1	≥ 1.60	≥ 0.28	0.20±0.01	0.205±0.01		11.6±0.3
96	12	2.0/3.3*1±0.2	≥ 1.60	≥ 0.28	0.20±0.01	0.205±0.01		13.7±0.3
120	12	2.0/4.4*1±0.2	≥ 1.60	≥ 0.28	0.22±0.01	0.205±0.01		15.0±0.3
144	12	2.0/5.8*1±0.2	≥ 1.60	≥ 0.28	0.22±0.01	0.205±0.01		16.4±0.3

Mechanical Properties

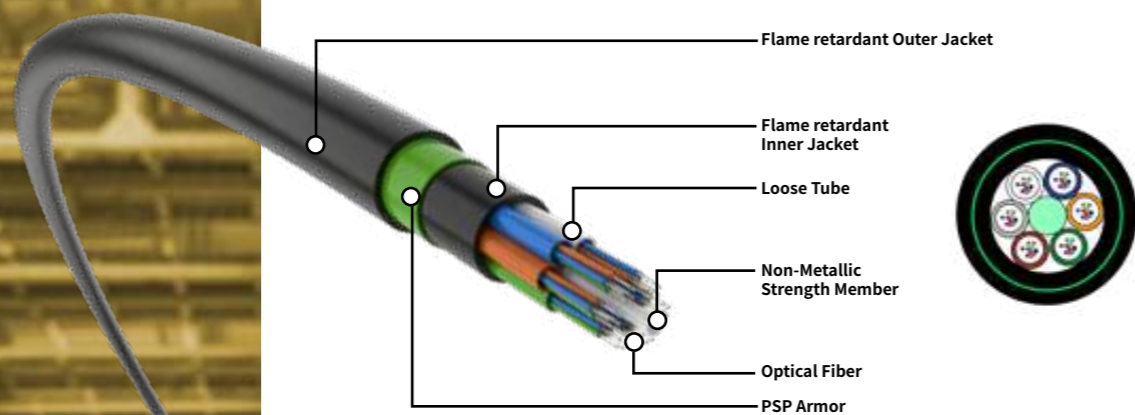
No.	Name	Requirements	
1	Allowed Tensile Strength, N	Short Term	3000
		Long Term	1000
2	Allowed Crush Resistance, N/100mm	Short Term	3000
		Long Term	1000
3	Bend Radius, mm	Static	12.5D
		Dynamic	25D

Order Information

Model	Description	Color	Package
GYTA53	Optical Fiber Heavy Armored, Stranded Cable, Outdoor	Black	2000 m/reel
GYTZA53	Optical Fiber Heavy Armored, Stranded Cable, Outdoor, LSZH, Flame retardant	Black	2000 m/reel

Optical Fiber Fire Resistant Cable

GJFZY53-FR



Product Information

Product Application

Optical Fiber Fire Resistant Cable is intended to be used in indoor structured cabling as well as connections between outdoor and indoor optical fiber distribution devices. Inside GJFZY53 optical fiber fire resistant cable, 250µm fibers are positioned in loose tubes made of high modulus polyester material, filled with water-resistant compounds. The optical fiber cable is centered by a non-metallic strength member. For some optical fiber cables with multiple cores, a PE layer should be added outside. Loose tubes are stranded around the strength member into a compact and circular cable core. Outside the core, a layer of flame retardant inner jacket is extruded. PSP armor is then longitudinally applied before a polyethylene (PE) outer jacket is extruded over it.

Product Features

- Optical fiber fire resistant cable provides superior mechanical performance, temperature performance and fire resistance;
- The loose tube material has good resistance to hydrolysis performance and high strength;
- Special gels are filled inside the loose tubes crucial to the protection of optical fibers;
- The optical fiber cable enjoys rigorous processing craft and rational design in a scientific way;
- The jacket is made of aluminum-PE material.

Application Standards

YD/T 1258.4; ICEA- 596; GR-409; IEC 60794; IEC 60331-25

Color Code (2-12 core)	1	2	3	4	5	6	7	8	9	10	11	12
	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

Flammability standard for single wire	GB/T 18380.12-2022
Flame Resistance	Jacket: Peel off 50mm-long cable, place the empty jacket horizontally and burn for 4-5 seconds, using alcohol lamp; after the fire source is taken away, it extinguishes less than 2 seconds; Aramid yarn: it is burnt into powder and extinguishes right after the fire source is taken away.
Fire Resistance	GB/T 19216.25, for 90 minutes

Optical Properties

Type of Optical Fiber	Attenuation		Injection Bandwidth (OFL)	Effective Modal Bandwidth	10 Ethernet Link Length SX	Min. Bend Radius (mm)
	1310nm/1550nm	850nm/1300nm	850nm	850nm		
	Typical Value (dB/km)	Max. Value (dB/km)	MHz · km	MHz · km		
SM 9/125	0.36/0.22	0.4/0.3	/	/	/	16
	850nm/1300nm					
	Typical Value (dB/km)	Max. Value (dB/km)				
MM62.5/125 OM1	3.0/1.0	3.5/1.5	≥ 200/500	/	/	30
MM50/125 OM2	3.0/1.0	3.5/1.5	≥ 500/500	/	≥ 150	30
MM50/125 OM3	3.0/1.0	3.5/1.5	≥ 1500/500	≥ 2000	≥ 300	30
MM50/125 OM4	3.0/1.0	3.5/1.5	≥ 3500/500	≥ 4700	≥ 550	30

Structure Specifications

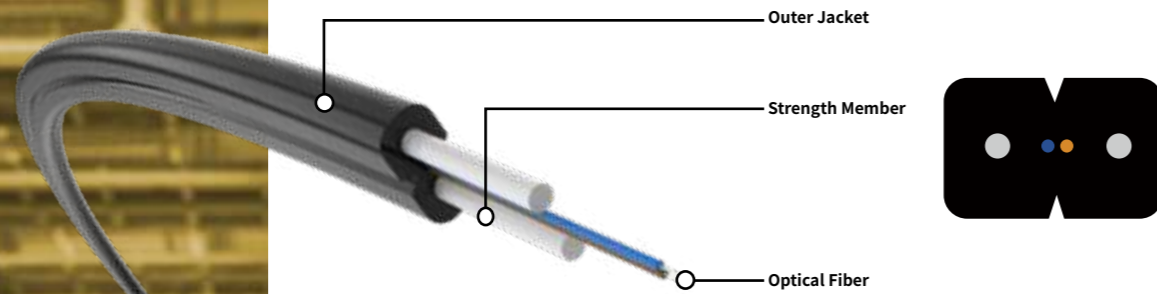
Fiber Counts	Weight (kg/km)	Allowed Tensile Strength Long Term/Short Term, N	Allowed Crush Resistance Long Term/Short Term, N/100mm	Bend Radius Dynamic/Static, mm
6 ~ 36	239	400/1000	1000/3000	20D/10D
48 ~ 60	260	400/1000	1000/3000	20D/10D
72	277	400/1000	1000/3000	20D/10D
96	329	400/1000	1000/3000	20D/10D

Order Information

Model	Description	Color	Package
GJFZY53(FR)	Optical Fiber Fire Resistant Cable, Singlemode, Indoor	Black	2000 m/reel
GJFZY53(FR)	Optical Fiber Fire Resistant Cable, Multimode	Black	2000 m/reel
GJFZY53(FR)	Optical Fiber Fire Resistant Cable, 10G Multimode	Black	2000 m/reel

Optical Fiber Bow-Type Cable (Drop Cable)

GJXFZH-*, GJXZH-*, GJXFH-*, GJXH-*



Product Information

Product Application

Optical fiber bow-type cable is used as access building cable, used as drop cable along the wall, the roof, the mezzanine and the conduit, and also used as communications rear cable, connection cable and patch cord.

Product Features

- Optical fiber bow-type cable, also named as drop cable, provides superior bending performance;
- The cable has 62.5/125 singlemode/multimode, 50/125 multimode, 1-4 cores, and many other specifications available;
- The tight buffer optical fiber provides great mechanical protection;
- Two parallel FRP or steel wires ensure a high crush resistance, thus protecting the optical fibers;
- Unique slot design, easy to peel off and splice, makes it easier to install and maintain;
- The cable meets the industry-regulated requirements of optical transmission, mechanical protection and flammability.

Application Standards

IEC 60793, ISO/IEC11801, YD/T1997

Color Code	1	2	3	4
	Blue	Orange	Green	Brown

Flame Resistance	Flammability standard for single wire	GB/T 18380.12-2022	Flammability standard for bunched wires	GB/T 18380.35-2022
	Jacket: Peel off 50mm-long cable, place the empty jacket horizontally and burn for 4-5 seconds, using alcohol lamp; after the fire source is taken away, it extinguishes less than 2 seconds; Aramid yarn: it is burnt into powder and extinguishes right after the fire source is taken away.			

Optical Properties

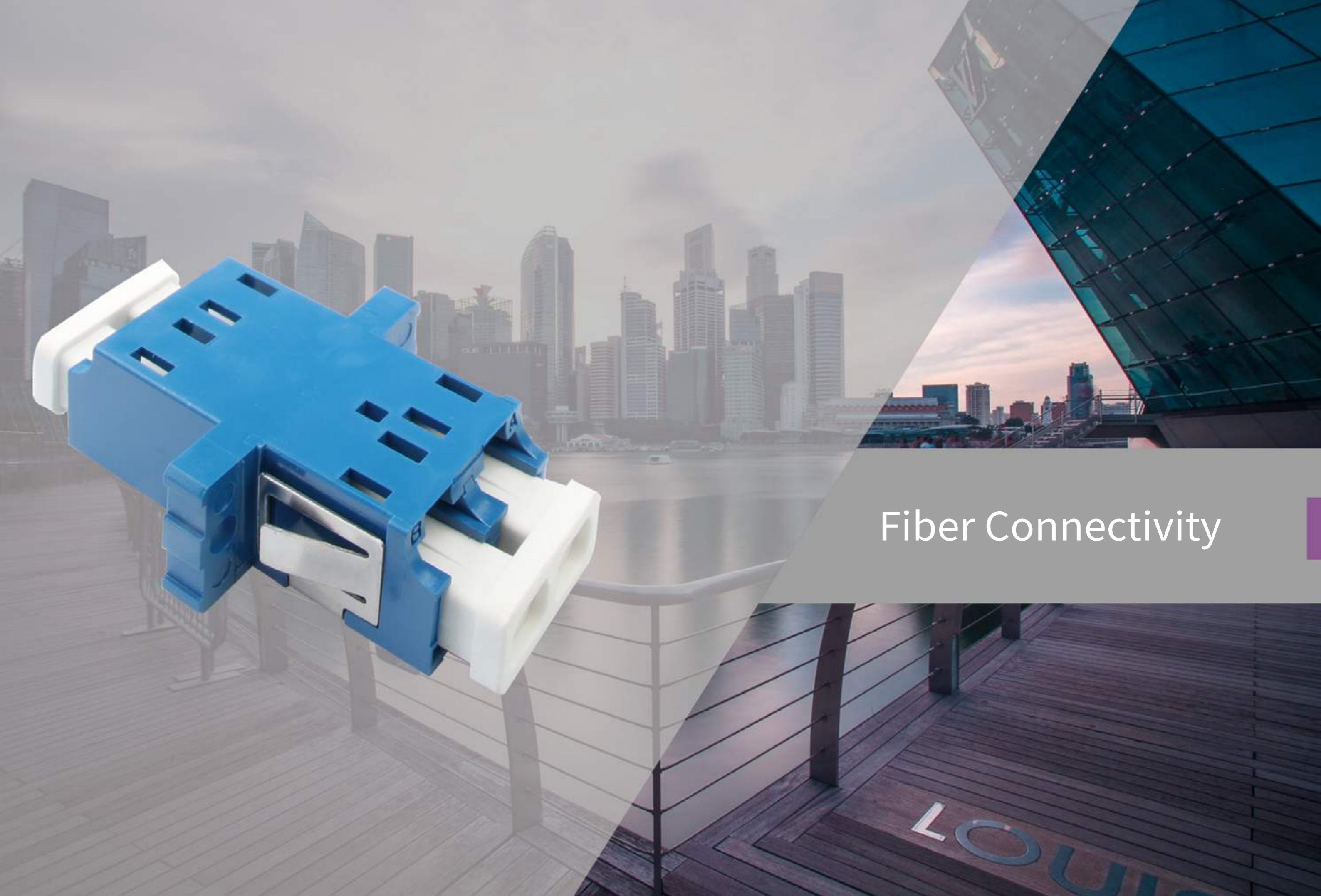
Type of Optical Fiber	Attenuation		Min. Bend Radius (mm)
	1310nm/1550nm		
	Typical Value (dB/km)	Typical Value (dB/km)	
G657A2	0.36/0.22	0.4/0.3	10

Structure Specifications

Fiber Model	Diameter (mm)	Weight (kg/km)	Allowed Tensile Strength (N)		Allowed Crush Resistance (N/100Mm)		Bend Radius (mm)		Strength Member	Size of Strength Member	Color of Outer Jacket	Jacket Material
			Long Term	Short Term	Long Term	Short Term	Dynamic	Static				
GJXFZH-1B6	2.0×3.0±0.1	8.5	40	80	500	1000	40	20	Fiber Reinforced Plastic (FRP)	0.5mm ×2±0.1	Black	Low Smoke Zero Halogen (LSZH) Flame retardant Polyolefin
GJXFZH -2B6	2.0×3.0±0.1	8.5	40	80	500	1000	40	20				
GJXFZH -4B6	2.0×3.0±0.1	8.5	40	80	500	1000	40	20				
GJXZH-1B6	2.0×3.0±0.1	10	100	200	1000	2200	40	20	Phosphatized Steel Wire	0.4mm ×2±0.1	Black	Low Smoke Zero Halogen (LSZH) Flame retardant Polyolefin
GJXZH -2B6	2.0×3.0±0.1	10	100	200	1000	2200	40	20				
GJXZH -4B6	2.0×3.0±0.1	10	100	200	1000	2200	40	20				
GJXFH-1B6	2.0×3.0±0.1	8.5	40	80	500	1000	40	20	Fiber Reinforced Plastic (FRP)	0.5mm ×2±0.1	Black	Low Smoke Zero Halogen (LSZH) Polyolefin
GJXFH -2B6	2.0×3.0±0.1	8.5	40	80	500	1000	40	20				
GJXFH -4B6	2.0×3.0±0.1	8.5	40	80	500	1000	40	20				
GJXH-1B6	2.0×3.0±0.1	10	100	200	1000	2200	40	20	Phosphatized Steel Wire	0.4mm ×2±0.1	Black	Low Smoke Zero Halogen (LSZH) Polyolefin
GJXH-2B6	2.0×3.0±0.1	10	100	200	1000	2200	40	20				
GJXH-4B6	2.0×3.0±0.1	10	100	200	1000	2200	40	20				

Order Information

Model	Description	Jacket Color	Package
GJXFZH-xxB6	Optical Fiber Bow-Type Cable, -xx Core, Singlemode, Non Metallic Strength Member, LSZH, Flame retardant	Black	2000 m/ reel
GJXZH-xxB6	Optical Fiber Bow-Type Cable, -xx Core, Singlemode, Metallic Strength Member, LSZH, Flame retardant	Black	2000 m/ reel
GJXFH-xxB6	Optical Fiber Bow-Type Cable, -xx Core, Singlemode, Non-Metallic Strength Member, LSZH	Black	2000 m/ reel
GJXH-xxB6	Optical Fiber Bow-Type Cable, -xx Core, Singlemode, Metallic Strength Member, LSZH	Black	2000 m/ reel



Fiber Connectivity

Magic series HD96 Fiber Optic Cassettes

FB-11-PB-*, FB-11-WB-*

Matched with Modular Patch Panel, splice or pre-terminated, 12*SC/LCD/MPO/MTP ports in front



Product Information

Product Application

HD96 Fiber Optic Cassette provides a centered cable distribution to management rooms, equipment rooms and data center information points in smart building structured cabling system. It exceeds all parameters specified in IEC 61754, IEC 61755 standards. The cassette can be installed in Magic series Modular Patch Panels, used in combination with fiber optic splicing, MPO/MTP pre-term fiber optic cables and fiber optic patch cords, and provide high performance, high density inlets and outlets for fiber optic information points. There are both splicing and pre-terminated types. The former supports 24 splices, while the latter provides a variety of models, such as MPO/MTP to SC, LCD, MPO/MTP, and OS2, OM3, OM4, OM5. With LC adapter in use, it can house 96 fibers within 1U, which realizes optimal space utilization and provides a strong guarantee for structured cabling installation, maintenance and management.

Product Features

Plastics gives the main housing good mechanical property. Modular design offers both splicing and pre-terminated types.

With SCD/LCQ adapters in front (in combination with 1.6mm ultra thin patch cords from TC) and M16 cable gland (4-8mm diameter) in rear, each splice cassette holds up to 24 splices and is equipped with a micro splice tray as well as bend radius protection. It is suggested that G.657.A1 singlemode pigtailed should be used to reduce macro bending losses of singlemode fibers.

Pre-terminated type has two MPO/MTP-LC fan-outs built-in with low losses. 100% original, it exceeds all parameters specified in IEC 61754, IEC 61755 and other international standards. It is compatible with Type A and Type B wiring as well as exclusive Type T wiring (the same wiring on both terminals) by TC. High density that 96 fibers within 1U, together with pre-termination ensures high space utilization and quick deployment in data center.

Application standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



HD96 Pre-Term Cassette
Inbuilt high-performance MPO/MTP-LC fan-outs



HD96 Splice Cassette
Inbuilt splice tray for 24-splices

Specifications	OM3/OM4	OM5	G.657.A2 LC-PC	G.657.A2 LC-APC	
Capacity	24 core	24 core	24 core	24 core	
Connector	2 x MPO/MTP female	2 x MPO/MTP female	2 x MPO/MTP female	2 x MPO/MTP female	
Connector Type, Grinding Type	Low loss, PC 0°	Low loss, PC 0°	Low loss, APC 8°	Low loss, APC 8°	
Rear	Insertion Loss IL (Typical)	≤ 0.15dB	≤ 0.18dB	≤ 0.18dB	
	Insertion Loss IL (Max.)	≤ 0.30dB	≤ 0.30dB	≤ 0.30dB	
	Return Loss RL (Typical)	≥ 35dB	≥ 35dB	≥ 70dB	≥ 70dB
	Return Loss RL (Min.)	≥ 30dB	≥ 30dB	≥ 65dB	≥ 65dB
	Connectivity Method	A, B, T	A, B, T	A, B, T	A, B, T
	Color Code	Aqua, Violet	Lime green	Black	Black
	Color Code of Fan-Out Fibers	IEC 60304	IEC 60304	IEC 60304	IEC 60304
Front	Connector	24 x LC PC 0°	24 x LC PC 0°	24 x LC APC 8°	
	Grinding Type	ZrO ₂	ZrO ₂	ZrO ₂	
	Fiber Stub	ZrO ₂	ZrO ₂	ZrO ₂	
	Insertion Loss IL (Typical)	≤ 0.10dB	≤ 0.10dB	≤ 0.10dB	≤ 0.10dB
	Insertion Loss IL (Max.)	≤ 0.25dB	≤ 0.25dB	≤ 0.25dB	≤ 0.25dB
	Return Loss RL (Typical)	≥ 40dB	≥ 40dB	≥ 50dB	≥ 75dB
	Return Loss RL (Min.)	≥ 35dB	≥ 35dB	≥ 45dB	≥ 65dB
	Tube	ZrO ₂	ZrO ₂	ZrO ₂	ZrO ₂
	Color Code	Aqua, Violet	Lime green	Blue	Green
	Jacket Material	PEI	PEI	PEI	PEI
Dust Cover (duplex)	White or Transparent	White or Transparent	White or Transparent	White or Transparent	
Quantity of Fan-Outs	2 x 12 core	2 x 12 core	2 x 12 core	2 x 12 core	

Notes: Multimode Insertion Loss IL value is measured at 850nm light, using EFL (Encircled Flux Launch) testing methods according to IEC 61280-4-1.

Order Information

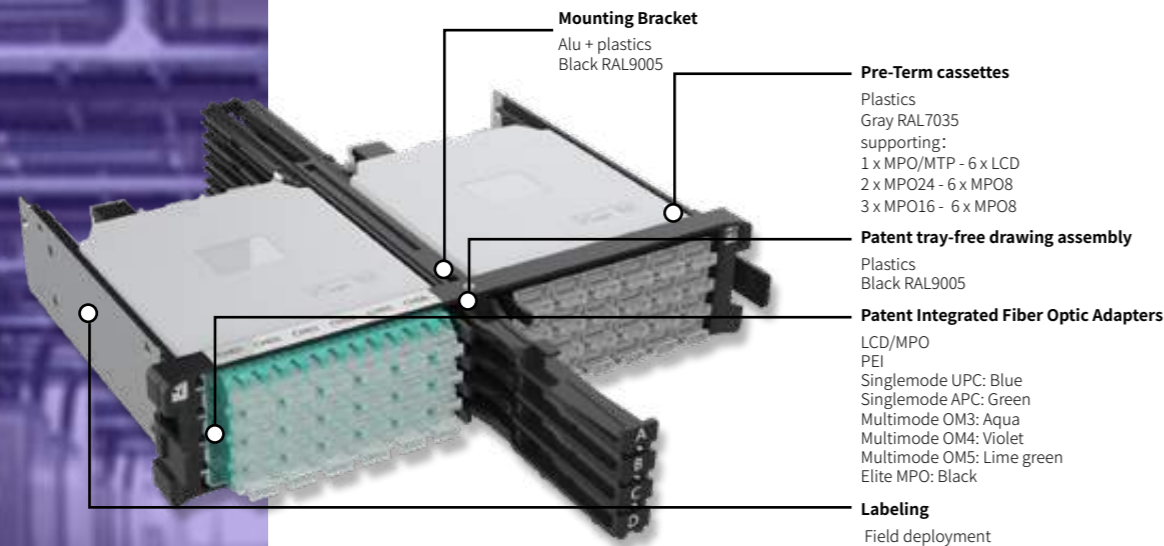
Model	Description	Color	Package
FB-11-PB-6-2*MPO/F-LC-24OM3-A	Magic series, HD 24-core LC Pre-Term Cassette, 2 MPO (female) -24LC, OM3, Polarity A	Black RAL9005	1 per box
FB-11-PB-6-2*MPO/F-LC-24OM4-A	Magic series, HD 24-core LC Pre-Term Cassette, 2 MPO (female) -24LC, OM4, Polarity A	Black RAL9005	1 per box
FB-11-PB-6-2*MPO/F-LC-24OM5-A	Magic series, HD 24-core LC Pre-Term Cassette, 2 MPO (female) -24LC, OM5, Polarity A	Black RAL9005	1 per box
FB-11-PB-6-2*MPO/F-LC-24B6A2-A	Magic series, HD 24-core LC Pre-Term Cassette, 2 MPO (female) -24LC, G.657.A2, Polarity A	Black RAL9005	1 per box
FB-11-PB-6-2*MPO/F-LC-24OM3-B	Magic series, HD 24-core LC Pre-Term Cassette, 2 MPO (female) -24LC, OM3, Polarity B	Black RAL9005	1 per box
FB-11-PB-6-2*MPO/F-LC-24OM4-B	Magic series, HD 24-core LC Pre-Term Cassette, 2 MPO (female) -24LC, OM4, Polarity B	Black RAL9005	1 per box
FB-11-PB-6-2*MPO/F-LC-24OM5-B	Magic series, HD 24-core LC Pre-Term Cassette, 2 MPO (female) -24LC, OM5, Polarity B	Black RAL9005	1 per box
FB-11-PB-6-2*MPO/F-LC-24B6A2-B	Magic series, HD 24-core LC Pre-Term Cassette, 2 MPO (female) -24LC, G.657.A2, Polarity B	Black RAL9005	1 per box
FB-11-PB-6-2*MPO/F-LC-24OM3-T	Magic series, HD 24-core LC Pre-Term Cassette, 2 MPO (female) -24LC, OM3, Polarity T	Black RAL9005	1 per box
FB-11-PB-6-2*MPO/F-LC-24OM4-T	Magic series, HD 24-core LC Pre-Term Cassette, 2 MPO (female) -24LC, OM4, Polarity T	Black RAL9005	1 per box
FB-11-PB-6-2*MPO/F-LC-24OM5-T	Magic series, HD 24-core LC Pre-Term Cassette, 2 MPO (female) -24LC, OM5, Polarity T	Black RAL9005	1 per box
FB-11-PB-6-2*MPO/F-LC-24B6A2-T	Magic series, HD 24-core LC Pre-Term Cassette, 2 MPO (female) -24LC, G.657.A2, Polarity T	Black RAL9005	1 per box
FB-11-WB-6-LCQ-24B6A2	Magic series, HD 12-core SC Splice Cassette, with 6*singlemode G.657.A2 blue SCD adapters, front detachable	Black RAL9005	1 per box
FB-11-WB-6-SCD-12B6A2	Magic series, HD 24-core LC Splice Cassette, with 6*singlemode G.657.A2 blue LCQ adapters, front detachable	Black RAL9005	1 per box
FB-11-WB-6-LCQ-24OM3	Magic series, HD 24-core LC Splice Cassette, with 6*10G OM3 multimode aqua LCQ adapters, front detachable	Black RAL9005	1 per box

Notes: Magic Series HD96 Fiber Optic Cassette offers a broad selection of models. For detailed information, please contact local distributors.

Magic series UHD192 Fiber Optic Cassette Module

FB-11-ZJ-K, FB-11-HB-*

Matched with Modular Patch Panel, pre-terminated type, for 8*pre-term cassettes



Product Information

Product Application

Fiber Optic Cassette Module provides a centered cable distribution to equipment rooms and data center fiber optic information points in smart building structured cabling system. It exceeds all parameters specified in IEC 61754, IEC 61755 standards. The cassette module can be installed in Magic series Modular Patch Panels, used in combination with MPO/MTP pre-term optic fiber cables and fiber optic patch cords, and provide high performance, high density inlets and outlets for fiber optic information points. It has MPO/MTP to SC, LCD, MPO/MTP available. With LC adapter in use, it can house 192 fibers within 1U, twice what HD96 can accommodate, which realizes optimal space utilization and provides a strong guarantee for structured cabling installation, maintenance and management.

Product Features

Magic series Modular Patch Panel can have two UHD 192 fiber cassette modules installed, and each has at most 8 pre-term cassettes. Patent tray-free design and integrated design for adapter plugs greatly reduce gaps between the units, ensure 192 fibers in 1U, and keep all the advantages of 144-fiber layered drawing. For better working environment, 1.8mm ultra thin Uniboot patch cords are recommended.

Behind the unit is the patent MPO/MTP plug/unplug assembly, and its MPO/MTP connector can be detached from the front for easier and faster removal of each modular unit.

MPO/MTP-LC cassette has one MPO/MTP low loss fan-out cable inside, 100% original. It is compatible with Type A and Type B wiring as well as exclusive Type T wiring (the same wiring on both terminals) by TC. MPO/MTP-MPO/MTP cassette can install several low loss fan-out cables based on user's demand. It is an optimal choice for the transition from 40G to 400G.

Extra cable management ring attached to the pull rod, allied with 0U cabling assembly of Magic Modular Patch Panel, gives a perfect solution for patch cord organization. Its barrier to vertical cold wind decreases to the lowest level so as to encourage energy efficiency in data center.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Keep the function of single-layer drawing



MPO plug/unplug assembly
MPO/MTP connector removable from the front



Various types of pre-term cassettes

Specifications	OM3/OM4	OM5	G.657.A2 LC-PC	G.657.A2 LC-APC
Capacity	24 core	24 core	24 core	24 core
Connector	2 x MPO/MTP female	2 x MPO/MTP female	2 x MPO/MTP female	2 x MPO/MTP female
Connector Type, Grinding Type	Low loss, PC 0°	Low loss, PC 0°	Low loss, APC 8°	Low loss, APC 8°
Insertion Loss IL (Typical)	≤ 0.15dB	≤ 0.15dB	≤ 0.18dB	≤ 0.18dB
Insertion Loss IL (Max.)	≤ 0.30dB	≤ 0.30dB	≤ 0.30dB	≤ 0.30dB
Return Loss RL (Typical)	≥ 35dB	≥ 35dB	≥ 70dB	≥ 70dB
Return Loss RL (Min.)	≥ 30dB	≥ 30dB	≥ 65dB	≥ 65dB
Connectivity Method	A, B, T	A, B, T	A, B, T	A, B, T
Color Code	Aqua, Violet	Lime green	Black	Black
Connector Grinding Type	24 x LC PC 0°	24 x LC PC 0°	24 x LC PC 0°	24 x LC APC 8°
Fiber Stub	ZrO ₂	ZrO ₂	ZrO ₂	ZrO ₂
Insertion Loss IL (Typical)	≤ 0.10dB	≤ 0.10dB	≤ 0.10dB	≤ 0.10dB
Insertion Loss IL (Max.)	≤ 0.25dB	≤ 0.25dB	≤ 0.25dB	≤ 0.25dB
Return Loss RL (Typical)	≥ 40dB	≥ 40dB	≥ 50dB	≥ 75dB
Return Loss RL (Min.)	≥ 35dB	≥ 35dB	≥ 45dB	≥ 65dB
Tube	ZrO ₂	ZrO ₂	ZrO ₂	ZrO ₂
Color Code	Aqua, Violet	Lime green	Blue	Green
Jacket Material	PEI	PEI	PEI	PEI
Dust Cover (duplex)	White or Transparent	White or Transparent	White or Transparent	White or Transparent
Color Code of Fan-Out Fibers	IEC 60304	IEC 60304	IEC 60304	IEC 60304
Quantity of Fan-Outs	2 x 12 core	2 x 12 core	2 x 12 core	2 x 12 core

Notes: Multimode Insertion Loss IL value is measured at 850nm light, using EFL (Encircled Flux Launch) testing methods according to IEC 61280-4-1.

