

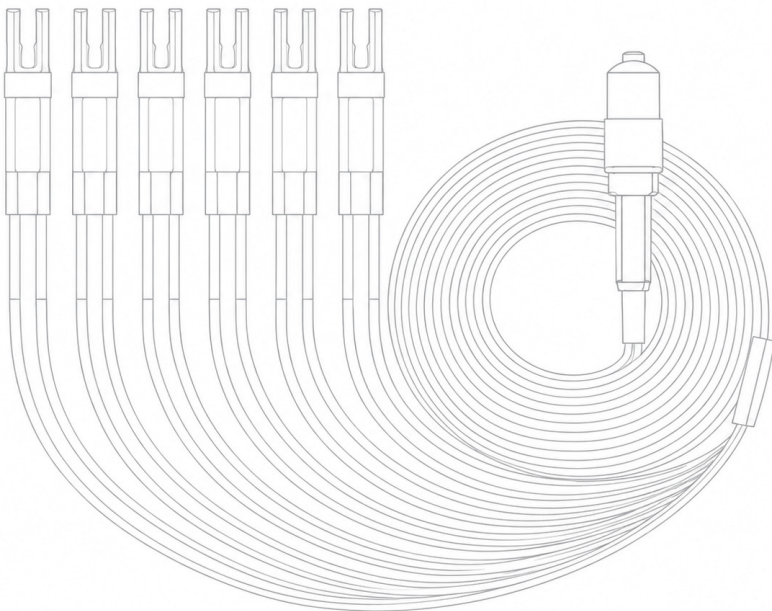
MPO/MTP

系列产品手册

PRODUCT CATALOG

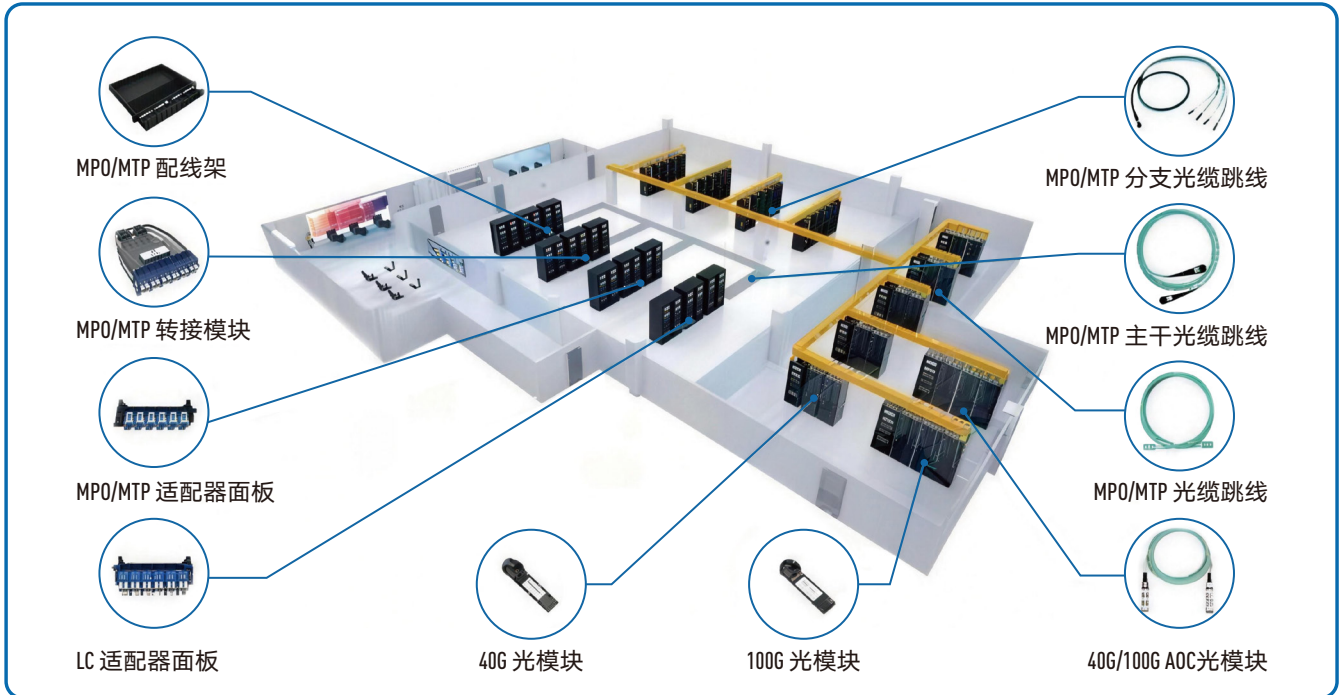
AIDC智算中心MPO/MTP高密度布线系统解决方案

AIDC Intelligent Computing Center MPO/MTP High-Density Cabling System Solution

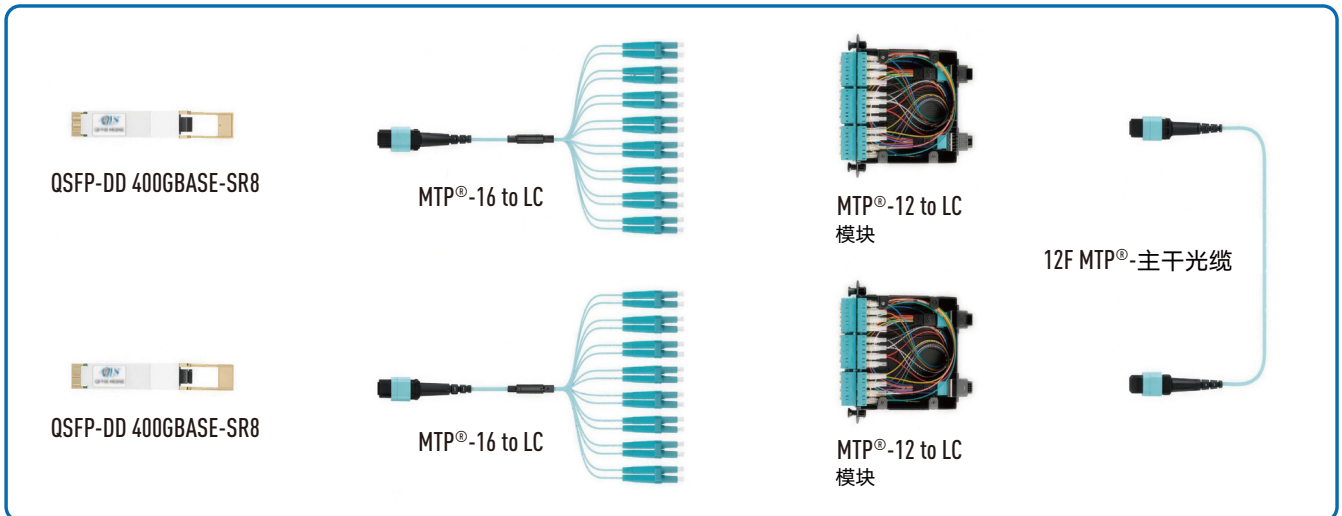


SMART LINKS START THE FUTURE

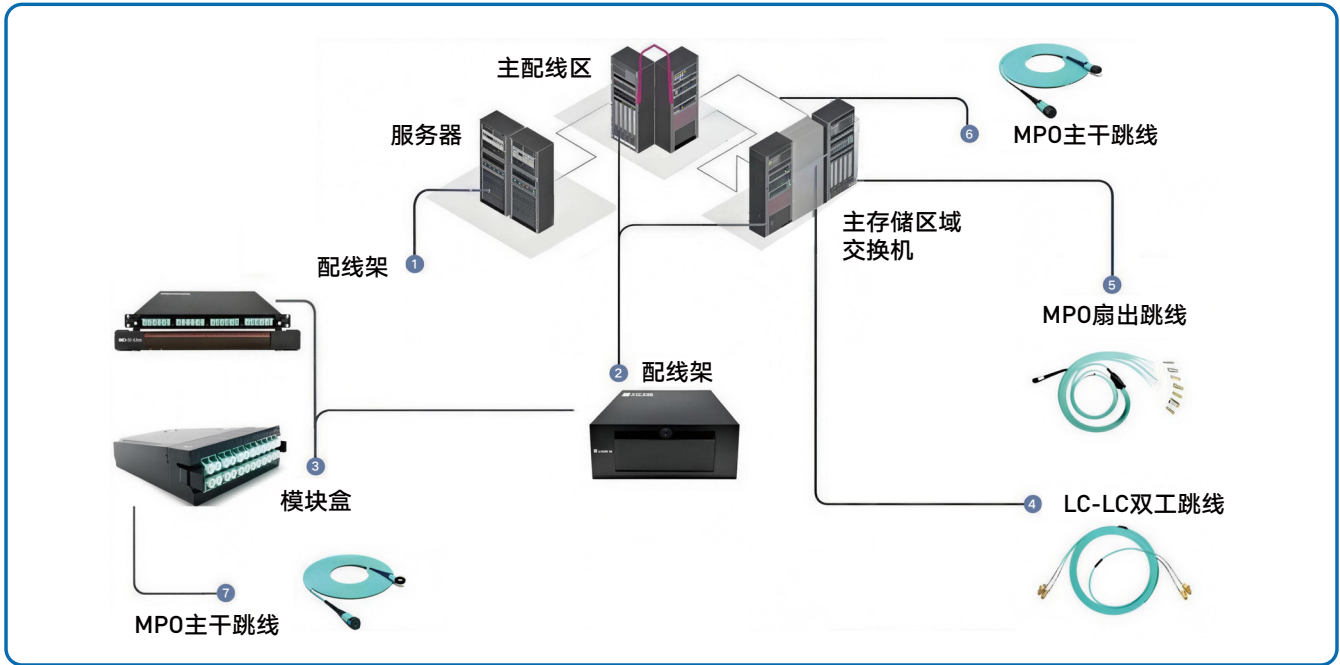
数据中心布线解决方案 Data center cabling solution



MPO/MTP应用方案 APPLICATIONS



数据中心MPO典型应用系统图 DATA CENTER MPO TYPICAL SYSTEM DIAGRAM



数据中心解决方案 DATA CENTER SOLUTIONS

1	MPO光模块		MPO光纤跳线		MPO光模块	
2	数据中心交换机		MPO光纤跳线		数据中心交换机	
3	配线架		MPO光纤跳线		配线架	
4	总机房		MPO-LC光纤跳线		LC光模块x4	

江苏南方通信科技有限公司

Jiangsu Nanfang Communication Technology Co., Ltd

ADD: 常州市金坛经济开发区南二环东路1798-1号
No. 1798-1, South Second Ring East Rd, Jintan Economic Development Zone, Changzhou

URL: www.jsnfgroup.com

TEL: +86 51982986938

FAX: +86 51988792646



江苏南方通信科技有限公司是香港上市公司“南方通信控股有限公司”（股票代码：1617.HK）的子公司。公司位于江苏省常州市武进区洛阳镇，公司成立于1992年7月，实缴资本15000万元。公司目前主要研发、生产及销售的产品：通信光缆、光纤光缆、通信电缆、光电配件、ODN产品、通信设备、MPO光连接器、MT-FA系列光无源器件、保偏FA光纤阵列等。自成立之日起矢志不移地致力于以研发、生产、制造高品质的通信产品为主导，并竭尽全力地推动和实现从研发、制造延伸到高品质服务的转变，其业务正迅速发展成为整个集团公司业务的基石，并活跃在信息与通讯行业中。

公司先后通过了ISO9001质量管理体系、TL9000通信行业质量管理体系、ISO14001环境管理体系、OHSAS18001职业安全健康管理体系、两化融合管理体系、ISO50001能源管理体系的认证；获得了中国合格评定国家认可委员会认可的CNAS实验室；拥有高新技术企业、国家级“绿色工厂”、省级技术中心、中国驰名商标、江苏省民营科技企业、安全生产标准化三级企业、江苏省“五星级上云企业”的等多项称号；现有专利300+项（发明专利45+）、标准16项（1项国家标准，15项行业标准）、江苏省高新技术产品证书4份，常州市高新技术产品2份。

江苏南方通信已与中国电信、中国移动、中国联通、中国广电等运营商，以及高速铁路、电网、化工等专网用户建立了长期、良好的合作伙伴关系，并在全国范围内设立了28个省级办事处，实现了产品销售、技术支持、售后服务的本地化和实时化。

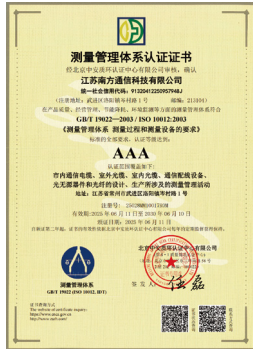


Jiangsu South Communication Technology Co., Ltd. is a subsidiary of the Hong Kong-listed company South Communication Holdings Limited (Stock Code: 1617.HK). The company is located in Luoyang Town, Wujin District, Changzhou City, Jiangsu Province. Founded in July 1992, it has a paid-in capital of RMB 150 million. The company currently researches, develops, produces and sells the following main products: communication optical cables, fiber optic cables, communication cables, optical-electrical accessories, ODN