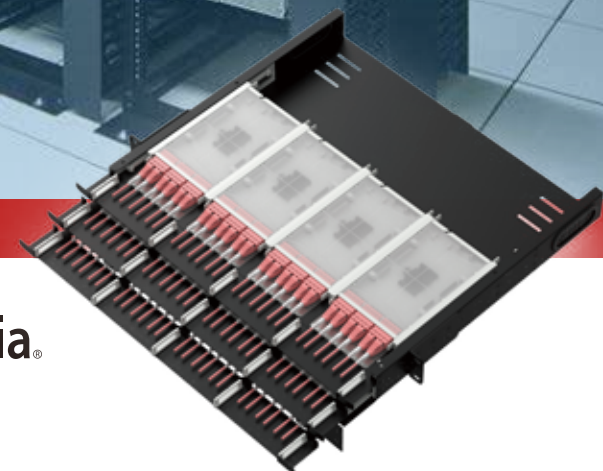




CPR    Telcordia®

数据中心光连接产品 IDC Connectivity Products

New Brochure

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Global Fiber Optic Cabling and Components Supplier



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高稳定性 高可靠性 高性价比



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About Our Company



KOC Shenzhen is the center of KOC R&D, sales, training, finance and purchasing. Total plant area is 4500 square meters. Total stuff 256. It also has patch cord , MPO assembly, IDC mini connectivity production line for urgent delivery for customer.



KOC Group was one of the pioneer companies engaged in fiber optical connectivity in China. With about 25 years’ development, it is now a specialized service provider and manufacturer in ODN fiber connectivities , passive devices, IDC cabling and micro-connection, indoors cables, FTTH boxes, etc. It provides ODM design and OEM manufacturing service for customer.

深圳市嘉万光通信有限公司（简称KOC）成立于2001年，属深圳市高新技术企业、国家级高新技术企业，公司位于深圳市龙华大浪联建科技工业园。KOC是国内较早从事光纤连接器生产和销售的公司之一，经过25年的发展，目前在光通信领域已经发展成为ODN光网络全系连接产品、光无源器件、IDC数据中心布线与微连接、室内外光缆等产品的专业生产和销售企业。

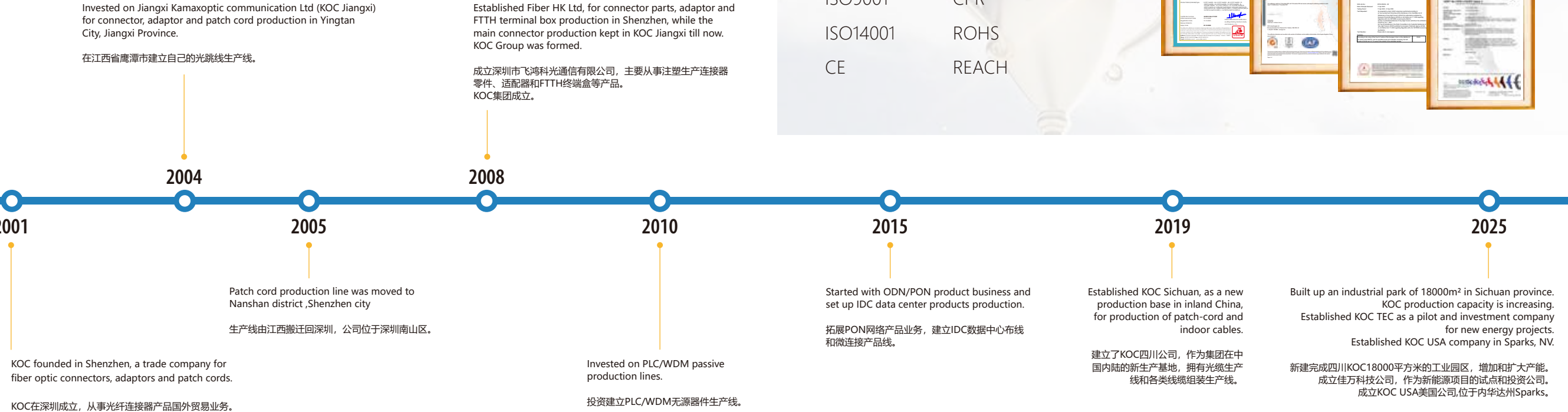
至今在欧洲、南美、中东及亚太等地区，KOC产品已广泛应用于电信运营商、光纤工程施工、有线及广电系统、宽带网络、光纤到户FTTH、数据中心工程等的建设中。我们以KOC高品质的理念，为全球客户提供可信赖的产品与服务。

KOC在全球各地设有分公司或办事处，全球布局，提供本地化服务，我们追求与客户建立和维护长久稳定的互利合作关系。

As the production base of KOC Group, located in Sichuan Province, KOC Sichuan was established in 2019 and is a national high-tech enterprise. The company is located in Hongya County Economic Development Zone, Meishan City. KOC Sichuan has a production plant area of 18000 square meters. After complete completion in 2025, the production scale is expected to reach an annual output of 60 million fiber optic connector terminations and 100K core kilometers of optical cables. At the same time, it has the production capacity of IDC high-end passive components such as FA, MT, Jumper, and other supporting products for fiber optic cabling.

作为KOC集团的生产基地，四川KOC成立于2019年，是一家国家高新技术企业。公司位于眉山市洪雅县经济开发区。KOC四川拥有18000平方米的生产厂房。2025年建成后，生产规模预计将达到年产6000万个光纤连接器终端和10万芯公里光缆。同时具备IDC高端无源元件FA、MT、Jumper等光纤布线配套产品的生产能力。

Development History



Certificates

- ISO9001
- ISO14001
- CE
- CPR
- ROHS
- REACH



Mini Internal Connectivity for QSFP
光模块内部的微连接产品

PRODUCT SERIES I

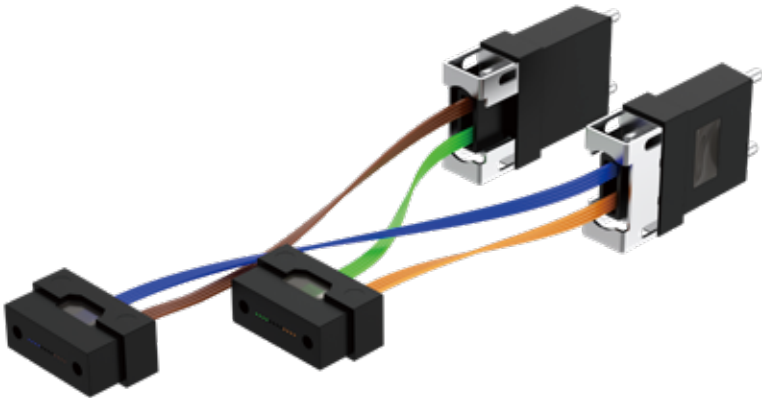
Internal Connection focuses on optical passive connections in three applications: QSFP, AOCs and COBO applications. The business model includes OEM, ODM and JDM, to provide customers with quality products, professional technical support and professional service.

我们专注于光无源内部连接的三种应用：QSFP、AOCs、COBO。业务模式包括OEM、ODM及JDM，为客户提供优质的产品、专业的技术支持和服务。

MT - MT Assembly (MT 组件)

Passive optical interconnect jumpers can be deployed in QSFP, QSFP+, QSFP28, 100G PSM4, QSFP-DD, Micro QSFP, OSFP, CXP, CFP, CDFP and any parallel optical transceiver modules, supporting various network types, including Ethernet optical network, Infiniband optical network, and Fiber Channel network.

产品应用于QSFP、QSFP+、QSFP28、100G PSM4、QSFP-DD、Micro QSFP、OSFP、CXP、CFP、CDFP 以及其他并行传输光收发模块中，支持200G以上各类型光模块内部微连接应用的OEM/ODM配套。



Features
GR-1435, GR-1221 compliant
Transmission mode: Multi-channel serial and parallel transmission mode
High accuracy
Support: 40G(4x10G), 100G(4x25G), 100G(10X10G), 12x10G, 4x32G, 8X10G, 200G(8X25G), 400G(8X50G), 800G(8X100G)

Coupling Mode
Passive coupling with guide pins and 0, 8 degrees

IL/RL Specifications
MT IL ≤0.60 dB typical 0.20 dB MT RL ≥20 dB

Environment Conditions
-40°C~+85°C

特点
兼容GR-1435、GR-1221
传输方式：多通道并行光传输
支持：40G (4x10G)、100G (4x25G)、100G (10X10G)、12x10G、4x32G、8X10G、200G (8X25G)、400G (8X50G)、800G (8X100G)

耦合模式
无源接口侧MT导针对准可实现0°、8°及按客户定制角度

插损、回损参数
MT插损≤0.60 dB；典型插损0.20 dB；MT回损≥20 dB

适用环境
-40°C~+85°C

Item	Specification
Connector A (连接头A)	MT Ferrule with guide pin (带引针的MT插芯)
Connector B (连接头B)	MT Ferrule (MT插芯)
Fiber Shape (光纤形状)	Ribbon/Single fibers (带状/单纤)
Fiber Counts (纤芯数)	8F/12F/16F/24F
Fiber Type (光纤型号)	OM2, OM3, OM4, OM5; OS1, OS2;
Length (长度)	20~100mm, Customized length available (20-100mm可选)
Length Tolerance (长度公差)	+0.3/-0mm ~ +0.5/-0mm

MT - FA 42.5°

MT-42.5°FA uses 42.5° total reflection FA as the RX receiving end to directly couple with the PD Array to complete the optical to optical conversion of the optica path; use the small size and multiple channels of the MT ferrule to realize the parallel transmission of multiple optical channels. At present, it is widely used in high-speed optical module connection.