Order Information

Model	Description	Color	Package
FB-11-ZJ-K	Magic series UHD Mounting Bracket, support 8*Magic series UHD Pre-Term Cassettes	Black RAL9005	1 per box
FB-11-HB-6-K	Magic series UHD Pre-Term Cassette (empty)	Gray RAL7035	1 per box
FB-11-HB-6-1*MPO/F-LC-12OM3-T	Magic series UHD LC Pre-Term Cassette, 1MPO (female) -12LC, OM3, Polarity T	Gray RAL7035	1 per box
FB-11-HB-6-1*MPO/M-LC-12OM3-T	Magic series UHD LC Pre-Term Cassette, 1MPO (male) -12LC, OM3, Polarity T	Gray RAL7035	1 per box
FB-11-HB-6-1*MPO/F-LC-12OM4-T	Magic series UHD LC Pre-Term Cassette, 1MPO (female) -12LC, OM4, Polarity T	Gray RAL7035	1 per box
FB-11-HB-6-1*MPO/M-LC-12OM4-T	Magic series UHD LC Pre-Term Cassette, 1MPO (male) -12LC, OM4, Polarity T	Gray RAL7035	1 per box
FB-11-HB-6-1*MPO/F-LC-12OM5-T	Magic series UHD LC Pre-Term Cassette, 1MPO (female) -12LC, OM5, Polarity T	Gray RAL7035	1 per box
FB-11-HB-6-1*MPO/M-LC-12OM5-T	Magic series UHD LC Pre-Term Cassette, 1MPO (male) -12LC, OM5, Polarity T	Gray RAL7035	1 per box
FB-11-HB-6-1*MPO/F-LC-12B6A2-T	Magic series UHD LC Pre-Term Cassette, 1MPO (female) -12LC, G.657.A2, Polarity T	Gray RAL7035	1 per box
FB-11-HB-6-1*MPO/M-LC-12B6A2-T	Magic series UHD LC Pre-Term Cassette, 1MPO (male) -12LC, G.657.A2, Polarity T	Gray RAL7035	1 per box

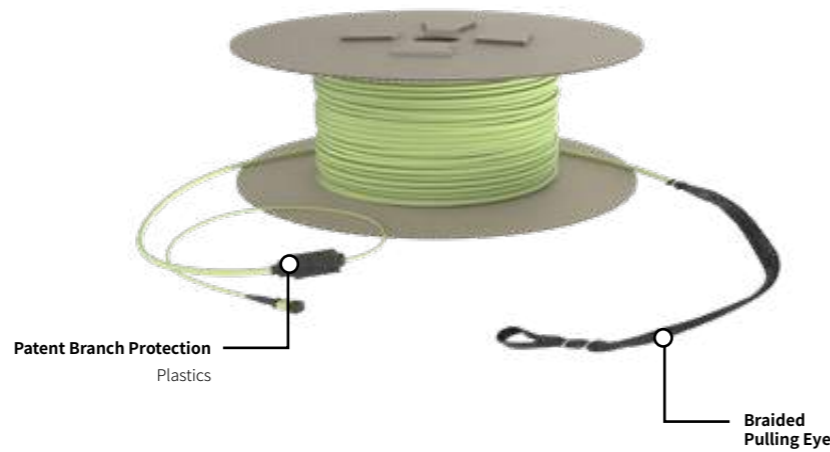
Notes: Magic Series HD192 Fiber Optic Cassette offers a broad selection of models. For detailed information, please contact local distributors.

MTP, US Conec.'s registered trademark

Magic series Pre-terminated Fiber Optic Cables

Tailored Products

Tailored service for all present types of optical fibers and connectors, high flame retardant PVC/LSZH jackets



Product Information

Product Application

They provide fast deployment for horizontal and backbone fiber optic cables in equipment rooms of smart building cabling system as well as all data centers. Standardized components, de-engineered, ensure data center production in factories and realize the overall delivery to customers. Customers can quickly acquire products as needed and expand capacity according to businesses.

Product Features

Pre-terminated Fiber Optic Cables adopt high-grade low-loss MPO/MTP and LC connectors and have a 100% pass guarantee on the polishing process, exceeding all parameters specified in IEC 61754, IEC 61755 standards.

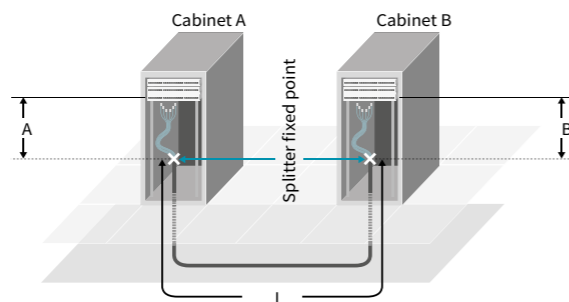
OS2, OM3, OM4 and OM5 backbone cables can all be provided. The branch splitter has been patented to protect fiber fan-outs and delivers optimal tensile strength so that fiber counts are up to 192.

Tailored services are provided, such as fiber length, branch types as well as various types of connector plugs, namely, MPO/MTP, LC, SC, E2000, and MU.

Matched with Magic series patch panel and allied with pre-term cassettes, this product offers users the latest 10G-800G integrated solutions.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Pre-terminated fiber optic cable length calculation:
Total Length = Cabinet Distance L (including vertical line length from cabinet to branch splitter installation point) + Branch A (branch point to the farthest port) + branch B



24-core MPO Pre-Assembled FO Cables



12-core LC Pre-assembled FO cables



24-core LC Pre-assembled FO cables

	Specifications	OM3/OM4	OM5	G.657.A2 PC	G.657.A2 APC
MPO Connector	Connector Type, Grinding Type	Low loss, PC 0°	Low loss, PC 0°	-	Low loss, APC 8°
	Insertion Loss IL (Typical)	≤ 0.15dB	≤ 0.15dB	-	≤ 0.18dB
	Insertion Loss IL (Max.)	≤ 0.30dB	≤ 0.30dB	-	≤ 0.30dB
	Return Loss RL (Typical)	≥ 35dB	≥ 35dB	-	≥ 70dB
	Return Loss RL (Min.)	≥ 30dB	≥ 30dB	-	≥ 65dB
	Connectivity Method	A, B, C	A, B, C	-	A, B, C
	Color Code	Aqua /Violet	Lime green	-	Green
LC Connector	Connector Type, Grinding Type	ZrO ₂ PC 0°	ZrO ₂ PC 0°	ZrO ₂ PC 0°	ZrO ₂ APC 8°
	Insertion Loss IL (Typical)	≤ 0.10dB	≤ 0.10dB	≤ 0.10dB	≤ 0.10dB
	Insertion Loss IL (Max.)	≤ 0.25dB	≤ 0.25dB	≤ 0.25dB	≤ 0.25dB
	Return Loss RL (Typical)	≥ 40dB	≥ 40dB	≥ 50dB	≥ 75dB
	Return Loss RL (Min.)	≥ 35dB	≥ 35dB	≥ 45dB	≥ 65dB
	Color Code	Aqua /Violet	Lime green	Blue	Green
	Jacket Material	PEI	PEI	PEI	PEI
Dust Cover (duplex)	White or Transparent	White or Transparent	White or Transparent	White or Transparent	

Notes: Multimode Insertion Loss IL value is measured at 850nm light, using EFL (Encircled Flux Launch) testing methods according to IEC 61280-4-1.

Order Information

Model	Description	Color	Package
GJFJZY-MPO/M-MPO/M-12OM3-60M, Type A, 4.5	Indoor, LSZH, flame retardant, pre-terminated FO cable, OM3, 4.5mm, 12-core, 60m, Type A, MPO/M-MPO/M, male-male	Aqua	1 per reel
GJFJZY-2*MPO/M-2*MPO/M-24OM4-10M, Type B, 5.0	Indoor, LSZH, flame retardant, pre-terminated FO cable, OM4, 5.0mm, 24-core, 10m, Type B, MPO/M-MPO/M, male-male	Magenta	1 per pack
GJFJZY-12*LC-12*LC-12OM5-60M, Type A, 4.5	Indoor, LSZH, flame retardant, pre-terminated FO cable, OM5, 4.5mm, 12-core, 60m, Type A, MPO/M-MPO/M, male-male	lime green	1 per reel
GJFJZY-24*LC-24*LC-24B6A2-10M, Type A, 5.0	Indoor, LSZH, flame retardant, pre-terminated FO cable, G.657.A2, 5.0mm, 24-core, 10m, Type A, MPO/M-MPO/M, male-male	Yellow	1 per pack
GJFJZY-MPO/M-LC-12OM3-10M, Type A, 4.5	Indoor, LSZH, flame retardant, pre-terminated FO cable, OM3, 4.5mm, 12-core, 60m, Type A, MPO/M-LC, male-LC	Aqua	1 per pack
GJFJZY-MPO/M-MPO/M-12OM3-60M, Type A, 4.5, H1-H1	Indoor, LSZH, flame retardant, pre-terminated FO cable, OM3, 4.5mm, 12-core, 60m, Type A, MPO/M-MPO/M, male-male, with braided pulling eyes	Aqua	1 per reel

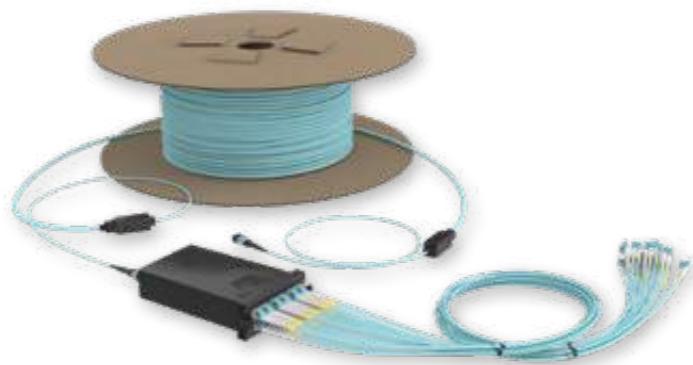
Notes: TC offers a complete range of products for modular data center, available in a wide variety of models. For detailed product information, please contact local distributors.

MTP, US Conec.'s registered trademark

Magic series Data Center Patch Cords

FJ-*

Tailored service for all present types of optical fibers and connectors, high flame retardant PVC/LSZH jackets



Magic series Data Center Solutions

Product Information

Product Application

Data Center Patch Cords provide fast deployment for horizontal and backbone fiber optic cables in equipment rooms of smart building cabling system as well as all data centers. Standardized components, de-engineered, ensure data center production in factories and realize the overall delivery to customers. Customers can quickly acquire products as needed and expand capacity according to businesses.

Product Features

Data Center Patch Cords adopt high-grade low-loss MPO/MTP and LC connectors and have a 100% pass guarantee on the polishing process, exceeding all parameters specified in IEC 61754, IEC 61755 standards.

Data Center Ultra thin LC Uniboot Patch Cords, 1.8mm (60% thinner than traditional ones), effectively reduce space and speed up installation and maintenance.

OS2, OM3, OM4, OM5 and G.657.A2 FO cables can all be provided. The branch protection has been patented to protect fiber fan-outs and delivers optimal tensile strength so that fiber counts are up to 192.

Tailored services are provided, such as fiber length, branch types as well as various types of connector plugs, namely, MPO/MTP, LC, SC, E2000, and MU.

Matched with Magic series patch panel and allied with pre-term cassettes, this product offers users the latest 10G-800G integrated solutions.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



MPO/MTP-LC Fanout Cables



LC-LC Fanout Cables



MPO/MTP-MPO/MTP Patch Cords



1.6mm Ultra thin Duplex Patch Cords



1.8mm Uniboot FO Patch Cords

Specifications	OM3/OM4	OM5	G.657.A2 PC	G.657.A2 APC	
MPO Connector	Connector Type, Grinding Type	Low loss, PC 0°	Low loss, PC 0°	Low loss, APC 8°	
	Insertion Loss IL (Typical)	≤ 0.15dB	≤ 0.15dB	≤ 0.18dB	
	Insertion Loss IL (Max.)	≤ 0.30dB	≤ 0.30dB	≤ 0.30dB	
	Return Loss RL (Typical)	≥ 35dB	≥ 35dB	≥ 70dB	
	Return Loss RL (Min.)	≥ 30dB	≥ 30dB	≥ 65dB	
	Connectivity Method	A, B, C	A, B, C	A, B, C	
	Color Code	Aqua /Violet	Lime green	-	Green
LC Connector	Connector Type, Grinding Type	ZrO ₂ PC 0°	ZrO ₂ PC 0°	ZrO ₂ APC 8°	
	Insertion Loss IL (Typical)	≤ 0.10dB	≤ 0.10dB	≤ 0.10dB	
	Insertion Loss IL (Max.)	≤ 0.25dB	≤ 0.25dB	≤ 0.25dB	
	Return Loss RL (Typical)	≥ 40dB	≥ 40dB	≥ 50dB	
	Return Loss RL (Min.)	≥ 35dB	≥ 35dB	≥ 45dB	
	Color Code	Aqua /Violet	Lime green	Blue	Green
	Jacket Material	PEI	PEI	PEI	PEI
Dust Cover (duplex)	White or Transparent	White or Transparent	White or Transparent	White or Transparent	

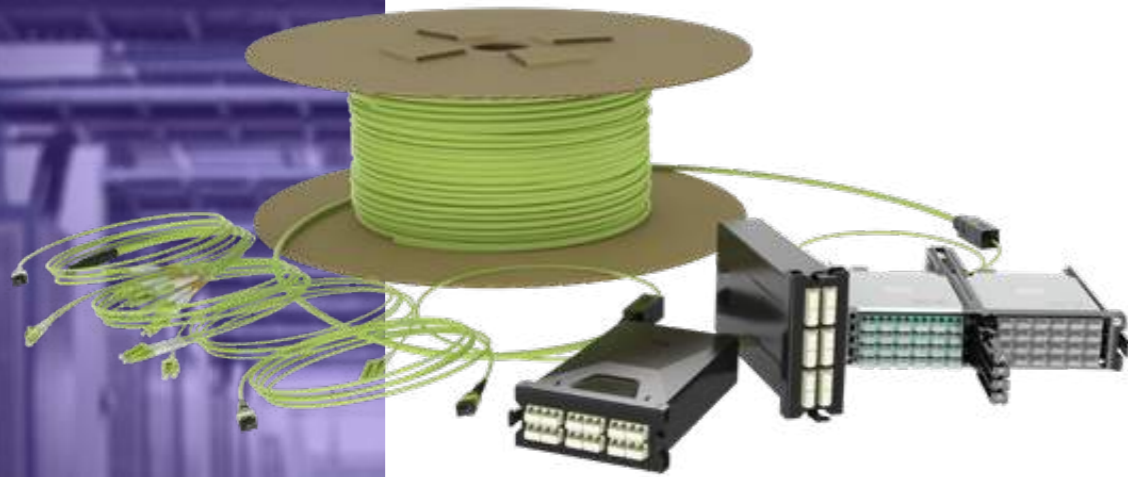
Order Information

Model	Description	Color	Package
FJ-MPO/M-MPO/M-12OM3-10M-LSZH,Type B,3.0	Indoor, LSZH, flame retardant, FO patch cords, OM3, 3.0mm, 12-core, 10m, Type B, MPO/M-MPO/M, male-male	Aqua	1 per pack
FJ-MPO/M-MPO/M-12OM4-10M-LSZH,Type B,3.0	Indoor, LSZH, flame retardant, FO patch cords, OM4, 3.0mm, 12-core, 10m, Type B, MPO/M-MPO/M, male-male	Magenta	1 per pack
FJ-MPO/M-MPO/M-12OM5-10M-LSZH,Type B,3.0	Indoor, LSZH, flame retardant, FO patch cords, OM5, 3.0mm, 12-core, 10m, Type B, MPO/M-MPO/M, male-male	lime green	1 per pack
FJ-MPO/M-MPO/M-12B6A2-10M-LSZH,Type B,3.0	Indoor, LSZH, flame retardant, FO patch cords, G.6572.A2, 3.0mm, 12-core, 10m, Type B, MPO/M-MPO/M, male-male	Blue	1 per pack
FJ-MPO/M-LC-12OM3-10M,Type C, branch 0.5m	Indoor, LSZH, flame retardant, FO breakout cables, OM3, 3.0mm, 12-core, 10m, Type C, MPO/M-LC, male	Aqua	1 per pack
FJ-LCD-LCD-OM3-3M-LSZH, 1.8	Indoor, LSZH, FO patch cords, OM3, 1.8mm, 2-core, 3m, Uniboot LC-LC	Aqua	1 per pack
FJ-LC-LC-OM3-2P-3M, 1.6	Indoor, FO patch cords, OM3, 1.6mm, 2-core, 3m, LC-LC	Blue	1 per pack

Data Center Ultra Low Loss Link Products

TC-DC

Ultra low loss, long transmission



Product Information

Product Application

As global IP traffic grows rapidly and broadband Internet technology continues to improve, there is rising demand for transmission capacity and communications network, especially 400G/1000G technology, which also brings high requirements for optical fiber transmission featuring multi-node, low loss, ultra long distance, high capacity and high speed. Traditional low loss fiber optic system can no longer coordinate the application of data center multi-node management architecture, so TC's ultra low loss optical link products, manufactured by super Class-A high precision devices and innovative processes, are the optimal choice. They are mainly used in multi-node structured cabling projects, and far exceed the standards such as IEC 61754 and IEC 61755.

Product Features

Optical links in data centers typically consist of multiple MPO nodes, LC nodes, and fiber optic cables. Compared to traditional ones, TC's ultra low loss FO products enjoy a significant drop in the total loss.

The maximum loss of ultra low loss MPO nodes reduces from 0.35dB to about 0.25dB, about 28% performance improvements; while LC nodes reduces from 0.2dB to about 0.1dB, resulting in about 50% performance improvements. The more losses saved, the more flexibility provided for cabling management. For example, when using multimode OM3 fiber transmission of more than 100G, the total loss value of the entire link requires IL<1.8dB, which means that the loss of fiber optic cable in 100m standard link reaches about 0.35dB, left less than 1.45dB to connection nodes. That is, traditional low loss products can only support 4 MPO nodes (or corresponding MPO&LC node combinations, such as 2*MPO nodes + 3*LC nodes), greatly reducing flexibility and manageability of data center cabling. However, with TC's ultra low loss products, the entire optical link can hold about 6 MPO nodes or up to 15 LC nodes and their combinations, thus bringing more convenience to node management in EDA, IDA, HDA, and MDA.

Therefore, customers can acquire both speed and manageability with TC's ultra low loss products.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Specifications	MPO Patch Cords		MPO-LC Fanout Patch Cords		LC-LC Fanout Patch Cords	
	L ≤ 3m	L > 3m	L ≤ 3m	L > 3m	L ≤ 3m	L > 3m
Length	L ≤ 3m	L > 3m	L ≤ 3m	L > 3m	L ≤ 3m	L > 3m
Connector Type	MPO-MPO	MPO-MPO	MPO-LC	MPO-LC	LC-LC	LC-LC
Grinding Type (front)	MPO APC 8°	MPO APC 8°	MPO APC 8°	MPO APC 8°	LC PC0°	LC PC0°
Grinding Type (end)	MPO APC 8°	MPO APC 8°	LC PC0°	LC PC0°	LC PC0°	LC PC0°
Testing Method	Method B	Method B	Method C	Method C	Method B	Method B
Insertion Loss IL (Typical)	≤ 0.10dB	—	≤ 0.12dB	—	≤ 0.04dB	—
Insert Loss IL (Max.)	≤ 0.35dB	≤ 0.35+0.0004×LdB	≤ 0.35dB	≤ 0.45+0.0004×LdB	≤ 0.10dB	≤ 0.15+0.0004×LdB
Return Loss RL (Min.)	≥ 60dB	≥ 60dB	—	—	≥ 50dB	≥ 50dB
Connectivity Method	A/B/C	A/B/C	straight/cross	straight/cross	straight/cross	straight/cross
Length	L ≤ 3m	L > 3m	L ≤ 3m	L > 3m	L ≤ 3m	L > 3m
Connector Type	MPO-MPO	MPO-MPO	MPO-LC	MPO-LC	LC-LC	LC-LC
Grinding Type (front)	MPO PC 0°	MPO PC 0°	MPO PC 0°	MPO PC 0°	PC 0°	PC 0°
Grinding Type (end)	MPO PC 0°	MPO PC 0°	LC PC0°	LC PC0°	LC PC0°	LC PC0°
Testing Method	Method B	Method B	Method C	Method C	Method B	Method B
Insertion Loss IL (Typical)	≤ 0.08dB	—	≤ 0.10dB	—	≤ 0.06dB	—
Insert Loss IL (Max.)	≤ 0.2dB	≤ 0.3+0.0035×LdB	≤ 0.25dB	≤ 0.40+0.0035×LdB	≤ 0.10dB	≤ 0.15+0.0035×LdB
Return Loss RL (Min.)	≥ 30dB	≥ 30dB	—	—	≥ 30dB	≥ 30dB
Connectivity Method	A/B/C	A/B/C	straight/cross	straight/cross	straight/cross	straight/cross

Specifications	MPO Pre-terminated FO Cables		MPO-LC Pre-terminated FO Cables		LC-LC Pre-terminated FO Cables	
	L ≤ 3m	L > 3m	L ≤ 3m	L > 3m	L ≤ 3m	L > 3m
Length	L ≤ 3m	L > 3m	L ≤ 3m	L > 3m	L ≤ 3m	L > 3m
Connector Type	MPO-MPO	MPO-MPO	MPO-LC	MPO-LC	LC-LC	LC-LC
Grinding Type (front)	MPO APC 8°	MPO APC 8°	MPO APC 8°	MPO APC 8°	LC PC0°	LC PC0°
Grinding Type (end)	MPO APC 8°	MPO APC 8°	LC PC0°	LC PC0°	LC PC0°	LC PC0°
Testing Method	Method B	Method B	Method C	Method C	Method B	Method B
Insertion Loss IL (Typical)	≤ 0.1dB	—	≤ 0.12dB	—	≤ 0.04dB	—
Insert Loss IL (Max.)	≤ 0.35dB	≤ 0.35+0.0004×LdB	≤ 0.35dB	≤ 0.45+0.0004×LdB	≤ 0.10dB	≤ 0.15+0.0004×LdB
Return Loss RL (Min.)	≥ 60dB	≥ 60dB	—	—	≥ 50dB	≥ 50dB
Connectivity Method	A/B/C	A/B/C	straight/cross	straight/cross	straight/cross	straight/cross
Length	L ≤ 3m	L > 3m	L ≤ 3m	L > 3m	L ≤ 3m	L > 3m
Connector Type	MPO-MPO	MPO-MPO	MPO-LC	MPO-LC	LC-LC	LC-LC
Grinding Type (front)	MPO PC 0°	MPO PC 0°	MPO PC 0°	MPO PC 0°	PC 0°	PC 0°
Grinding Type (end)	MPO PC 0°	MPO PC 0°	LC PC0°	LC PC0°	LC PC0°	LC PC0°
Testing Method	Method B	Method B	Method C	Method C	Method B	Method B
Insertion Loss IL (Typical)	≤ 0.08dB	—	≤ 0.10dB	—	≤ 0.06dB	—
Insert Loss IL (Max.)	≤ 0.2dB	≤ 0.3+0.0035×LdB	≤ 0.25dB	≤ 0.40+0.0035×LdB	≤ 0.10dB	≤ 0.15+0.0035×LdB
Return Loss RL (Min.)	≥ 30dB	≥ 30dB	—	—	≥ 30dB	≥ 30dB
Connectivity Method	A/B/C	A/B/C	straight/cross	straight/cross	straight/cross	straight/cross

Notes:
 1. When length < 1.8m, RL will not tested;
 2. IL refers to IEC 61300-3-4; RL: IEC 61300-3-6.

	Specifications	HD96 Cassette	1.6mm Ultra Thin Dulpex Patch Cord	
Singlemode	Length	0.42	L ≤ 3m	L > 3m
	Connector Type	MPO-LC	LC-LC	LC-LC
	Grinding Type (front)	MPO APC 8°	LC PC0°	LC PC0°
	Grinding Type (end)	LC PC0°	LC PC0°	LC PC0°
	Testing Method	Method C	Method B	Method B
	Insertion Loss IL (Typical)	≤ 0.15dB	≤ 0.04dB	—
	Insert Loss IL (Max.)	≤ 0.35dB	≤ 0.10dB	≤ 0.15+0.0004 × LdB
	Return Loss RL (Min.)	—	≥ 50dB	≥ 50dB
	Connectivity Method	A/B/T	straight/cross	straight/cross
Multimode	Length	0.42	L ≤ 3m	L > 3m
	Connector Type	MPO-LC	LC-LC	LC-LC
	Grinding Type (front)	MPO PC 0°	LC PC 0°	LC PC 0°
	Grinding Type (end)	LC PC0°	LC PC 0°	LC PC 0°
	Testing Method	Method C	Method B	Method B
	Insertion Loss IL (Typical)	≤ 0.10dB	≤ 0.04dB	—
	Insert Loss IL (Max.)	≤ 0.25dB	≤ 0.10dB	≤ 0.15+0.0035 × LdB
	Return Loss RL (Min.)	—	≥ 30dB	≥ 30dB
	Connectivity Method	A/B/T	straight/cross	straight/cross

	Specifications	HD96 Cassette	1.6mm Ultra Thin Dulpex Patch Cord	
Singlemode	Length	0.29	L ≤ 3m	L > 3m
	Connector Type	MPO-LC	LC-LC	LC-LC
	Grinding Type (front)	MPO APC 8°	LC PC0°	LC PC0°
	Grinding Type (end)	LC PC0°	LC PC0°	LC PC0°
	Testing Method	Method C	Method B	Method B
	Insertion Loss IL (Typical)	≤ 0.15dB	≤ 0.04dB	—
	Insert Loss IL (Max.)	≤ 0.35dB	≤ 0.10dB	≤ 0.15+0.0004 × LdB
	Return Loss RL (Min.)	—	≥ 50dB	≥ 50dB
	Connectivity Method	A/B/T	straight/cross	straight/cross
Multimode	Length	0.29	L ≤ 3m	L > 3m
	Connector Type	MPO-LC	LC-LC	LC-LC
	Grinding Type (front)	MPO PC 0°	LC PC 0°	LC PC 0°
	Grinding Type (end)	LC PC0°	LC PC 0°	LC PC 0°
	Testing Method	Method C	Method B	Method B
	Insertion Loss IL (Typical)	≤ 0.10dB	≤ 0.04dB	—
	Insert Loss IL (Max.)	≤ 0.25dB	≤ 0.10dB	≤ 0.15+0.0035 × LdB
	Return Loss RL (Min.)	—	≥ 30dB	≥ 30dB
	Connectivity Method	A/B/T	straight/cross	straight/cross