products, communication equipment, MPO optical connectors, MT-FA series optical passive components, and PM FA fiber arrays (Polarization-maintaining Fiber Array). Since its establishment, the company has been unwaveringly committed to the R&D, production and manufacturing of high-quality communication products, and has made every effort to drive and realize the transformation from R&D and manufacturing to high-quality services. Its business is rapidly developing into the cornerstone of the entire group's operations and is actively operating in the information and communication industry.

The company has successively obtained certifications for: ISO9001 Quality Management System, TL9000 Telecommunications Industry Quality Management System, ISO14001 Environmental Management System, OHSAS18001 Occupational Health and Safety Management System, the Integration of Informatization and Industrialization Management System, and ISO50001 Energy Management System; it has also been accredited with a CNAS laboratory (China National Accreditation Service for Conformity Assessment). The company holds multiple titles, including High-tech Enterprise, National-level "Green Factory", Provincial-level Technology Center, China Well-known Trademark, Jiangsu Private Science and Technology Enterprise, Level III Enterprise for Work Safety Standardization, and Jiangsu "Three-Star Cloud Enterprise". It currently possesses over 300 patents (including over 45 invention patents), 16 standards (1 national standard, 15 industry standards), 4 Jiangsu High-tech Product Certificates, and 2 Changzhou High-tech Products.

Jiangsu South Communication Technology Co., Ltd. has established long-term and sound cooperative relationships with operators such as China Telecom, China Mobile, China Unicom, China Broadcast Network, as well as private network users in high-speed railways, power grids, chemical industries, etc. It has set up 28 provincial-level offices across the country, achieving localized and real-time product sales, technical support, and after-sales services.