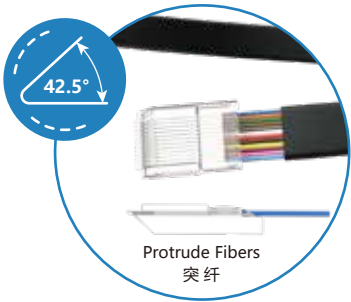
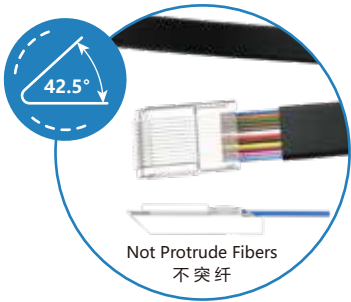
MT-42.5°FA 以 42.5°全反射FA作为RX接收端与PDArray直接耦合，完成光路的光电转换，利用 MT插芯体积小、通道多的特点实现多路光的并行传输，目前大量应用于高速光模块内连接。

- Features
- Low insertion loss
- High repeatability and high stability
- High precision and customizable
- Meets GR1221 /1209 and RoHS standards

- Application
- 100G PSM high-speed optical module

- 特点
- 低插入损耗
- 高重复性和高稳定性
- 精度高、定制化
- 符合 GR1221、GR1209 和 RoHS 标准

- 应用
- 应用于 100G PSM 高速光模块

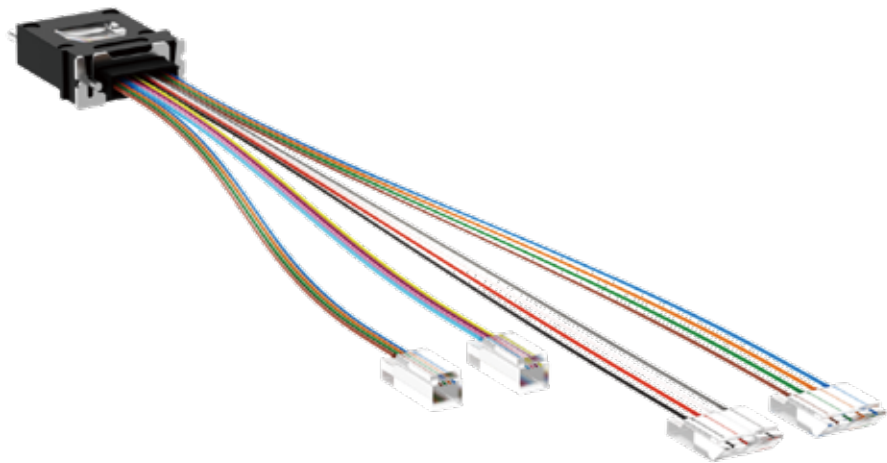


Item	Specification
Operating Wavelength (工作波段)	850~1650nm
Insertion loss (插入损耗)	<0.5dB
Return Loss (回波损耗)	≥50dB
Operating Temperature (工作温度)	-40℃~85℃
Pitch Error (位置偏差)	<1.0μm (0.3,0.5,0.7,1.0μm can be customized according to channel number accuracy)

FA - MT Assembly (FA - MT 组件)

Passive optical interconnect jumpers can be deployed in QSFP, QSFP+, QSFP28, QSFP-DD, OSFP, CXP, CFP, CDFP and any parallel optical transceiver modules, supporting various network types, including Ethernet optical network, Infiniband optical network, and Fiber Channel network.

产品应用于QSFP、QSFP+、QSFP28、QSFP-DD、OSFP、CXP、CFP、CDFP 以及其他并行传输光收发模块中，支持200G以上各类型光模块内部微连接应用的OEM/ODM配套。



- Features
- GR-1435, GR-1221 compliant
- Transmission mode: Multi-channel serial and parallel transmission mode
- High accuracy
- Support: 200G(8x25G), 400G(8X50G), 800G(8X100G)

- Coupling Mode
- Active coupling with light source and 0~ 45 degrees
- Active coupling with light source and 0, 8, 42.5 degrees as customer designed

- IL/RL Specifications
- MT IL ≤0.60 dB typical 0.20 dB MT RL ≥20 dB

- Environment Conditions
- 40℃~+85℃

- 特点
- 兼容GR-1435、GR-1221
- 传输方式：多通道并行光传输
- 支持：200G（8x25G）、400G（8x50G）、800G（8X100G）

- 耦合模式
- 有源侧Jumper激光切割耦合，角度0~45°可定制
- 接通光源的有源耦合可用0°，8°，42.5°以及按客户定制角度

- 插损、回损参数
- MT插损≤0.60 dB；典型插损0.20 dB；MT回损≥20 dB

- 适用环境
- 40℃~+85℃

Item	Specification
Connector A (连接头A)	MT Ferrule with guide pin (带引针的MT插芯)
Connector B (连接头B)	FA, Customized size/angle available (FA可定制尺寸/角度)
Fiber Shape (光纤形状)	Ribbon/single fibers (带状/单纤)
Fiber Counts (纤芯数)	12F
Fiber Type (光纤型号)	OM3, OM4, G657B3
Length (长度)	20~100mm, Customized length available (20-100mm可选)
Length Tolerance (长度公差)	+0.3/-0mm ~ +0.5/-0mm

SUS - MT Assembly (SUS 组件)

Passive optical interconnect jumpers can be deployed in QSFP, QSFP+, QSFP28, 100G PSMA, QSFP-DD, OSFP, CXP, CFP, CDFP and any parallel optical transceiver modules, supporting various network types, including Ethernet optical network, Infiniband optical network, and Fiber Channel network.

产品应用于QSFP、QSFP+、QSFP28、100G PSMA、QSFP-DD、OSFP、CXP、CFP、CDFP 以及其他并行传输光收发模块中，支持200G以上各类型光模块内部微连接应用的OEM/ODM配套。

- Features
- GR-1435, GR-1221, GR-1209 compliant
- Transmission mode: Multi-channel serial and parallel transmission mode
- High accuracy
- Support: 40G(4x10G), 100G(4x25G)

- Coupling Mode
- Passive coupling with guide pins and 0, 8 degrees
- Active coupling with light source and 0, 8, 42.5 degrees as customer designed

- IL/RL Specifications
- MT IL ≤0.60 dB typical 0.20 dB MT RL ≥20 dB

- Environment Conditions
- 40°C~+85°C

- 特点
- 兼容GR-1435、GR-1221、GR-1209
- 传输方式：多通道并行光传输
- 支持：40G（4x10G）、100G（4x25G）

- 耦合模式
- 无源接口侧MT导针对准可实现0°、8°及按客户定制角度
- 接通光源的有源耦合可用0°，8°，42.5°以及按客户定制角

- 插损、回损参数
- MT插损≤0.60 dB；典型插损0.20 dB；MT回损≥20 dB

- 适用环境
- 40°C~+85°C



Item	Specification
Connector A (连接头A)	MT Ferrule with guide pin (带引针的MT插芯)
Connector B (连接头B)	MT&SUS or FA&SUS, Customized size/angle available for FA (FA可定制尺寸/角度)
Fiber Shape (光纤形状)	Ribbon (带状)
Fiber Counts (纤芯数)	4F/8F/12F/16F/24F
Fiber Type (光纤型号)	G657B3
Length (长度)	20~100mm, Customized length available (20-100mm可选)
Length Tolerance (长度公差)	+0.3/-0mm ~ +0.5/-0mm

Jumper - MT Assembly (Jumper 组件)

Passive optical interconnect jumpers can be deployed in QSFP, QSFP+, QSFP28, QSFP-DD, OSFP, CXP, CFP, CDFP and any parallel optical transceiver modules, supporting various network types, including Ethernet optical network, Infiniband optical network, and Fiber Channel network.

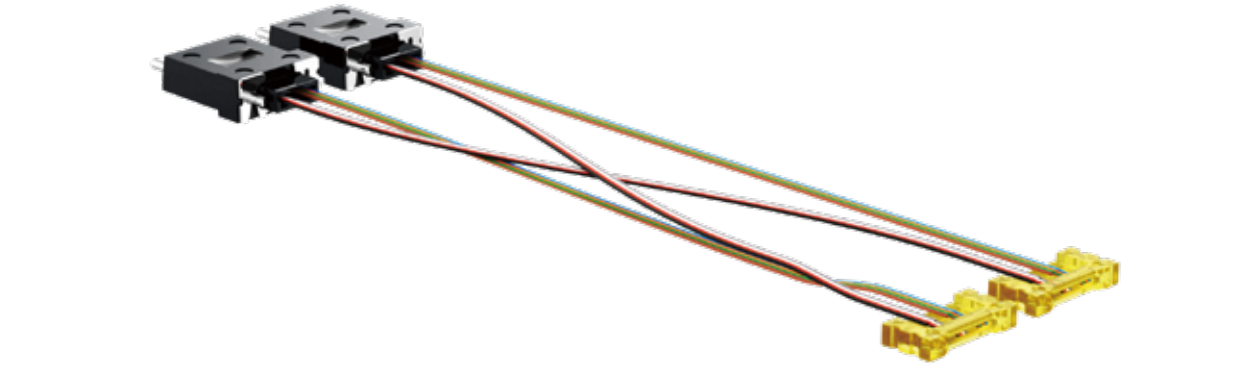
产品应用于QSFP、QSFP+、QSFP28、QSFP-DD、OSFP、CXP、CFP、CDFP 以及其他并行传输光收发模块中，支持200G以上各类型光模块内部微连接应用的OEM/ODM配套。

- Features
- GR-1435, GR-1221 compliant
- Transmission mode: Multi-channel serial and parallel transmission mode
- High accuracy
- Support: 200G(8x25G), 400G(8X50G)

- Coupling Mode
- Passive coupling with guide pins and 0, 8, 10 degrees as customer designed
- Active coupling with light source and 0, 8 degrees as customer designed
- Active polish coupling with 0, 8 degrees as customer designed

- IL/RL Specifications
- MT IL ≤0.60 dB typical 0.20 dB MT RL ≥20 dB

- Environment Conditions
- 40°C~+85°C



- 特点
- 符合GR-1435、GR-1221
- 传输方式：多通道并行光传输
- 支持：200G（8x25G）、400G（8x50G）

- 耦合模式
- 无源接口侧MT导针对准可实现0°、8°、10°及按客户定制角度
- 有源侧jumper激光切割耦合可用0°、8° 及按客户定制角度
- 有源侧Jumper研磨耦合，角度0°、8° 及按客户定制角度

- 插损、回损参数
- MT插损≤0.60 dB；典型插损 0.20 dB；MT回损≥20 dB

- 适用环境
- 40°C~+85°C

Item	Specification
Connector A (连接头A)	MT ferrule with guide pin (带引针的MT插芯)
Connector B (连接头B)	Customized Jumper/Lens, Usconnect Prism/Lensed MT (客户订制跳线/滤镜，Usconnect Prism/带滤镜的MT)
Fiber Shape (光纤形状)	Ribbon (带状)
Fiber Counts (纤芯数)	2F/4F/8F/12F/16F/24F
Fiber Type (光纤型号)	OM3, OM4, OM5;
Length (长度)	20~100mm, Customized length available (20-100mm可选)
Length Tolerance (长度公差)	±0.30 ~ ±0.50mm

FA with Lens Array Assembly (光纤阵列FA贴透镜阵列)

A Fiber Array Unit (FAU) with an integrated lens array effectively enhances signal coupling efficiency between optical chips (e.g., PICs) and optical fibers through focusing and collimation. KOC offers flexible customization options—including channel count, core pitch, and polishing angle—to meet diverse customer requirements. The product's reliability meets MIL-STD-883G and GR-1221 standards and has been validated through PCT 168H testing.