Order Information

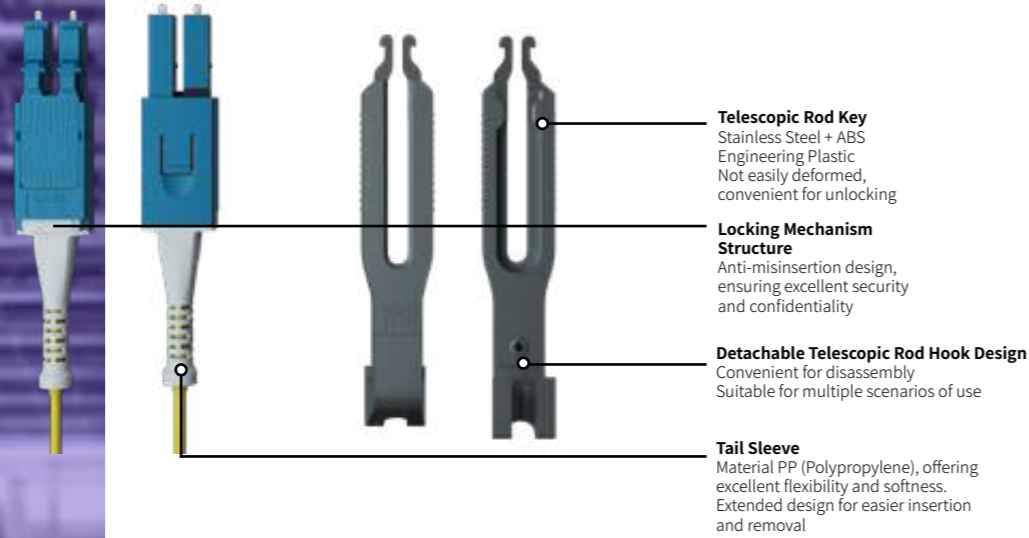
Model	Description	Color	Package
FB-11-PB-6-2*MPO(MTP)/F-LC-24OM3-A-TCDC	TCDC HD 24-core LC Pre-term Cassette, 2MPO(MTP) (female) -24LC, OM3, Polarity A	Black RAL9005	1 per box
FB-11-PB-6-2*MPO(MTP)/F-LC-24OM4-B-TCDC	TCDC HD 24-core LC Pre-term Cassette, 2MPO(MTP) (female) -24LC, OM4, Polarity B	Black RAL9005	1 per box
FB-11-PB-6-2*MPO(MTP)/F-LC-24OM5-T-TCDC	TCDC HD 24-core LC Pre-term Cassette, 2MPO(MTP) (female) -24LC, OM5, Polarity T	Black RAL9005	1 per box
FB-11-PB-6-2*MPO(MTP)/F-LC-24B6A2-T-TCDC	TCDC HD 24-core LC Pre-term Cassette, 2MPO(MTP) (female) -24LC, G.657.A2, Polarity T	Black RAL9005	1 per box
FB-11-HB-6-1*MPO(MTP)/M-LC-12OM3-A-TCDC	TCDC UHD, LC Pre-term Cassette, 1MPO(MTP) (male) -12LC, OM3, Polarity A	Gray RAL7035	1 per box
FB-11-HB-6-1*MPO(MTP)/M-LC-12OM4-B-TCDC	TCDC UHD, LC Pre-term Cassette, 1MPO(MTP) (male) -12LC, OM4, Polarity B	Gray RAL7035	1 per box
FB-11-HB-6-1*MPO(MTP)/M-LC-12OM5-T-TCDC	TCDC UHD, LC Pre-term Cassette, 1MPO(MTP) (male) -12LC, OM5, Polarity T	Gray RAL7035	1 per box
FB-11-HB-6-1*MPO(MTP)/M-LC-12B6A2-T-TCDC	TCDC UHD, LC Pre-term Cassette, 1MPO(MTP) (male) -12LC, G.657.A2, Polarity T	Gray RAL7035	1 per box
FJ-MPO(MTP)/M-LC-12OM3-10M-LSZH-TCDC,Type A,3.0	TCDC Indoor, LSZH, Flame Retardant, OM3 FO Patch Cord 3.0mm, 12-core 10m, Type A, MPO(MTP)/M-LC, male	Aqua	1 per pack
FJ-MPO(MTP)/M-LC-12OM4-10M-LSZH-TCDC,Type B,3.0	TCDC Indoor, LSZH, Flame Retardant, OM4 FO Patch Cord 3.0mm, 12-core 10m, Type B, MPO(MTP)/M-LC, male	Magenta	1 per pack
FJ-MPO(MTP)/M-MPO(MTP)/M-12OM5-10M-LSZH-TCDC,Type B,3.0	TCDC Indoor, LSZH, Flame Retardant, OM5 FO Patch Cord 3.0mm, 12-core 10m, Type B, MPO(MTP)/M-MPO(MTP)/M, male-male	Lime Green	1 per pack
FJ-MPO(MTP)/M-MPO(MTP)/M-12B6A2-10M-LSZH-TCDC,Type B,3.0	TCDC Indoor, LSZH, Flame Retardant, G.6572.A2 FO Patch Cord, 3.0mm, 12-core 10m, Type B, MPO(MTP)/M-MPO(MTP)/M, male-male	Blue	1 per pack
FJ-MPO(MTP)/M-LC-12OM3-10M-TCDC,Type B,分支 0.5m	TCDC Indoor, LSZH, Flame Retardant, OM3 Breakout Cables, 12-core 10m, Type B, MPO(MTP)/M-LC, male	Aqua	1 per pack
FJ-MPO(MTP)/M-LC-12OM4-10M-LSZH-TCDC,Type B,3.0	TCDC Indoor, LSZH, Flame Retardant, OM4 FO Patch Cord, 3.0mm, 12-core 10m, Type B, MPO(MTP)/M-LC, male	Magenta	1 per pack
FJ-MPO(MTP)/M-MPO(MTP)/M-12OM5-10M-LSZH-TCDC,Type B,3.0	TCDC Indoor, LSZH, Flame Retardant, OM5 FO Patch Cord, 3.0mm, 12-core 10m, Type B, MPO(MTP)/M-MPO(MTP)/M, male-male	Lime Green	1 per pack
FJ-LCD-LCD-OM3-3M-LSZH-TCDC, 1.8	TCDC Indoor, LSZH, OM3 FO Patch Cord, 1.8mm, 2-core 3m, Uniboot LC-LC	Aqua	1 per pack
FJ-LC-LC-OM3-2P-3M-TCDC, 1.6	TCDC Indoor OM3 FO Patch Cord, 1.6mm, 2-core 3m, LC-LC	Blue	1 per pack
GJFJZY-MPO(MTP)/M-MPO(MTP)/M-12OM3-60M-TCDC,Type A,4.5	TCDC Indoor, LSZH, Flame Retardant, OM3 Pre-assembled FO Cables, 4.5mm, 12-core 60m, Type A, MPO(MTP)/M-MPO(MTP)/M, male-male	Aqua	1 per pack
GJFJZY-2*MPO(MTP)/M-2*MPO(MTP)/M-24OM4-10M-TCDC,Type B,5.0	TCDC Indoor, LSZH, Flame Retardant, OM4 Pre-assembled FO Cables, 5.0mm, 24-core 10m, Type B, MPO(MTP)/M-MPO(MTP)/M, male-male	Magenta	1 per pack
GJFJZY-12*LC-12*LC-12OM5-60M-TCDC,Type A,4.5	TCDC Indoor, LSZH, Flame Retardant, OM5 Pre-assembled FO Cables, 4.5mm,12-core 60m, Type A, MPO(MTP)/M-MPO(MTP)/M, male-male	Lime Green	1 per pack
GJFJZY-MPO(MTP)/M-LC-12OM3-10M-TCDC,Type A, 4.5	TCDC Indoor, LSZH, Flame Retardant, OM3 Pre-assembled FO Cables, 4.5mm, 12-core 10m, Type A, MPO(MTP)/M-LC, male-LC	Aqua	1 per pack
GJFJZY-24*LC-24*LC-24B6A2-10M-TCDC,Type A,5.0	TCDC Indoor, LSZH, Flame Retardant, G.657.A2 Pre-assembled FO Cables, 5.0mm,24-core 10m, Type A, MPO(MTP)/M-MPO(MTP)/M, male-male	Yellow	1 per pack

Notes: TC offers a complete range of products for data center ultra low loss link products, available in a wide variety of models. For detailed product information, please contact local distributors.

LC Uniboot Fiber Patch Cord

FJ-LCD-LCD-*

Locking Mechanism, Easy Plug-and-Play, Duplex, 2.0



Telescopic Rod Key
Stainless Steel + ABS
Engineering Plastic
Not easily deformed,
convenient for unlocking

Locking Mechanism Structure
Anti-misinsertion design,
ensuring excellent security
and confidentiality

Detachable Telescopic Rod Hook Design
Convenient for disassembly
Suitable for multiple scenarios of use

Tail Sleeve
Material PP (Polypropylene), offering
excellent flexibility and softness.
Extended design for easier insertion
and removal

Product Information

Product Application

With the development of data center technology and the increasing demand for higher bandwidth, "high density" has become a critical keyword in data centers. To meet market demands, Tiancheng has introduced a locking Uniboot fiber jumper with reversible polarity, which helps solve the problem of hand-plugging connectors in high-density cabling systems. Moreover, it utilizes a special "circular duplex" jumper with dual-core bend-insensitive fibers, allowing for polarity interchange based on on-site construction requirements. This solution is ideal for upgrading 10G/40G/100G/400G networks and implementing high-density cabling systems.

Product Features

Compact design to meet high-density application requirements

The LC Uniboot adopts a dual-fiber single tube, one-piece boot design, with a maximum thickness of 9.2mm. It is more compact and space-saving than regular LC duplex fiber jumpers, reducing wiring space by 50% and promoting better heat dissipation in the cabling system.

Polarity conversion design for simple and convenient operation

The connectors on both ends are designed for easy polarity reversal, allowing users to open the housing and switch polarity without the need for tools. The internal structure also ensures protection of the fiber.

Multiple plug options for diverse environments

TC LC Uniboot fiber jumpers support four types of plugs: traditional manual push-pull for structured cabling in data centers, shell-pulling for high-density data centers, boot-pulling for Tiancheng's 96-core high-density solutions, and rod-insertion for Tiancheng's 192-core ultra-high-density solutions.

Locking structure for enhanced security and convenience

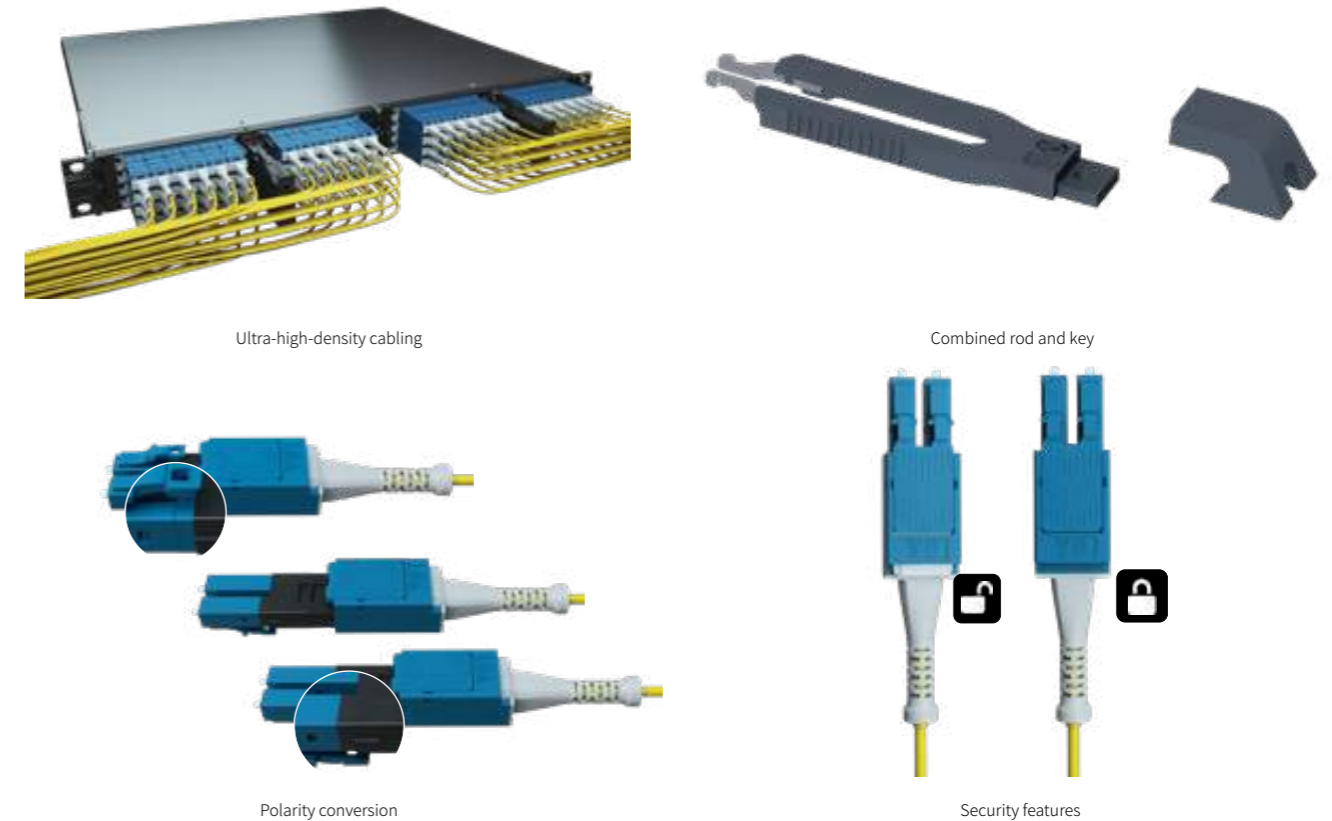
The design prioritizes data security, making it difficult for unauthorized individuals to disconnect network equipment or related connections.

Patented design with detachable rod

The patented rod design serves as both a rod and a key. Even in high-density environments, the rod-key combination makes it easy to plug and unplug jumpers.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568.2-D etc.



Ultra-high-density cabling

Combined rod and key

Polarity conversion

Security features

Product Parameters LC Uniboot

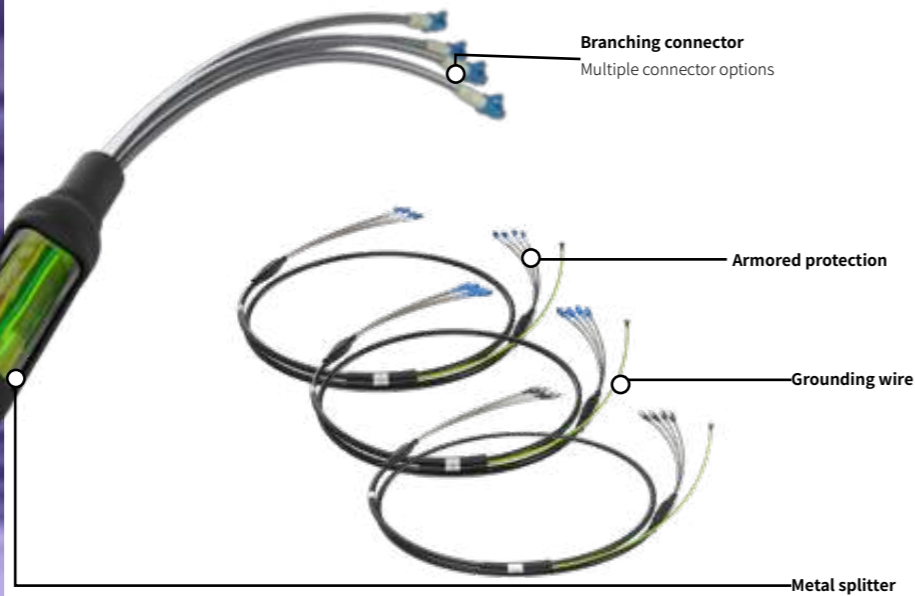
		L ≤ 3m	L > 3m
Single Mode	Product Length	L ≤ 3m	L > 3m
	Polishing Method	LC PC 0°	LC PC 0°
	Test Method	Method B	Method B
	Insertion Loss IL (Typical Value)	≤ 0.10dB	—
	Insertion Loss IL (Maximum Value)	≤ 0.25dB	≤ 0.25+0.0004×L dB
	Return Loss RL (Minimum Value)	≥ 45dB	≥ 45dB
Multimode	Product Length	L ≤ 3m	L > 3m
	Polishing Method	LC PC 0°	LC PC 0°
	Test Method	Method B	Method B
	Insertion Loss IL (Typical Value)	≤ 0.10dB	—
	Insertion Loss IL (Maximum Value)	≤ 0.25dB	≤ 0.25+0.0035×L dB
	Return Loss RL (Minimum Value)	≥ 35dB	≥ 35dB

Notes: IL testing reference: IEC 61300-3-4; RL testing reference: IEC 61300-3-6.

Order Information

Model	Description	Color	Package
FJ-LCD-LCD-B6A2-3M-LSZH-TC Uniboot,1.8	Indoor Low Smoke Zero Halogen Flame-Retardant G.657.A2 Uniboot Fiber Jumper, 1.8mm, 2 Cores, 3 meters, TC Uniboot LCD-LCD	Yellow	1 per pack
FJ-LCD-LCD-OM3-3M-LSZH-TC Uniboot,1.8	Indoor Low Smoke Zero Halogen Flame-Retardant OM3 Uniboot Fiber Jumper, 1.8mm, 2 Cores, 3 meters, TC Uniboot LCD-LCD	Aqua Green	1 per pack
FJ-LCD-LCD-OM4-3M-LSZH-TC Uniboot,1.8	Indoor Low Smoke Zero Halogen Flame-Retardant OM4 Uniboot Fiber Jumper, 1.8mm, 2 Cores, 3 meters, TC Uniboot LCD-LCD	Magenta	1 per pack
FJ-LCD-LCD-OM5-3M-LSZH-TC Uniboot,1.8	Indoor Low Smoke Zero Halogen Flame-Retardant OM5 Uniboot Fiber Jumper, 1.8mm, 2 Cores, 3 meters, TC Uniboot LCD-LCD	Lime Green	1 per pack
FJ309-K	Unlocking Key	Gray	10 per pack

Armored Breakout Optical Fiber Patch



Product Information

Protection Application

These patch cords are mainly used in rail transit projects and 5G long range antenna, and can be directly laid in server rooms and even in harsh environments regardless of protective tubes, thus resulting in space saving, construction cost reduction as well as improvement of network maintenance. What differs most from the traditional ones is that the TC armored breakout patch cords are equipped with SUS tubes to prevent fibers from being easily broken and damaged. Meanwhile, these patch cords are specially processed with unique structure to ensure secured connection between tubes and connectors. In doing so, the SCs of these armored patch cords become easier, losses are greatly reduced during construction process, and their life time is largely improved, so that the entire system becomes more secure and stable.

Product Features

- Protection armor provides excellent mechanical performance;
- Metal splitter is invested in unique technology with high resistance and good repeated bending performance;
- Fibers will not be bent to a right angle during construction to ensure secure transmission of fibers;
- Available in SC, LC, FC connectors;
- Anti-moisture, anti-corrosion, rodent-resistant;
- All materials completely meet the requirements of environmental protection.

Application Standards

GR-326-CORE; IEC60793-2; IEC61754-13

Components of Armored Breakout Optical Fiber Patch Cord, 4-core, branch 0.5m

No.	Name	Specifications
1	Connector	SC/FC/LC
2	Plum Tube	1,2,3,4
3	Spiral Tube	φ2.9mm
4	Metal Splitter	40 mm length
5	Dual Wall with Glue, Heat Shrink Tube	φ15.4mm; 70mm length
6	PVC/LSZH Outer Jacket	φ7.3 mm; black
7	Earth Wire	1m length
8	Braided Pulling Eye	φ19mm, black



Outdoor armored branch Patch Cord (SC type)



Outdoor armored branch Patch Cord (LC type)



Outdoor armored branch Patch Cord (FC type)

Optical Characteristics

Connector Type	LC, SC, FC etc.
Insertion Loss (Maximum Value)	$L \leq 3m: \leq 0.25dB, L > 3m: \leq 0.25+0.0004 \cdot LdB$
Return Loss (Minimum Value)	Single-mode: $\geq 45dB$, Multi-mode: $\geq 35dB$
Cable Tensile Strength	600N
Cable Side Pressure Resistance	300N/100mm
Cable Bending Radius	10 times the cable outer diameter

Notes: IL testing reference: IEC 61300-3-4; RL testing reference: IEC 61300-3-6.

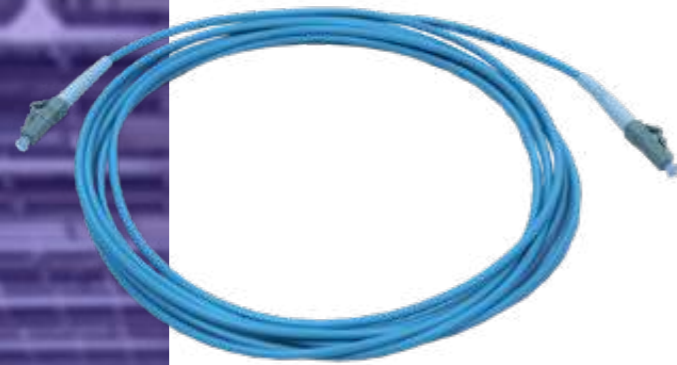
Order Information

Model	Description	Jacket Color
GY-LC-LC-4B1-XXM-LSZH, branch 0.5m	Outdoor, LSZH, Flame Retardant, Singlemode, B1 Armored Breakout FO Patch Cord, 4-core, xx m, LC-LC, branch 0.5m	Black
GY-SC-SC-4B1-XXM-LSZH, branch 0.5m	Outdoor, LSZH, Flame Retardant, Singlemode, B1 Armored Breakout FO Patch Cord, 4-core, xx m, SC-SC, branch 0.5m	Black
GY-FC-FC-4B1-XXM-LSZH, branch 0.5m	Outdoor, LSZH, Flame Retardant, Singlemode, B1 Armored Breakout FO Patch Cord, 4-core, xx m, FC-FC, branch 0.5m	Black

Optical Fiber Patch Cord

FJ-*

Low loss, a variety of connectors and combinations available



Product Information

Product Applications

In optical fiber cabling system, the patch cord provides connections between hardware equipment and devices, or between devices and optical fiber links.

Included with optical fiber patch cord are singlemode, multimode and 10G multimode. Generally, singlemode cable is yellow while its connector and protection sleeve is blue; multimode is orange while its connector and protection sleeve is cream or black.

Product Features

Pre-termination and testing in factories to ensure its transmission performance;

- Fast network configuration to speed up installation;
- Fire rating and flame resistance in accordance with IEC 60332-3C;
- Non corrosive gas emission in accordance with IEC 60754-2;
- Low smoke zero halogen emission in accordance with IEC 61034-2;
- With standard LC, SC, ST, FC adapters;
- 1- and 2-core, all available as custom tailored products;
- Insertion Loss < 0.3dB;
- Return Loss > 50dB;
- Custom tailored services for length, quantity of cores and physical structures.

Application Standards

YD/T 926.3, IEC 60332-3C, IEC 60754-2, IEC 61034-2

Optical Properties	Insertion Loss	Interchangeability	Return Loss
	≤ 0.3dB	≤ 0.2dB	APC singlemode ≥ 60dB PC singlemode ≥ 50dB PC multimode ≥ 35dB

Mechanical Properties

Quantity of Cores	1	2
Tensile Strength	150	300
Crush Resistance	15	30
Min. Bend Radius during Installation (mm)	20 Times the Optical Fiber Diameter	20 Times the Optical Fiber Diameter
Min. Bend Radius during Operation (mm)	10 Times the Optical Fiber Diameter	10 Times the Optical Fiber Diameter
Installation Temperature Range (°C)	-5 to +50	-5 to +50
Operation Temperature Range (°C)	-20 to +60	-20 to +60
Delivery and Storage Temperature Range (°C)	-25 to +70	-25 to +70

Order Information

Model	Description	Package
FJ-SC-SC-B1-3M	SC to SC Singlemode Optical Fiber Patch Cord, 3m	1 per pack
FJ-SC-SC-A1b-3M	SC to SC Multimode Optical Fiber Patch Cord, 3m	1 per pack
FJ-SC-SC-A1a-3M	SC to SC Multimode Optical Fiber Patch Cord (50/125), 3m	1 per pack
FJ-SC-SC-A1a-OM3-3M	SC to SC 10G Multimode Optical Fiber Patch Cord (50/125/OM3), 3m	1 per pack
FJ-LC-LC-B1-3M	LC to LC Singlemode Optical Fiber Patch Cord, 3m	1 per pack
FJ-LC-LC-A1b-3M	LC to LC Multimode Optical Fiber Patch Cord, 3m	1 per pack
FJ-LC-LC-A1a-3M	LC to LC Multimode Optical Fiber Patch Cord (50/125), 3m	1 per pack
FJ-LC-LC-A1a-OM3-3M	LC to LC 10G Multimode Optical Fiber Patch Cord (50/125/OM3), 3m	1 per pack

Notes: We usually provide standard patch cords (3.0mm) and also tailored services. For detailed product information, please contact local distributors.

Optical Fiber Pigtail

FF-*

0.9mm optical fiber, single head, low loss



Product Information

Product Applications

Optical fiber pigtail can be used in a variety of fiber termination applications, joint applications in splice trays of patch panels, together with FTTH applications.

Product Features

Pre-termination and testing in factories to ensure its transmission performance:

- Yellow singlemode pigtail, orange multimode pigtail;
- Fast network configuration to speed up installation;
- Fire rating and flame resistance in accordance with IEC 60332-3C;
- Non corrosive gas emission in accordance with IEC 60754-2;
- Low smoke zero halogen emission in accordance with IEC 61034-2;
- Insertion Loss < 0.3dB;
- Return Loss > 50dB;
- Custom tailored services for length, quantity of cores and physical structures.

Application Standards

YD/T 926.3, IEC 60332-3C, IEC 60754-2, IEC 61034-2

Optical Properties	Insertion Loss	Interchangeability	Return Loss
	≤ 0.3dB	≤ 0.2dB	APC singlemode ≥ 60dB PC singlemode ≥ 50dB PC multimode ≥ 35dB

Mechanical Properties

Quantity of Cores	1
Tensile Strength	150
Crush Resistance	15
Min. Bend Radius during Installation (mm)	20 Times the Optical Fiber Diameter
Min. Bend Radius during Operation (mm)	10 Times the Optical Fiber Diameter
Installation Temperature Range (°C)	-5 to +50
Operation Temperature Range (°C)	-20 to +60
Delivery and Storage Temperature Range (°C)	-25 to +70

Order Information

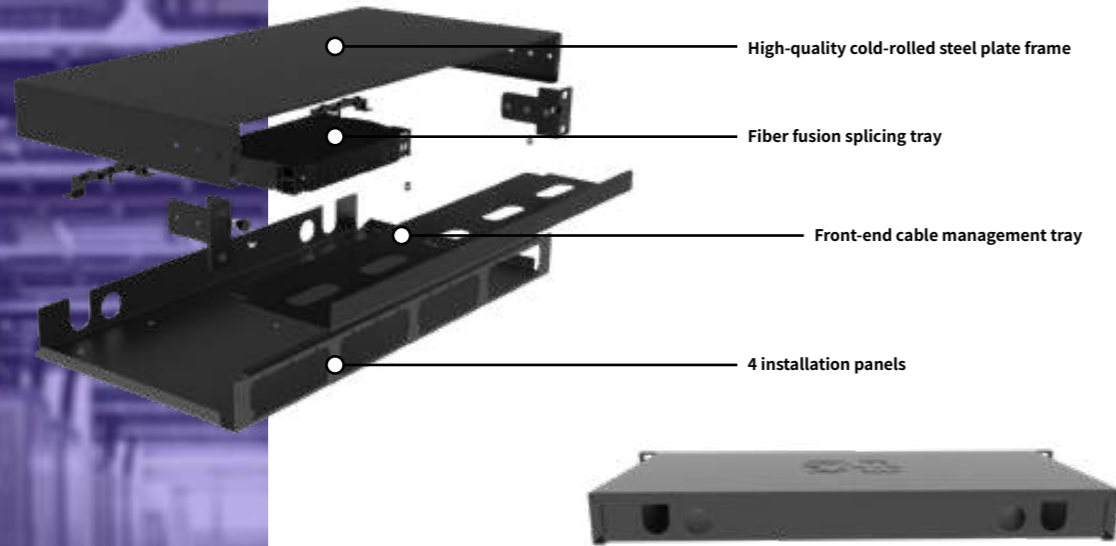
Model	Description	Package
FF-FC-B1-1M	FC Singlemode Pigtail, 1m	1 per pack
FF-FC-A1b-1M	FC Multimode Pigtail, 1m	1 per pack
FF-FC-A1a-1M	FC Multimode Pigtail (50/125), 1m	1 per pack
FF-FC-A1a-OM3-1M	FC 10G Multimode Pigtail (50/125/OM3)	1 per pack
FF-LC-B1-1M	LC Singlemode Pigtail, 1m	1 per pack
FF-LC-A1b-1M	LC Multimode Pigtail, 1m	1 per pack
FF-LC-A1a-1M	LC Multimode Pigtail (50/125), 1m	1 per pack
FF-LC-A1a-OM3-1M	LC 10G Multimode Pigtail (50/125/OM3), 1m	1 per pack

Notes: Other length, quantity of cores, optical fiber connectors are all available as tailored services.

E-Type Drawer-Type Fiber Distribution Frame

FB-22-1U

19-inch rack-mountable, 1U height, modular design, drawer-type, with built-in cable management tray



Product Information

Product Applications

The fiber distribution frame is primarily used for fiber fusion splicing, fiber connector installation, optical path adjustment, storage of excess pigtails, and protection of optical cables. It is designed to fit within one rack unit (1U) and can accommodate 6 to 24 ports, equipped with fusion splicing trays, making it suitable for fiber fusion and installation. By combining different installation panels, the fiber distribution frame can be configured with various densities and types of fiber distribution options.

Product Features

The product strictly complies with the requirements of YD/T778-2011 "Fiber Distribution Frame." Standard 19-inch size, providing great flexibility for structured cabling design.

The drawer can be easily and conveniently removed, supporting tool-less locking and unlocking of the drawer.

Full-length fiber routing protection design ensures the fiber bending radius $\geq 40\text{mm}$, guaranteeing fiber performance is not affected by cabling.

Suitable for direct or crossover connections of indoor or outdoor optical cables for horizontal and backbone networks.

Equipped with a fiber fusion splicing box, no additional configuration required, supporting up to 48 cores fiber fusion, maximizing cabinet utilization space.

The distribution frame can be fully equipped with four fiber plastic installation panels, providing 6-24 ports with different configurations to meet specific needs.

All-steel plate frame structure ensures higher mechanical performance.

The distribution frame shell is treated with a black matte powder coating, giving it a neat and attractive appearance.

Both the coating materials and the frame meet environmental protection requirements.

The surface of the fiber panel is also treated with powder coating, ensuring a coordinated and appealing appearance with the distribution frame.

The steel frame has a thickness of 1.2mm, providing high mechanical strength and preventing deformation.

The surface of the shell undergoes a 48-hour salt spray test according to GB/T223.17-1993 standard, with no visible rust spots.

Application Standards

YD/T 926.3, YD/T 778-2011, TIA/EIA 568



Plastic Fiber Optic Installation Panel

FB-22-MB-*

Compatible with E-Series Drawer-Type Fiber Distribution Frame



6-Port LC-Type Fiber Optic Plastic Installation Panel



6-Port SC-Type Fiber Optic Plastic Installation Panel



6-Port ST-Type Fiber Optic Plastic Installation Panel



Fiber Optic Plastic Blank Installation Panel



6-Port LC/SC Fiber Optic Plastic Installation Panel with Dust Caps



6-Port FC/ST Fiber Optic Plastic Installation Panel with Dust Caps

Product Information

Product Applications

E-Series drawer-type fiber accessories, used with adapters of various interface types on fiber panels, complete fiber termination in the work area.

Product Features

The fiber optic plastic installation panel features a unique water drop digital identification, making it easy to distinguish each port. It is designed to be used in conjunction with the fiber distribution frame, providing flexible configurations with 6-24 ports to suit various requirements.

The panel allows for easy installation and removal, facilitating hardware upgrades and updates.

Its unique plastic material ensures a lightweight, simple, and aesthetically pleasing design with a well-organized and elegant structure.