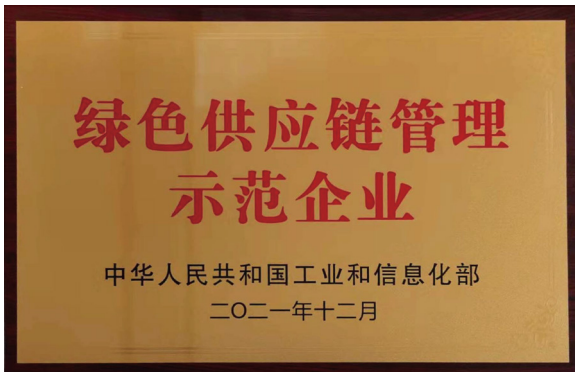
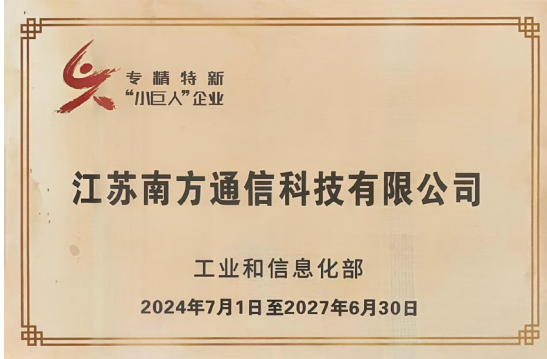
一 管理体系证书 /Management System Certifications



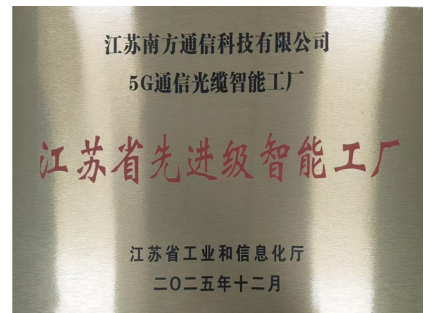
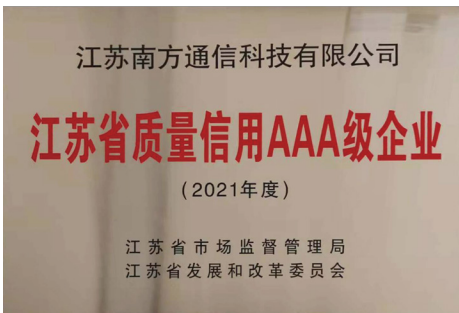
一 产品认证证书 (部分) /Product Certifications (Partial List)



一 企业荣誉（国家级）/Corporate Honors (National Level)



一 企业荣誉（省级）/Corporate Honors (Provincial Level)

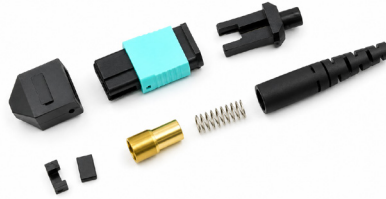


目录 /CONTENT

MPO光纤适配器	08
MPO Fiber Optic Adapter	
PO/MTP回路器	09
MPO Connector (multimode)	
MPO/MTP光纤连接器	11
MPO/MTP Fiber Optic Connector	
MPO预端接模块	13
MPO Pre-terminated Module	
MTP/MPO预端接扇形光纤	14
MTP/MPO Fan-out Pre-terminated Cable	
MTP/MPO预端接主干光缆	15
MTP/MPO Pre-terminated Trunk Cable	
MTP/MPO预端接分支	16
MTP/MPO Pre-terminated Breakout	
MPO高密度配线架	17
MPO High-density Patch Panel	
MPO/MTP方案	18
MPO/MTP Solution	
检测能力	21
Testing Capability	

MPO光纤适配器

MPO Fiber Optic Adapter



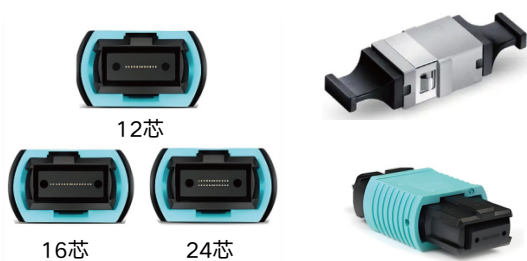
产品参数 /Product Parameters

参数/Parameter	单位/Unit	单模/Sm	颜色
插入损耗 IL	dB	标损IL<0.5, 低损IL<0.35	-
回波损耗 RL	dB	≥50	-
法兰 (有耳) Flange (with ears)	-	-	黑色 Black
法兰 (无耳) Flange (without ears)	-	-	水蓝色 Aqua (OM3) 紫罗兰 Violet (OM4)
插拔寿命 Mating Cycles	次 Cycles	500次 (符合IEC标准) 500 cycles (IEC compliant)	-
操作温度 Operation Temperature	°C	-40~+85	

产品特点 /Product Features

- 低插入损耗
Low insertion loss
- 符合IEC6157-7国际标准
Complies with IEC 6157-7 international standard
- 支持4-72芯 单模、多模MPO光纤线缆连接
Supports 4-72F SM/MM MPO cables

产品图片 /Product Image



应用 /Application

- 数据中心阵列式多通道连接系统、高密度通道连接系统
Data center array and high-density channel connectivity systems
- 40G、100G等高速率光传输系统、QSFP、CXP模块等
40G/100G optical links, QSFP/CXP modules

PO/MTP回路器

PO/MTP Loopback



产品介绍 /Product Introduction

MPO/MTP回路器是将一段多芯光纤的两端都加工到一个MPO/MTP连接器内，使单个连接器收发一体，实现回路作用，主要用于测试网络设备的发射能量和接收灵敏度，定位各种潜在的异常。赛诺可提供全方面的MPO/MTP回路器产品，传输模式、光缆类型、连接器类型均可以任意搭配，具有传输稳定、可靠度高、可定制化等优势，被广泛运用于监控设备、主干网、数据中心等光网络场景。

An MPO/MTP loopback is made by terminating both ends of a multi-fiber cable into a single MPO/MTP connector, integrating transmission and reception into one connector to create a loopback path. It is primarily used to test the transmit power and receive sensitivity of network equipment and to identify various potential anomalies. Sainuo offers a comprehensive range of MPO/MTP loopback products, allowing arbitrary combinations of transmission modes, cable types, and connector types. These products feature stable transmission, high reliability, and customizability, and are widely used in optical network scenarios such as surveillance equipment, backbone networks, and data centers.