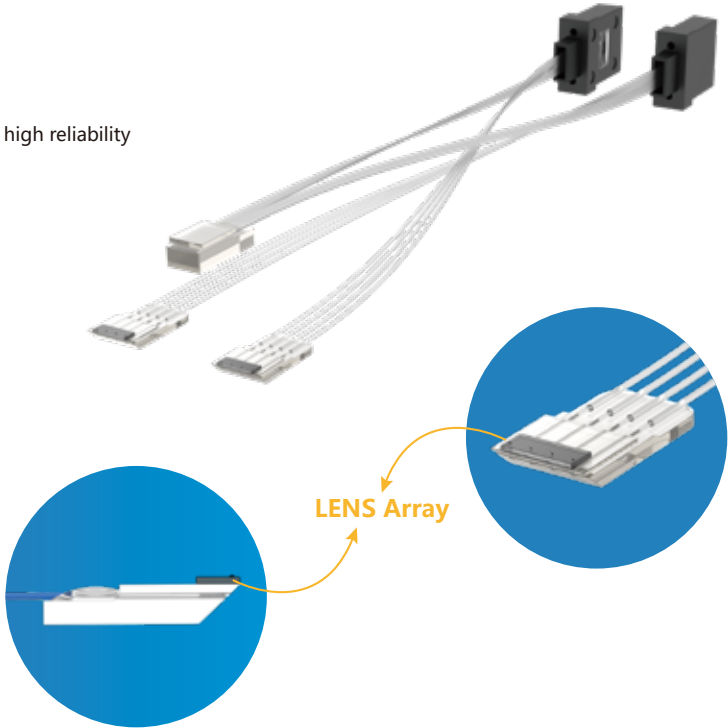
透镜阵列lens array具有优异的光学特性，贴合在光纤阵列FA端面后，可有效通过聚焦和准直光信号来改善光芯片（如PIC）和光纤之间的信号耦合效率、降低损耗。KOC可提供灵活的通道数、纤芯间距、研磨角度等定制化服务，满足不同客户需求。产品可靠性符合MIL-STD-883G和GR-1221标准，并通过PCT 168H实验验证。

- Features
- Output beam can be collimated and focused.
- Precision output beam angle control
- MFD can be converted to different one of chips
- The space optical design for customer assembly with high reliability

- Application
- CPO
- AI
- HPC

- 特点
- 输出光束可进行准直与聚焦
- 精确控制输出光束角度
- 模场直径可适配不同芯片规格
- 为客户端装配提供高可靠性的空间光学设计

- 应用
- CPO应用
- AI应用
- 超算应用



FA With Isolator Assembly (光纤阵列FA贴隔离器)

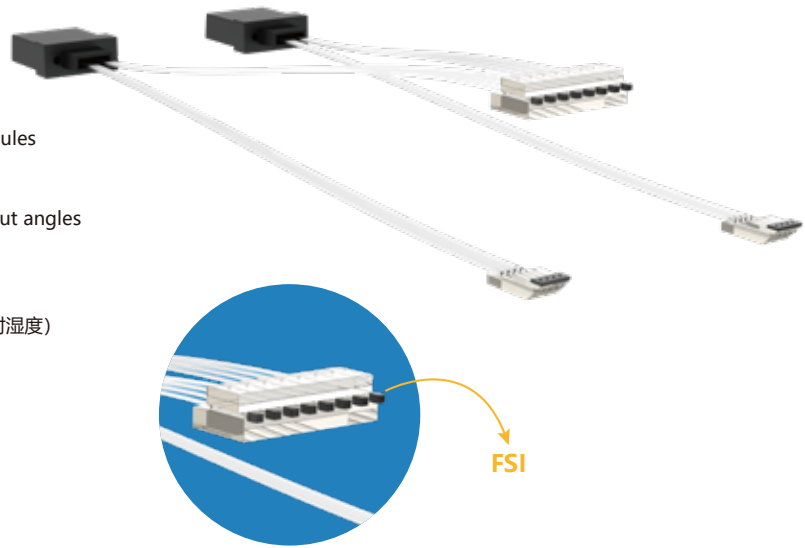
An optical isolator is a passive device that allows light to travel in only one direction. Integrated onto the output end-face of a Fiber Array (FA), it ensures irreversible light propagation. KOC offers customized FA-integrated isolator solutions to meet specific customer requirements, which significantly simplify the optical module assembly process and reduce packaging costs. The product reliability complies with MIL-STD-883G and GR-1221 standards and has been validated by 168h PCT testing.

隔离器是一种只允许单向光通过的无源光器件，通过贴合在光纤阵列FA的出纤端面，使光路不可逆，KOC可根据客户需求提供定制化FA贴隔离器产品，能够极大地简化光模块贴装工序和降低贴装成本。产品可靠性符合MIL-STD-883G和GR-1221标准，并通过168h PCT 实验验证。

- Features
- Return loss > 32dB
- 168h PCT (Tested at 105, 0.12MPa, 100%RH)
- Shear force compliant with MIL-STD-883G
- Application
- Applicable to 400G/800G high-speed optical modules
- High-precision mechanical installation
- Optional 12/16-channel MT connectors
- Array coupling lens with high-precision light output angles

- 特点
- 回波损耗 > 32dB
- 168h PCT（测试条件：105℃，0.12MPa，100%相对湿度）
- 剪切力符合 MIL-STD-883G 标准

- 应用
- 应用于400G/800G的高速光模块
- 精准的机械安装精度
- 12/16CH MT可选
- 阵列耦合透镜高精度出光角度



Item	Specification
Operating Wavelength (工作波段)	1270 ~ 1610
Insertion Loss (插入损耗)	0.3dB(Typical 0.2)/Single Stage (Max); 0.5dB(Typical 0.3)/Dual Stage (Max)
Isolation (隔离度)	35dB(Typical 40)/Single Stage (Min); 55dB(Typical 60)/Dual Stage (Min)
Clear Aperture (有效口径)	CA0.3mm (Min)
Power Handling (功率处理)	500mw (Max)

Mode-Field-Converting Fiber Array (模场转换连接组件)

Mode Field Diameters (MFD) Fiber Array (FA) provides a means of low-loss coupling to waveguides with smaller mode-fields. The process of splicing ultra-high-NA(UHNA) fiber to a standard NA fiber, such as 3.2μm/3.3μm/4μm/5.5μm to 9μm, is used to realize the conversion of the mode field.

模场直径转换FA是提供一种低损耗耦合到具有较小模场的波导的方法，采用一小段超高数值孔径单模光纤（UHNA）拼接到标准的SM或PM光纤的尾纤上，来实现模场转换。该产品是高速硅光子收发器模块上连接的理想方案，我们可提供定制化光纤直径，如3.0μm/4.0μm/5.0μm/5.5μm转换到9μm，采用特殊组装抛光工艺以及高精度V型槽基板，实现低插损、高Pitch-Core，采用全石英材质，耐宽温。

- Features
- Low insertion loss

High precision pitch core (pitch error<0.5μm)

High precision polishing angle

Customized available

GR1221, GR1209 and RoHS compliant

Application

Integrated photonic transceiver module, Optical waveguide coupling

- 特点
- 低损耗

可定制化

高精度纤芯间距 (pitch error<0.5μm)

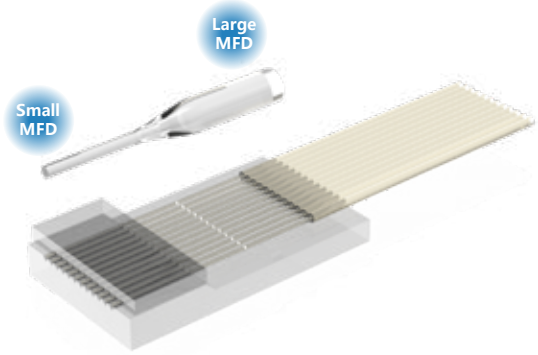
高精度抛光角度，并可定制化角度

符合GR1221、GR1209和RoHS标准

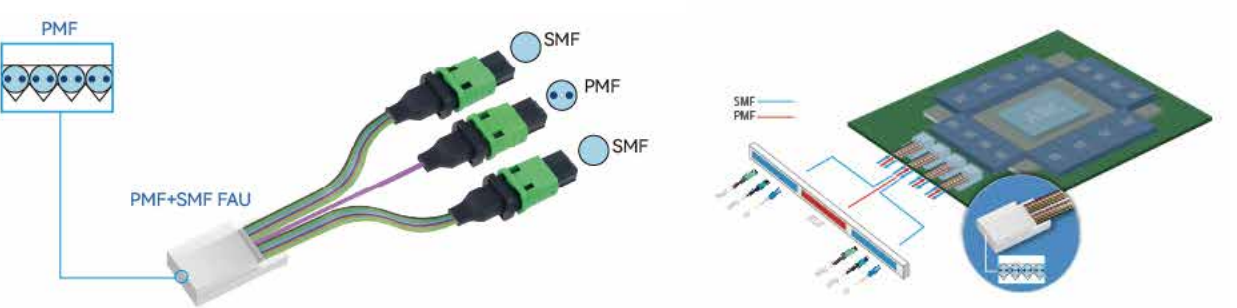
应用

集成光子收发模块、光波导耦合

Item	Specification
Insertion Loss (插入损耗)	≤0.30 dB
Substrate Material (基板材质)	Quartz, BF33 and others
Fiber Spacing (光纤间距)	127μm or 250μm or customized
Fiber Core Position Tolerance (间距公差)	<0.5μm, or customized
Mode Field Diameter (模场直径)	3.2μm, 3.3μm or customized
Polishing Angle (端面角度)	0°~45°, or customized
Fiber Type (光纤类型)	SM
Number of Channels (通道数)	Customized
Operating Temperature (工作温度)	-5°C~70°C



NPO/CPO FAU (CPO/CPO多通道高精度光纤阵列)



The Precision Bridge in the AI Era: FAU
In the era of the AI computing boom, Co-Packaged Optics (CPO) technology is breaking the power consumption and bandwidth bottlenecks of traditional copper interconnects. The Fiber Array Unit (FAU) serves as the "precision bridge" connecting the optical engine to the external fiber network.
As an indispensable core passive component in the CPO architecture, the FAU utilizes ultra-high-precision V-groove substrates to align and secure multiple bare fibers with sub-micron accuracy ($\pm 0.5\mu\text{m}$), ensuring lossless coupling between optical signals and silicon photonic chip waveguides.
With the evolution of next-generation CPO optical engines (such as 3.2T), FAUs are scaling from traditional 8-channel configurations to 36 channels or higher, while integrating cutting-edge technologies like polarization-maintaining (PM) and vertical coupling. This not only elevates the FAU from a "supporting component" to a "system-critical requirement," but also drives a multi-fold increase in its value.