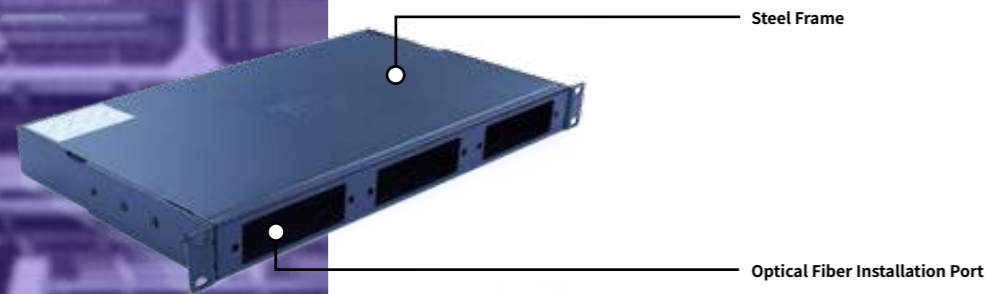
Order Information

Model	Description	Color	Package
FB-22-1U	1U Drawer-Type Fiber Distribution Frame, without fiber installation panels	Black	1 per box
FB-22-MB-SC-6	6-Port SC Fiber Optic Plastic Installation Panel, including 6 SC simplex adapters	Black	1 per box
FB-22-MB-ST-6	6-Port ST Fiber Optic Plastic Installation Panel, including 6 ST simplex adapters	Black	1 per box
FB-22-MB-FC-6	6-Port FC Fiber Optic Plastic Installation Panel, including 6 FC simplex adapters	Black	1 per box
FB-22-MB-LC-12	12-Port LC Fiber Optic Plastic Installation Panel, including 6 LC duplex adapters	Black	1 per box
FB-22-MB-KB	Blank Panel for Drawer-Type Fiber Distribution Frame	Black	1 per box
MB309-F	Square Dust Cap, for covering vacant adapter slots in LC duplex and SC simplex installation panels	Black	50 per pack
MB309-Y	Round Dust Cap, for covering vacant adapter slots in FC and ST installation panels	Black	50 per pack

Optical Fiber 1U Fixed Patch Panel

FB-11-1U

19 inch, rack mounted, 1U, modular design, fixed type



Product Information

Product Application

Optical fiber fixed patch panel is designed for fusion splicing, connector installation, optical link adjustment, storage of excess pigtails and optical fiber protection. The patch panel offers 4-48 ports within 1U rack coupled with a splice tray with support for optical fiber splicing and installation. Different installation panels are available to configure with a variety of high density optical fiber patch panels of different types.

Product Features

All products strictly follow the requirements of YD/T778-2011 "Optical Fiber Distribution Frame":

- TC's optical fiber patch panel supports both rack mounted and wall mounted, providing high flexibility for structured cabling;
- Optical fibers are protected all along the route so as to ensure that the bend radius is more than 40mm and the performance is free from the influence of cabling;
- The optical fiber patch panel offers direct and cross connection of indoor/outdoor optical fibers in horizontal and backbone networks;
- The patch panel matches with three optical fiber panels and accommodates 4-48 ports for different demands;
- One patch panel houses more than four optical fiber adapters;
- The clamped modular structure ensures that jacks can be removed from the front and connected directly to pre-terminated fiber optic cables and patch cords, thus speeding up and simplifying installation and maintenance;
- Its built-in splice tray holds up to 48 splices, significantly improving space utilization within the cabinet;
- All steel outer frame guarantees better mechanical performance;
- The outer frame is coated with black mist powder with clean and beautiful appearance;
- Coating materials and frameworks all meet environmental requirements;
- Optical fiber panels are also coated with powder in coordination with the outer frame;
- The steel patch panel features 1.5 mm thickness, high mechanical strength, and each of its housing withstanding more than 250N vertical static pressure, not easy to deform;
- The patch panel passes GB/T2423.17-1993 standard salt spray test (within 48 hours), no visible rust spots in the surface.

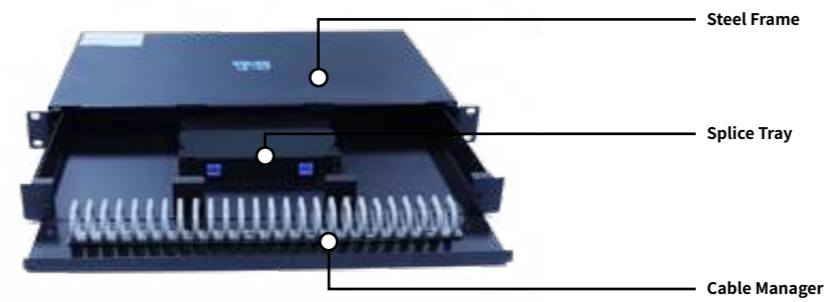
Application Standards

YD/T926.3; YD/T778-2011; TIA/EIA568

Optical Fiber Drawer-Type 1U Patch Panel

FB-12-1U

19 inch, rack mounted, 1U, modular, drawer type, built-in cable manager



Product Information

Product Application

Optical fiber drawer-type patch panel is designed for fusion splicing, connector installation, optical link adjustment, storage of excess pigtails and optical fiber protection. The patch panel offers 4-48 ports within 1U rack coupled with a splice tray with support for optical fiber splicing and installation. Different installation panels are available to configure with a variety of high density optical fiber patch panels of different types.

Product Features

All products strictly follow the requirements of YD/T778-2011 "Optical Fiber Distribution Frame":

- TC's optical fiber patch panel supports both rack mounted and wall mounted, providing high flexibility for structured cabling;
- Optical fibers are protected all along the route so as to ensure that the bend radius is more than 40mm and the performance is free from the influence of cabling;
- The optical fiber patch panel offers direct and cross connection of indoor/outdoor optical fibers in horizontal and backbone networks;
- The patch panel matches with three optical fiber panels and accommodates 4-48 ports for different demands;
- One patch panel houses more than four optical fiber adapters;
- The clamped modular structure ensures that jacks can be removed from the front and connected directly to pre-terminated fiber optic cables and patch cords, thus speeding up and simplifying installation and maintenance;
- Its built-in splice tray holds up to 48 splices, significantly improving space utilization within the cabinet;
- All steel outer frame guarantees better mechanical performance;
- The outer frame is coated with black mist powder with clean and beautiful appearance;
- Coating materials and frameworks all meet environmental requirements;
- Optical fiber panels are also coated with powder in coordination with the outer frame;
- The steel patch panel features 1.5 mm thickness, high mechanical strength, and each of its housing withstanding more than 250N vertical static pressure, not easy to deform;
- The patch panel passes GB/T2423.17-1993 standard salt spray test (within 48 hours), no visible rust spots in the surface.

Application Standards

YD/T926.3; YD/T778-2011; TIA/EIA568

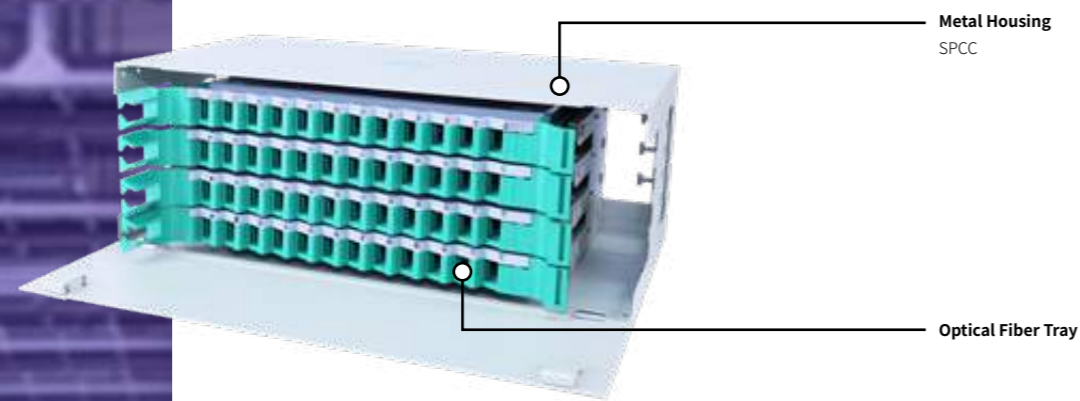
Order Information

Model	Description	Color	Package
FB-11-1U	Optical Fiber Patch Panel, 1U	Black	1 per box
FB-12-1U	Optical Fiber Drawer Type Patch Panel, without Optical Fiber Installation Panel	Black	1 per box

Optical Distribution Frame (ODF)

FB-ODF-*

19 inch rack mounted, drawer type unit



Product Information

Product Application

ODF Optical Distribution Frame (also named as ODF unit box or optical distribution box) is designed for fiber termination, distribution and deployment, as well as for storage of excess pigtailed. It not only can provide fusion splicing for the patch panels, but also can be installed separately in a standard 19-inch cabinet. Its flexible configuration makes it easier to operate.

Product Features

- ODF is suited for a standard 19-inch rack cabinet, with electrostatic powder sprayed in surface, designed with a sense of beauty;
- Stacked integrated 12-core splice tray is crafted for easy operation;
- The clamped FC, SC, LC and ST adapters are arranged at 30 degrees, which ensures that the bend radius of optical fibers is greater than 40 mm, and avoids the damage to the eyes when the laser burns and optical fibers are deployed;
- It provides termination, distribution and deployment of all kinds of structural optical cables, and meanwhile, optical fibers (or cables) are connected from top to bottom, left to right;
- It is suitable for termination of ribbon and bundle optical cables;
- Clear and complete labeling is provided for optical link identification;
- It provides fusion splicing, storage and distribution for optical fiber telecommunications systems, data transmission, Local Area Network (LAN), optical fiber sensors, HFC, and FTTX.

Product Specifications

Quantity of Core	Net Weight	Material	Size
12 Core	3.45KGS	SPCC Cold-Rolled Sheet 1.2mm	430*253*44mm
24 Core	4.12KGS	SPCC Cold-Rolled Sheet 1.2mm	430*253*87mm
48 Core	5.4KGS	SPCC Cold-Rolled Sheet 1.2mm	430*253*131mm
72 Core	6.2KGS	SPCC Cold-Rolled Sheet 1.2mm	430*253*176mm
96 Core	10.7KGS	SPCC Cold-Rolled Sheet 1.2mm	430*253*218mm
144 Core	12.5KGS	SPCC Cold-Rolled Sheet 1.2mm	430*253*350mm

Order Information

Model	Description	Package
FB-ODF-12-K	Optical Distribution Frame (ODF), 12 Port	1 per box
FB-ODF-24-K	Optical Distribution Frame (ODF), 24 Port	1 per box
FB-ODF-48-K	Optical Distribution Frame (ODF), 48 Port	1 per box
FB-ODF-72-K	Optical Distribution Frame (ODF), 72 Port	1 per box
FB-ODF-96-K	Optical Distribution Frame (ODF), 96 Port	1 per box
FB-ODF-144-K	Optical Distribution Frame (ODF), 144 Port	1 per box

Optical Fiber Terminal Box

FB-13-*

Metal, modular



Product Information

Product Application

Optical fiber terminal box is designed for network systems, data and image transmission systems, for indoor fiber optic cable straight-through force and branch continuity, as well as for storage of pigtailed and connector protection.

Product Features

All performances meet the parameters specified in YD/T925-2009 standards:

- Adhesion of the coating and the steel housing exceeds the Level 2 requirements of GB/T9286;
- Coupled with optical fiber installation panels, the patch panel is suited for 4-16 port (SC, ST, FC) adapters;
- Axial tension between the terminal box and the single fiber is more than 250N;
- Electrostatic powder is sprayed in steel plate, designed in a scientific way and with a sense of beauty;
- Optical fibers are protected all along the route so as to ensure that the bend radius is more than 40mm and the performance is free from the influence of cabling;
- Optical fibers are well connected and properly grounded, thus ensuring security and stability;
- The built-in splice tray with cover design holds up to the most 16 splices, making it easier to operate and maintain;
- The steel frame features 1.0 mm thickness, high mechanical strength, and each of its housing withstanding more than 250N vertical static pressure, not easy to deform;
- The terminal box passes GB/T2423.17-1993 standard salt spray test (within 48 hours), no visible rust spots in the surface.

Application Standards

YD/T926.3; YD/T778-2011; TIA/EIA568

Order Information

Model	Description	Color	Package
FB-13-K	Optical Fiber Terminal Box, without Optical Fiber Installation Panel	Black	1 per box

Fiber Adapter Panel

FB-11-MB-*

Matched with optical fiber fixed, drawer-type patch panel and optical fiber terminal box



Product Information

Product Application

Optical fiber panel coupled with adapters of various interface types completes the termination of the optical fibers.

Product Features

- Easy to install, secure and reliable.

4-16 Port SC Panel

- 4-16 duplex ports provided;
- Electrostatic powder sprayed in steel frame, designed in a scientific way and with a sense of beauty;
- Matched with all TC's optical fiber patch panels in order to achieve flexible configuration, speed up installation and detachment, as well as improve the hardware upgradability.



8-16 LC Panel

- 8-16 LC duplex ports provided;
- Electrostatic powder sprayed in steel frame, designed in a scientific way and with a sense of beauty;
- Matched with all TC's optical fiber patch panels in order to achieve flexible configuration, speed up installation and detachment, as well as improve the hardware upgradability.



4-16 ST Panel

- 4-16 ST simplex ports provided;
- Electrostatic powder sprayed in steel frame, designed in a scientific way and with a sense of beauty;
- Matched with all TC's optical fiber patch panels in order to achieve flexible configuration, speed up installation and detachment, as well as improve the hardware upgradability.



4-16 FC Panel

- 4-16 FC simplex ports provided;
- Electrostatic powder sprayed in steel frame, designed in a scientific way and with a sense of beauty;
- Matched with all TC's optical fiber patch panels in order to achieve flexible configuration, speed up installation and detachment, as well as improve the hardware upgradability.



8-16 LC 10G OM3 Panel

- LC duplex 10G OM3 ports provided;
- Electrostatic powder sprayed in steel frame, designed in a scientific way and with a sense of beauty;
- Matched with all TC's optical fiber patch panels in order to achieve flexible configuration, speed up installation and detachment, as well as improve the hardware upgradability.



8-16 LC 10G OM4 Panel

- LC duplex 10G OM4 ports provided;
- Electrostatic powder sprayed in steel frame, designed in a scientific way and with a sense of beauty;
- Matched with all TC's optical fiber patch panels in order to achieve flexible configuration, speed up installation and detachment, as well as improve the hardware upgradability.



Order Information

Model	Description	Color	Package
FB-11-MB-SC-4	SC Panel, 4-port, SC Simplex Adapter x4	Black	1 per box
FB-11-MB-SC-6	SC Panel, 6-port, SC Simplex Adapter x6	Black	1 per box
FB-11-MB-SC-8	SC Panel, 8-port, SC Simplex Adapter x8	Black	1 per box
FB-11-MB-SC-12	SC Panel, 12-port, SC Duplex Adapter x6	Black	1 per box
FB-11-MB-SC-16	SC Panel, 16-port, SC Duplex Adapter x8	Black	1 per box
FB-11-MB-LC-8	LC Panel, 8-port, LC Duplex Adapter x4	Black	1 per box
FB-11-MB-LC-12	LC Panel, 12-port, LC Duplex Adapter x6	Black	1 per box
FB-11-MB-LC-16	LC Panel, 16-port, LC Duplex Adapter x8	Black	1 per box
FB-11-MB-ST-4	ST Panel, 4-port, ST Simplex Adapter x4	Black	1 per box
FB-11-MB-ST-6	ST Panel, 6-port, ST Simplex Adapter x6	Black	1 per box
FB-11-MB-ST-8	ST Panel, 8-port, ST Simplex Adapter x8	Black	1 per box
FB-11-MB-ST-12	ST Panel, 12-port, ST Duplex Adapter x12	Black	1 per box
FB-11-MB-ST-16	ST Panel, 16-port, ST Simplex Adapter x16	Black	1 per box
FB-11-MB-FC-4	FC Panel, 4-port, FC Simplex Adapter x4	Black	1 per box
FB-11-MB-FC-6	FC Panel, 6-port, FC Simplex Adapter x6	Black	1 per box
FB-11-MB-FC-8	FC Panel, 8-port, FC Simplex Adapter x8	Black	1 per box
FB-11-MB-FC-12	FC Panel, 12-port, FC Simplex Adapter x12	Black	1 per box
FB-11-MB-FC-16	FC Panel, 16-port, FC Simplex Adapter x16	Black	1 per box
FB-11-MB-LC-OM3-8	10G OM3 LC Panel, 8-port, LC Duplex 10G OM3 Adapter x4	Black	1 per box
FB-11-MB-LC-OM3-12	10G OM3 LC Panel, 12-port, LC Duplex 10G OM3 Adapter x6	Black	1 per box
FB-11-MB-LC-OM3-16	10G OM3 LC Panel, 16-port, LC duplex 10G OM3 adapter x8	Black	1 per box
FB-11-MB-LC-OM4-8	10G OM4 LC Panel, 8-port, LC Duplex 10G OM4 Adapter x4	Black	1 per box
FB-11-MB-LC-OM4-12	10G OM4 LC Panel, 12-port, LC Duplex 10G OM4 Adapter x6	Black	1 per box
FB-11-MB-LC-OM4-16	10G OM4 LC Panel, 16-port, LC Duplex 10G OM4 Adapter x8	Black	1 per box
FB-11-MB-KB	Empty Panel, Provision of Space Capacity	Black	1 per box
FB-21-MB-KB	High Density Empty Panel, Provision of Space Capacity For High Density Optical Fiber Patch Panels	Black	1 per box

100Mbps Fiber Optic Converter

GSFQ-31-*

Singlemode, SC Port, 100Base-TX, 100Base-FX



Product Application

Product Application

Fiber optic converter, based on MODEM, is mainly used for the conversion of photoelectric signals in local area networks.

Product Features

- Conversion only for signals, not for interface protocols;
- Shielding and lightning protection;
- Access control mechanism based on CSMA/CD and compatibility with the existing Ethernet, upgraded to fully protect the customer original investment with support of cabling system.

Application Standards

IEEE 802.3 10BaseT; IEEE 802.3u 100Base-TX; 100Base-FX

Technical Specifications

Interface	Twisted Pair
Optical Fiber	SC
Transmission Rate	Twisted Pair: 10Mbps, 100Mbps; Optical Fiber: 100Mbps
Way of Duplex	Full Duplex, Half Duplex
Twisted Pair	Cat5, Cat5e
Power	AC: 220V(175-250V), 50Hz DC: 5V, 1A
Operation Temperature Range	0 ~ 50°C
Storage Temperature Range	-20 ~ 70°C
Humidity	5% ~ 90%
Volume	26 x 70 x 95mm (H x W x L)

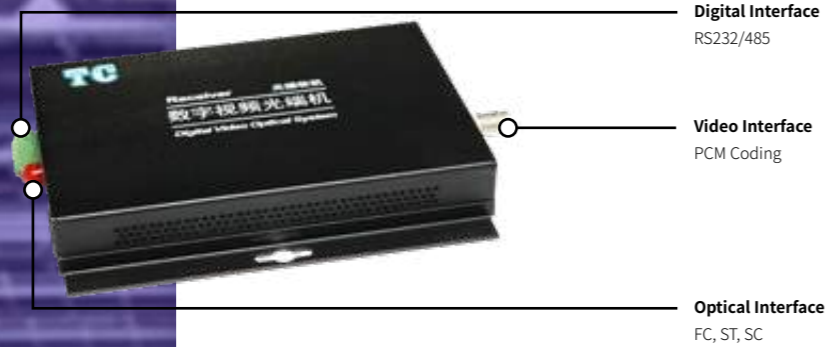
Order Information

Model	Description	Color	Package
GSFQ-31-1SC1E-SS-D	100Mbps Fiber Optic Converter, Singlemode	Black	1 pair per box
GSFQ-31-1SC1E-SD-D	100Mbps Fiber Optic Converter, Singlemode	Black	1 pair per box

Digital Video Optical Transceiver

GDJ-11-*

Telecine + digital non-compressed ring network, singlemode



Product Information

Product Application

Digital video optical transceiver featuring Telecine and ring network, utilizes digital video non-compression transmission technology along with CWDM technology that combines 1/2-core fiber onto one strand or two strands of fiber for self-healing ring networks and chain networks, and thus transmits multi-channel video and data signals. The shielding and lightning protection have the ability to control the front camera. Its video reaches up to the broadcasting standards in quality and supports RS-422 and RS-485 (2/4 wire) communication.

Product Features

- Compatibility with PAL, NTSC, SECAM;
- Transmission of any high-definition video signals;
- Broadcasting level of all digital non-compression, no damage transmission;
- No cross-band interference of analog FM, PM, AM optical transceivers;
- Video signal of high broadcasting quality, and multi-channel unidirectional and bidirectional RS232, RS422, 485;
- No damage, regenerative relaying of video;
- Available in separate way or rack mounted.



Environment Properties

Video Input/Output Voltage	Typical Peak 1Vpp, Max. 1.5Vpp
Operation Temperature Range	-10°C to 50°C ; Storage Temperature: -40°C to +80°C
Error Rate	< 10 ⁻⁹
Video Bit Width	8/10/12 bit
Sampling Rate	15MHz high speed
Input/Output Signal	1.0Vp-p

Video Characteristics

Input/Output Impedance	75Ω Unbalanced Interface Video Bandwidth: 8MHz
Video Coding	10-bit Linear PCM Code
Video Format	PAL/NTSC/SECAM
MTBF	> 100,000 hours

Optical Properties

Physical Interface	FC/PC, ST/PC, SC/PC
Optical Wavelength	1310nm/1550nm
Allowable Loss of Optical Path	Singlemode 1310nm LD: 25dB to 30dB
Transmission Distance	Singlemode: 5 to 100km
Optical Fiber Mode	Singlemode One Strand or Two Strands

Order Information

Model	Description	Color	Package
GDJ-11-SMD-1V1d	Optical Transceiver (Standard), 1 Channel Video and 1 Reserve Data, Point-to-Point	Black	1 pair per box
GDJ-11-SMD-1V	Optical Transceiver (Standard), 1 Channel Video, Point-to-Point	Black	1 pair per box
GDJ-11-SMD-2V1d	Optical Transceiver, 2 Channel Video and 1 Reserve Data, Point-to-Point	Black	1 pair per box
GDJ-11-SMD-2V	Optical Transceiver, 2 Channel Video, Point-to-Point	Black	1 pair per box
GDJ-11-SMD-4V1d	Optical Transceiver, 4 Channel Video and 1 Reserve Data, Point-to-Point	Black	1 pair per box
GDJ-11-SMD-4V	Optical Transceiver, 4 Channel Video, Point-to-Point	Black	1 pair per box
GDJ-11-SMD-8V1d	Optical Transceiver, 8 Channel Video and 1 Reserve Data, Point-to-Point	Black	1 pair per box
GDJ-11-SMD-8V	Optical Transceiver, 8 Channel Video, Point-to-Point	Black	1 pair per box
GDJ-11-SMD-16V1d	Optical Transceiver (1U), 16 Channel Video and 1 Reserve Data, Point-to-Point	Black	1 pair per box
GDJ-11-SMD-16V	Optical Transceiver (1U), 16 Channel Video, Point-to-Point	Black	1 pair per box



Intelligent Patch Panel



AIM Management Software

AIM-*

Automated infrastructure management software, BS architecture, mobile support, for intelligent patch panels



Product Information

Product Application

ICT Infrastructure Management Platform provides automated management for intelligent building ICT infrastructure, including structured cabling, network equipment, end equipment, users, and so on. It serves as the best auxiliary management tool for large local area network: digital rubbing of the entire ICT infrastructure can be achieved through a graphical interactive interface; IT management personnel and field implementation personnel closely link together through work order system; together with intelligent patch panels, it can achieve patch cord automation management, such as new adds, moves and changes in the entire network cabinets.

Product Features

Based on BS architecture and HTML5+CSS+Javascript technology, AIM management software supports various terminals. Its user-friendly graphic interface supports major operating systems (including smart phone operating system), as well as browsers.

Client apps with Baidu map plug-in ensure rapid and accurate creation or discovery of any building, suitable for multi-site ICT infrastructure management of chain businesses, group enterprises and multinational enterprises. Meanwhile, digital map system used in the floor information point layout supports common PDF-version vector drawings featuring non-polar scaling and quick positioning to each building unit, including data center cabinet channels, management rooms, work areas and even terminal information panels.

Equipment installation and configuration within the cabinet are reproduced in 1:1 graph ratio, resulting in a digital rubbing. The software has TC's structured cabling equipment built in, including intelligent patch panel products, mainstream brands of switches, servers and other devices. It also supports customized equipment libraries for users as a way to create their own equipment and infinitely expand their equipment libraries.



Digital Map System

As a big help for daily maintenance, the software visually displays each information channel connection and the device ports when passing by. In addition, it can quickly troubleshoot, locate fault points.

The software supports TC's current and future intelligent patch panel system, and also innovates itself to be compatible with general patch panels, single-port intelligent patch panels and dual-link intelligent patch panels. With the control panel of intelligent patch panels, it can automatically detect trespassing of unauthorized patch cord plug-in, clipping and so on. Its Pro version upgrades SNMP (Simple Network Management Protocol), which can detect on/off state of the system and trespassing of network equipment.

Its built-in infrastructure asset management records facilities' purchase time, license plate, model, and other information. Its matching label management system supports major label printing devices, printing asset management labels and professional patch cord labels with QR codes, via



1:1 Cabinet Rubbing

Wi-Fi and Bluetooth. Its built-in asset statistics reporting provides multiple reporting methods, customized secondary development, as well as real-time control of device usage in ICT architecture so as to offer much help for rapid decision-making in ICT provisioning, as well as daily management by IT managers. Its Pro version upgrades ICT infrastructure inventory management, and even more advanced features such as reporting of cable routing, lines, repair holes and so on.

Its sound work order management system automatically generates work orders when there are changes (including but not limited to the installation or removal of devices, cabinets, patch cords

personnel



ICT Infrastructure Asset Management

and so on) in digital rubbing, and notifies the construction personnel in real time after work orders have been dispatched. After completion of the construction based on the work order, the construction personnel can also review their work through intelligent patch panels or completion photos.

Its sound alarm system delivers alarms and warnings to the designated management personnel through the pop-up window, SMS, email, WeChat, etc., and also provides services, in terms of what users need, that support alarm classification management, one-click mandatory rationalization and other convenient functions.



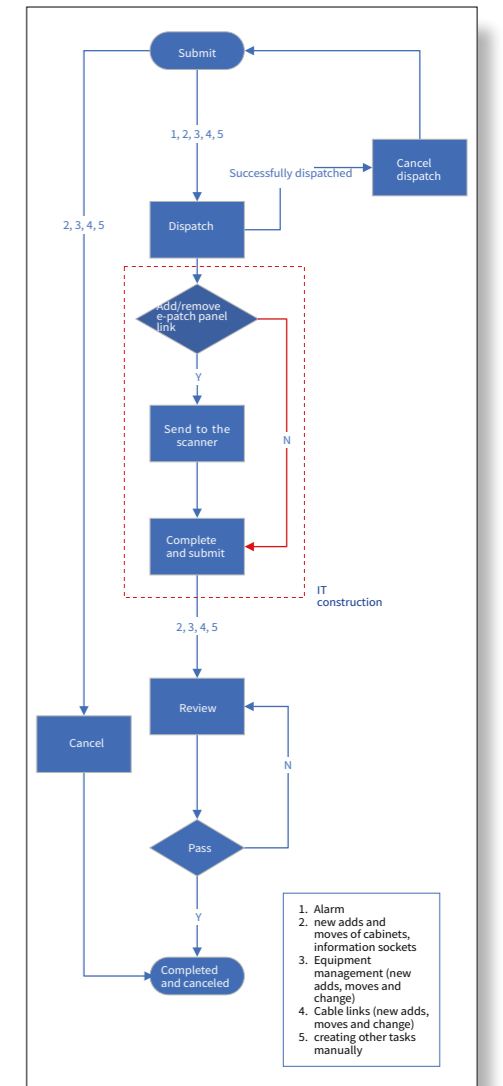
Work Order Management

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Order Information

Model	Description	Package
AIM-11-Std	Standard AIM Management Software, with the authorized key, installed in one server	1 set per box

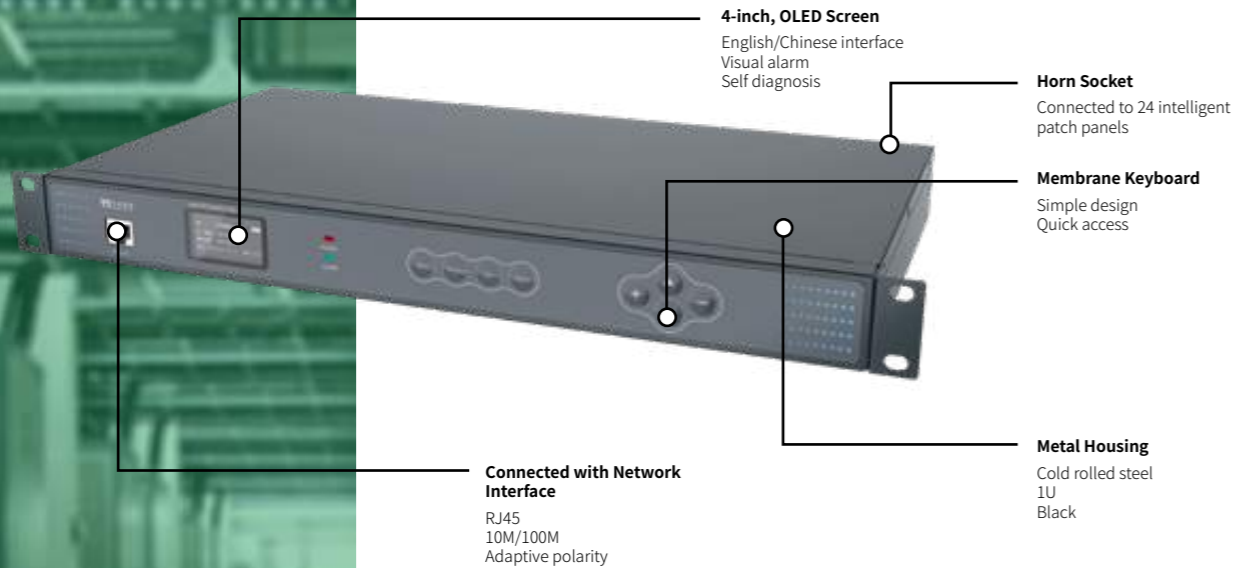


Process of Order Dispatch

Intelligent Patch Panel Scanner

Dzi-*

AIM core component, connected to 24 intelligent patch panels, for both single and dual configuration



Product Information

Product Application

Intelligent Patch Panel Scanner provides automated management for intelligent building ICT infrastructure, including structured cabling, network equipment, end equipment, users, and so on. It serves as the best auxiliary management tool for large local area network: digital rubbing of the entire ICT infrastructure can be achieved through a graphical interactive interface; IT management personnel and field implementation personnel closely link together through work order system; together with intelligent patch panels, it can achieve patch cord automation management, such as new adds, moves and changes in the entire network cabinets.