产品特点 /Product Features

- 低插入损耗
Low insertion loss
- MPO/MTP极性可任意搭配
Flexible MPO/MTP polarity configuration
- 高重复性和高稳定性
High repeatability and high stability
- 符合GR326或IEC61300-2标准
Compliant with GR-326 or IEC 61300-2 standards

应用 /Application

- **多光纤连接 /Multi-fiber Connectivity**
MPO 接口支持多达 12、24 或更高数量的光纤芯，这使得它能够同时处理多路信号，提高了光纤线路的利用率。
High performance & reliability: Precision ceramic or MTP (optimized MPO) ferrule; $\geq 100,000$ mating cycles; $<0.1\%$ link failure rate; supports 40G/100G/400G/800G parallel transmission (e.g., MPO-12 for 40GBASE-SR4, MPO-24 for 100GBASE-SR4).
- **单向传输 /Unidirectional Transmission**
回路器内部的光学元件确保光信号只能沿一个方向传播，防止了信号的反射和干扰，提高了信号的质量和传输的可靠性。
Cost saving & fast deployment: Less on-site labor, tools, splicing consumables; lower misconnection risk. LSZH jacket for indoor/outdoor use; Compact 1U/2U fit; supports smooth upgrade to 1.6T.
- **紧凑尺寸 /Compact Size**
MPO 回路器的体积小，便于在有限的空间内安装和使用，特别适合于数据中心、企业网络等需要高密度光纤连接的场所。
The MPO loopback is small in size, making it easy to install and use in confined spaces. It is particularly suitable for high-density fiber connection environments such as data centers and enterprise networks.
- **易于安装 /Easy installation**
MPO 回路器的连接器采用推拉式设计，操作简便，无需使用工具即可完成光纤连接和断开，提高了安装效率。
The MPO loopback connector features a push-pull design for simple operation, allowing fiber connection and disconnection without the need for tools, thus improving installation efficiency.
- **高隔离度 /High isolation**
MPO 回路器提供高隔离度，能够有效地阻断来自反向的光信号，防止了信号的串扰和干扰。
The MPO loopback offers high isolation, which effectively blocks optical signals coming from the reverse direction, thereby preventing crosstalk and signal interference.

产品参数 /Product Parameters

型号/Model	MTP/MPO(低损/Low Loss)				MTP/MPO(标损/Standard Loss)		
	SM		MM		SM	MM	
插入损耗 Insertion Loss	8F/12F	24F	8F/12F/16F	24F/32F	8F/12F/24F	8F/12F/16F	24F/32F
	≤0.7DB	≤1.0DB	≤0.7DB	≤1.0DB	≤1.4DB	≤1.0DB	
回波损耗 Return Loss	≥65DB		≥25DB		≥65DB	≥25DB	
光纤类型 Fiber Type	OS2/OM1/OM2/OM3/OM4/OM5						

MPO/MTP光纤连接器

MPO/MTP Fiber Optic Connector



产品介绍 /Product Introduction

MPO连接器是一种多芯光纤连接器，专门用于40G/100G甚至400G的高速网络传输，常见于数据中心高密度布线场景。相比传统单芯连接器，它能在一根线上同时传输多路信号，大大节省空间。

MPO是一种高密度多芯光纤连接器，通过MT插芯实现多根光纤的并行连接，包括12、24、48、72、144芯等类型。

An MPO/MTP loopback is made by terminating both ends of a multi-fiber cable into a single MPO/MTP connector, integrating transmission and reception into one connector to create a loopback path. It is primarily used to test the transmit power and receive sensitivity of network equipment and to identify various potential anomalies. Sainuo offers a comprehensive range of MPO/MTP loopback products, allowing arbitrary combinations of transmission modes, cable types, and connector types. These products feature stable transmission, high reliability, and customizability, and are widely used in optical network scenarios such as surveillance equipment, backbone networks, and data centers.

产品特点 /Product Features

- 性能优势：超高密度布线（如800G光模块仅需一根16芯MPO）、低损耗、高可靠性。
- 组成结构：MT插芯、引导针、弹簧、防尘帽、锁紧机构。

Performance advantages: Ultra-high-density cabling (e.g., an 800G optical module requires only a single 16-fiber MPO), low loss, and high reliability.

Composition structure: MT ferrule, guide pins, spring, dust cap, and locking mechanism.

应用 /Application

- 光模块 | 相较单芯，MPO 可在有限空间内并行传输多路信号，节省布线空间。
- CPO 交换机外部接口 | CPO 交换机面板配置大量 MPO 接口(如 144 接口 CPO)。

Optical modules | Compared with single-fiber solutions, MPO enables parallel transmission of multiple signals in a limited space, saving cabling space.

CPO switch external interfaces | The front panel of a CPO switch is equipped with a large number of MPO interfaces (e.g., a 144-port CPO switch).

- CPO 交换机内部连接 | 常规交换机内部以电信号传输，内部无光纤部署；CPO 交换机将光引擎、交换芯片封装在一块基板上，故内部有光信号传输。CPO 缩短了光引擎与交换芯片的布线距离，从而降低功耗，但也额外增加了光引擎到机箱前面板的 MPO 配置需求。在硅光方案中，主要采用更高端的保偏型 MPO。大量 MPO 接口(如 144 接口 CPO)。

CPO switch internal connections | Conventional switches transmit electrical signals internally and have no optical fiber deployment inside. In contrast, CPO switches integrate the optical engine and switching chip on a single substrate, so optical signals are transmitted internally. CPO shortens the routing distance between the optical engine and the switching chip, thereby reducing power consumption. However, it also adds additional MPO configuration requirements from the optical engine to the chassis front panel. In silicon photonics solutions, higher-grade polarization-maintaining MPO connectors are primarily used, with a large number of MPO interfaces (e.g., a 144-port CPO switch).

产品参数 /Product Parameters

光纤类型 /Fiber Type		OS2 / G657A / OM3 / OM4							
连接头类型 Connector type	型号 Model	波长 Wavelength	端面 End face	标准型 Standard type		低损耗型 Low-loss type			
				IL(最大值)	RL(最大值)	IL(最大值)	RL(最大值)		
MPO/MTP	多模 MM	@850 /1300NM	12F/PC	<0.50DB	NA	<0.35DB	NA		
			24F/PC	<0.50DB	NA	<0.35DB	NA		
	单模 SM	@1310 /1550NM	12F/PC	<0.50DB	<0.60DB	<0.35DB	<0.60DB		
			24F/PC	<0.70DB	<0.60DB	<0.50DB	<0.60DB		
光缆类型 Fiber Type		带纤、扁平缆或圆缆 Ribbon fiber, flat cable, or round cable							
衰减 Attenuation		@850NM<3.5DB,@1300NM<1.5DB							
		@1310NM<0.4DB,@1550NM<0.3DB							
温度 Temperature		运行温度-20°C~70°C Operating temperature: -20°C to +70°C							
		储存温度-40°C~85°C Storage temperature: -40°C to +85°C							
符合标准 Standards Compliance		GR-1435-CORE,IEC-61754-7,TIA -604-5(FOCIS5),ROHS							
订购信息 Order Information									
连接头A Connector A	A属性 Attribute A	连接头B Connector B	B属性 Attribute B	光缆类型 Fiber Type	芯数 Fiber count	极性 Polarity	外皮颜色 Jacket color	外护套材质 Outer sheath material	度(米) Length (m)
MPO/MTP	母头/公头 Female / Male	MPO/MTP	母头/公头 Female / Male	OS2/ G657A/ OM3/OM4	8 /12 /24/48	A/B/C	单模:黄色 /OM3:青蓝色 OM4:淡蓝色 /客户定制	LSZH/OFNR/OFNP	客户定制 Customized Upon request
MPO/MTP 低损耗 Low Loss		MPO/MTP 低损耗 Low Loss							
备注: 以上多项选择产品信息中,只可选择一项作为信息确认 Note: Only one selection is allowed from the above product options.									