- Features:
- High polarization extinction ratio

• Low insertion loss

• Low angular deviation ($\leq 3^\circ$)

• Excellent compatibility with standard connectors

• Customizable length

• Customizable axial angles including fast axis, slow axis and other orientations as required

• Optional polarization-maintaining fibers for 850nm, 980nm, 1310nm, 1550nm and other wavelengths

• RoHS compliant

Item	Specification	
Fiber Type	PANDA Polarization-Maintaining Fiber	
Operating Wavelength	850nm / 1310nm / 1550nm	
Cable Type	Ø0.25 Fiber Ribbon, Ø0.9, Ø2.0, Ø3.0 Optical Cable	
Polishing Type	UPC / APC	
Connector Type	LC / FC / SC	MPO/MTP®/MT
Insertion Loss	≤ 0.3	≤ 0.35
Return Loss	UPC: ≥ 50, APC: ≥ 60	
Extinction Ratio	≥ 20	
Slow Axis Angle	0, 90 or customizable	
Slow Axis Angle Tolerance	≤ 3° or customizable	
Operating Temperature	-20 ~ 75°C	
Storage Temperature	-40 ~ 85°C	

AI时代的精密桥梁：FAU
在AI算力爆发的时代，共封装光学（CPO，Co-Packaged Optics）技术正在突破传统铜互连在功耗和带宽方面的瓶颈。而光纤阵列单元（FAU，Fiber Array Unit）则作为连接光引擎与外部光纤网络的“精密桥梁”，发挥着关键作用。
作为CPO架构中不可或缺的核心无源器件，FAU采用超高精度V形槽基板，以亚微米级精度（ $\pm 0.5\mu\text{m}$ ）实现多根裸光纤的精准对准与固定，从而确保光信号与硅光芯片波导之间的低损耗/无损耦合。
随着下一代CPO光引擎（如3.2T）不断演进，FAU正从传统的8通道配置向36通道甚至更高通道数发展，同时融合保偏（PM，Polarization-Maintaining）、垂直耦合（Vertical Coupling）等前沿技术。这不仅使FAU的角色从传统的“配套器件”升级为CPO系统中的“系统级关键器件”，同时也将推动其单机价值量实现数倍增长。

- 产品特性:
- 高消光比

• 低插入损耗

• 低角度偏差 ($\leq 3^\circ$)

• 完美兼容标准连接器

• 线缆长度可定制

• 偏振轴角度按需定制，支持快轴、慢轴及其他任意定位方向

• 可选 850nm、980nm、1310nm、1550nm 等波段保偏光纤

• 符合 RoHS 环保标准

Polarization Maintaining Fiber Array / MT Pigtail (保偏组件)

PM FA is a Polarization-Maintaining fiber placed in the V-Groove on the array substrate to achieve high-density parallel transmission by maintaining the same polarization direction. PM fiber array has excellent performance such as precision alignment angle, high extinction ratio, precise fiber spacing and polishing angle, etc.

保偏光纤阵列系列产品，运用高精度特制的V型槽结构、专用的胶水以及特殊组装技术按照快轴或慢轴对准的方式把保偏光纤固定在V型槽中。产品具有快慢轴对准角度精准、高消光比参数、光纤间距和研磨角度精准、研磨面平滑等众多优良特性。

- Features
- High extinction ratio (≥18dB)
- High precision pitch core (pitch error≤0.5μm)
- Customized available
- GR1221, GR1209 and RoHS compliant

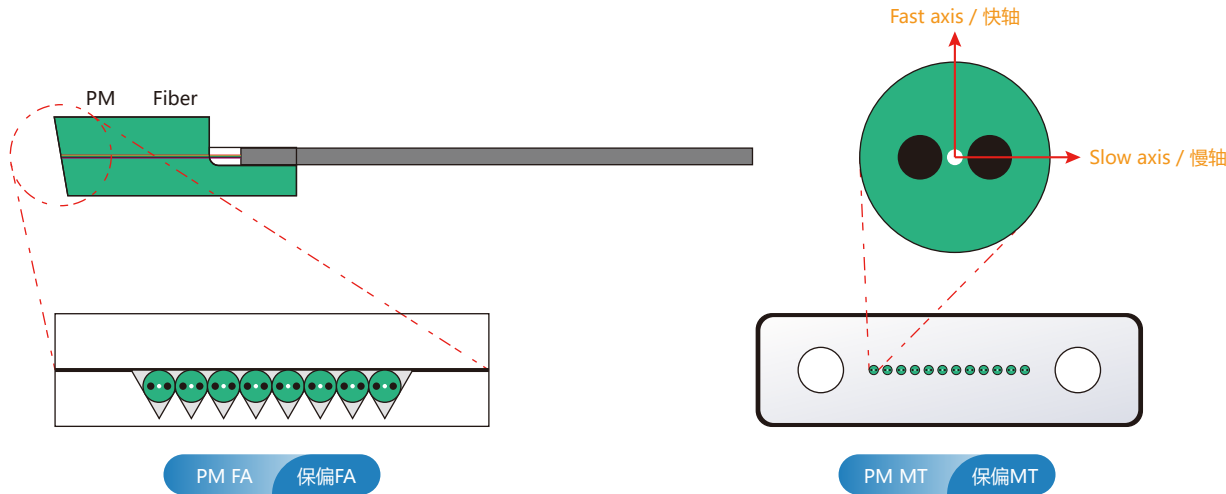
- Application
- Coherent transmission, PM optical waveguide devices, fiber sensing

- 特点
- 高消光比（PER>18dB）
- 高重复性和高稳定性
- 高精度纤芯间距(pitch error<0.5um)高精度抛光角度，并可定制化角度
- 符合 GR1221、GR1209 和 RoHS 标准

- 应用
- 多通道光学集成器件、相干通信、保偏光学系统



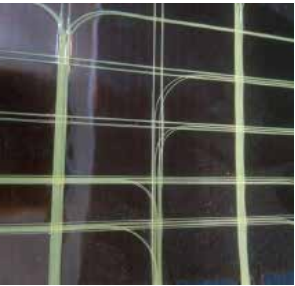
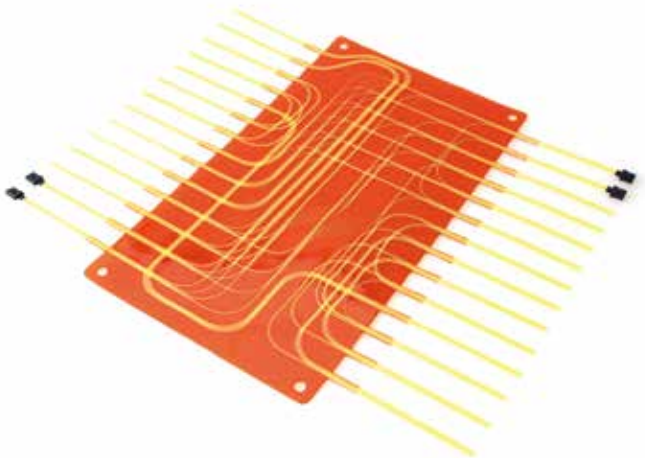
Item	Specification
Fiber Spacing (光纤间距)	127μm or 250μm or customized
Fiber Core Position Tolerance (间距公差)	≤0.5μm or customized
Fiber Type (光纤类型)	PM 1310nm 1550nm or customized
Polishing Angle (端面角度)	0°~45°
Fiber Counts (光纤芯数)	Customized
Extinction Ratio (消光比)	≥18dB
Standards (符合标准)	Comply with GR1209/1221,ROHS
Operating Temperature (工作温度)	-5°C~70°C



Fiber Shuffle (柔性光纤板)

Fiber Shuffle are used for high-fiber-count interconnections in backplane and cross-connect systems, offering a new manageable solution for fiber routing between cards or racks. Compared to traditional fiber optic cable bundles, they significantly save space and reduce weight. Flexible optical backplanes contain numerous fibers, with counts reaching up to thousands of cores. These fibers are encapsulated within a thin protective substrate, allowing for hybrid point-to-point arrangements or logical configurations tailored to customer requirements. They can be pre-connected to customer-specified ports (such as MT, SC, or LC connectors).

柔性光纤板与交叉连接系统提供了一种高光纤芯数互连方案，通过创新的可管理布线方式实现板卡间及机架间的光纤路由。与传统光纤束相比，该技术能显著节省空间并减轻重量。柔性光背板可容纳多达数千芯的光纤，这些光纤被封装在超薄保护基材中，既能实现混合式点对点布线，也可根据客户需求进行逻辑拓扑配置。该产品支持预端接各类指定接口（如MT、SC、LC连接器），满足客户定制化需求。



Automatic Fiber Placement Machine
The fiber optic automatic fiber placement machine can design the fiber routing path according to customer requirements. The device automatically identifies the path and arranges the fibers on the substrate along the designated route for bonding. Automated fiber placement significantly improves the precision and efficiency of fiber routing.