Product Features

With Cortex M4 high-performance CPU processor, the scanner has powerful ability of edge data processing. There's an innovation that allows for both port-type and link-type intelligent patch panels. The scanner can be connected to 24 intelligent patch panels which provides automatic detection of illegal invasion, abnormal disconnection, connection anomaly (unauthorized right of plugging/unplugging and shearing of the cords, etc.). The above anomalies will be reported in real time to the AIM system by connecting to the central server via RJ45 network port. Its built-in firmware supports the Chinese and English display interface. The smart cable hunting function provides site querying for the link-type port information on both sides without the need to plug/unplug the patch cords. The marginal computing capability to store the port configuration allows for periodically smart data reporting even with no port connection change, to ensure smooth network communication, and once there is a change in connection, the system reports immediately. High reliability design supports online/offline site display, and real-time port monitoring in the downtime. Unique smart diagnosis function provides online connection diagnosis for single/dual patch panels. Automatic re-transmission occurs when there is transmission delay or anomaly, ensuring real-time, accuracy and security of the connection status.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



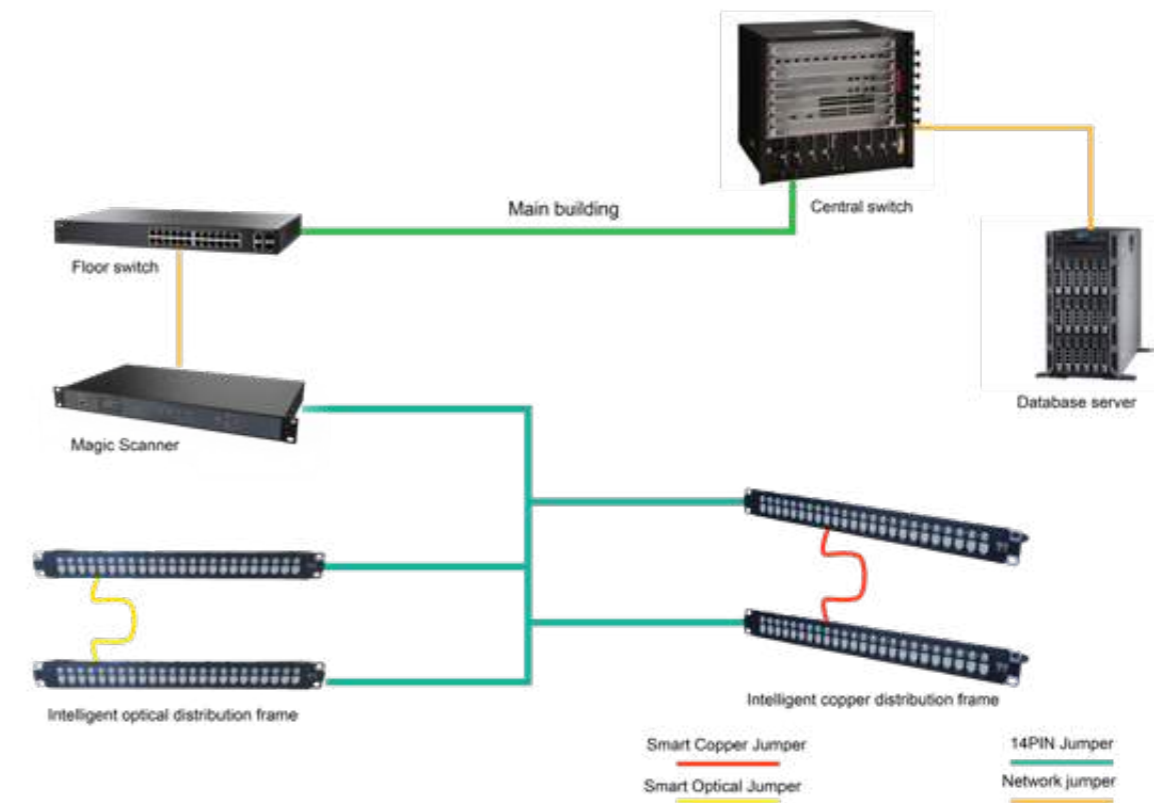
Magic Network Scanner



Scanner connecting cable (available in various lengths)

Specifications

Dimensions	280mm*440mm*67mm
Material	Cold-rolled steel
Max. Quantity of Patch Panels	24 pcs
Mode Compatibility	Single/ dual configuration
Space Utilization	1U
Package List	Manual x1, Scanner x1, Mounting Screws x1 set
Unit Weight	2.5kg



Magic Network Scanner Connection Topology

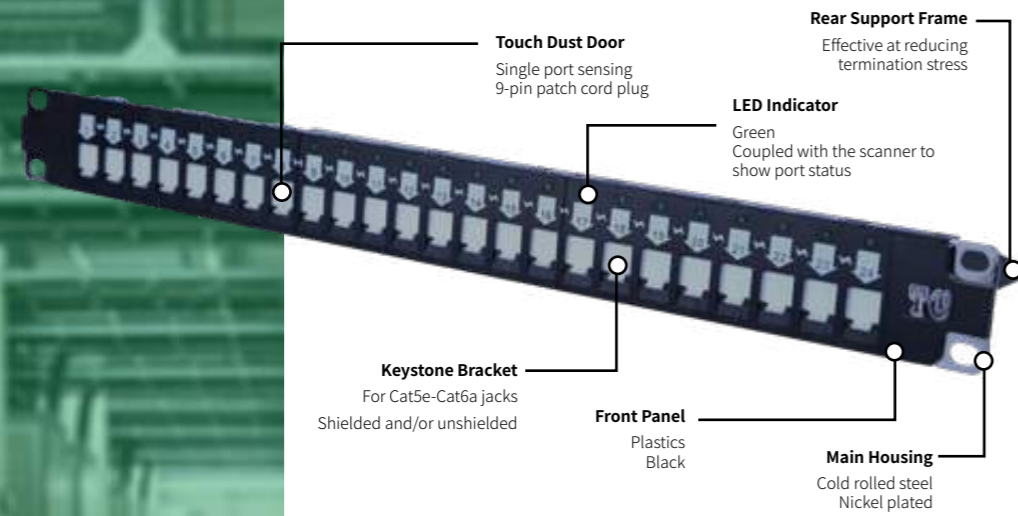
Order Information

Model	Description	Package
DZi-11-24-1U	iScan Network Scanner, 24-port	1 per box
PC-DZi-BPX-20-A	Network Scanner Connection Cable, 2 m	1 per pack
PC-DZi-BPX-30-A	Network Scanner Connection Cable, 3 m	1 per pack
PC-DZi-BPX-50-A	Network Scanner Connection Cable, 5 m	1 per pack

Notes: The length of the connection cable can be customized.

Modular Copper Intelligent Patch Panel

PP-DZi-00-0-24-02A
19-inch, 1U, modular



Product Information

Product Application

Modular Copper Intelligent Patch Panel provides a centered cable distribution for management rooms, equipment rooms and data center information points in smart building structured cabling system. When coupled with information modules, copper patch cords, smart copper patch cords and other connectors, it provides inlets and outlets for horizontal and vertical cabling (data, voice, etc.). When coupled with intelligent patch panels, it enables real-time monitoring of information ports and connection changes, and successfully manages AIM smart infrastructure. The patch panel supports 19-inch mount, and its modular design realizes optimal space utilization, providing a strong guarantee for structured cabling installation, maintenance and management.

Product Features

Based on the traditional one, the patch panel integrates electronic induction system and LED system. It has 14-core ports backwards and receives directives from the management software via the scanner, shown in LED indicators designed to indicate new adds, moves and changes of the patch cords. When the scanner is connected, the port and patch panel connection can be detected in real time, and reported to the AIM management software. A visual alarm will sound through the LED lighting system when an anomaly occurs. The patch panel features high-density 1U, 24 port, modular design, with modules installed as needed, compatible with all types of shielded, unshielded information modules, and detached in single unit for easy installation. It is equipped with the rear support frame, effectively reducing cable installation stress, and with unique touch dust doors, combined with internal contacts, enabling single or dual detection.

Application Standards

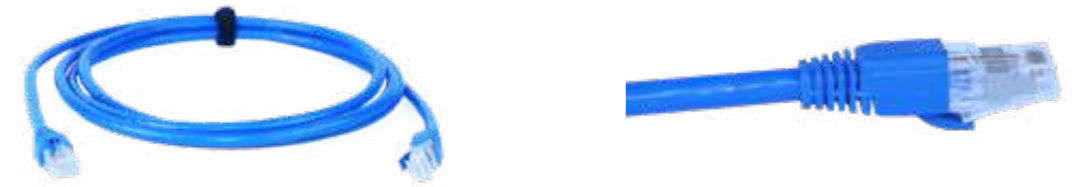
GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



24-port modular copper intelligent patch panel, front/rear view (without modules)

Specifications

Dimensions	19-inch, 1U
Material	Front frame and rear cable management holder: plastics + cold-rolled steel, nickel-plated
Flammability	GB/T 5169.11
Compatibility	RJ45 modules compatible with standard keystone jacks
Weight (with package)	0.7 kg per piece, 8 kg per box (10 pcs)



9-pin smart patch cord for intelligent patch panel

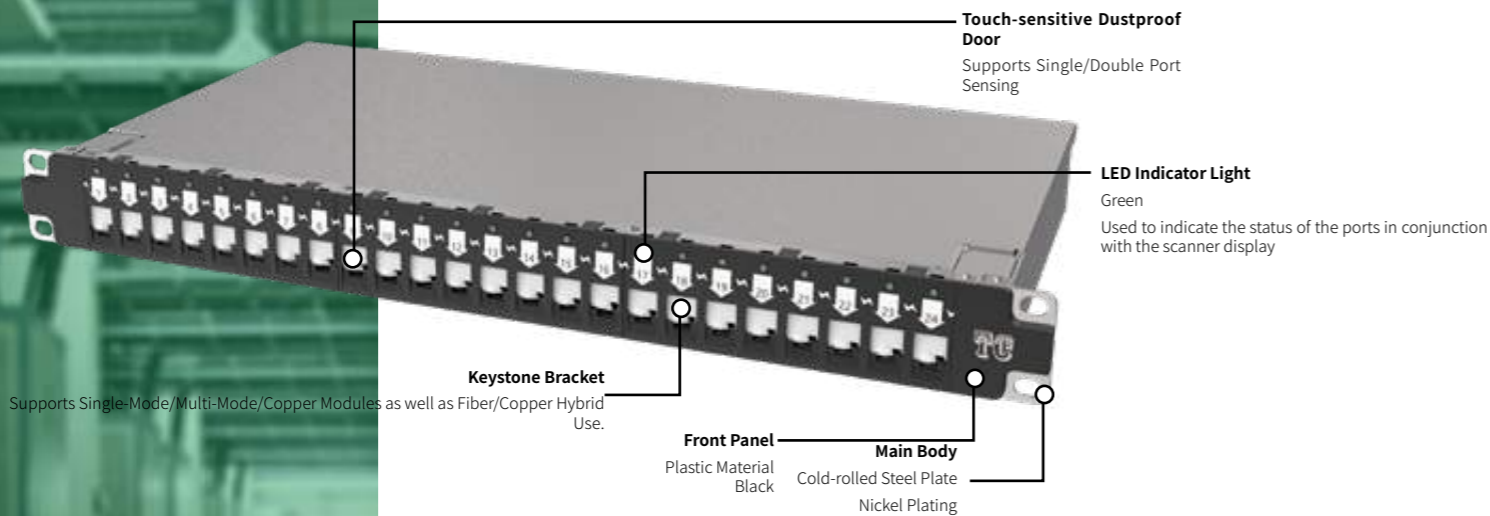
Order Information

Model	Description	Color	Package
PP-DZi-00-0-24-02A	24-Port Modular Intelligent Patch Panel (without jacks)	Black RAL9005	1 per box
PC-DZi-13-6-10-9B	Smart Copper Patch Cord, 9-Core, Cat6 Unshielded, 1m (probe type)	Blue	1 per pack
PC-DZi-21-6-10-9B	Smart Copper Patch Cord, 9-Core, Cat6 Shielded, 1m (probe Type)	Blue	1 per pack

Notes: Intelligent patch panel is empty with no jack. It is compatible with Magic series shielded Cat5e-Cat6a, and all unshielded jacks. The length of smart patch cord can be customized.

Fiber Optic Intelligent Patch Panel

FB-DZi-LC-1U-24-02A
19-inch, 1U



Product Information

Product Application

It is used in intelligent building cabling systems to centralize and manage wiring in various rooms. It works with fiber optic adapters and intelligent fiber optic patch cords, providing connectivity for horizontal and vertical cables (data, voice, etc.). When used with an intelligent patch panel scanner, it can monitor real-time port connections for AIM intelligent infrastructure management. With standard 19-inch rack mounting support, it saves valuable rack space and ensures efficient installation, maintenance, and management of structured cabling systems.

Product Features

The traditional patch panel is integrated with an electronic detection system and LED indication system. It has a 14-core interface at the back, connecting to a scanner. The scanner receives instructions from management software and provides visual guidance to construction and maintenance personnel through LED lights for handling port jumpers. Real-time detection of port and jumper connections is possible, and anomalies trigger visual alarms via the LED system. This 1U high-density panel has 24 ports and supports various modes (single-mode, multi-mode) with convenient installation. The bottom box includes a fiber fusion tray for up to 48 fiber splices. The unique touch-sensitive dust door design enables single or dual pairing detection. Additionally, it supports RJ45 copper module installation and allows for mixed use of fiber and copper connections.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2 etc.

Specifications

Dimensions	19 inches, 1U
Material	Front frame and rear cable management bracket are made of plastic and nickel-plated cold-rolled steel plate
Combustion Performance	GB/T 5169.11
Compatibility	Designed with a standard Keystone structure for modules



Fiber optic intelligent patch panel connections



Fiber Optic Intelligent Patch Panel Back View



Intelligent Fiber Optic Patch Cord



Elastic Metal Probe

	Product Parameters	Intelligent Fiber Optic Patch Cord	
Single Mode	Product Length	L ≤ 3m	L > 3m
	Polishing Method	LC PC 0°	LC PC 0°
	Test Method	Method B	Method B
	Insertion Loss IL (Typical Value)	≤ 0.10dB	—
	Insertion Loss IL (Maximum Value)	≤ 0.25dB	≤ 0.25+0.0004×L dB
	Return Loss RL (Minimum Value)	≥ 45dB	≥ 45dB
Multimode	Product Length	L ≤ 3m	L > 3m
	Polishing Method	LC PC 0°	LC PC 0°
	Test Method	Method B	Method B
	Insertion Loss IL (Typical Value)	≤ 0.10dB	—
	Insertion Loss IL (Maximum Value)	≤ 0.25dB	≤ 0.25+0.0035×L dB
	Return Loss RL (Minimum Value)	≥ 35dB	≥ 35dB

Notes: IL testing reference: IEC 61300-3-4; RL testing reference: IEC 61300-3-6.

Order Information

Model	Description	Color	Package
FB-DZi-LC-1U-24-02A	Fiber Optic Intelligent Patch Panel, 24-Port LC Duplex (Port Type)	Black RAL9005	1 per box
FJ-DZi-LCD-LCD-B1-1M	Dual-Core Intelligent Fiber Optic Patch Cord, LC Single Mode, 1 meter	Yellow	1 per pack

Notes: Factory-equipped adapters in the Fiber Optic Intelligent Patch Panel, no need for additional purchases. Intelligent patch cord length can be customized.



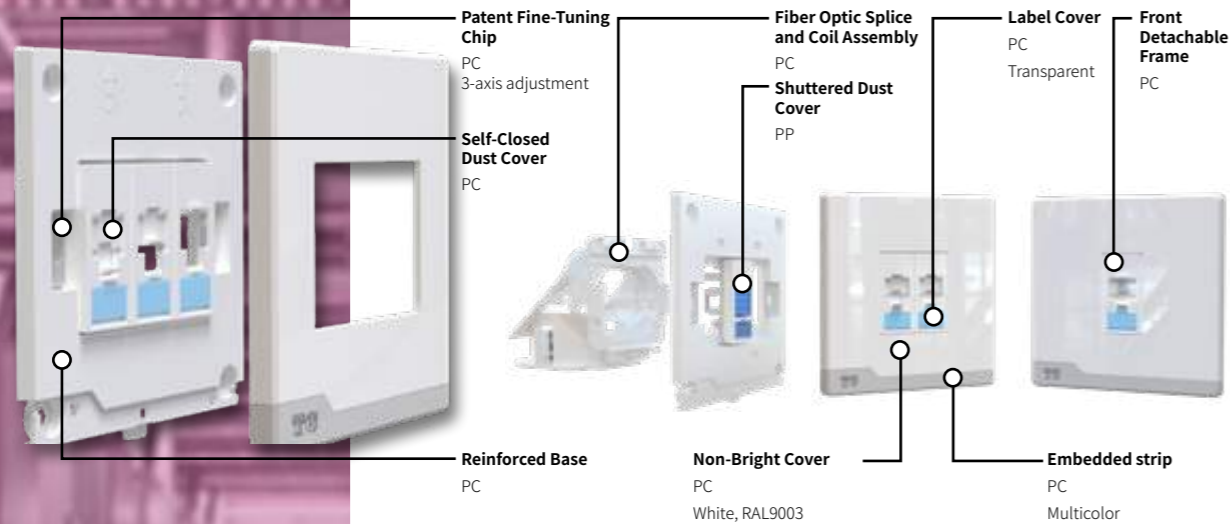
Outlet, Cable
management
& Accessories

TC

Magic series Front Detachable Faceplates

FP-21-*, FP-41-*

86mm type, 6mm ultrafine, modular design, front detachable, PC



Product Information

Product Application

Front Detachable Faceplate is intended to provide information outlets for work areas in smart building structured cabling system. Coupled with information modules, fiber optic adapters, and other terminating plug-ins, it provides information inlets for terminals (data, voice, etc.).

Product Features

Magic series faceplate featuring 86mm type international size, high grade PC material and 6mm ultrathin structure, is able to better adjust to the environments. The colored strip embedded in the front cover is designed for network identification.

It supports various multimedia frameworks, compatible with RJ45, optical fibers, USB, VGA, Cable TV, HDMI (4K), and RCA.

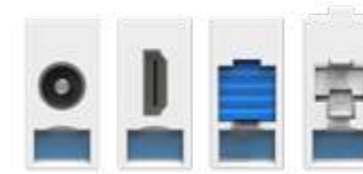
RJ45 modules are compatible with all TC jacks with a self-closed dust cover designed in shutter type for effective protection of unused ports. Each modular port can set high-definition marks for real-time use.

The unique front detachable design is crafted for easy maintenance which means there is no need to remove the whole plate.

The fine-tuning chip has been patented, which achieves up-down, left-right and 3-axis rotary installation, coupled with extra installation holes in each of the four corners for the partition purpose, and thus adjusts to the complex installation environments.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



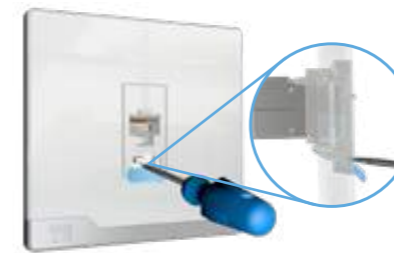
Multifunctional modules, such as cable TV, HDMI, SC/LCD/MPO, and RJ45.



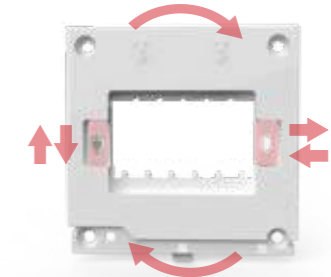
SC/LCD/MPO modules with shuttered dust cover

Product Specifications

Dimensions	86mm × 86mm × 6mm, in accordance with JB/T 8593-2013 standards
Material	High strength PC
Flammability	GB/T 5169.11, UL94-V0
Compatibility	RJ45 modules compatible with standard keystone jacks
Weight (10pcs, with package)	Single-Port: 400g; Dual-Port: 420g; Three-Port: 440g; Fiber Optic Type (with splice and coil assembly): 600g



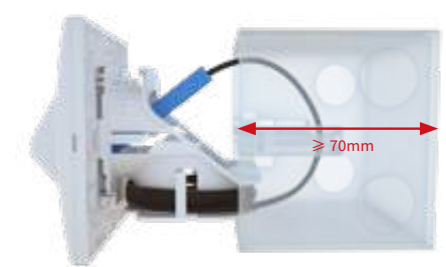
Modules easily detached from the front with a slotted screwdriver



Patent fine-tuning chip designed to achieve up-down, left-right and 3-axis rotary installation



Patent fiber splice and coil assembly for FTTx splicing and quick connection applications, Make sure bend radius of optical fiber is compatible with FP-21 series angled faceplates



Fiber optic assembly matches with 86mm type bottom box with a depth more than 70mm, Part of FTTx quick connectors supports angled faceplates for more space in bottom case

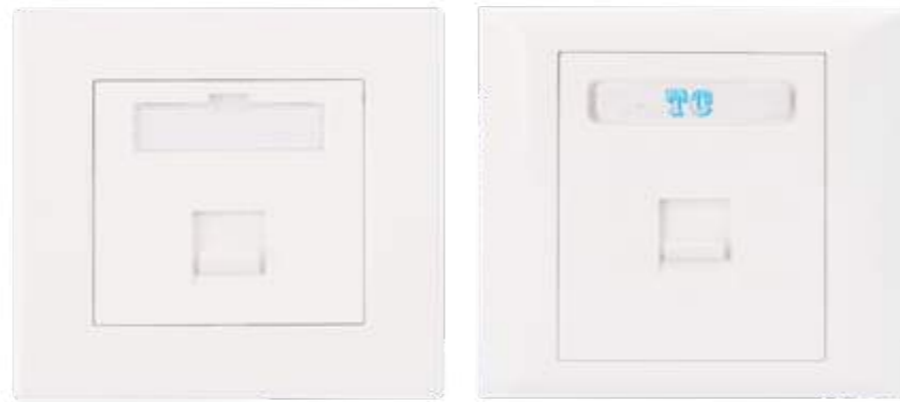
Order Information

Model	Description	Material	Cover Color	Strip Color	Package
FP-21-1-W	86mm Type Flat Single Port Faceplate, Keystone	PC	White RAL9003	White RAL9003	10 per box
FP-21-2-W	86mm Type Flat Dual Port Faceplate, Keystone	PC	White RAL9003	White RAL9003	10 per box
FP-21-3-W	86mm Type Flat Three Port Faceplate, Keystone	PC	White RAL9003	White RAL9003	10 per box
FP-21-TV-W	86mm Type Flat Single Port Cable TV Faceplate	PC	White RAL9003	White RAL9003	10 per box
FP-21-HDMI-W	86mm Type Flat Single Port HDMI Faceplate	PC	White RAL9003	White RAL9003	10 per box
FP-41-LC-1-W-ZJ	LC Fiber Optic Faceplate, Magic Series, 1-Port, with Splice and Coil Device	PC	White RAL9003	White RAL9003	1 per box
FP-22-LC-1-ZJ	LC Fiber Optic Angled Faceplate, 1-Port, with Splice and Coil Device	PC	White RAL9003	/	1 per box
FP-41-LC-1-W	LC Fiber Optic Faceplate, Magic Series, 1-Port	PC	White RAL9003	White RAL9003	5 per box
FP-22-LC-1	LC Fiber Optic Angled Faceplate, 1-Port	PC	White RAL9003	/	5 per box

Notes: Magic Series Front Detachable Faceplate offers a broad selection of models and colors. For detailed information, please contact local distributors.

Flat Faceplates

FP-11-*, FP-21-*
86mm type, modular



Elegant Series

Classic Series

Product Information

Product Application

Flat Faceplate, coupled with modules of various types, provides outlets for information terminals (data, voice, etc.), rated for work area cabling subsystem. Accessories including cables, can all be installed with their functionality left unaffected.

Product Features

Flat Faceplate utilizes high-performance PC structure featuring high gloss, good flexibility, impact resistance and aging resistance. The positioning holes have been patented, which allows for field installation without the need to consider the accurate size of pre-buried bottom box. What matters here is the position and angle of fine tuning chips. Embedded labeling is designed for data and voice port identification. The well-sealed, elastic dust cover effectively prevents dust and other contaminants.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2



Elegant Series 1-Port Flat Faceplate



Elegant Series 2-Port Flat Faceplate



Classic Series 1-Port Flat Faceplate



Classic Series 2-Port Flat Faceplate



Classic Series 4-Port Flat Faceplate

Specifications

Dimensions	86mm × 86mm × 10mm
Material	Flame retardant PC
Flammability	GB/T 5169.11
Compatibility	Compatible with TC's Cat5e to Cat6a unshielded modules
Weight (with package)	60 g per piece, 12 kg per box (200pcs)

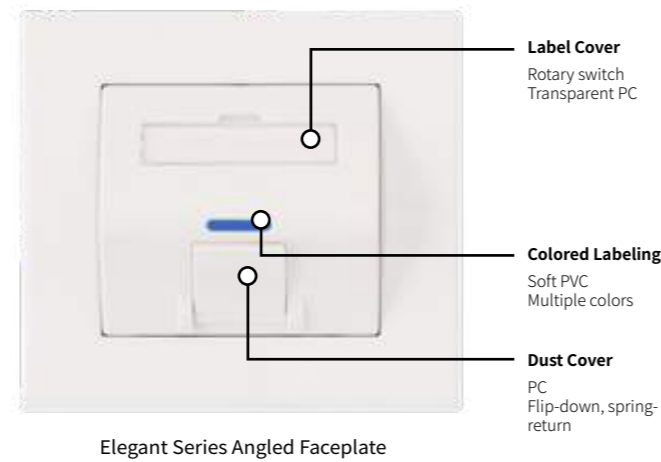
Order Information

Model	Description	Material	Color	Package
FP-21-1	Elegant Series 1-Port Flat Faceplate	PC	White	10 per box
FP-21-2	Elegant Series 2-Port Flat Faceplate	PC	White	10 per box
FP-11-1	Classic Series 1-Port Flat Faceplate	PC	White	10 per box
FP-11-2	Classic Series 2-Port Flat Faceplate	PC	White	10 per box
FP-11-4	Classic Series 4-Port Flat Faceplate	PC	White	10 per box

Angled Faceplates

FP-22-*

86mm type, modular



Product Information

Product Application

Angled Faceplate, coupled with modules of various types, provides outlets for information terminals (data, voice, etc.), rated for work area cabling subsystem. It can be mounted on a partition wall, floor, or desktop for easy management. The flip-down spring-return dust cover prevents dust from the unused ports.

Product Features

Angled Faceplate boasts a special angle of 30 degrees to ensure the bend radius of patch cord, thus delivering excellent transmission performance. Its high-performance PC structure features high gloss, good flexibility, impact resistance and aging resistance. The flip-down spring-return dust cover has the function of automatic return, effectively protecting the unused ports. The positioning holes have been patented, which allows for field installation without the need to consider the accurate size of pre-buried bottom box. What matters here is the position and angle of the fine tuning chips. Embedded labeling is designed for data and voice port identification.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Specifications

Dimensions	86mm × 86mm × 25mm
Material	Flame retardant PC
Flammability	GB/T 5169.11
Compatibility	Compatible with TC's Cat5e to Cat6a unshielded modules
Weight (with package)	70 g per piece, 11 kg per box (140pcs)

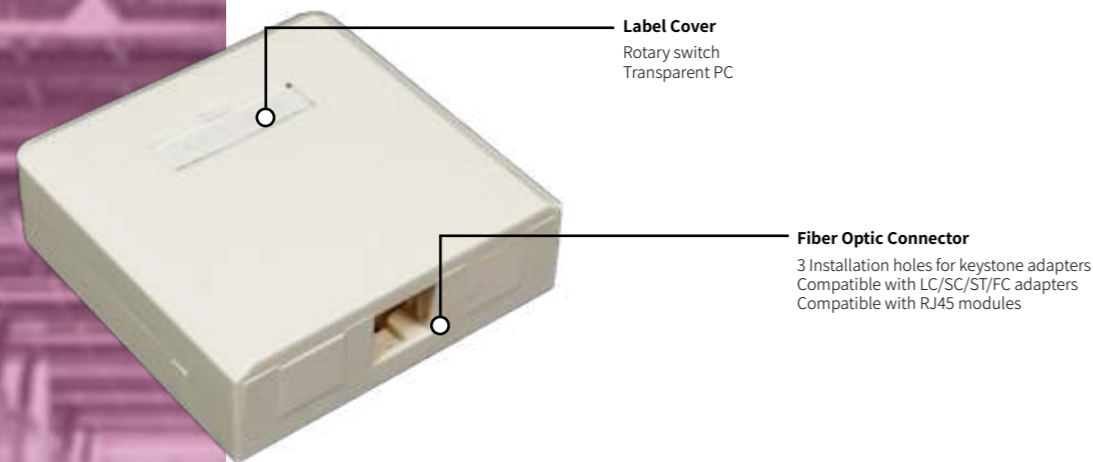
Order Information

Model	Description	Material	Color	Package
FP-22-1	Elegant Series 1-Port Angled Faceplate, with Flip-Down Spring-Return Dust Cover	PC	White	7 per box
FP-22-2	Elegant Series 2-Port Angled Faceplate, with Flip-Down Spring-Return Dust Cover	PC	White	7 per box

Three-in-One Fiber Optic Faceplate

FP-41-K

86mm type, modular



Label Cover
Rotary switch
Transparent PC

Fiber Optic Connector
3 Installation holes for keystone adapters
Compatible with LC/SC/ST/FC adapters
Compatible with RJ45 modules

Product Information

Product Application

Three-in-One Fiber Optic Faceplate provides port input/output for optical fibers, data and voice in households and work areas. In doing so, bend radius of the fiber is fully protected, so is the fiber and the fiber core. Proper curvature radius allows for small amounts of extra fiber coils designed for FTTD applications.