MPO预端接模块

MPO Pre-terminated Module

产品特点 /Product Features

- 高密度集成：单个MPO接口支持12/24/48/72/144芯光纤并行传输，1U配线架可部署高达768芯，空间利用率较传统LC方案提升70%以上。

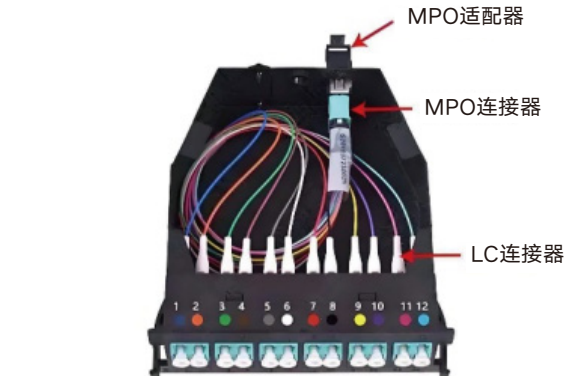
High-density integration: A single MPO interface supports parallel transmission of 12/24/48/72/144 fibers. A 1U patch panel can deploy up to 768 fibers, improving space utilization by over 70% compared to traditional LC solutions.

- 模块化设计：以模块盒（Cassette）形式实现MPO转LC/SC扇出，支持盲插、热插拔、前后滑动维护，前端端口标识清晰，极性与色标管理规范，便于运维与升级。

Modular design: MPO-to-LC/SC fan-out cassette; supports blind mate, hot-swap, front/rear sliding access; clear front port labeling, polarity and color-code management for easy maintenance and upgrades.

- 高性能与高可靠：采用精密陶瓷或MTP（MPO优化版）插芯，通过 ≥ 10 万次插拔测试，链路故障率 $< 0.1\%$ ，支持40G/100G/400G甚至800G并行传输（如MPO-12用于40GBASE-SR4，MPO-24用于100GBASE-SR4）。

High performance & reliability: Precision ceramic or MTP (optimized MPO) ferrule; $\geq 100,000$ mating cycles; $< 0.1\%$ link failure rate; supports 40G/100G/400G/800G parallel transmission (e.g., MPO-12 for 40GBASE-SR4, MPO-24 for 100GBASE-SR4).



- 工厂预端接、即插即用：现场无需熔接，安装时间从数小时缩短至分钟级（如96芯从16小时 \rightarrow 约10分钟）

Factory pre-terminated & plug-and-play: No on-site splicing; installation time from hours to minutes (e.g., 96 fibers: 16h \rightarrow ~10min)

- 节省成本与加速部署：减少现场施工人力、工具及熔接耗材，降低错连风险；LSZH护套适配室内外环境，结构紧凑适配标准1U/2U配线架，支持平滑升级至1.6T。

Cost saving & fast deployment: Less on-site labor, tools, splicing consumables; lower misconnection risk. LSZH jacket for indoor/outdoor use; Compact 1U/2U fit; supports smooth upgrade to 1.6T.

产品参数 /Product Parameters

参数/Parameter	单位/Unit	单模/Sm	多模/Mm
插入损耗 IL	典型 (dB)	0.35	0.35
	最大 (dB)	0.75	0.75
低插入损耗 Low insertion loss	典型 (dB)	0.10	0.10
	最大 (dB)	0.35	0.35
回波损耗 RL		≥ 60 (APC) ≥ 50 (PC)	≥ 20 (PC)
公/母 Male/Female		公头：含针 Male: with pins	母头：不含针 Female: without pins
持久性 Durability		≤ 0.2 500次对接	
操作温度 Operation Temperature		-20~+70	
测试波长 Test Wavelength		1310	

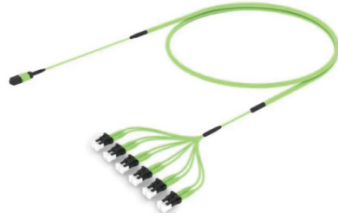
应用 /Application

MPO预端接模块主要用于高密度、高速率光通信场景，以实现工厂预制、即插即用、节省空间与快速部署的光纤连接，核心应用集中在数据中心主干/水平布线、40G/100G/400G设备互联及向800G演进的基础设施。数据中心阵列式多通道连接系统、高密度通道连接系统

MPO pre-terminated modules for high-density, high-speed optical comms: factory-preterminated, plug-and-play, space-saving, rapid deployment. Key applications: data center backbone/horizontal cabling, 40G/100G/400G interconnect, 800G-ready infrastructure. Including data center array multi-channel and high-density channel connectivity systems.

MTP/MPO预端接扇形光纤

MTP/MPO Fan-out Pre-terminated Cable



产品特点 /Product Features

- 1个含导向针的MPO连接器通过模块盒的MPO端口与主干光缆对接，另外一端LC或者SC连接器通过模块盒的LC面板或者SC面板与设备端的跳线对接。

A male MPO connector (with pins) mates with the trunk cable via the cassette's MPO port; the LC/SC connectors on the opposite end connect to equipment patch cords through the cassette's LC/SC panel.

- MTP/MPO(多芯)→LC/SC(单芯, 常为双工或四联分出), 常见芯数为 12F 或 24F, 采用 OM3/OM4 多模或单模光纤, 护套常为 LSZH/OFNR, 支持即插即用与模块化布线。

MTP/MPO (multi-fiber) → LC/SC (single-fiber, duplex/quad breakout); 12F/24F; OM3/OM4 MM or SM fiber; LSZH/OFNR jacket; plug-and-play, modular cabling.

产品参数 /Product Parameters

参数/Parameter	单位/Unit	单模/Sm	多模/Mm
插入损耗 IL	典型 (dB)	0.35	0.35
	最大 (dB)	0.75	0.75
低插入损耗 Low insertion loss	典型 (dB)	0.10	0.10
	最大 (dB)	0.35	0.35
回波损耗 RL		≥60 (APC) ≥50 (PC)	≥20 (PC)
公/母 Male/Female		公头: 含针 Male: with pins	母头: 不含针 Female: without pins
持久性 Durability		≤0.2 500次对接	
操作温度 Operation Temperature		-20~+70	
测试波长 Test Wavelength		1310	850

应用 /Application

- MTP/MPO 预端接扇形光纤 (又称 MPO-LC/SC 分支跳线) 是一种工厂预端接的高密度光纤组件, 一端为 MTP/MPO 多芯连接器 (通常 12 或 24 芯), 另一端扇出为多个常规单芯连接器 (如 LC、SC), 实现主干多芯光缆与设备单芯端口的即插即用连接, 无需现场熔接。

An MTP/MPO pre-terminated fan-out fiber (also known as an MPO-LC/SC breakout patch cord) is a factory pre-terminated high-density fiber assembly. One end features an MTP/MPO multi-fiber connector (typically 12 or 24 fibers), while the other end fans out into multiple standard single-fiber connectors (e.g., LC, SC), enabling plug-and-play connection between the trunk multi-fiber cable and equipment single-fiber ports without on-site splicing.

- 连接 40G/100G/400G SR4/PSM4 光模块 (需拆分为 4×10G 或 4×25G LC 接口), 用于预端接模块盒、高密度配线架中, 替代传统“MPO-MPO+多根跳线”方案。

Connects to 40G/100G/400G SR4/PSM4 optical modules (requires breakout into 4×10G or 4×25G LC interfaces). Used in pre-terminated cassettes and high-density patch panels, replacing the traditional "MPO-MPO + multiple patch cords" solution.

MTP/MPO预端接主干光缆

MTP/MPO Pre-terminated Trunk Cable



产品特点 /Product Features

- 高密度与空间节省：单个MPO接口可替代12至24个LC接口，显著减少配线架占用空间，解决机柜布线拥堵问题。

High-density & space-saving: One MPO port replaces 12-24 LC ports; cuts patch panel footprint; eliminates rack cabling clutter.