光纤自动铺丝设备可根据客户需求设计光纤排布路径。该设备能自动识别路径走向，并沿指定路线将光纤排布在基板上进行固化。自动化铺丝技术显著提升了光纤布线的精度与生产效率。



Comparison of Wiring Solutions

Traditional Wiring Solution

Upgraded and Optimized Wiring Solution

1000+
Fiber Optic Connection

1
Fiber Optic Connection

✔ Significantly saves space

✔ Reduces link loss

Item	Specification
Base Material	High-temperature resistant, flexible, and environmentally friendly
Operating Temperature	70°C
Number of Fiber Cores Accommodated	Customized
Fiber Flex Plate Thickness	≤8mm
Insertion Loss	≤1.4dB(1310nm & 1550nm)
Return Loss	≥40dB(1310nm & 1550nm)

ELSFP Connector

SENKO's ELSFP Host Optical Connector is a cutting-edge solution designed for seamless integration in Co-Packaged Optics (CPO) external laser source applications. The Host connector is attached to the PCB of CPO switches allowing the Module connector to precisely align to it once plugged. The connectivity is engineered with self alignment features to precisely blind-mate up to two Low-Loss MT ferrules in one connection, enhancing overall performance and reliability. The ELSFP is optimized to support next-generation co-packaged optics (CPO) requiring a remote laser source.

Features

- High precision blind-mateable
- Up to 2 MT ferrules in one connection
- Low-loss performance
- Support PM fiber for the interconnect
- Spring force to accommodate higher fiber counts ferrule alignment
- Multiple boot options
- Compliant to OIF-ELSFP-02.0

Application

- CPO (Co-Packaged Optics)
- NPO (Near Packaged Optics)

SENKO的ELSFP主机光连接器是专为共封装光学器件 (CPO) 外部激光源应用设计的尖端解决方案, 可实现无缝集成。主机连接器直接装配在CPO交换机的PCB板上, 确保模块连接器插入时能精确对准。其采用自对准设计, 可在单次连接中实现多达两个低损耗MT插芯的精准盲插, 从而显著提升系统整体性能与可靠性。

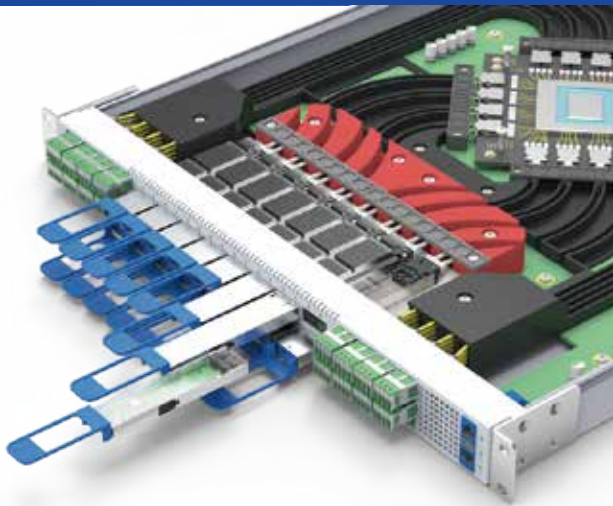
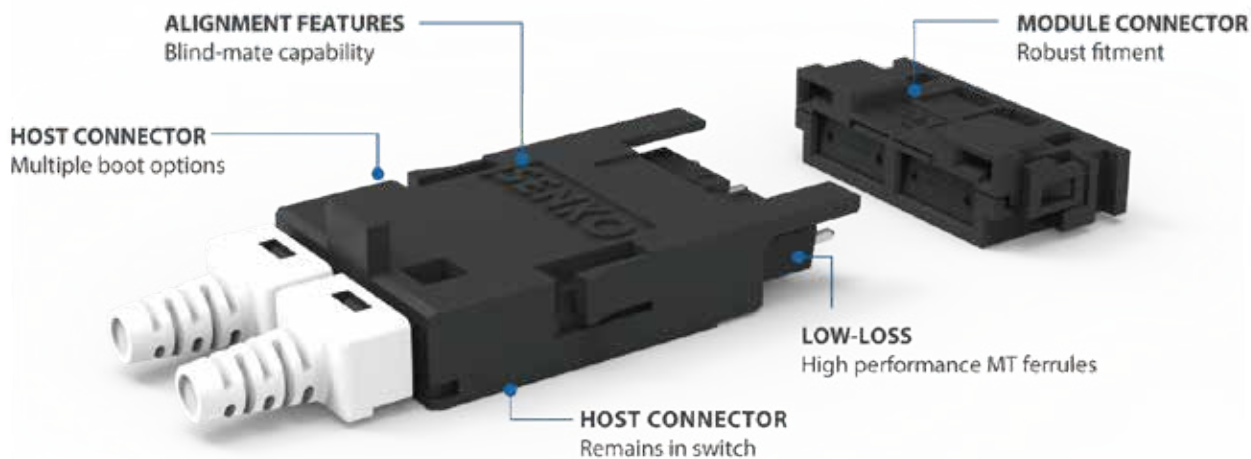
ELSFP 专为支持下一代共封装光学 (CPO) 应用而优化, 尤其适用于需要采用远端激光光源 (Remote Laser Source) 的 CPO 系统。

产品特性

- 高精度盲插
- 一次最多可以连接2个MT插芯
- 低损耗性能
- 支持用于互联的 PM 光纤
- 弹簧力可适应高芯数插芯对齐
- 多种尾套选项
- Compliant to OIF-ELSFP-02.0

应用领域

- 共封装光学
- 近封装光学



Mechanical Data

Durability	Exceeds GR-1435 (tested to 100 mating cycles)
Fiber Count	Multi-fiber (up to 24 fibers per ferrule)
Cable Suitability	Bare ribbon, 1.8mm jacketed
Ferrule Material	Polymer

Optical Data: Single-mode / 12-Fiber / APC / Low Loss

Typical Insertion Loss (dB)	0.15
Max Insertion Loss (dB)	0.35
Typical Return Loss (dB)	≥60

Environmental Data

Operating Temperature	-40°C to +75°C
RoHS Compliance	2015/863 RoHS
REACH Compliance	Yes
Humidity Resistance	95% in duration of 168 hours

MMC Connector



US Conec's MMC connector is a Very Small Form Factor (VSFF) multi-fiber optical connector designed for termination of single-mode and multimode fiber cables up to 2.5mm in diameter. The MMC connector employs novel TMT ferrule technology harmonized with the MT or MT-16 alignment structure. Individual connector access in the most extremely dense connector environments is easily accomplished using revolutionary DirectConec™ push-pull boot technology.

US Conec 的 MMC 连接器是一种超小型 (VSFF) 的多芯光纤连接器, 设计用于直径达 2.5mm 的单模和多模光缆的端接。MMC 连接器采用新颖的TMT 插芯技术, 与 MT 或 MT-16 对准结构相一致。使用突破性的DirectConec™ 推拉尾套技术, 在极端密集的连接环境中轻松实现单个连接器的接入。



The MMC connector offers a very small form factor footprint enabling > 3x density compared to MPO connectors. This density advantage can be leveraged in multiple ways:

- Deployment of the same port count in < 1/3rd of the space
- Increase of the optical port capacity per rack unit by > 3x
- Enable increase space around all optical ports

To ensure ease of use in these high density applications, the MMC connector is designed with the DirectConec™ Push-Pull Boot to enable easy access when installing or de-commissioning cabling at a passive patch panel, server, or switch in the network.

MMC连接器尺寸非常小巧, 密度比MPO连接器高出3倍以上。这种密度优势可以从多个方面加以利用:

- 在不到三分之一的空间内部署相同数量的端口
- 每个机架单元的光端口容量增加3倍
- 增加所有光端口周围的空间

为了确保在这些高密度应用中的易用性, MMC 连接器采用 DirectConec™ 推拉式护套设计, 以便在网络中的无源配线架、服务器或交换机上安装或拆卸电缆时能够轻松访问。

Features

- 3× the cabling density of MPO ports
- DirectConec™ push-pull boot for easy connector insertion and removal
- Utilizes a proven MT or MT-16 mechanical and optical fiber alignment structure
- 250 μm fiber pitch, compatible with standard 250 μm fibers as well as smaller-diameter fibers
- TMT Elite™ low-loss technology, compliant with IEC Grade B insertion loss performance (0.25 dB random-mating insertion loss, ≥97%)
- APC end-face available for both SM and MM applications
- Available in 1×12, 1×16, and 2×12 configurations
- Tested and qualified to Telcordia GR-1435
- Supports cable outer diameters of up to 2.5 mm
- Compatible with standard fiber-optic cabling industry infrastructure, including IBC cleaning tools, polishing fixtures, interferometers, and optical test equipment

Application

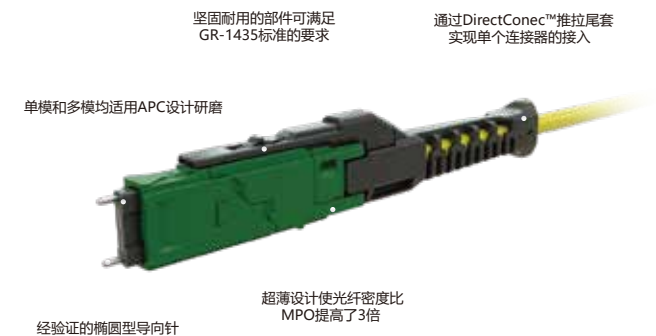
- Indoor Structured Cabling
- Data Center Interconnect & Constrained Space Pathways
- Transceivers & Active Optical Cables
- Co-Packaged and Onboard Optics