Product Features

Fiber Optic Faceplate boasts a standard desk box of 86×86×27mm size, and high density PC outer housing featuring high gloss, good flexibility, impact resistance and aging resistance. It provides three standard information ports compatible with LC, SC, ST, FC and RJ45 modules, and also supports both copper and fiber. Built-in angle at 45 degrees helps coil the fiber, and fiber inlets have multiple angles ideal for different cabling environments. The embedded labeling is designed for data and voice port identification, and the well-sealed, elastic dust cover effectively prevents dust and other contaminants.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Specifications

Dimensions	86×86×27mm
Material	PC
Flammability	GB/T 5169.11
Compatibility	Compatible with fiber optic adapters with Keystone brackets
Operation Temperature Range	-30°C ~ 70°C
Storage Temperature Range	-40°C ~ 80°C
Humidity	≤ 95% relative humidity
Weight (with package)	0.06 kg per piece, 0.42 kg per box

Keystone Fiber Optic Adapters

KJ-*

Keystone adapter panels, LC/SC/ST/FC



Product Information

Product Application

Fiber Optic adapters provide optical fiber connections for work areas (FTTD) and patch panels. Adapters can be transformed to Keystone connectors via special conversion brackets, and thus installed in Three-in-One Fiber Optic Faceplate and other patch panels.

Product Features

The outer housing has high density PC (UL94V-0 fire rating) featuring high gloss, good flexibility, impact resistance and aging resistance. Suitable for adapters that have low insertion loss and high repeatability, meet and even exceed the demands on SC, LC, FC, ST connectors specified in YD/T1272 standards.

Product Specifications

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Specifications

Appearance	Keystone
Material	PC
Pressure to Elastic Sleeve	8~10N
Connection Performance	Insertion Loss ≤ 0.35dB (repeatability included) Return Loss ≥ 40dB (PC) , ≥ 60dB (APC)
Repeatability	After two standard plugs insert into the adapter for 10 times, Insertion Loss < 0.05dB
Loss of Two Standard Plugs	≤ 0.2dB (Singlemode), ≤ 0.1dB (Multimode)
Operation Temperature Range	-25°C ~ 60°C

Order Information

Model	Description	Color	Adapter Color	Package
FP-41-K	Three-in-One Fiber Optic Faceplate	White	-	6 per box
KJ-SC	Fiber Optic Keystone Adapter Panel, with a Singlemode SC Adapter	White	Blue	20 per pack
KJ-LC	Fiber Optic Keystone Adapter Panel, with a Singlemode LCD Adapter	White	Blue	20 per pack
KJ-LC-OM3	Fiber Optic Keystone Adapter Panel, with a OM3 LCD Adapter	White	Aqua	20 per pack
KJ-LC-OM4	Fiber Optic Keystone Adapter Panel, with a OM4 LCD Adapter	White	Violet	20 per pack
KJ-ST	Fiber Optic Keystone Adapter Panel, with a ST Adapter	White	Metallic	20 per pack
KJ-FC	Fiber Optic Keystone JAdapter Panel, with a FC Adapter	White	Metallic	20 per pack

Pop-Up Floor Socket

FM-11-*

120×120mm, brass, three-port pop up



Product Information

Product Application

Pop-Up Floor Socket is intended for open office, such as hotel lobby and conference room, and mounted invisibly on a partition wall, floor, or desktop for easy management and professional use. Accessories including cables and modules, can all be installed inside.

Product Features

Pop-Up Floor Socket provides three ports, ideal for Cat6, Cat5e unshielded modules and multimedia modules (these modules shall be purchased separately. For shielded modules and the others, please contact the local distributors). Included with the standard modules are reserved blank panel, BNC socket, double lotus socket, microphone socket, Cannon socket, sound socket, headphone socket, 15-pin hole socket, 15-pin needle socket. The automatic pop up design ensures that the cover closes and opens flexibly and no jam occurs. The high quality brass structure with special treatment always looks new. Additionally, no unevenness occurs between the cover and the outer frame with the difference less than 0.2mm. The metal housing is connected to the ground with contact resistance less than 0.05Ω.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Specifications

Dimensions	120×120mm (common base size of 55mm)
Material	High Quality Brass + Zinc Alloy
Flammability	GB/T 5169.11
Compatibility	RJ45 modules compatible with standard keystone jacks
Weight (with package)	1.2 kg per piece, 15 kg per box (12pcs)

Flip-Open Floor Socket

FM-21-*

120×120mm, brass, three-port flip-open



Product Information

Product Application

Flip-Open Floor Socket is intended for open office, such as hotel lobby and conference room, and mounted invisibly on a partition wall, floor, or desktop for easy management and professional use. Accessories including cables and modules, can all be installed inside. The flip-open design means that when the patch cord is connected, the cover can be closed leaving no functionality affected.

Product Features

Pop-Up Floor Socket provides three ports, ideal for Cat6, Cat5e unshielded modules and multimedia modules (these modules shall be purchased separately. For shielded modules and the others, please contact the local distributors). Included with the standard modules are reserved blank panel, BNC socket, double lotus socket, microphone socket, Cannon socket, sound socket, headphone socket, 15-pin hole socket, 15-pin needle socket. The automatic pop up design ensures that the cover closes and opens flexibly and no jam occurs. The high quality brass structure with special treatment always looks new. Additionally, no unevenness occurs between the cover and the outer frame with the difference less than 0.2mm. The metal housing is connected to the ground with contact resistance less than 0.05Ω.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Specifications











Dimensions	Three-Port: 120×120mm Six-Port: 146×146mm (common base size of 65mm, HDMI thickened to 85mm)
Material	High Quality Brass + Zinc Alloy
Flammability	GB/T 5169.11
Compatibility	RJ45 modules compatible with standard keystone jacks
Weight (with package)	1.2 kg per piece, 15 kg per box (12pcs)

Order Information

Model	Description	Material	Package
FM-T11-3	Pop-Up Floor Socket, Three-Port, Square	High Quality Brass + Zinc Alloy	1 per box
FM-T21-3	Flip-Open Floor Socket, Three-Port, Square	High Quality Brass + Zinc Alloy	1 per box
FM-T21-3-HDMI-K	Flip-Open Floor Socket, HDMI, Three-Port, Square (without modules)	High Quality Brass + Zinc Alloy	1 per box
FM-T21-6-HDMI-K	Flip-Open Floor Socket, HDMI, Six-Port, Square (without modules)	High Quality Brass + Zinc Alloy	1 per box

Floor Socket Modules

Matched with pop-up and flip-open floor sockets

Product Information		
TV Socket	High strength PC, Occupying 1 port	
	For all standard module connectors	
	Clamped installation for easy construction and change	
	Model: FM-11-TV-D	
Video Socket	High strength PC, Occupying 1 port	
	For all standard module connectors	
	Clamped installation for easy construction and change	
	Model: FM-11-RCA1-D	
Audio Socket	High strength PC, Occupying 1 port	
	For all standard module connectors	
	Clamped installation for easy construction and change	
	Model: FM-11-RCA2-D	
Microphone Socket	High strength PC, Occupying 1 port	
	For all standard module connectors	
	Clamped installation for easy construction and change	
	Model: FM-11-HT-D	
15-pin VGA Hole Socket	High strength PC, Occupying 1 port	
	For all standard module connectors	
	Clamped installation for easy construction and change	
	Model: FM-11-VGA-K-D	
15-pin VGA Needle Socket	High strength PC, Occupying 1 port	
	For all standard module connectors	
	Clamped installation for easy construction and change	
	Model: FM-11-VGA-Z-D	
Sound Socket	High strength PC, Occupying 1 port	
	For all standard module connectors	
	Clamped installation for easy construction and change	
	Model: FM-11-YX-D	
φ 3.5 Headphone Socket	High strength PC, Occupying 1 port	
	For all standard module connectors	
	Clamped installation for easy construction and change	
	Model: FM-11-EJ-D	
HDMI Wall Socket Module	High strength PC, Occupying 1 port	
	For all standard module connectors	
	Clamped installation for easy construction and change	
	Model: FM-11-HDMI-D	
Blank Components	Material: high strength PC, Occupying 1 port	
	For all standard module connectors	
	Clamped installation for easy construction and change	
	Model: FM-11-KB-D	

Multifunctional Desktop Socket



Product Information

Product Application

Multifunctional Desktop Socket is intended to be used mainly in the desks of offices and conference rooms, and mounted invisibly in overall environments for easy management and professional use. Accessories including cables, power cords and modules, can all be installed inside, leaving no functionality affected.

Product Features

Multifunctional Desktop Socket is ideal for offices, households, hotels, schools and conference rooms, mounted in the flat surfaces such as the desk partition or the desk, designed for smart device charging, data transmission and exchange, as well as power supply while working, studying and living. It provides two module connectors, two audio sockets and two video sockets (VGA&HDMI), and accommodates Cat6, Cat5e unshielded modules and multimedia modules. The high quality aerospace level aluminum alloy and engineering PC structure features high strength, reasonable and durable construction, with paint and metal treatment in surface for simple appearance and high corrosion performance. The flush-type clamped and screw-free installation allows for better integration with the table and the partition. This product is fully qualified to have 3C certification.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Specifications

Panel Size	265×130mm
Base Size	252×114×75mm
Hole Size	(253-256) × (115-118) mm
Panel Material	High Quality Aluminum Alloy
Plastic Parts	High Quality Engineering PC
Socket Conductive Parts	Phosphor Copper
Type/Quantity of Adapter	Cat5e/Cat6 Shielded/Unshielded Modules x2; 3.5mm Audio Socket x1; Microphone Socket x1; VGA Socket x1; HDMI Socket x1; 5-port Charger x2

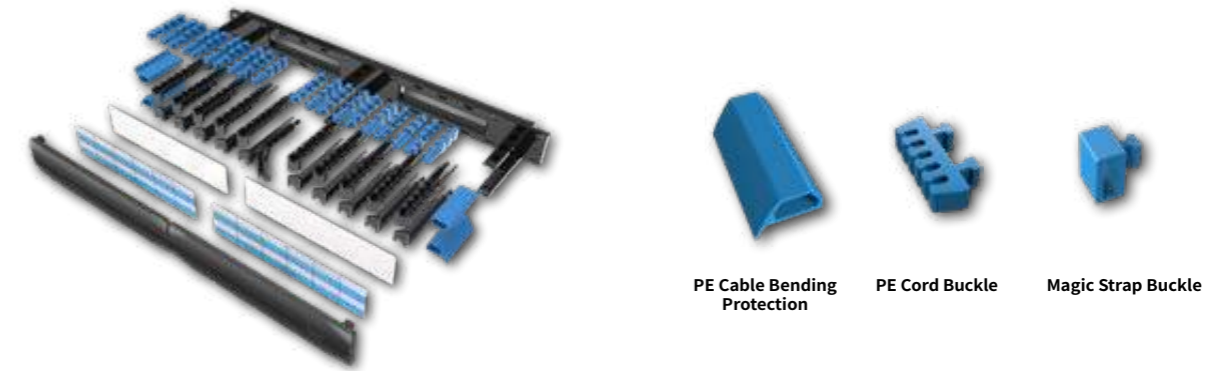
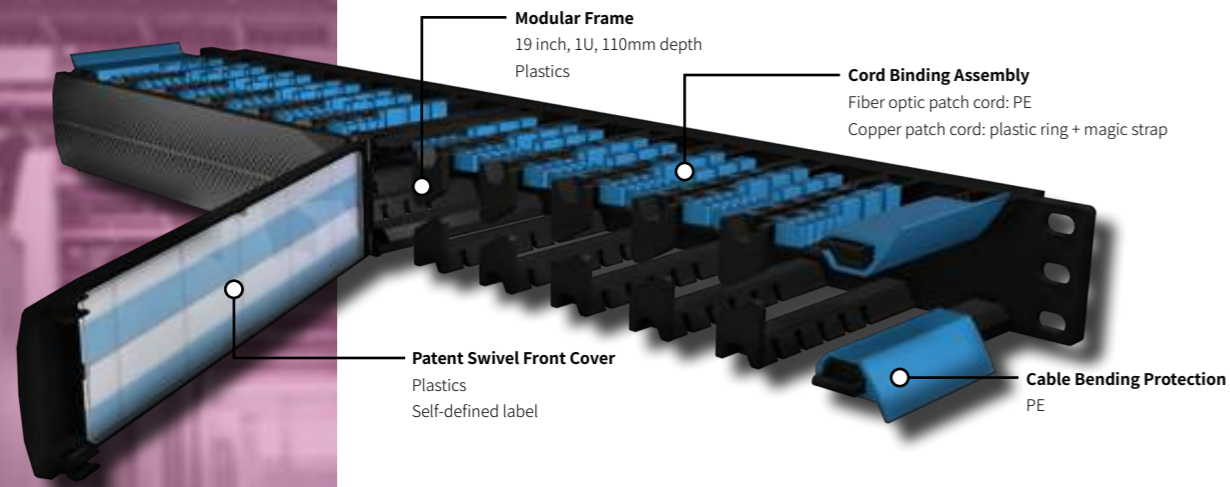
Order Information

Model	Description	Color	Package
FM-Y61-6-U6	Six-Port Desktop Socket (Black, for Cat6 Unshielded Module)	Black	1 per box
FM-Y61-6-U6A	Six-Port Desktop Socket (Black, for Cat6a Unshielded Module)	Black	1 per box
FM-Y61-6-S6	Six-Port Desktop Socket (Black, for Cat6 Shielded Module)	Black	1 per box
FM-Y61-6-S6A	Six-Port Desktop Socket (Black, for Cat6a Shielded Module)	Black	1 per box

Notes: The above products in Order Information include modules, but TC's normal modules cannot match with the desktop adapters.

Magic series MultiFunction Cable Manager CM-21-*

19-inch, 1U, modular, multi-functional, swivel front cover, plastics



Product Information

Protect Application

MultiFunction Cable Manager is intended for patch cord organization in management rooms and equipment rooms of smart building structured cabling system, as well as patch cord organization in the equipment cabinets and the column cabinets in data centers, so as to keep all copper and fiber optic patch cords neat and untangled, and to provide a strong guarantee for cabinet installation, maintenance and management.

Product Features

The Cable Manager is made in high-strength plastic material, engraved as diamond hive to gain a sense of style.

It has been patented and has detachable swivel covers in both left and right side. Its additional labels are available inside to make cable management and post-maintenance more efficient and convenient.

Its huge space accepts more than 48 large-diameter copper patch cords or up to 192-core fiber optic patch cords.

The Cable Manager has modular design and multiple functions, free to switch the matching modes, between open and closed type, or between copper and fiber optic cables.

There are a variety of cable connection and fixing methods available based on different characteristics of the cable. For delicate fiber optic patch cords, the special slot adopts PE material for easy connection; and the cable bending protection, also in PE material, at both ends ensures bend radius of the fibers. For copper patch cords, the special binding fixed buckle makes routine maintenance easier.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Configuration

Product	Main Frame	Modular Bracket	Front Panel (set)	Label	PE Cord Buckle	PE Cable Bending Protection	Magic Strap and Plastic Buckle
Open Cable Manager	●	12					
Closed Cable Manager (standard)	●	20	●	●			
Closed Copper Cable Manager	●	20	●	●			24
Closed Fiber Optic Cable Manager	●	20	●	●	20	2	



Open Cable Manager



Closed Cable Manager



Closed fiber optic cable manager

Specifications

Dimensions	19 inch, 1U, 110mm depth
Flammability	UL94-V0
Weight (with package)	Open type: 480 g; Closed type: 580 g

Order Information

Model	Description	Material	Color	Package
CM-21-1U-K	19-inch, Open Cable Manager, Modular Bracket x12, 1U	Plastics	Black RAL9005	1 per box
CM-21-1U-F	19-inch, Closed Cable Manager, with Panels, Standard Version, without Labels, 1U	Plastics	Black RAL9005	1 per box
CM-21-1U-FT	19-inch, Closed Copper Cable Manager, with Panels and Labels, Magic Strap Buckle x24, 1U	Plastics	Black RAL9005	1 per box
CM-21-1U-FG	19-inch, Closed Fiber Optic Cable Manager, with Panels, Labels and Protection Assembly, 1U	Plastics	Black RAL9005	1 per box
CM309-B	Label and Transparent Label Cover	Paper, PVC	-	50 sets per pack
CM309-T	Magic Strap and Buckle Assembly	Plastics	Blue	50 sets per pack
CM309-G	PE Cord Buckle	PE	Blue	50 per pack
CM309-J	PE Cable Bending Protection	PE	Blue	10 per pack

Notes: Magic Series Cable Manager offers a broad selection of models. For detailed information, please contact local distributors.

1U Metal Horizontal Cable Management, Enclosed

CM-12-1U

19 inch, 1U, metal, enclosed



Product Information

Product Application

Cable Management is usually mounted in the cabinets to organize the patch cords laid between patch panels and switches. In doing this, patch cords can be maintained in a neat and organized way, making it easier for future maintenance. Generally, one patch panel can be used with one cable manager.

Product Features

Features include 1U height, 19-inch mount, black painted steel structure, 1.2mm thickness and strong mechanical performance. The clamped cover (buckle) simplifies installation and detachment. The special 12 pass-through holes accommodate to patch panels of different types. The comb type rack design allows easy patch cord organization and efficient cable management. Besides, the quantity and the position of cables can be adjusted in real time.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Specifications

Dimensions	19-inch, 1U
Material	Black painted steel
Flammability	GB/T 5169.11
Compatibility	Compatible with all TC's fiber optic and copper patch cords
Weight (with package)	0.75kg per piece, 26kg per box (35pcs)

1U Plastic Horizontal Cable Management, Open Frame

CM-21-1U

19-inch, 1U, plastic, open frame



Product Information

Product Application

1U Plastic Horizontal Cable Management is mainly used for 110 patch cord organization.

Product Features

Features include 19 inch mount, 1U height, compatibility with 110 patch cords, and special plastic grippers to make the patch cords enter/exit the manager.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568-C.2

Specifications

Dimensions	19 inch, 1U
Material	Black painted steel; flame retardant pc
Flammability	GB/T 5169.11
Compatibility	Compatible with all TC's fiber optic and copper patch cords, especially for 110 patch cords
Weight (with package)	0.6kg per piece, 21kg per box (35pcs)

Order Information

Model	Description	Notes	Package
CM-12-1U	1U Black Metal Cable Management, Enclosed Type	Metal	1 per box
CM-21-1U	1U White Plastic Cable Management, Open Frame, for 110 Patch Panel	Metal	1 per box



Cabinet

AB Series Free standing Cabinet

AB*

Standard 19-inch rack cabinet, 18~42U, perforated front door, glass front door



Product Information

Product Application

The AB Series Free standing Cabinet features a modular assembly design with various structural sizes and personalized configuration options, providing unlimited expandability. It is ideal for housing and managing network equipment and structured cabling in intelligent building equipment rooms and management areas. The cabinet ensures the safe protection of valuable equipment and can withstand heavy electrical devices. It also provides power supply and fan cooling. With excellent structural stability, impressive static and dynamic load capacity, outstanding interchangeability, and long-lasting durability, the AB Series Free standing Cabinet is a secure and reliable choice.

Product Features

The AB Series Free standing Cabinet is made of high-quality steel and assembled quickly using precision equipment like lasers and welding. It has a high static load capacity of up to 800KG and an IP20 protection rating. The surface has an electrostatic sprayed coating with a fine sand texture and metallic luster, reducing glare.

The cabinet offers options for front doors with tempered glass or pre-punched ventilation holes, both designed for easy tool-less installation. The front door can open up to 110°, making equipment installation and debugging convenient. The uprights are labeled with "U" position indicators for quick equipment installation. They can be adjusted forward or backward to accommodate different IT equipment depths.

The cabinet has a modular design and can be flat-packed for cost-effective transportation and secure delivery.

Overall, the AB Series Free standing Cabinet provides durability, flexibility, and easy installation with a range of accessory options.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; GB 50174-2017; TIA/EIA568-C.2, TIA-569-D, YD 5083-2005, ETSI EN300019-2-3 etc.

Product Parameters

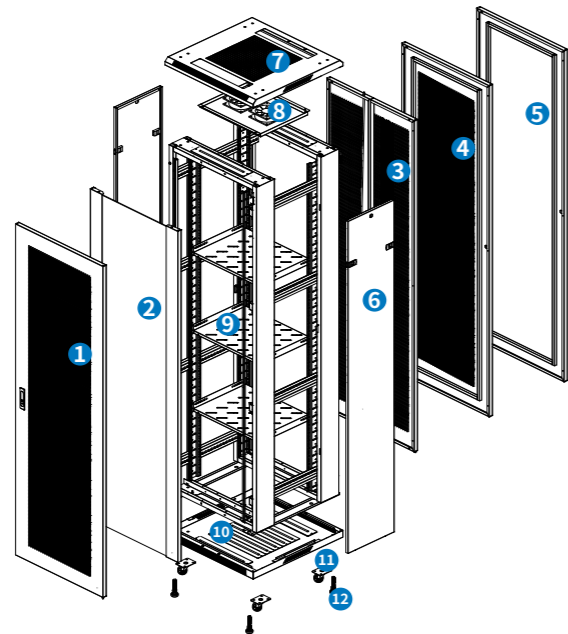
19-Inch Equipment Installation Upright	Compliant with Standards: GB/T 19520.16 (IEC 60297-3-100), IEC 60297-2, DIN 41491 PART 1, DIN 41494 PART 7, ANSI/EIA RS-310-D, ANSI/EIA/ECA-310-E; compatible with ETSI standards					
Height A (mm)	42UR	37UR	32UR	27UR	22UR	18UR
Width B (mm)	600-800					
Depth C (mm)	600-1000					
Maximum Equipment Installation Depth (mm)	415					
Minimum Equipment Installation Depth (mm)	305					
Front Door Type	Perforated Front Door / Tempered Glass Front Door					
Door Opening Angle	≥ 110°					
Side Panel Type	Removable with lock / without lock					
Static Load-Bearing Capacity	≥ 800kg					
Protection Rating	IP20					
Cabinet Color	Black color RAL9005 or other custom colors specified by the customer					

Ease of Use

Perforated or Glass Front Door	Perforated or glass front door for ample ventilation and easy equipment monitoring
Removable Side Panels	Removable side panels with optional locks for convenient cable management
Cable Management Holes on Top and Bottom of Cabinet	Top and bottom cable entry holes for efficient cable routing
Quick-Release Front Door Design	Quick-release front door design for easy swapping
PDU Installation	Space-saving rack-mounted PDU for improved utilization

Product Reliability

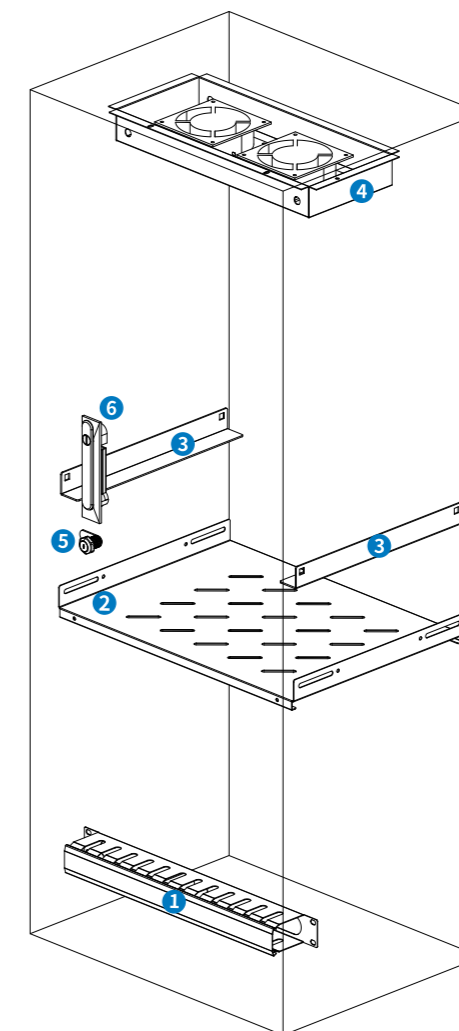
Internal dimensions and structure of the 19-inch equipment installation upright, including spacing and hole distance between uprights	GB/T 19520.16 (IEC 60297-3-100) , ANSI/EIA/ECA-310-E, GB/T 3047.2
Smooth and even coating surface without drips or exposed areas; metal parts free from burrs and rust	GB/T 19520.16 (IEC 60297-3-100) , ANSI/EIA/ECA-310-E
Load-bearing capacity of the cabinet is not less than 800Kg when fully loaded	YD/T2319-2011, QB-50049



Accessories for cabinets

RT*, RF*, RL*, CM-*

Accessories for 19-inch standard server cabinets



Model Number Coding Rules AB

Series	Type	Front Door Structure	Width	Depth	Height (U)	Side Panel
AB	1: Vertical Cabinet 2: Wall-Mounted Cabinet	1: Glass Door 3: Perforated Door	6: 600mm 8: 800mm	6: 600mm 8: 800mm 10: 1070mm 100: 1000mm 12: 1200mm	18: 18U 22: 22U 27: 27U 32: 32U 37: 37U 42: 42U	T: No Ventilation Holes (can be omitted) C: Louvered Ventilation

Order Information/Configuration Information

Model	Description	Size (W×D×H)	1 Perforated Front Door	2 Glass Front Door	3 Perforated Rear Door	4 Double Perforated Rear Door	5 Single Perforated Rear Door	6 Solid Rear Door	7 Solid Side Panel	8 Top Cover	9 Fan	10 Partition	11 Bottom Panel	12 Casters	Adjustable Support Feet
AB-13-66-42	Front and Rear Single-Opening Perforated Door Network Cabinet with 1x 6-way 10A Power Outlet, 30 sets of screws	600×600×42U	●		●				●	●	2	3	●	●	●
AB-13-66-37	Front and Rear Single-Opening Perforated Door Network Cabinet with 1x 6-way 10A Power Outlet, 90 sets of screws	600×600×37U	●		●				●	●	2	2	●	●	●
AB-13-66-32	Front Single and Rear Double-Opening Perforated Door Network Cabinet with 1x 6-way 10A Power Outlet, 90 sets of screws	600×600×32U	●		●				●	●	2	2	●	●	●
AB-13-66-27	Front Single and Rear Double-Opening Perforated Door Network Cabinet with 1x 6-way 10A Power Outlet, 90 sets of screws	600×600×27U	●		●				●	●	2	1	●	●	●
AB-13-66-22	Front Single and Rear Double-Opening Perforated Door Network Cabinet with 1x 6-way 10A Power Outlet, 90 sets of screws	600×600×22U	●		●				●	●	2	1	●	●	●
AB-13-66-18	Front Glass and Rear Steel Door Equipment Cabinet with 1x 6-way 10A Power Outlet, 90 sets of screws	600×600×18U	●	●	●				●	●	2	1	●	●	●
AB-13-68-42	Front Glass and Rear Steel Door Equipment Cabinet with 1x 6-way 10A Power Outlet, 90 sets of screws	600×800×42U	●		●				●	●	4	3	●	●	●
AB-13-610-42	Front Glass and Rear Steel Door Equipment Cabinet with 1x 6-way 10A Power Outlet, 90 sets of screws	600×1070×42U	●		●				●	●	4	3	●	●	●
AB-13-6100-42	Front Single and Rear Double-Opening Perforated Door Network Cabinet with 1x 6-way 10A Power Outlet, 90 sets of screws.	600×1000×42U	●		●				●	●	4	3	●	●	●
AB-13-88-42	Front Single and Rear Double-Opening Perforated Door Network Cabinet with 1x 6-way 10A Power Outlet, 90 sets of screws	800×800×42U	●		●				●	●	4	3	●	●	●
AB-11-66-42	3. Front Glass and Rear Steel Door Equipment Cabinet with 1x 6-way 10A Power Outlet, 90 sets of screws.	600×600×42U		●					●	●	2	3	●	●	●
AB-11-68-42	3. Front Glass and Rear Steel Door Equipment Cabinet with 1x 6-way 10A Power Outlet, 90 sets of screws.	600×800×42U		●					●	●	4	3	●	●	●
AB-11-610-42	3. Front Glass and Rear Steel Door Equipment Cabinet with 1x 6-way 10A Power Outlet, 90 sets of screws.	600×1070×42U		●					●	●	4	3	●	●	●

Notes: 1. "●" indicates standard configuration, "○" indicates optional configuration.

2. TC Magic DC™ AB series cabinet products have multiple models available for selection. Please consult the local distributors.