- 快速部署与即插即用：出厂前 100% 通过光学性能检测（插入损耗、回波损耗等），现场无需熔接，大幅缩短施工时间并降低人工成本。

Rapid deployment & plug-and-play: 100% factory-tested (IL, RL, etc.); no field splicing; cuts installation time & labor cost.

产品参数 /Product Parameters

参数/Parameter	单位/Unit	单模/Sm	多模/Mm
插入损耗 IL	典型 (dB)	0.35	0.35
	最大 (dB)	0.75	0.75
低插入损耗 Low insertion loss	典型 (dB)	0.10	0.10
	最大 (dB)	0.35	0.35
回波损耗 RL		≥60 (APC) ≥50 (PC)	≥20 (PC)
公/母 Male/Female		公头：含针 Male: with pins	母头：不含针 Female: without pins
持久性 Durability		≤0.2 500次对接	
操作温度 Operation Temperature		-20~+70	
测试波长 Test Wavelength		1310	850

应用 /Application

- 数据中心主干互联：用于主配线区（MDA）、水平配线区（HDA）及设备配线区（EDA）之间的高速链路连接。

Data center backbone interconnection: Used for high-speed link connections between the Main Distribution Area (MDA), Horizontal Distribution Area (HDA), and Equipment Distribution Area (EDA).

- 连接 40G/100G/400G SR4/PSM4 光模块（需拆分为 4×10G 或 4×25G LC 接口），用于预端接模块盒、高密度配线架中，替代传统“MPO-MPO+多根跳线”方案。

Connects to 40G/100G/400G SR4/PSM4 optical modules (requires breakout into 4×10G or 4×25G LC interfaces). Used in pre-terminated cassettes and high-density patch panels, replacing the traditional "MPO-MPO + multiple patch cords" solution.

MTP/MPO预端接分支

MTP/MPO Pre-terminated Breakout



产品特点 /Product Features

- 工厂预制、高密度主干转多路标准接口、即插即用、支持高速并行传输（如 40G/100G/400G），专用于数据中心设备端口拆分。

Factory-preterminated, high-density backbone to multi-standard interfaces; plug-and-play; supports 40G/100G/400G parallel transmission; for data center port breakout.

- 高密度与空间节省：单根分支光缆可替代多个LC跳线，适配高密度机柜（如1U支持768芯），解决TOR交换机至服务器的端口裂变需求（如40G QSFP+ → 4×10G LC）。

High-density and space saving: A single breakout cable replaces multiple LC patch cords, fitting high-density cabinets (e.g., 1U supports 768 fibers). It addresses port breakout requirements from ToR switches to servers (e.g., 40G QSFP+ → 4×10G LC).

- 结构明确：一端为 MTP/MPO 多芯连接器（常见 12 或 24 芯），另一端分支为多个双工 LC(或 SC)连接器。

Well-defined structure: MTP/MPO multi-fiber connector (12/24F) on one end; breakout to multiple duplex LC/SC connectors on the other.

- 性能可靠：采用抗微弯OM3/OM4/OM5多模或 G.657.A1/A2单模光纤，优化护套（LSZH/OF-NR/OFNP）满足阻燃与环保。

Reliable performance: Uses bend-insensitive OM3/OM4/OM5 multimode or G.657.A1/A2 single-mode fibers; optimized sheaths (LSZH/OFNR/OFNP) meet flame retardancy and environmental requirements.

产品参数 /Product Parameters

参数/Parameter	单位/Unit	单模/Sm	多模/Mm
插入损耗 IL	典型 (dB)	0.35	0.35
	最大 (dB)	0.75	0.75
低插入损耗 Low insertion loss	典型 (dB)	0.10	0.10
	最大 (dB)	0.35	0.35
回波损耗 RL		≥60 (APC) ≥50 (PC)	≥20 (PC)
公/母 Male/Female		公头：含针 Male: with pins	母头：不含针 Female: without pins
持久性 Durability		≤0.2 500次对接	
操作温度 Operation Temperature		-20~+70	
测试波长 Test Wavelength		1310	

应用 /Application

- 主要用于数据中心机柜内或机柜间，将主干MTP链路分支至服务器/存储设备的LC端口，不用于纯MPO主干直连。

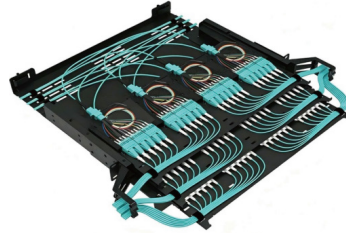
Primarily used within or between data center cabinets, breaking out trunk MTP links to LC ports of servers/storage devices. Not intended for direct MPO trunk-to-trunk connections.

- 常配合MTP模块盒（Cassette）使用，支持热插拔、快速更换，平滑升级至400G/800G（如24芯 MTP → 6×40G或12×100G）。

Often used with MTP cassettes, supports hot-swapping and quick replacement, enabling smooth upgrade to 400G/800G (e.g., 24-fiber MTP → 6×40G or 12×100G).

MPO高密度配线架

MPO High-density Patch Panel



产品特点 /Product Features

- **高密度集成：**单个 MPO 连接器支持 12 芯、24 芯（主流）甚至 48/72 芯并行传输，1U 机架空间可管理高达 288 - 768 芯光纤，密度约为传统 LC 配线架的 6 倍，显著节省数据中心机柜空间。

High-density integration: Single MPO port for 12/24 (mainstream)/48/72-fiber parallel transmission; 1U rack handles up to 288-768 fibers, ~6x density of LC panels, saving data center space.

- **高速网络适配：**原生支持40G/100G/400G/800G 高速以太网，通过MPO-LC分支跳线实现平滑升级，满足AI/云计算等大带宽流量需求。

High-speed ready: Native 40G/100G/400G/800G Ethernet; smooth upgrade with MPO-LC breakout; meets AI/cloud high-bandwidth needs.

- **模块化与预端接支持：**采用可插拔 MPO 适配器面板或预端接模块（如 12×12 芯或 6×24 芯），支持即插即用、工厂预制，现场无需熔接，部署效率提升 50% 以上，便于扩容与维护。

Modular & pre-terminated: Pluggable MPO panels or pre-terminated modules (e.g., 12×12F/6×24F); plug-and-play, factory pre-terminated, no field splicing; 50%+ faster deployment; easy expansion & maintenance.

- **标准机架安装：**符合 19 英寸机架规范（常见 1U/2U/4U），冷轧钢板结构 + 抽拉 / 防尘设计，具备理线、熔接盘、冗余存储等一体化管理功能。

Standard 19" rack mount (1U/2U/4U); cold-rolled steel; sliding/dustproof; integrated cable management, splice tray, slack storage.