产品特性

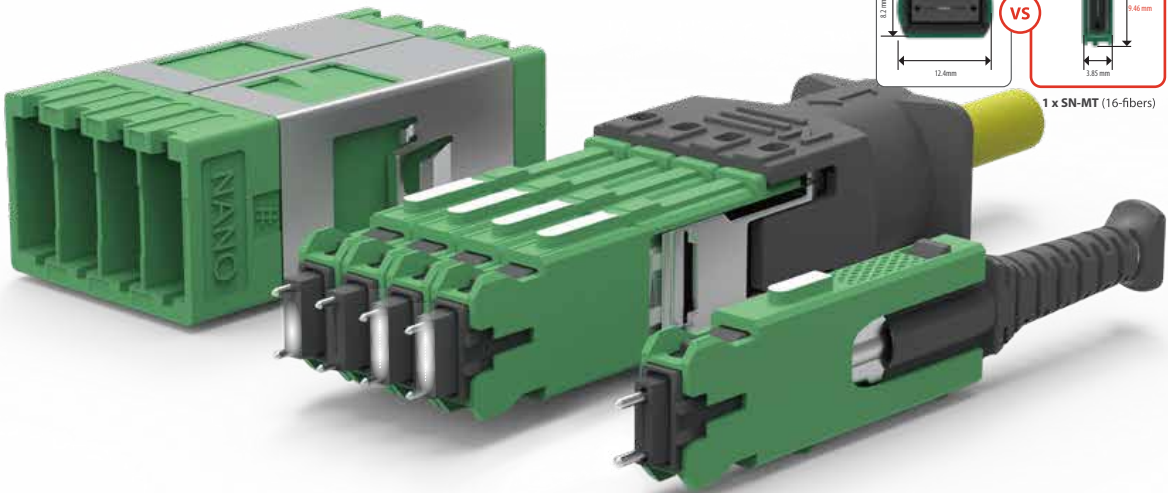
- 3 倍于 MPO 端口的布线密度
- DirectConec™ 推拉尾套实现连接器轻松插拔
- 采用经过验证的 MT 或 MT-16 机械与光纤对准结构
- 250 μm 间距, 兼容标准 250 μm 及更小外径的光纤
- TMT Elite™ 低损耗, 符合IEC Grade B插损性能标准 (0.25dB随机互配, ≥ 97%)
- 同时适用于 SM 和 MM 应用的 APC
- 1x12、1x16 和 2x12 可供选择
- 经测试符合 Telcordia GR-1435 标准
- 光缆外径可达 2.5mm
- 支持标准布线行业基础设施, 包括IBC清洁工具、研磨盘、干涉仪和光学测试设备

应用领域

- 结构化布线
- 数据中心互连及小直径预端接光缆组件
- 高带宽光模块
- 共封装光学及板载互联



SN-MT Connector



The SN-MT connector is designed for high density applications with its compact size and push-pull boots. The SN-MT is offered in 16F, and has 2.7 x the density than 16F MPO. SN-MT keeps the same footprint as the SN so it can fit 64 fibers in QSFP-DD or OSFP modules.

SN-MT 连接器采用紧凑的尺寸和推拉式护套，专为高密度应用而设计。SN-MT 提供 16 芯规格，其密度是 16 芯 MPO 连接器的 2.7 倍。SN-MT 与 SN 连接器尺寸相同，因此可以在 QSFP-DD 或 OSFP 模块中容纳 64 芯光纤。

Features

- Carries a maximum of 16-fiber in a row
- Same connector footprint as SN duplex
- Carries many features from the SN duplex
- The industry’ s highest density connector
- Fiber density per 1RU is improved by:
 - 2.7 time over MPO-16F
 - 1.3 time over MPO-32F
- Insertion loss targeted 0.35dB max for SM

Application

- Maximum Patch Panel Densification
- 75% Faster Data Center Interconnects
- 800G and 1.6TB Transceivers
- SN-MT for CoPackaged Optics

产品特性

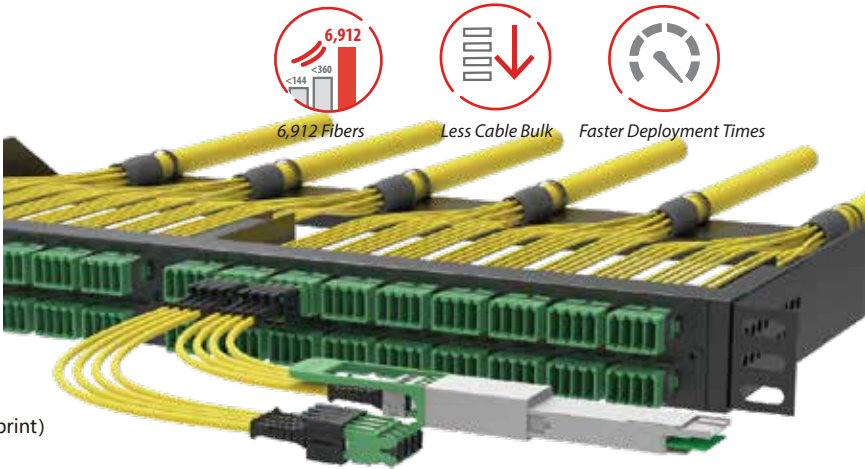
- 单排最多支持 16 芯光纤
- 与 SN 双工连接器采用相同的连接器外形尺寸（Footprint）
- 继承 SN 双工连接器的多项特性
- 业界最高密度的光纤连接器
- 每个 1RU 机架单元的光纤密度得到显著提升：
 - 相比 MPO-16F 提升 2.7 倍
 - 相比 MPO-32F 提升 1.3 倍
- 单模（SM）插入损耗目标值：最大 0.35 dB

应用领域

- 最大程度的配线架密度
- 数据中心互连速度提升75%
- 800G 和 1.6TB 收发器
- 用于共封装光学器件的SN-MT

Single-mode / 16-Fiber / Low Loss	
Typical Insertion Loss (dB)	0.15
Max Insertion Loss (dB)	0.35
Typical Return Loss (dB)	≥60
Operating Temperature (°C)	– 40 to +75
Durability	SM <0.3dB typical change, 50 matings

Hyperscale Densification
超大规模数据中心密度提升



Optimized for DC Inter-Connects

SN®-MT can be used in high-density patch panels to connect legacy MPO-based transceivers today, and then in the future, they can be redeployed to connect next-generation transceivers using the SN®-MT interface.

针对数据中心互联（DCI）应用进行优化

SN®-MT 可用于高密度配线架，在现阶段实现与基于传统 MPO 接口的光模块连接；未来，当下一代光模块采用 SN®-MT 接口后，这些配线架还可以重新部署，用于连接新一代光模块。

MPO - Fiber Array Assembly (MPO - FA 组件)

Passive optical interconnect jumper could connect to optical modules, optical FPGA and Silicon photonic chip installed on PCB, and also it could connect to any parallel optical transceiver modules, supporting various network types, including Ethernet network, Infiniband network and Fiber Channel network, the application equipment includes Switches, Servers, Storages, HPC, and, etc.

无源光学互连跳线可以连接到光学模块，光学FPGA和硅光子芯片安装在PCB上，也可以连接到任何平行光收发模块，支持各种网络类型,包括以太网网络、无线宽带网络和光纤通道网络，应用设备包括交换机、服务器、存储、HPC等等。

Features

GR-1435, GR-1221, GR-1209 compliant
Transmission mode: Multi-channel serial and parallel transmission mode
High accuracy
Support: 40G(4x10G), 100G(4x25G)

Coupling Mode

Passive coupling with guide pins and 0, 8 degrees
Active coupling with light source and 0, 8, 42.5 degrees as customer designed
Passive coupling with guide pins and 90 degrees

IL/RL Specifications

MT IL ≤0.60 dB typical 0.20 dB MT RL ≥20 dB

Environment Conditions

-40°C~+85°C

特点

兼容GR-1435、GR-1221、GR-1209
传输方式：精度高多路串并联传输方式
支持：40G（4x10G）、100G（4x25G）

耦合模式

以导针对准的无源耦合可实现0°、8°及按客户定制角度
接通光源的有源耦合可用0°，8°，42.5°以及按客户定制角度
以导针对准的无源耦合也可用90°转角

插损、回损参数

MT插损≤0.60 dB；典型插损0.20 dB；MT回损≥20 dB

环境状况

-40°C~+85°C



Item	Specification
Connector A (连接头A)	MPO
Connector B (连接头B)	Customized Fiber Array (可定制FA)
Fiber shape (光纤形状)	Ribbon (带状)
Fiber count (纤芯数)	12F
Fiber type (光纤型号)	OM2,OM3,OM4,SM;
Length (长度)	50~80mm, Customized length available (50-80mm可选)
Length tolerance (长度公差)	±0.5mm

MPO - Jumper Assembly (MPO - Jumper 组件)

Passive optical interconnect jumper could connect to optical modules, optical FPGA and Silicon photonic chip installed on PCB, and also it could connect to any parallel optical transceiver modules, supporting various network types, including Ethernet network, Infiniband network and Fiber Channel network, the application equipment includes Switches, Servers, Storages, HPC, and, etc.

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- Features
- GR-1435, GR-1221 compliant
- Transmission mode: Multi-channel serial and parallel transmission mode
- High accuracy
- Support: 40G(4x10G), 100G(4x25G)

- Coupling Mode
- Passive coupling with guide pins and 0, 8 degrees
- Active coupling with light source and 0, 8 degrees as customer designed
- Active polish coupling with 0, 8degrees as customer designed

- IL/RL Specifications
- MT IL ≤0.60 dB typical 0.20 dB MT RL ≥20 dB

- Environment Conditions
- 40°C~+85°C

- 特点
- 兼容GR-1435、GR- 1221
- 传输方式：精度高多路串并联传输方式
- 支持： 40G （4x10G） 、100G （4x25G）

- 耦合模式
- 以导针对准的无源耦合可实现0°、8°及按客户定制角度
- 有源侧jumper激光切割耦合可用0°、8°及按客户定制角度
- 有源侧Jumper研磨耦合，角度0°、8°及按客户定制角度

- 插损、回损参数
- MT插损≤0.60 dB；典型插损0.20 dB；MT回损≥20 dB

- 环境状况
- 40°C~+85°C

Item	Specification
Connector A (连接头A)	MPO
Connector B (连接头B)	Customized Jumper/Lens (可定制Jumper/Lens)
Fiber shape (光纤形状)	Ribbon (带状)
Fiber count (纤芯数)	12F
Fiber type (光纤型号)	OM2,OM3,OM4;
Length (长度)	50~100mm, Customized length available (50-100mm可选)
Length tolerance (长度公差)	±0.5mm



MPO - MT Assembly (MPO - MT 组件)

Passive optical interconnect jumper could connect to optical modules, optical FPGA and Silicon photonic chip installed on PCB, and also it could connect to any parallel optical transceiver modules, supporting various network types, including Ethernet network, Infiniband network and Fiber Channel network, the application equipment includes Switches, Servers, Storages, HPC, and, etc.