Order Information

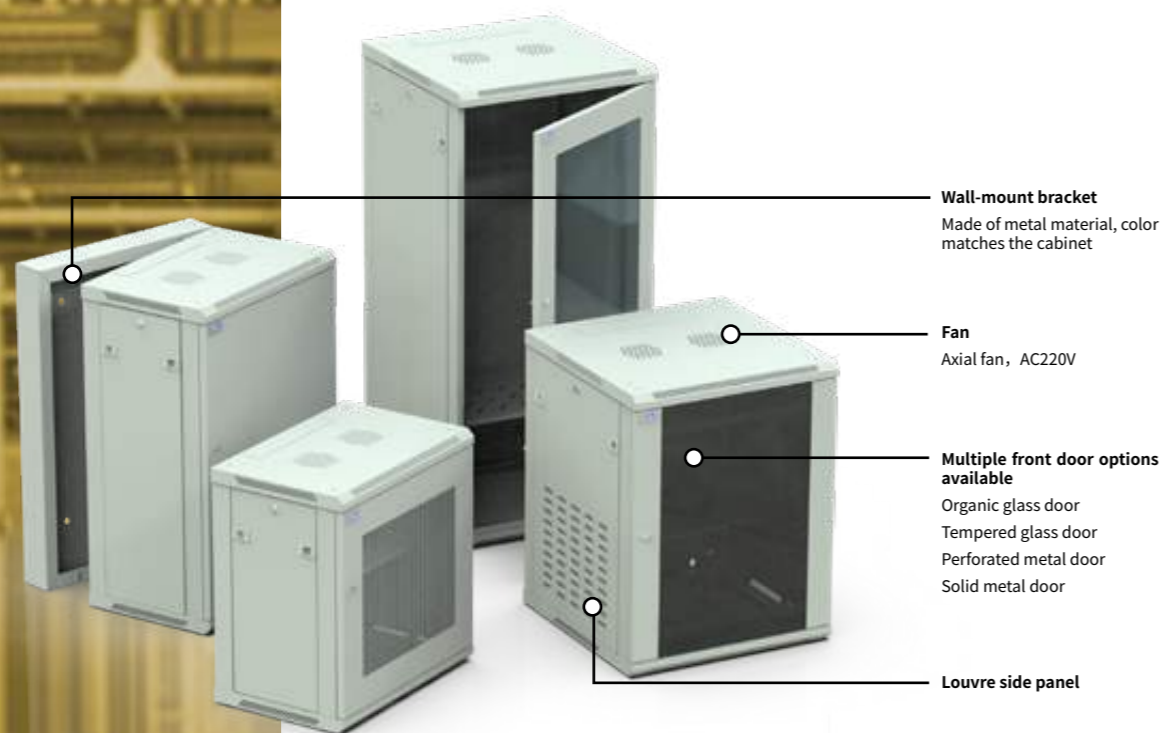
No.	Model	Description	Color	Package
1	CM-12-1U	1U Horizontal Cable Manager, Cold Rolled Steel, Surface Electrostatic Spraying, Depth: 70mm	Black (RAL 9005)	1 per box
2	RT2061201B	Light Duty Tray, Depth 600mm, Load Capacity: 120kg	Black (RAL 9005)	1 per box
3	RT1060501B	L-Type Mounting Rail, Depth 600mm, Load Capacity: 50kg	Black (RAL 9005)	2 per box
4	RF02012	Fan Unit, Including Tray, Non-Temperature Controlled, with 2 Fans	Black (RAL 9005)	1 per box
5	RL1101B	Round Lock	Black (RAL 9005)	1 per box
6	RL1201B	Long Bar Lock	Black (RAL 9005)	1 per box

Notes: TC Magic DC™ AB Series cabinet products have multiple accessory models available for selection. For specific models, please consult local distributors.

AB Series Wall-mounted Cabinet

AB*

19-inch standard cabinet, frame assembly design, suitable for wall-mounted or floor installation



Product Information

Product Application

The AB series wall-mounted cabinets feature a modular design with multiple sizes and ventilation options, offering flexibility and scalability. They are suitable for data centers, telecom, and enterprise installations, providing excellent stability, load capacity, and durability for reliable performance.

Product Features

选 The AB series wall-mounted cabinets are made of high-quality steel and assembled quickly using precision equipment. They can handle up to 100KG of static load and have an IP20 protection rating. The surface is electrostatically sprayed, providing a fine sand texture and non-glare metallic appearance. Various front doors, including organic glass, tempered glass, solid, and perforated doors, are easily installed without tools. The front door opens up to 110°, facilitating equipment installation and adjustment. The side panels can be flexibly assembled or disassembled for easy configuration changes. The vertical pillars are marked with "U" positions for convenient equipment installation and can be adjusted to accommodate different depths of IT equipment. Optional installation brackets ensure reliable support. A wide selection of installation accessories is available. The modular design allows for cost-effective transportation and secure delivery.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; GB 50174-2017; TIA/EIA568-C.2, TIA-569-D, YD 5083-2005, ETSI EN300019-2-3 etc.

Product Parameters

19-Inch Equipment Installation Upright	Compliant with GB/T 19520.16 (IEC 60297-3-100), IEC 60297-2, DIN 41491 PART1, DIN 41494 PART7, ANSI/EIARS-310-D, ANSI/EIA/ECA-310-E standards; compatible with ETSI standards					
Height A (mm)	21UR	18UR	15UR	12UR	9UR	6UR
Width B (mm)	450-600					
Depth C (mm)	450-600					
Maximum Equipment Installation Depth (mm)	400					
Minimum Equipment Installation Depth (mm)	270					
Front Door Type	Perforated front door / Tempered glass front door / Organic glass front door / Solid door					
Door Opening Angle	≥ 110°					
Side Panel Type	Removable with lock / without lock					
Static Load-Bearing Capacity	≥ 100kg					
Protection Rating	IP20					
Cabinet Color	Front air intake, top exhaust / Bottom air intake, top exhaust / Louvered side panel air intake, top exhaust					
Airflow Organization Inside the Cabinet	Natural ventilation or forced ventilation					
Cabinet Color	Black color RAL9005 or Gray color RAL7035 other custom colors specified by the customer					

Ease of Use

Perforated or Glass Front Door	Perforated or glass front door for ample ventilation and easy equipment monitoring
Removable Side Panels	Removable side panels with optional locks for convenient cable management
Cable Management Holes on Top and Bottom of Cabinet	Top and bottom cable entry holes for efficient cable routing
Quick-Release Front Door Design	Quick-release front door design for easy swapping
PDU Installation	Space-saving rack-mounted PDU for improved utilization

Product Reliability

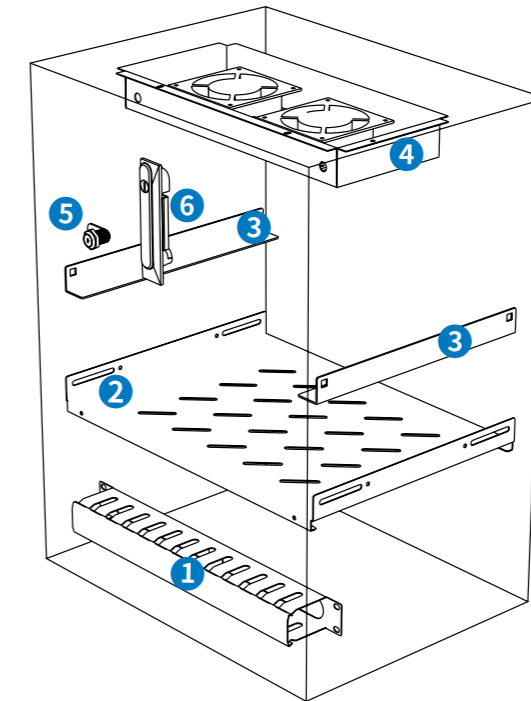
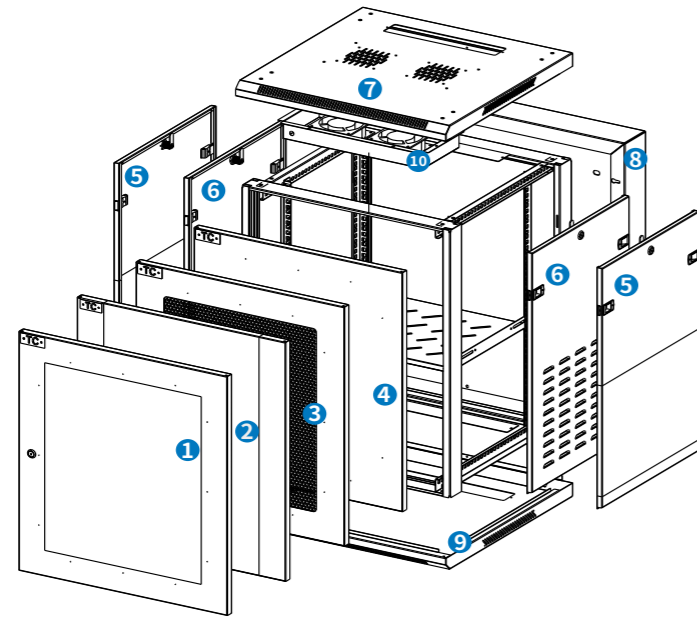
Internal dimensions and structure of the 19-inch equipment installation upright, including spacing and hole distance between uprights	GB/T 19520.16 (IEC 60297-3-100) , ANSI/EIA/ECA-310-E, GB/T 3047.2
Smooth and even coating surface without drips or exposed areas; metal parts free from burrs and rust	GB/T 19520.16 (IEC 60297-3-100) , ANSI/EIA/ECA-310-E
Load-bearing capacity of the cabinet is not less than 100Kg when fully loaded	YD/T2319-2011, QB -50049



Accessories for cabinets

RT*, RF*, RL*, CM*

Accessories for 19-inch standard server cabinets



Model Number Coding Rules RA

Series	Type	Front Door Structure	Width	Depth	Height (U)	Side Panel
AB	1: Vertical Cabinet 2: Wall-Mounted Cabinet	1: Glass Door 3: Perforated Door	4: 450mm 5: 500mm 6: 600mm	4: 450mm 5: 500mm 6: 600mm	06: 6U 09: 9U 12: 12U 15: 15U 18: 18U 21: 21U	T: No Ventilation Holes C: Louvered Ventilation

Order Information/Configuration Information

Model	Description	Size (W×D&H)	Color	1	2	3	4	5	6	7	8	9	10
				Acrylic Glass Door	Tempered Glass Door	Mesh Door	Solid Door	Solid Side Panel	Louvered Side Panel	Top Cover	Wall Mount Bracket	Bottom Panel	Fan
AB-22-64-06	6U Tempered Glass Wall Mount Cabinet	600×450 6U	Grey-white RAL7035	●	●	●	●	●	●	●	○	○	○
AB-22-64-09	9U Tempered Glass Wall Mount Cabinet	600×450 9U	Grey-white RAL7035	●	●	●	●	●	●	●	○	○	○
AB-22-64-12	12U Tempered Glass Wall Mount Cabinet	600×450 12U	Grey-white RAL7035	●	●	●	●	●	●	●	○	○	○
AB-22-64-15	15U Tempered Glass Wall Mount Cabinet	600×450 15U	Grey-white RAL7035	●	●	●	●	●	●	●	○	○	○
AB-21-54-6C	6U Acrylic Glass Wall Mount Cabinet with Louvered Side Panel	500×450 6U	Grey-white RAL7035	●	●	●	●	●	●	●	○	○	○
AB-21-54-9C	9U Acrylic Glass Wall Mount Cabinet with Louvered Side Panel	500×450 9U	Grey-white RAL7035	●	●	●	●	●	●	●	○	○	○
AB-21-54-12C	12U Acrylic Glass Wall Mount Cabinet with Louvered Side Panel	500×450 12U	Grey-white RAL7035	●	●	●	●	●	●	●	○	○	○
AB-21-54-15C	15U Acrylic Glass Wall Mount Cabinet with Louvered Side Panel	500×450 15U	Grey-white RAL7035	●	●	●	●	●	●	●	○	○	○
AB-21-66-6C	6U Acrylic Glass Wall Mount Cabinet with Louvered Side Panel	600×600 6U	Grey-white RAL7035	●	●	●	●	●	●	●	○	○	○
AB-21-66-9C	9U Acrylic Glass Wall Mount Cabinet with Louvered Side Panel	600×600 9U	Grey-white RAL7035	●	●	●	●	●	●	●	○	○	○
AB-21-66-12C	12U Acrylic Glass Wall Mount Cabinet with Louvered Side Panel	600×600 12U	Grey-white RAL7035	●	●	●	●	●	●	●	○	○	○
AB-21-66-15C	15U Acrylic Glass Wall Mount Cabinet with Louvered Side Panel	600×600 15U	Grey-white RAL7035	●	●	●	●	●	●	●	○	○	○

Notes: 1. "●" indicates standard configuration, "○" indicates optional configuration.
2. TC Magic DC™ AB series cabinet products have multiple models available for selection. Please consult the local distributors.

Order Information

No.	Model	Description	Color	Package
1	CM-12-1U	1U Horizontal Cable Manager, made of cold-rolled steel, surface coated with static spray, depth: 70mm	Black (RAL 9005)	1 per box
2	RT2061201B	Light-duty Tray, depth: 600mm, load-bearing capacity: 120kg	Black (RAL 9005)	1 per box
3	RT1060501B	L-shaped Mounting Rails, depth: 600mm, load-bearing capacity: 50kg	Black (RAL 9005)	2 per box
4	RF02012	Fan Unit Assembly, includes tray, without temperature control, with 2 fans	Black (RAL 9005)	1 per box
5	RL1101B	Circular Lock	Black (RAL 9005)	1 per box
6	RL1201B	Long Bar Lock	Black (RAL 9005)	1 per box

Notes: TC Magic DC™ AB series cabinet products offer multiple accessory models for selection, Please consult the local distributors.

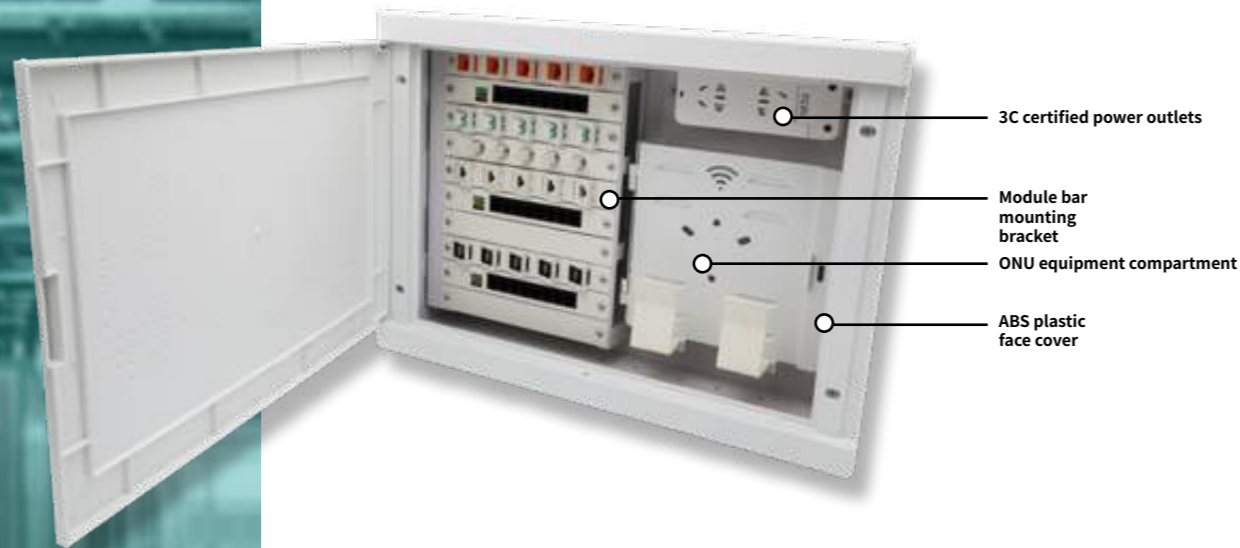


Smart Home Cabling

Deluxe Home Wiring Box

HB-21-10-FTTH-E

10U capacity, including equipment compartment, comes with 3C certified power outlets



Product Information

Product Application

Used for weak electrical signal cables such as telephone lines, cable TV lines, network cables, security control cables, etc., in households or SOHO offices, at the entrance, indoors, or at aggregation points. This FTTH-type enclosure is designed to fix and protect cable or fiber optic branches and junctions, providing reliable centralized planning, layout, and management of cables or optical fibers.

Product Features

TC Home Wiring Box features a patented modular design, allowing flexible installation of various functional module bars. These modules include Voice, Cable TV, Data, and Terminal options, catering to current and future needs of home and SOHO networks, telephony, cable TV, and security systems.

The box is designed with knock-out holes on all sides and large knock-out holes on the upper and lower sides for cable entry from different rooms and conduits.

With built-in cable management, the interior remains tidy and attractive.

It comes with 3C certified power sockets and equipment compartments for safety and reliability.

Additionally, you can opt for our three-in-one fiber optic panel, offering more space and a cleaner look.

The exquisite type home wiring box is compatible only with the exquisite type module bars.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568.2-D etc.



Front View

Side View

Product Parameters	FTTHE 10U Home Wiring Box	FTTHEP 10U Home Wiring Box
Panel Material	2.5mm ABS plastic cover with white spray coating	2.5mm ABS plastic cover with white spray coating
Bottom Box Material	High-quality cold-rolled steel plate with a thickness of 1.0mm	High-quality cold-rolled steel plate with a thickness of 1.0mm
Bottom Box Size (mm)(L*H*D)	400*300*120	400*300*120
Overall Size(mm)(L*H*D)	425*325*140	425*325*140
Reserved Installation U Count1U=38.5mm	10U	10U
Knockout Holes on the Box	16 small holes and 2 large holes on both the upper and lower sides for easy cable management and entry; 3 holes on each of the left and right sides for additional cable routing	16 small holes and 2 large holes on both the upper and lower sides for easy cable management and entry; 3 holes on each of the left and right sides for additional cable routing
Color	White	White
Product Configuration	ONU Equipment Cabinet, 3C Certified Power Strip	ONU Equipment Cabinet, 3C Certified Power Strip, Triple Play Fiber Installation Panel.

Notes: This product does not accept any customization on dimensions, and it is only available for whole-package shipping. Partial shipments of components are not accepted.

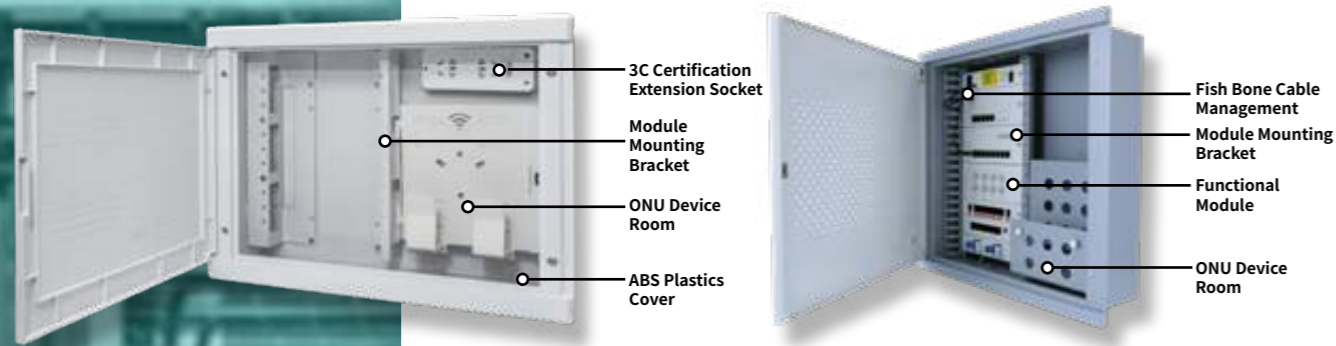
Order Information

Model	Description	Color	Remark	Package
HB-21-10-FTTH-E	FTTHE Type 10U Home Distribution Box, 1 power strip, 1 ONU equipment compartment	White	Plastic + Metal	1 per box
HB-21-10-FTTH-EP	FTTHEP Type 10U Home Distribution Box, 1 power strip, 1 ONU equipment compartment	White	Plastic + Metal	1 per box

Household Multimedia Boxes

HB-*

For household and SOHO network, telephone, cable TV, security control and other system transmission



Product Information

Product Application

Household Multimedia Box is designed for household or SOHO telephone cables, Cable TV cables, network cables, security control cables and other low voltage signal cables, which are routed indoor, through houses, or in consolidation points. The product is used to secure and protect cable routing between copper/fiber optic cable branches and connection points, and therefore provide reliable and unified cable layout and centralized cable management. Available with Elegant Type, Excellent Type and FTTH Type.

Product Features

Features include patent modular structure and flexible configuration. Functional modules can be configured as follows:

Voice module: 2-in/8-out, confidential or non-confidential

Cable TV module: 4/7-port

Data module: 6-port, modular design

Network router module: 5-port

Network switch module: 5/8-port

Built-in power module: 1 drag 1/2 7.5V 2A/3A

Connection module: 10-pair screw type or 10-pair Krone strip

Functional modules, for both present and future use, can be installed to provide system transmission for household, SOHO network, telephone, Cable TV, security and control system.

Several standard knock-out holes at the top and bottom have been reserved for cable entry in different rooms and conduits.

Built-in cable splitting bracket is designed for tidy and easy cable management.

Embedded housing, with floating and positioning function, can be pre-buried in different depths of walls.

Open type: Elegant Type with elastic plastic clips, Excellent and FTTH Type with magnet locking.

Application Standards

GB/T 18233 (ISO/IEC 11801); GB 50311; TIA/EIA568.2-D



Elegant Type Household Multimedia Box

Excellent Type Household Multimedia Box

FTTHE Type Household Multimedia Box

FTTH Type Household Multimedia Box





Specifications	4U Elegant Type	6U Excellent Type	6U FTTHE Type	6U FTTH Type	10U FTTH Type
Panel Material	High quality ABS material, white matte surface	0.8mm high quality cold-rolled steel, white fine-grain surfaces with electrostatic spraying	2.5mm ABS Plastics cover, white surfaces with electrostatic spraying	1.0mm high quality cold-rolled steel, white fine-grain surfaces with electrostatic spraying	1.0mm high quality cold-rolled steel, white fine-grain surfaces with electrostatic spraying
Bottom Case Material	High quality ABS material, white matte surface	1.0mm high quality cold-rolled steel, white fine-grain surfaces with electrostatic spraying	1.0mm high quality cold-rolled steel	1.0mm high quality cold-rolled steel, white fine-grain surfaces with electrostatic spraying	1.0mm high quality cold-rolled steel, white fine-grain surfaces with electrostatic spraying
Bottom Case Size (mm, L x H x D)	235*200*80	272*230*90	400*300*120	425*275*120	425*430*120
Whole Size (mm, L x H x D)	250*230*100	300*260*105	425*325*140	455*310*135	455*465*135
Number of Rack Unit 1U=38.5mm	4U	6U	6U	6U	10U
Knock-out Holes	Φ25 8 holes	Φ25 10 holes	Φ35 8 holes Φ25 28 holes	Φ25 12 holes	Φ25 12 holes
Color	White	White	White	Gray Frame, White Cover	Gray Frame, White Cover
Configuration	Empty Box	Empty Box	ONU Device Room, 3C Certification Extension Sockets (in combination with 3-in-1 fiber adapter panels)	ONU Device Room	ONU Device Room

Notes: 6U FTTHE Type Household Multimedia box only has one dimension and can only be delivered as a whole; other sizes can be customized. For more details, please contact our local distributors.





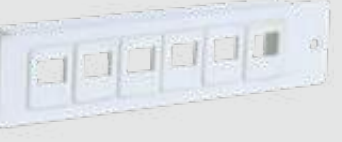
Order Information











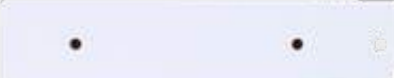
Model	Description	Color	Notes	Package
HB-11-4	Elegant Type 4U Household Multimedia Box, Plastic, Empty	White	No ONU Device Room	1 per box
HB-22-6	Excellent Type 6U Household Multimedia Box, Metal, Empty	Gray Frame, White Cover	No ONU Device Room	1 per box
HB-21-6-FTTH-E	FTTHE Type 6U Household Multimedia Box, 1*Extension Socket, 1*ONU Device Room	White	Plastics +Metal	1 per box
HB-21-6-FTTH-EP	FTTHEP Type 6U Household Multimedia Box, 1*Extension Socket, 1*ONU Device Room, 1*3-in-1 Adapter Panel	White	Plastics +Metal	1 per box
HB-21-6-FTTH	FTTH Type 6U Household Multimedia Box, Metal, 1*ONU Device Room	Gray Frame, White Cover	If no ONU device room is needed, space can be expanded to 12U	1 per box
HB-21-10-FTTH	FTTH Type 10U Household Multimedia Box, Metal, 1*ONU Device Room	Gray Frame, White Cover	If no ONU device room is needed, space can be expanded to 20U	1 per box
FB-RJP-6	6-Core Fiber Splice Tray	Gray-white	Optional FTTH Type	1 per box

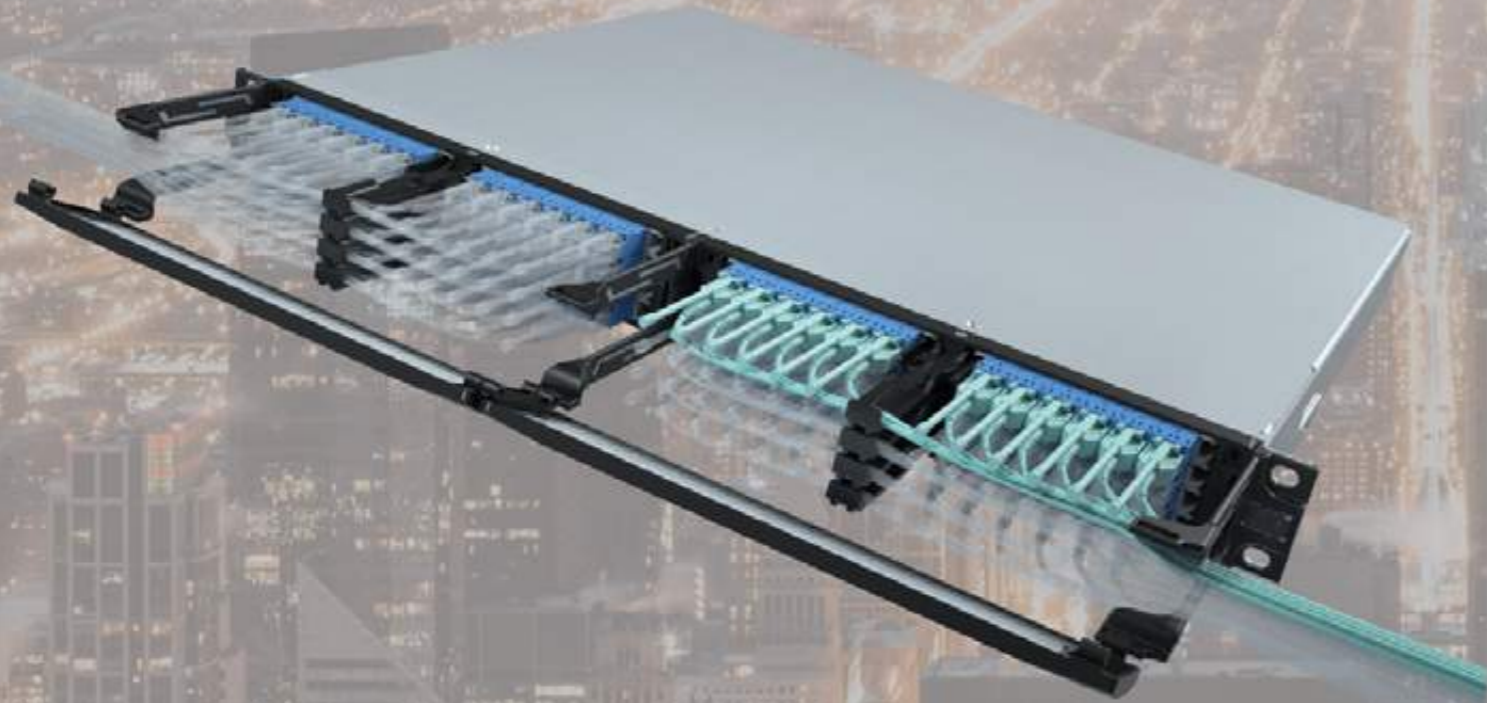
Deluxe · Home Wiring Box · Functional Accessories (Compatible with Deluxe Type Home Wiring Box)

Model	Description	Photo
HB-12-Y-8	2x8 Non-Secret Voice Module Bar RJ11 Interface, Direct Connection Type External Telephone Lines: 2 lines Indoor Telephone Extensions: 8 lines Occupied Space: 1U (25mm)	
HB-12-K-5	5-Port Blank Data Module Bar Port Allocation: Module not included, optional compatibility with Super Category 5, Category 6, Super Category 6 Unshielded Modules, and Fiber Modules Occupied Space: 1U (25mm)	
HB-12-T-4	4-Port Wired TV Module Bar Signal Input Ports: 1 port Signal Output Ports: 4 ports Internal Connection: Signals evenly distributed, bidirectional Frequency Range: 5MHz to 1000MHz Interface Type: F-type Occupied Space: 1U (25mm)	
HB-12-TKJ	Blank Filler Panel Usage: Used for filling redundant backup installation space Occupied Space: 1U (25mm)	

Home Wiring Functional Accessories (Compatible with Non-Deluxe Type Home Wiring Boxes)

Model	Description	Photo
HB-GY-2-8	Voice Module Bar (2 Inputs 8 Outputs, Non-Secret Type) Interface Type: RJ11 Interface, Direct Connection Type External Telephone Lines: 2 lines Indoor Telephone Extensions: 8 lines Overall Size: 173.5×38.5×29mm Occupied Space: 1U (38.5mm)	
HB-BY-2-8	Voice Module Bar (2 Inputs 8 Outputs, Confidential Type) Interface Type: RJ11 Interface External Telephone Lines: 2 lines Indoor Telephone Extensions: 8 lines Any Switching Function: Allows switching of internal lines to any external line through touch buttons Call Confidentiality Function: Isolation of communication between extensions, preventing mutual monitoring Overall Size: 173.5×38.5×29mm Occupied Space: 1U (38.5mm)	
HB-SJ-6-6-5E	6-Port Module Type Category 5e Data Module Bar Network Inputs: 1 to 6 lines Port Allocation: Includes 6 independent Category 5e modules Number of Internet Connections: Matches the number of network inputs Function: A high-performance multi-network port distributor Occupied Space: 1U (38.5mm)	
HB-SJ-6-6-6	6-Port Module Type Category 6 Data Module Bar Network Inputs: 1 to 6 lines Port Allocation: Includes 6 independent Category 6 modules Number of Internet Connections: Matches the number of network inputs Function: A high-performance multi-network port distributor Occupied Space: 1U (38.5mm)	
HB-SJ-6-6-K	6-Port Module Type Blank Data Module Bar (Modules not included) Network Inputs: 1 to 6 lines Port Allocation: Can be equipped with Category 5e, Category 6 Unshielded/Shielded modules Occupied Space: 1U (38.5mm)	

HB-SJ-1-6	Direct Connection 6-Port Data Module Bar Network Inputs: 1 line Port Allocation: 6 ports Number of Internet Connections: Only 1 computer can access the internet simultaneously Function: A low-performance multi-network port distributor Overall Size: 173.5×38.5×29mm Occupied Space: 1U (38.5mm)	
HB-TV-1-4	4-Port Wired TV Module Bar (Bidirectional 4-Way Splitter) Signal Input Port: 1 port Signal Output Ports: 4 ports Internal Connection: Signals evenly distributed, bidirectional Frequency Range: 5MHz to 1000MHz Interface Type: F-type Overall Size: 173.5×38.5×29mm Occupied Space: 1U (38.5mm)	
HB-TV-1-7	7-Port Wired TV Module Bar (Bidirectional 7-Way Splitter) Signal Input Port: 1 port Signal Output Ports: 7 ports Internal Connection: Signals evenly distributed, bidirectional Frequency Range: 5MHz to 1000MHz Interface Type: F-type Overall Size: 173.5×77×29mm Occupied Space: 1U (38.5mm)	
HB-JXK-10-10	10 Pairs Krone Terminal Module Wire Gauge: 26~22AWG for network cables and telephone cables Connection Method: Use a Krone type punch-down tool for termination Overall Size: 173.5×38.5×29mm Occupied Space: 1U (38.5mm)	
HB-JXL-10-10	10 Pairs Screw Terminal Module Wire Compatibility: Suitable for crimping various specifications of low-voltage cables Connection Method: After stripping the conductor insulation layer, tighten using a screwdriver Overall Size: 173.5×38.5×29mm Occupied Space: 1U (38.5mm)	
HB-GX-SC-2	Product Function: Supports fiber-to-the-home connection Product Ports: 2 LC duplex interfaces Product Feature: Fiber optic adapter inclined at 55° to ensure bending of pigtail and jumper Overall Size: 173.5×38.5×29mm Occupied Space: 1U (38.5mm)	
HB-GX-LC-4	Product Function: Supports fiber-to-the-home connection Product Ports: 2 LC duplex interfaces Product Feature: Fiber optic adapter inclined at 55° to ensure bending of pigtail and jumper Overall Size: 173.5×38.5×29mm Occupied Space: 1U (38.5mm)	
HB-GX-ST-2	Product Function: Supports fiber-to-the-home connection Product Ports: 2 LC duplex interfaces Product Feature: Fiber optic adapter inclined at 55° to ensure bending of pigtail and jumper Overall Size: 173.5×38.5×29mm Occupied Space: 1U (38.5mm)	
HB-GX-FC-2	Product Function: Supports fiber-to-the-home connection Product Ports: 2 LC duplex interfaces Product Feature: Fiber optic adapter inclined at 55° to ensure bending of pigtail and jumper Overall Size: 173.5×38.5×29mm Occupied Space: 1U (38.5mm)	
HB-DY-31-4	4-Hole Built-in Power Socket Module Bar Output Voltage: 220V Output Current: 10A Overall Size: 173.5×38.5×29mm Occupied Space: 1U (38.5mm)	
HB-TKJ	Blank Filler Panel Usage: Used for filling redundant backup installation space Overall Size: 173.5×38.5×29mm Occupied Space: 1U (38.5mm)	



Technology White Paper

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COLOR CODE

Color codes for copper and fiber optic cables comply with GB/T6995.2 Markings for Electric Wires and Cables, Part 2, together with IEC 60304 Standards Colors for Insulation for Low Frequency Cables and Wires: White, Red, Black, Yellow, Blue, Green, Orange, Slate, Brown, Aqua, Violet and Rose.