产品参数 /Product Parameters

产品名称/Product Name	规格型号/Model	容量/型号/Fiber Count	高度/Dimensions
MPO高密度配线架	1U	96	480mm*370mm*1U
MPO高密度配线架	2U	192	480mm*370mm*2U
MPO高密度配线架	3U	288	480mm*370mm*3U

应用 /Application

适用于数据中心主干（MDA/HDA）、5G前传/中回传、超算及企业园区高密度光互连场景，是构建800G/1.6T网络基础设施的关键组件。

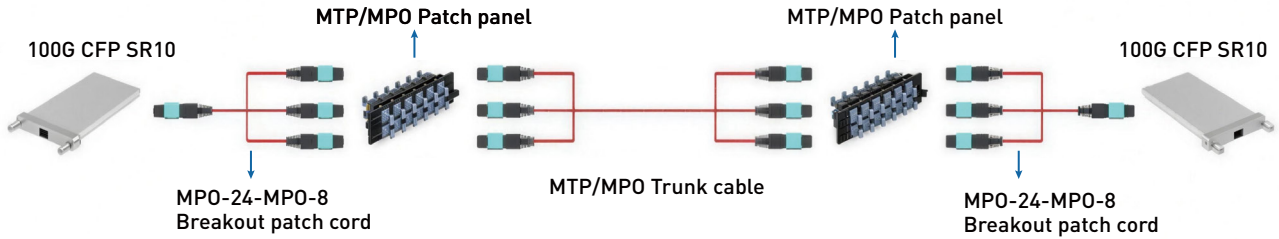
For data center backbone (MDA/HDA), 5G fronthaul/midhaul/backhaul, supercomputing, and enterprise campus high-density optical interconnects — a critical building block for 800G/1.6T network infrastructure.

MPO/MTP方案

MPO/MTP solution

MPO/MTP Base-8到24芯方案

MPO/MTP Base-8 to 24-fiber solution

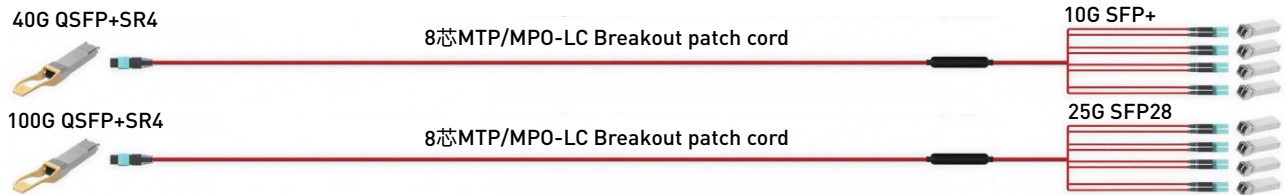


Base-8 MTP/MPO光缆也可用于连接两个20芯或24芯光模块，例如100G CFP SR10。下图展示了基于Base-8 MTP/MPO的分支光缆解决方案，该方案实现两个100G CFP光模块之间的连接（或20立倒20芯的连接）。它使用一根24芯MTP/MPO转3根8芯MTP/MPO分支光缆，通过Base-8 MTP/MPO光缆传输信息。

Base-8 MTP/MPO cables can also be used to connect two 20-fiber or 24-fiber optical modules, such as the 100G CFP SR10. The figure below shows a breakout cable solution based on Base-8 MTP/MPO, which enables a connection between two 100G CFP optical modules (or a 20-fiber-to-20-fiber connection). It uses one 24-fiber MTP/MPO to three 8-fiber MTP/MPO breakout cables, transmitting information over Base-8 MTP/MPO cables.

MPO/MTP Base-8到2芯方案

MPO/MTP Base-8 to 2-fiber solution



最常见的8芯转2芯连接是40G-10G和100G-25G传输。这是Base-8 MTP/MPO光线的直接连接方案。

The most common 8-fiber to 2-fiber connection is for 40G-to-10G and 100G-to-25G transmission. This is a direct mating solution for Base-8 MTP/MPO cables.



建议仅在同一机架或机柜内的短距离内使用此直接连接方式，对于较长距离的连接，可在连接的两端使用MTP/MPO适配器面板和MTP/MPO-LC分配盒，中间部分可使用MTP/MPO主光缆。

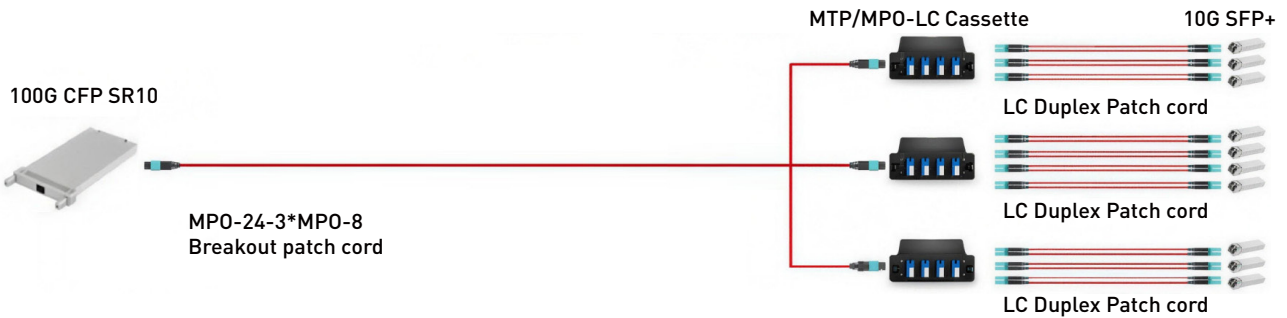
It is recommended to use this direct connection method only over short distances within the same rack or cabinet. For longer distances, MTP/MPO adapter panels and MTP/MPO-LC distribution boxes can be used at both ends, with an MTP/MPO trunk cable in the middle.

MPO/MTP方案

MPO/MTP solution

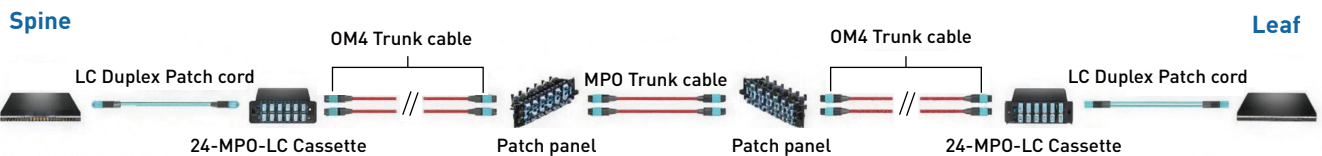
MPO/MTP 20 to 2方案

MPO/MTP 20-to-2 solution



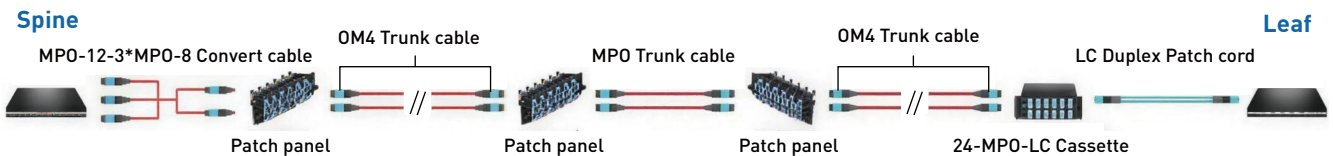
采用24芯MTP/MPO分支光缆和MTP/MPO-LC配线盒连接100个GCFP光模块和10个10GSFP+光模块。这24根光纤被分成三路MTP/MPO-8连接器，分别通过十根双工LC光缆传输，从而在整个链路中实现20芯到2芯的连接。

A 24-fiber MTP/MPO breakout cable and MTP/MPO-LC distribution boxes are used to connect 100 GCFP optical modules and 10 10G SFP+ optical modules. The 24 fibers are split into three MTP/MPO-8 connectors, which are then routed through ten duplex LC patch cords, achieving 20-fiber-to-2-fiber connections throughout the entire link.



Base-12 MTP/MPO光缆通常用作双工主干光缆。两条Base-12 MTP/MPO主干光缆组合在一起，可支持24芯LC配线盒（12个双工端口）。

Base-12 MTP/MPO cables are typically used as duplex trunk cables. Two Base-12 MTP/MPO trunk cables can be combined to support a 24-fiber LC distribution box (12 duplex ports).