无源光学互连跳线可以连接到光学模块，光学FPGA和硅光子芯片安装在PCB上，也可以连接到任何平行光收发模块，支持各种网络类型,包括以太网网络、无线宽带网络和光纤通道网络，应用设备包括交换机、服务器、存储、HPC等等。

- Features
- GR-1435, GR-1221 compliant
- Transmission mode: Multi-channel serial and parallel transmission mode
- High accuracy
- Support: 40G(4x10G), 100G(4x25G), 100G(10X10G)

- Coupling Mode
- Passive coupling with guide pins and 0, 8 degrees

- IL/RL Specifications
- MT IL ≤0.60 dB typical 0.20 dB MT RL ≥20 dB

- Environment Conditions
- 40°C~+85°C

- 特点
- 兼容GR-1435、GR-1221
- 传输方式：精度高多路串并联传输方式
- 支持： 40G （4x10G） 、100G （4x25G） 、100G （10X10G）

- 耦合模式
- 以导针对准的无源耦合可实现0°、8°及按客户定制角度

- 插损、回损参数
- MT插损≤0.60 dB；典型插损0.20 dB；MT回损≥20 dB

- 环境状况
- 40°C~+85°C

Item	Specification
Connector A (连接头A)	MPO
Connector B (连接头B)	MT Ferrule
Fiber shape (光纤形状)	Ribbon (带状)
Fiber count (纤芯数)	12F/24F
Fiber type (光纤型号)	OM2,OM3,OM4;
Length (长度)	50~100mm, Customized length available (50-100mm可选)
Length tolerance (长度公差)	±0.5mm



LC Series AOC Assembly (LC 系列 AOC 尾缆)

Passive optical interconnect jumpers can be deployed in QSFP, QSFP+, QSFP28, 100G PSMA, QSFP-DD, OSFP, CXP, CFP, CDFP and any parallel optical transceiver modules, supporting various network types, including Ethernet optical network, Infiniband optical network, and Fiber Channel network.

无源光互连跳线可用于QSFP、QSFP+、QSFP28、100G PSMA、QSFP-DD、OSFP、CXP、CFP、CDFP以及任何并行光收发模块AOC中，支持以太网光网络、无线宽带网络、光纤通道网络等多种网络类型。

Features

GR-1435, GR-1221 compliant
Transmission mode: Multi-channel serial and parallel transmission mode
High accuracy
Support: 40G(4x10G), 100G(4x25G)

Coupling Mode

Passive coupling with guide pins and 0, 8 degrees

IL/RL Specifications

MT IL ≤0.60 dB typical 0.20 dB MT RL ≥20 dB

Environment Conditions

-40°C~+85°C

特点

兼容GR-1435、GR-1221
传输方式：精度高多路串并联传输方式
支持：40G（4x10G）、100G（4x25G）

耦合模式

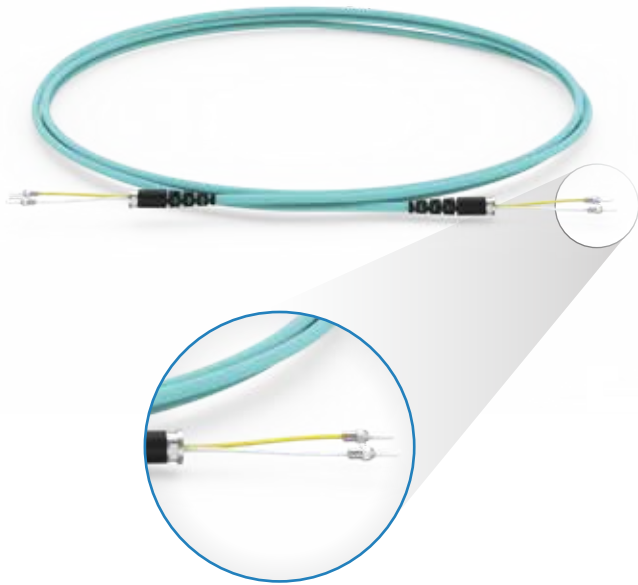
以导针对准的无源耦合可实现0°、8°及按客户定制角度

插损、回损参数

MT插损≤0.60 dB；典型插损0.20 dB；MT回损≥20 dB

环境状况

-40°C~+85°C



Item	Specification
Connector A (连接头A)	2*LC Ferrule
Connector B (连接头B)	2*LC Ferrule
Fiber shape (光纤形状)	Ribbon (带状)
Fiber count (纤芯数)	2F
Fiber type (光纤型号)	OM1, OM2;
Length (长度)	20~50mm, Customized length available (20-50mm可选)
Length tolerance (长度公差)	+0.3/-0mm ~ +0.5/-0mm
Cable diameter (光缆直径)	Φ3.0mm
Cable jacket (光缆护套)	LSZH/OFNR/OFNP/LSZH+OFNR
Cable length (光缆长度)	1M/3M/5M/7M.....50M/100M

Jumper Series AOC Assembly (Jumper 系列 AOC 尾缆)

Passive optical interconnect jumpers could be deployed in QSFP AOC, QSFP28 AOC, QSFP-DD AOC, Micro QSFP AOC, CXP AOC, CFP AOC, CDFP AOC, and any parallel optical transceiver module AOC, supporting network types include Ethernet with optical fiber transmission, Infiniband with optical fiber transmission, and Fiber Channel.

无源光互连跳线可用于QSFP AOC、QSFP28 AOC、QSFP-DD AOC、Micro QSFP AOC、CXP AOC、CFP AOC、CDFP AOC以及任何并行光收发模块AOC中，支持以太网光网络、无线宽带网络、光纤通道网络等多种网络类型。

Features

GR-1435, GR-1221 compliant
Transmission mode: Multi-channel serial and parallel transmission mode
High accuracy
Support: 40G(4x10G), 100G(4x25G), 100G(10X10G), 12x10G, 4x32G, 8X10G, 200G(8X25G), 400G(8X50G), 800G(8X100G)

Coupling Mode

Passive coupling with guide pins and 0, 8 degrees
Active coupling with light source and 0, 8degrees
Passive coupling with guide pins and 90 degrees

IL/RL Specifications

MT IL ≤0.60 dB typical 0.20 dB MT RL ≥20 dB

Environment Conditions

-40°C~+85°C

特点

兼容GR-1435、GR-1221
传输方式：精度高多路串并联传输方式
支持：40G（4x10G）、100G（4x25G）、100G（10X10G）、12x10G、4x32G、8X10G、200G（8X25G）、400G（8X50G）、800G（8X100G）

耦合模式

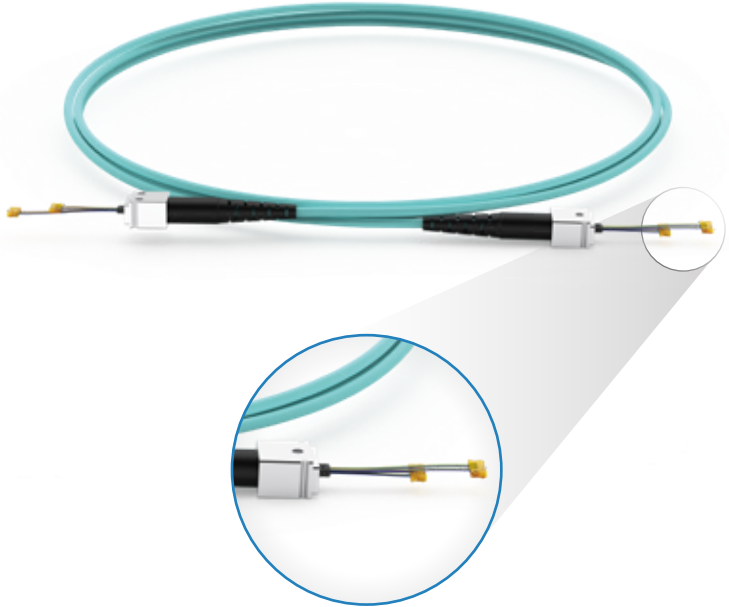
以导针对准的无源耦合可实现0°、8°及按客户定制角度
接通光源的有源耦合可用0°、8°及按客户定制角度
以导针对准的无源耦合也可用90°转角

插损、回损参数

MT插损≤0.60 dB；典型插损0.20 dB；MT回损≥20 dB

环境状况

-40°C~+85°C



Item	Specification
Connector A (连接头A)	Customized Jumper/Lens (可定制Jumper/Lens)
Connector B (连接头B)	Customized Jumper/Lens (可定制Jumper/Lens)
Fiber shape (光纤形状)	Round Cable (圆形光缆)
Fiber count (纤芯数)	8F/12F/16F/24F
Fiber type (光纤型号)	OM2,OM3,OM4,OM5;
Length (长度)	20~60mm, Customized length available (20-60mm可选)
Length tolerance (长度公差)	+0.3/-0mm ~ +0.5/-0mm
Cable diameter (光缆直径)	Φ3.0mm/Φ3.8mm
Cable jacket (光缆护套)	LSZH/OFNR/OFNP/LSZH+OFNR
Cable length (光缆长度)	1M/3M/5M/7M.....50M/100M

MT Series AOC Assembly (MT 系列 AOC 尾缆)

Passive optical interconnect jumpers could be deployed in QSFP AOC, QSFP28 AOC, QSFP-DD AOC, Micro QSFP AOC, CXP AOC, CFP AOC, CDFP AOC, and any parallel optical transceiver module AOC, supporting network types include Ethernet with optical fiber transmission, Infiniband with optical fiber transmission, and Fiber Channel.