Fiber Color Coding

Color Sequence in international BELLCORE standards:
Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua

Fiber No.	1	2	3	4	5	6	7	8	9	10	11	12
Color	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

Notes:

- When fibers are less than 12, the color is marked from No.1.
- In standard color coding, No.6 White can be replaced by Nature Color (uncolored); and the color list starts with W.
- When more than 12 fibers within one single tube, the color code is repeated every 12; and there is a maximum of 24 fibers per tube.

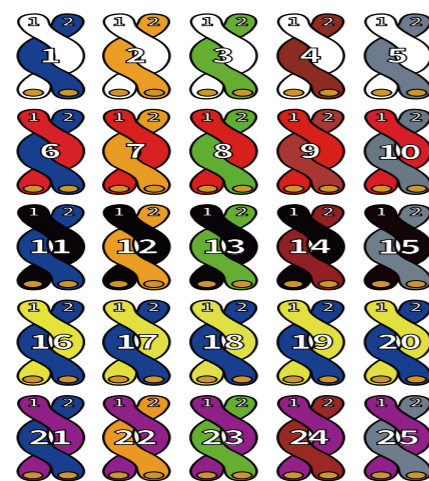
Tube Color Coding

International tube color sequence:
Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua

Tube No.	1	2	3	4	5	6	7	8	9	10	11	12
Color	Blue	Orange	Green	Brown	Slate	White	Red	Black	Yellow	Violet	Rose	Aqua

Color Coding of Multi-Pair Cable

International color sequence for twisted pair cables:
Major Color: White, Red, Black, Yellow, Violet; Minor Color: Blue, Orange, Green, Brown, Slate; major and minor colors are bound with one another, resulting in 25 color combinations.



Notes:

- When pairs are less than 25, the color is marked from No.1.
- For cables with more than 25 pairs, each group of 25 is marked with a ribbon to distinguish from each other. The ribbon color starts from Blue, Orange, Green, Brown, Slate, White, Red, Black, Yellow, Violet, Rose, Aqua.
- Colors may not follow the 25-pair color coding due to high frequent transmission. Please refer to the specific technical specifications.

How to Choose OM5 Wideband Multimode or OM4 Optical Fiber

OM5 Optical fiber specifications were specified in TIA-492AAAE by Telecommunications Industry Association (TIA), and also in IEC60793-2-10, Edition 6.0. by International Electrotechnical Commission (IEC); and recognized by ISO/IEC11801, Edition 3.0 and ANSI/TIA-568.3-D. OM5 fiber is as good as OM4 in supporting all traditional applications, and maintains compatibility with OM3 and OM4 fibers. It is intended to deliver optimized transmission at 850 to 950 nm, and support at least four low-cost short-wavelength division multiplexing (SWDM) applications. SWDM technology ensures that 40G and 100G is transmitted over a single pair of fibers rather than four pairs, which allows a fourfold reduction in the number of fibers required to achieve higher transmission speed.



Figure 1: SWDM with Four Wavelengths in MMF

OM5 fiber has been available on the market for more than three years, but suffers a low penetration rate. In building a new data center, it still bothers us whether to choose the latest OM5 or the cost-effective OM4. To solve it, TC Group provides some guidance as follows:

First of all, the paper studies on OM5 and OM4 performance. Wideband Multimode Fiber (WBMMF) was first brought up on the basis of the existing OM4 fiber. It is well-known that WDM technology in the singlemode fiber is quite mature while WBMMF expands the range of wavelength in data transmission. That demonstrates the reason why the term OM4W was used before OM5 was officially named. The term OM5 was finally adopted after a vote by IEC which TC Group has also participated in as one of the representatives of Chinese enterprises. Despite the new name, OM5 cannot be referred to as a revolutionary product or overwhelmingly superior product, strictly speaking, it is only a new version of OM4 with additional specifications of effective modal bandwidth (EMB) and attenuation at 953 nm. See Figure 2.

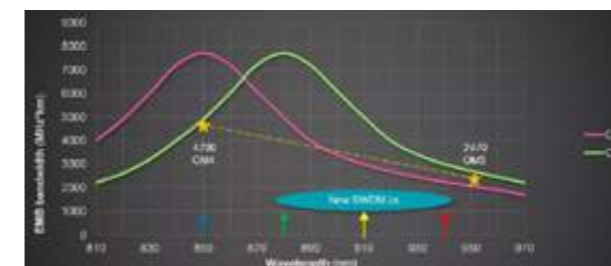


Figure 2: EMB Comparison based on Wavelength

At 850 nm, a high-quality OM4 fiber gives a better EMB bandwidth than OM5. In the bandwidth range from 880 to 950 nm, OM5 fiber gives a better EMB bandwidth than OM4. What's more, OM4 fiber delivers the same performance at 850 nm and 1300 nm. See Chart 1.

	Wavelength (nm)	OM4	OM5
Fiber Attenuation (dB/km)	850	< 2.5	< 2.5
	953	N/S	< 1.8
	1300	< 0.8	< 0.8
EMB Bandwidth (MHz·km)	850	≥ 4700	≥ 4700
	953	N/S	≥ 2470
	1300	≥ 500	≥ 500

Chart 1: Attenuation and EMB Comparison between OM4 and OM5

SWDM technology allows data transmission in multimode fibers over four wavelengths (850 nm, 880 nm, 910 nm, 940 nm). OM3 and OM4 fibers are also suitable for this type of transmission, which has been clearly defined in the relevant technical specifications. See Figure 3.

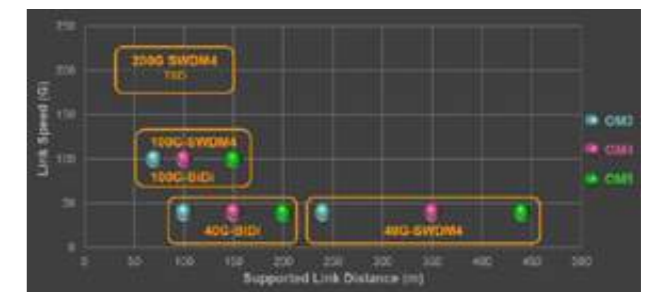


Figure 3: SWDM Applications and Transmission

Second, OM5 and OM4 transmission distance. As OM5 fiber has additional specifications of wavelength, it enjoys a better transmission distance when coupled with SWDM transceivers. For example, with 100G-SWDM4, OM5 fiber has a greater distance (150 m) than OM4 (100 m). However, when VCSEL transceivers (850 nm) are used for parallel transmission (e.g. MPO-based 100G Base-SR4), it has no advantages. In addition, the data center industry report indicates that 100 m distance over OM4 fiber with SWDM technology, has already met the requirements of the majority of data center constructions.

Then, it comes to reduction of fiber counts. WBMMF technology allows a fourfold reduction in the number of fibers. This credit goes to SWDM transceivers rather than OM5 fiber itself, which also means that SWDM transceivers should be used in the data center. Currently, this type of transceivers are much expensive, so is OM5 fiber. As a result, there is no obvious advantage in fiber counts or in prices.

Finally, color for OM5. TIA has defined "Lime" as the color for OM5, which can be easily confused with the classic green of singlemode APC and do harm to OM5 promotion in the data center.



Figure 4: Color Comparison between OM5 and Singlemode APC

In conclusion, OM5 fiber can only produce sound results with SWDM technology. Recently, the relevant transceivers are not widely used while Leaf-Spline architecture has gained much popularity, so that it is still optimal to choose parallel transmission and OM4 fiber in data center for a long time to come.

Data Center Copper Cabling

Currently large data centers are advancing the development of optical networks. However, there are still demands for copper cables in a majority of small- and medium-size data centers that cannot be neglected. That's why IEEE has made targeted efforts to add 40G Base-T, 25G Base-T, 5G Base-T protocols in copper system, together with the previous 10G Base-T to form a complete data center copper cabling. In response, IEC and TIA put forward the Class I/II and Cat8 cabling standards. And IEC also officially announced that Cat7 cabling (1G Hz) can support 25G Base-T at 30 m.

IEC Vs TIA						
Category	TIA	IEC	Frequency MHz	Rate bps	Transmission Distance	
					Permanent Link	Channel
CAT6	√	√	250	5G	90M	100M
CAT6 _A	√	√	500	10G	90M	100M
CAT7	X	√	600	10G	90M	100M
CAT7 _A	X	√	1000	25G	24M	30M
CAT8.1	√	Class I	2000	40G	24M	30M
CAT8.2	√	Class II	2000	40G	24M	30M

How to Upgrade the Old Data Center Copper Cabling

As can be seen in the chart above, Cat6 cabling (See Row 1) that once has been popular, can support 5G transmission rate, which is good news for the old data center built several years ago, that is, the original Gigabit data center aggregation layer can be improved to 5 times of bandwidth through switch upgrades. It should be noted, however, that similar improvements cannot be 100% achieved, because Cat6a related technology and encoding increases a variety of indicators, Alien Near End Crosstalk (ANEXT) included. Statistically, 10% to 20% possibility of failure could occur due to different link lengths. But the results of experimentation show that chances are the links can be repaired after replacement of higher advanced modules and patch cords, if not, cabling needs to be rebuilt. Currently, more and more 5G Base-T network cards and network equipment have come to the market, and even to workstations, notebooks and other PCs. As a result, it is worth a try due to an increase in cost reduction of the related chips.

Likewise, if Cat7a cabling is used in the aggregation layer, it is likely to be increased to 25Gbps transmission rate (See Row 4). However, there are several conditions as follows:

1. Copper connectors, including modules and patch cords should all be Cat7a;
2. The permanent link length should be within 24 m;
3. 25G Base-T supported network cards and switches should be purchased.

For Condition 1, there are two types of modules as required: Tera and ARJ45. It must be upgraded if Cat7a cables are used in the data center while the modules are still Cat6a. For Condition 2, a majority of data centers can meet the requirements. The biggest challenge to 25G Base-T upgrading and installation comes to Condition 3. Since 25G transmission distance of 30 m is only ideal for data centers, without a remarkable market potential, which differs from the common 5G Base-T in desktop system. This is the reason why no relevant switch chip manufacturers have so far devised the corresponding solutions. Consequently, we recommend that do not rush to upgrade, but remain on the sidelines and continue using the mature and cost-effective 10G solution.

How to Choose 10G Copper Cabling for a New Data Center

The international standards by ISO/IEC and TIA recommend

that at least Cat6a or higher twisted pairs should be used in data centers and new construction projects. As such, TC suggest Cat6a products as the first priority for a new data center to support 10G Base-T.

Compared to Cat6a system, Cat6 is not rated for 10Gbps applications and not likely to be updated in the future, and thus is not recommended. Though Cat7 and Cat7a systems (See Row 3, 4) support 10Gbps applications and even 25Gbps, cost of the cables and connectors is relatively high; and few alternative network equipment can be used with them. In conclusion, it is not cost effective to recommend Cat7 and Cat7 systems if not considering the 25G-upgraded possibility.

How to Choose 40G Copper Cabling for a New Data Center

40G Base-T is the latest standard for cabling system, and probably the ultimate application for 4 twisted-pairs; and correspondingly, Cat8 cabling may also be the extreme of 4 twisted-pair frequency. Cat8 products have once given an impetus on the market of data center copper cabling, but similar to OM5, the products have not obtained much market coverage as expected.

In TIA standards, Cat8 is categorized as Cat8.1 and Cat8.2 while in ISO/IEC standards, it is defined as Class 1 and Class 2. Cat8 cable operates at a frequency of 2000MHz, allows a permanent link up to 24 meters and a cabling distance up to 30 meters (See Row 5, 6), which always confuses customers. In fact, Cat8.1 is like Class 1, an upgrade of Cat6a technology, with large conductors and low attenuation, coupled with optimized RJ45 modules, backward compatible with all the previous Cat6a cabling and applications; and Cat8.2 is like Class2, an upgrade of Cat7 and Cat7a technology, with shielded twisted pairs and low crosstalk, coupled with Tera and ARJ45 modules, backward compatible with all the previous Cat7a cabling and applications. These two solutions are almost identical to each other, all improving the signal-to-noise of the whole channel. Cat8 cables by some manufacturers and TC itself, can support the above two solutions at the same time.

Compared to cabling manufacturers, network equipment manufacturers do not react positively to 40G Base-T. A transmission distance of 30 meters, like 25G, means it can only be used in data centers. Not like optical fibers in 40G networks, Cat8 copper cables enjoy no obvious advantage in cost efficiency, which directly causes the hesitation of equipment manufacturers. Generally speaking, Cat8 cabling should be one of your options if you pursue extreme performance and future upgrades.

Shielded or Unshielded

Cat6a serves as a watershed of shielded and unshielded systems. With the current twisted pair technology, unshielded system can only be applicable up to Cat6a. For higher cables including Cat8, only shielded structure can be used. Compared to shielded system less susceptible to electromagnetic interference, unshielded system has limited resistance to external interference, such as interference from adjacent cables. In finding a correct structured cabling system (Refer to IEC11801-2018), considerations should be taken into real-time conditions and future possibilities of electromagnetic environments. Test equipment companies such as FLUKE have once introduced field ANEXT testing solutions, but due to difficulties in practical implementation, there are few project tests. And the current standard modification allows that manufacturers test cable balance performance instead of field testing. Whether it is reliable, that is an open question. As one of the participants in international standard-setting, TC recommends that shielded cables or non-continuous aluminum foil Cat6a cables with ANEXT performance close to shielded ones, be your first priority for the purpose of reliable 10G Base-T transmission even with no ANEXT testing.

Introduction to 400G

400G transmission technology has gained maturity with the help of a number of parties. In addition to IEEE standards and other ongoing standards, together with MSA applications, no fewer than ten kinds of 400G applications can be referred to. 400G network adopts a more complex encoding approach, resulting in a reduction in the optical link loss budget compared to 10G/40G. What's more, network complexity calls for more connection points in fiber optic transmission where signal losses could be caused. This is a design challenge that demands an end-to-end channel method. For a better link performance, assemblies with lower Insertion Loss and better Return Loss should be considered, since the low loss cabling solutions have the ability to support longer link lengths and physical layers needed by a guaranteed operational availability. The transmission distance and link loss requirements for 400G applications are as follows:

ISO/IEC and IEEE						
Transmission Rate	Application	Type of Optical Fiber	Transmission Distance	Link Loss	Notes	
400G	SR16	OM3	0.5m~70m	1.8dB	In the process	
		OM4	0.5m~100m	1.9dB		
		OM5	0.5m~100m	1.9dB		
	SR8	OM3	0.5m~70m	1.8dB		
		OM4	0.5m~100m	1.9dB		
		OM5	0.5m~100m	1.9dB		
	BD4.2	OM3	0.5m~70m	1.8dB		
		OM4	0.5m~100m	1.9dB		
		OM5	0.5m~150m	2dB		
	SR4.2	OM3	0.5m~70m	1.8dB		In the process
		OM4	0.5m~100m	1.9dB		
		OM5	0.5m~150m	1.9dB		
	DR4	4 Pairs SM	2m~500m	3dB		LWDM
	FR8	1 Pair SM	2m~2km	4dB		
	LR8	1 Pair SM	2m~10km	6.3dB		
	CWDM8	1 Pair SM	2m~2km	4dB		CWDM
CWDM8	1 Pair SM	2m~10km	6.3dB			
FR4	1 Pair SM	2m~2km	4dB	In the process		
LR4	1 Pair SM	2m~10km	6.3dB	In the process		

400G Connection Model in Data Center

As can be seen in the model, 4 or 8 pairs of fibers are required for optical transmission, and MPO/MTP multimode connectors and pre-terminated fiber optic cables are going into the mainstream.



Figure 1: Estimating Trend of Spline-Leaf Network Migration

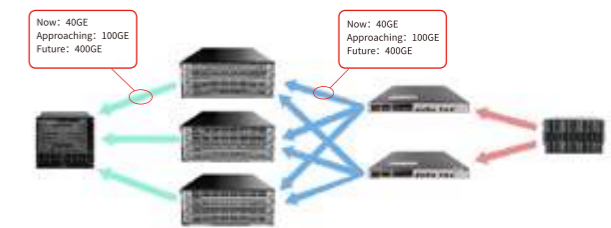


Figure 2: 400G Spline-Leaf Connection Model

How to Choose 400G System

The common MPO/MTP in 400G transmission includes 8/12 fiber, 24 fiber, 16 fiber and 32 fiber.

First of all, MPO-8/12 is used for 400GBASE-SR4.2/DR4 based on 12-fiber MPO/MTP. In data centers, 12-core MPO/MTP optical fiber connectors and 12-core beam optical fibers are very common. 400GBASE-SR4.2 is an 8-pair fiber interface but compatible with 12-fiber connectors. When directly connected to SR4.2 transceivers, 12 fiber cannot fully utilize all backbone fibers unless it combines multiple 12-fiber MPO/MTP and processes 8-fiber MPO/MTP conversion.

Secondly, MPO-24 is used for 400GBASE-SR8, offering 16 out of 24 fibers for signal transmission. Compared to MPO-12, it reduces fiber counts in the optical link. However, when configured with 24 fibers in the backbone, it is only with a conversion module that 24-fiber MPO/MTP can accept up to duplex and 8-fiber connectors. The following figure illustrates how 24-fiber MPO/MTP supports SR8.

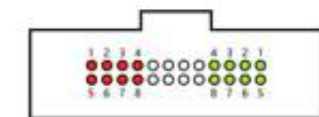


Figure 3: 24-fiber MPO/MTP

Finally, it comes to MPO-16. In the latest cabling and IEEE standards, new 16-fiber MPO/MTP is introduced to support 400GBASE-SR8, as shown in the following figure.

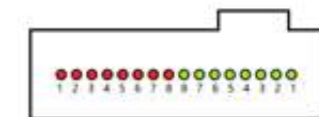


Figure 4: 16-fiber MPO/MTP

In conclusion, for most data center operators, MPO-12 is their optimal choice, since coverage of 12-core fiber optic connectors and cables remains high in the market. Considering system compatibility, TC recommends that MPO-8/12/24 be your first choice for 400G system. In addition, for pre-terminated backbone optical fiber MPO/MTP, please follow the instructions below:

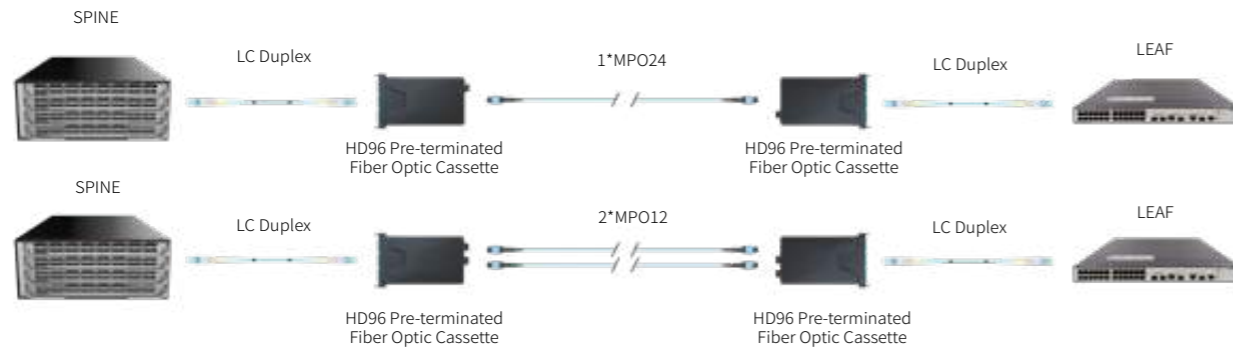
1. For MPO/MTP used in backbone optical fiber cables, male connectors are recommended, because this configuration allows for female-to-female patch cord connection;
2. For MPO/MTP in straight cables, female connectors are recommended;

If 4G/100G is required to facilitate a later 400G upgrade in prior planning and construction, fiber optic connectors with Type B are recommended, and to maintain the correct polarity between LC connectors and adapters, TC recommends MPO/MTP-LC Type T cassettes.

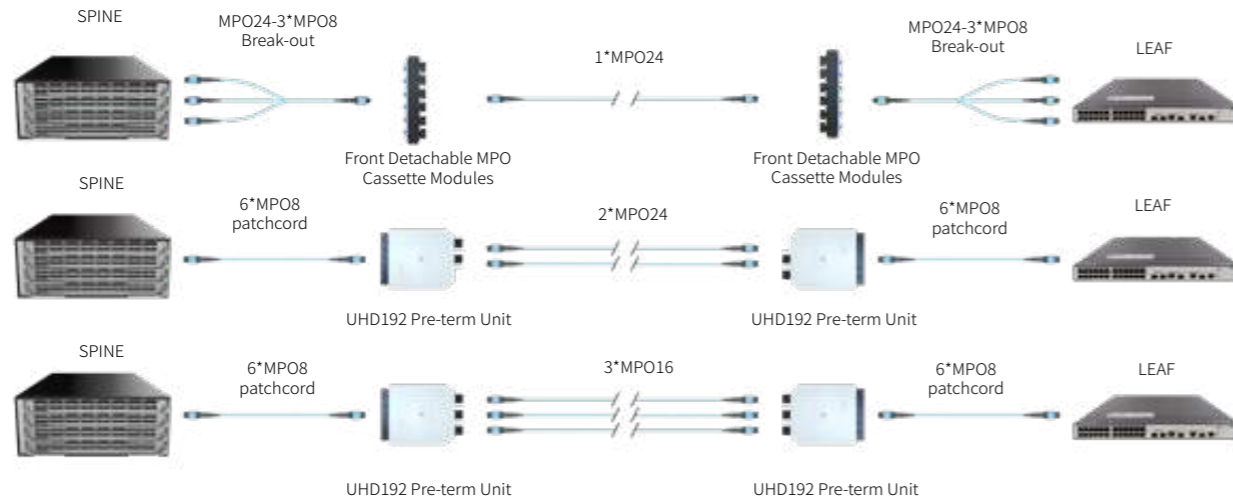
Fiber Conversion Model

In 40GE/100GE transition and 400GE upgrade, fiber conversion of different pre-terminated backbone cables is involved, through MPO/MTP-LC pre-terminated modules and/or MPO/MTP-LC breakout cables. Fiber re-utilization rate of the laid cables should be fully taken into account when fibers and adapter types are converted in a much reasonable way via conversion modules.

LC and MPO/MTP connectors are available with 24, 12, 16 fibers as illustrated in the following picture:



Dual Fiber Conversion Model



Multiple Fiber Conversion Model

POE Introduction

Power Over Ethernet, PoE for short, is also known as PoL (Power Over LAN) or Active Ethernet. Under the existing standards, PoE ensures that Ethernet cables supply power while transmitting data, and maintains compatibility between Ethernet systems and the users.

IEEE802.3af and IEEE802.3at defines that a complete PoE system includes Power Sourcing Equipment (PSE) and Power Device (PD).

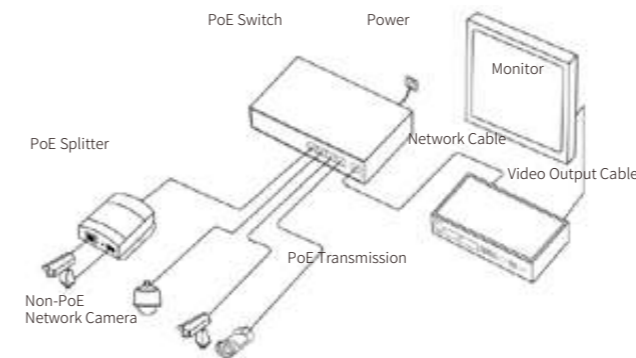
PSE provides power supply for Ethernet client devices and also functions as a manager during the process. It is classified as Midspan (PoE works outside the switch) and Endpoint (PoE works inside the switch), shown in the following picture:



POE Application

PoE switch has all its power supply systems integrated inside the device, part of PSE, Endpoint device.

PD (Power Device) is powered for PSE, that is, client device of PoE, including network cameras, wireless AP devices, IP PHONE devices, low-power SOHO switches, handheld computers (PDA), mobile phone chargers and so on. The typical configuration is shown as below:



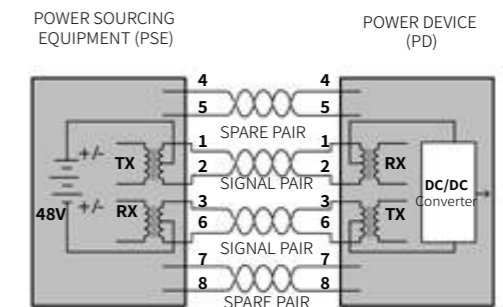
PoE Power Supply Methods

Standard Cat5 Ethernet cables have 4 twisted pairs, but only two of them are used for 10BASE-T and 100BASE-T. There are two solutions applicable, shown as below:

Terms in the picture:

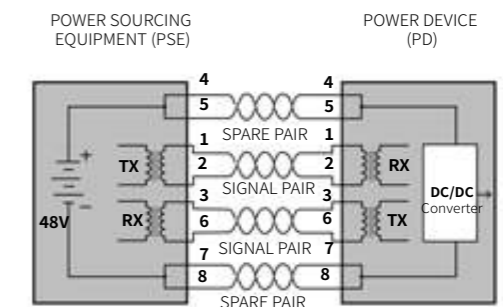
- POWER SOURCING EQUIPMENT (PSE)
- POWERED DEVICE (PD)
- SPARE PAIR
- SIGNAL PAIR
- DC/DC Converter

Method 1: PSE network switch is applied, with patch panels cross-connected, powered by signal pairs (pair 2, 3) and together with data pairs. Since Ethernet pairs are coupled by a transformer at each end, DC power can be provided by the central cap of the isolation transformer without affecting data transmission. In this mode, pairs in either polarity can be connected to Pin 3, 6 and Pin 1, 2, which is generally referred to as Intermediate Cross Connect Power Supply Method.



Power Supply by Data Pairs

Method 2: Patch Cords in PSE are interconnected and powered by spare pairs (Pair 1, 4). Pairs connected to Pin 4, 5 are positive ends while pairs connected to Pin 7, 8 are negative ends. Power and signal pairs are set separately. This is often referred to as End Connect Power Supply Method.



Power Supply by Spare Pairs

In IEEE 802.3 bt standards, the above two methods are suitable for 10BASE-T and 100BASE-TX, but for PoE applications in 1000BASE-T, 2.5GBASE-T, 5GBASE-T and 10GBASE-T, similar Method 1 should be applied so that all pairs are powered by isolation transformers.