转换线缆可替代配线盒，直接连接至MPO-12主干光缆，实现与配线盒相同的功能。它们能够提高面板密度，减少网络通道中的连接数量，符合光缆管理的要求。MPO/MTP组件和配线盒可以以多种方式组合，以适应不同的应用场景。

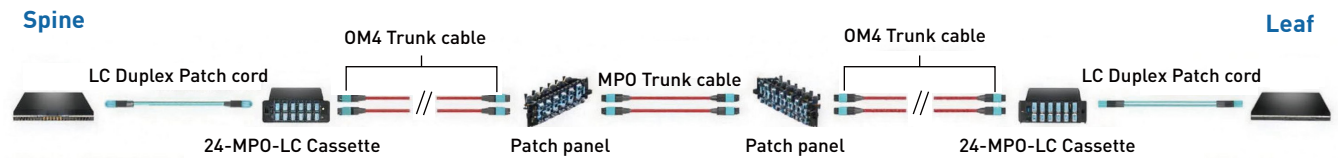
Conversion cables can replace distribution boxes and connect directly to MPO-12 trunk cables, achieving the same functionality as distribution boxes. They increase panel density, reduce the number of connections in the network channel, and meet cable management requirements. MPO/MTP components and distribution boxes can be combined in various ways to accommodate different application scenarios.

MPO/MTP方案

MPO/MTP solution

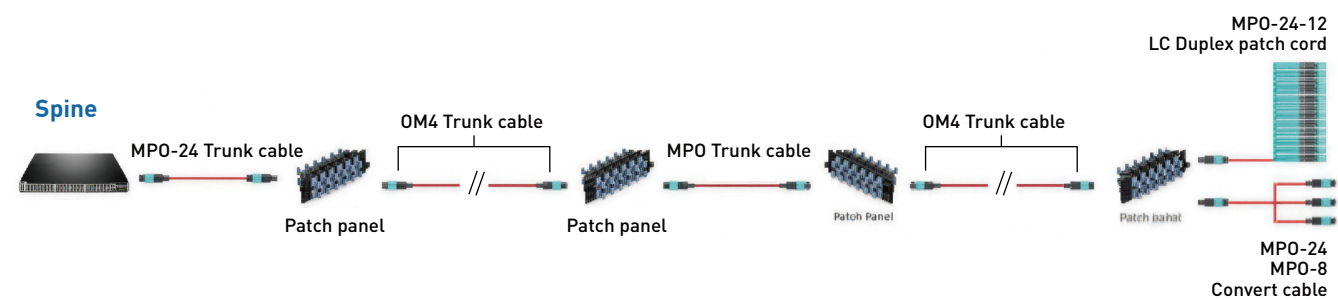
MPO/MTP 24方案

MPO/MTP 24-fiber solution



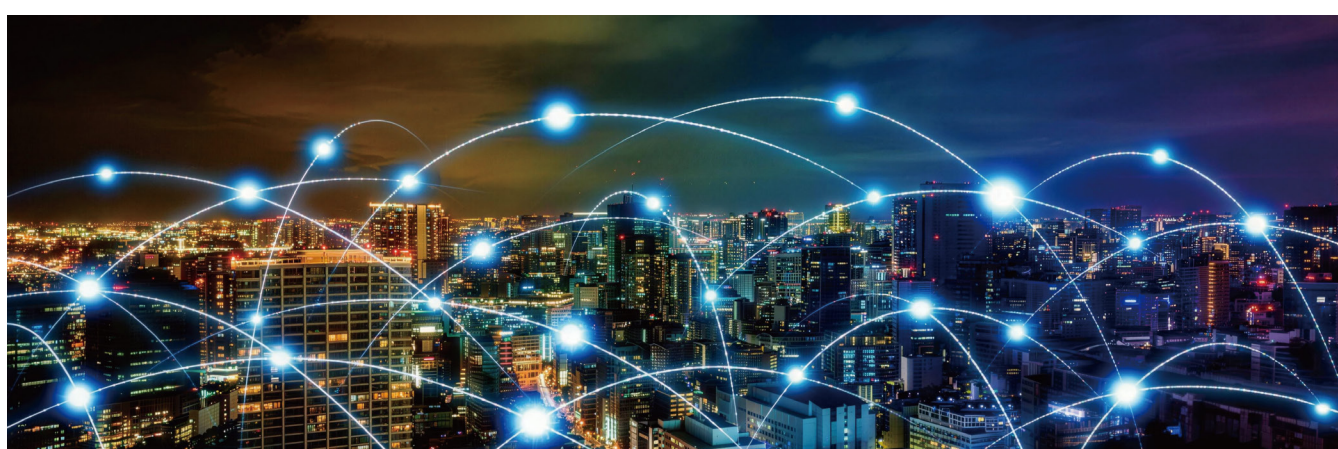
与MTP-8或MTP-12系统相比，MTP-24系统能够支持更广泛的并行应用。例如，MTP-24可为100GSR-10应用提供10x10G的直接连接。即使一些供应商已将100GSR-10应用扩展到120G（超过12x10G），Base-24MTP 光缆也能轻松应对。

Compared to MTP-8 or MTP-12 systems, the MTP-24 system supports a wider range of parallel applications. For example, MTP-24 can provide a direct 10x10G connection for 100G SR-10 applications. Even if some vendors have extended 100G SR-10 applications to 120G (beyond 12x10G), Base-24 MTP cables can easily handle them.



在120G并行应用中，120G端口可以配置为12条独立的10G链路，并通过MTP-24协议连接到12条双工LC扇出光缆。这些链路可以分成三条40G链路，用于网络交换机连接。MTP-24主干网和MTP-24扇出分支网络能够为这些应用提供最佳支持。

In 120G parallel applications, a 120G port can be configured as 12 independent 10G links and connected to 12 duplex LC fan-out cables via the MTP-24 interface. These links can be split into three 40G links for network switch connections. MTP-24 trunk cables and MTP-24 fan-out breakout networks provide optimal support for these applications.



检测能力 / TESTING CAPABILITY

江苏南方通信科技有限公司检测中心已获得中国合格评定国家认可委员会（CNAS）授予的实验室认可证书，标志着公司的研发测试能力上升至新的台阶，将为产品的研发设计、生产制造、品质性能等提供更有力的技术保障，对江苏南方通信与整个行业都具有深刻影响。

The Testing Center of Jiangsu South Communication Technology Co., Ltd. has been awarded the Laboratory Accreditation Certificate by the China National Accreditation Service for Conformity Assessment (CNAS). This marks a significant step forward in the company's R&D and testing capabilities, providing stronger technical support for product R&D, design, manufacturing, and quality performance. It has a profound impact on both Jiangsu South Communication and the entire industry.



SMART LINKS START THE FUTURE
智慧连接 启动未来

江苏省常州市武进区洛阳镇岑村路1号

No. 1, Cencun Rd, Luoyang Town, Wujin Dist, Changzhou, Jiangsu, China

江苏省常州市金坛经济开发区南二环东路1798-1号

No. 1798-1, S 2nd Ring E Rd, Jintan Eco Dev Zone, Changzhou, Jiangsu, China

更多了解，请联系 /For more information, please contact

T: (86)519-8879 8788

F: (86)519-8879-2646

E: nftx@jsnfgroup.com

W: www.jsnfgroup.com



微信公众号



官网