无源光互连跳线可用于QSFP AOC、QSFP28 AOC、QSFP-DD AOC、Micro QSFP AOC、CXP AOC、CFP AOC、CDFP AOC以及任何并行光收发模块AOC中，支持以太网网络、无线宽带网络、光纤通道网络等多种网络类型。

- Features
- GR-1435, GR-1221 compliant
- Transmission mode: Multi-channel serial and parallel transmission mode
- High accuracy
- Support: 40G(4x10G), 100G(4x25G), 100G(10X10G), 12x10G, 4x32G, 8X10G, 200G(8X25G), 400G(8X50G), 800G(8X100G)

- Coupling Mode
- Passive coupling with guide pins and 0, 8 degrees

- IL/RL Specifications
- MT IL ≤0.60 dB typical 0.20 dB MT RL ≥20 dB

- Environment Conditions
- 40°C~+85°C

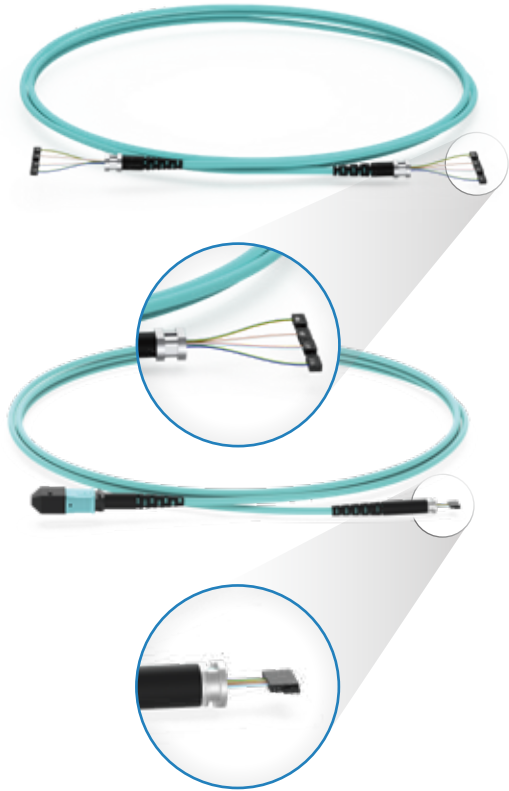
- 特点
- 兼容GR-1435、GR-1221
- 传输方式：精度高多路串并联传输方式
- 支持： 40G（4x10G）、100G（4x25G）、100G（10X10G）、12x10G、4x32G、8X10G、200G（8X25G）、400G（8X50G）、800G（8X100G）

- 耦合模式
- 以导针对准的无源耦合可实现0°、8°及按客户定制角度

- 插损、回损参数
- MT插损≤0.60 dB；典型插损0.20 dB；MT回损≥20 dB

- 环境状况
- 40°C~+85°C

Item	Specification
Connector A (连接头A)	MPO / MT ferrule
Connector B (连接头B)	MT ferrule
Fiber shape (光纤形状)	Round Cable (圆形光缆)
Fiber count (纤芯数)	8F/12F/16F/24F
Fiber type (光纤型号)	OM2,OM3,OM4,OM5;
Length (长度)	20~50mm, Customized length available (20-50mm可选)
Length tolerance (长度公差)	+0.3/-0mm ~ +0.5/-0mm
Cable diameter (光缆直径)	Φ3.0mm/Φ3.8mm
Cable jacket (光缆护套)	LSZH/OFNR/OFNP/LSZH+OFNR
Cable length (光缆长度)	1M/3M/5M/7M 50M/100M



FA Series AOC Assembly (FA 系列 AOC 尾缆)

Passive optical interconnect jumpers could be deployed in QSFP AOC, QSFP28 AOC, QSFP-DD AOC, Micro QSFP AOC, CXP AOC, CFP AOC, CDFP AOC, and any parallel optical transceiver module AOC, supporting network types include Ethernet with optical fiber transmission, Infiniband with optical fiber transmission, and Fiber Channel.

无源光互连跳线可用于QSFP AOC、QSFP28 AOC、QSFP-DD AOC、Micro QSFP AOC、CXP AOC、CFP AOC、CDFP AOC以及任何并行光收发模块AOC中，支持以太网网络、无线宽带网络、光纤通道网络等多种网络类型。

- Features
- GR-1435, GR-1221, GR-1209 compliant
- Transmission mode: Multi-channel serial and parallel transmission mode
- High accuracy
- Support: 40G(4x10G), 100G(4x25G), 100G(10X10G), 12x10G, 4x32G, 8X10G, 200G(8X25G), 400G(8X50G), 800G(8X100G)

- Coupling Mode
- Active coupling with light source and 0, 8, 42.5 degrees as customer designed

- IL/RL Specifications
- MT IL ≤0.60 dB typical 0.20 dB MT RL ≥20 dB

- Environment Conditions
- 40°C~+85°C

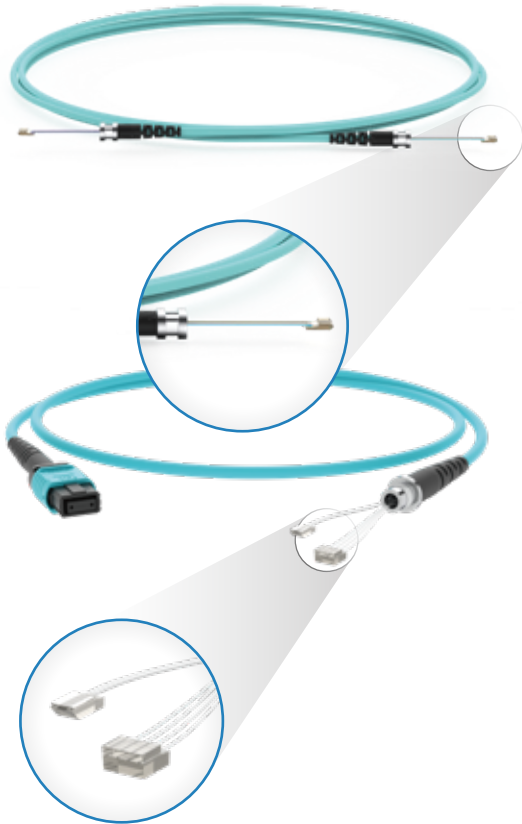
- 特点
- 兼容GR-1435、GR-1221、GR-1209
- 传输方式：精度高多路串并联传输方式
- 支持： 40G（4x10G）、100G（4x25G）、100G（10X10G）、12x10G、4x32G、8X10G、200G（8X25G）、400G（8X50G）、800G（8X100G）

- 耦合模式
- 接通光源的有源耦合可用0°，8°，42.5°以及按客户定制角度

- 插损、回损参数
- MT插损≤0.60 dB；典型插损0.20 dB；MT回损≥20 dB

- 环境状况
- 40°C~+85°C

Item	Specification
Connector A (连接头A)	MPO / Customized Fiber Array (可定制FA)
Connector B (连接头B)	Customized Fiber Array (可定制FA)
Fiber shape (光纤形状)	Ribbon (带状) / Round Cable (圆形光缆)
Fiber count (纤芯数)	8F/12F/16F/24F
Fiber type (光纤型号)	OM2,OM3,OM4,OM5,SM
Length (长度)	20~50mm, Customized length available (20-50mm可选)
Length tolerance (长度公差)	+0.3/-0mm ~ +0.5/-0mm
Cable diameter (光缆直径)	Φ3.0mm/Φ3.8mm
Cable jacket (光缆护套)	LSZH/OFNR/OFNP/LSZH+OFNR
Cable length (光缆长度)	1M/3M/5M/7M.....50M/100M



IDC Cabling Products 数据中心光纤布线产品

Cabling Products focus on optical passive connections, cabling management and high-density pre-terminated connections in the structured fiber cabling system, and we are committed to provide customers with high-precision, low-loss, high-reliability, low-cost, miniaturization and high-compatibility products, solutions and services.

我们致力于为客户提供高密度、高可靠性、低成本的光纤连接以及高可靠性、低损耗的光纤布线解决方案。



PRODUCT SERIES II

MPO Patch Cord for Internal Cabinet 机柜内部连接MPO光跳线

MPO fiber optical patchcord which are highly demanded in fiber optical communication systems with high density optical fiber. KOC's MPO product comes in many types such as distribution and ribbon type. It can be split into 2 to 24 core 0.9mm or 2.0mm fiber branch though a splitter(round or square). The connector type and the lengh of fiber patchcord can be decided by customers. Our product conforms to Telcordia GR-326.IEC and RoHS standards.

Features

- Low insertion loss and back reflection loss
- Good exchangeability
- Good Durability
- High temperature stability
- Standard: Telcordia GR-1435-CORE compliant

Applications

- CATV , and Multimedia
- Telecommunication networks
- Active device interface
- Telecommunication networks
- Gigabit Ethernet
- Data processing networks
- Interconnection for O/E modules
- Premise installations
- Optical switch interframe connection
- Asynchronous Transmission Mode (ATM)

应用

- 有线电视和多媒体
- 电信网络
- 有源设备接口
- 电信网络
- 千兆以太网
- 数据处理网络
- O/E模块的互连
- 房屋安装
- 光开关机架间连接
- 异步传输模式 (ATM)

MPO光纤跳线是高密度光纤通信系统中的高要求光纤跳线。KOC的MPO产品有多种类型，如分布型和带状。它可以通过分支器（圆形或方形）分成2到24芯0.9mm或2.0mm的光纤分支。光纤跳线的连接器类型和长度可由客户决定。我们的产品符合Telcordia GR-326.IEC和RoHS标准。

特点

- 低插入损耗和高回波损耗
- 良好的互换性
- 良好的耐用性
- 高温稳定性
- 标准：Telcordia GR-1435-CORE兼容



Item	Single mode	Multimode
Insertion Loss (插入损耗)	Standard Loss≤0.75dB, typical≤0.5dB Low loss≤0.35dB, typical≤0.2dB	Standard Loss≤0.75dB, typical≤0.5dB Low loss≤0.35dB, typical≤0.2dB
Return Loss (回波损耗)	≥60dB (APC)	≥30dB (PC)
Repeatability	≤0.1dB	
Durability (耐久性)	≤0.2 dB typical change, 500 matings	
Interchangeability	≤0.2dB	
Tensile Strength	> 70N	
Operating Temperature (工作温度)	Operating Temperature -40 to +85°C	

MTP/MPO - LC Patch Cord for QSFP to SFP+ MTP/MPO-LC QSFP to SFP+ 连接缆

The fan-out is applied to connect 12-core MTP / MPO connector to the LC connectors on the trunk cable. KOC provides both standard and customized branch lengths. When the network equipment is close to MTP patch panel frames, the length of fan-out patch cords are minimized. For the hardware and equipment in the same cabinet, the longer patch cords can provide flexibility at any location, and the branch cables can be wound into the vertical cable organizer.

- Features**
- Array connectors with high precision low loss MTP / MPO connectors
 - Smooth upgrading to next generation data center for 800GbE
 - Outer jacket material option: PVC, LSZH and other selected materials
 - Cable flammability rating: OFNR, OFNP, LSZH

- 特点**
- 采用高精度低损耗MPO/MTP光纤活动连接器
 - 可以直接平滑升级到下一代数据中心800G及以上的应用
 - 外护套材质，有PVC、LSZH等多种材料选择
 - 光缆材料，满足OFNR、OFNP、LSZH阻燃等级

Item	Single mode		Multimode	
	MTP / MPO	LC	MTP / MPO	LC
Insertion Loss (插入损耗)	Low loss ≤0.35 dB	≤0.3 dB	Low loss ≤0.35 dB	≤0.3 dB
	Standard Loss ≤ 0.7 dB	/	Standard Loss ≤0.5 dB	/
Return Loss (回波损耗)	≥60 dB	≥50 dB	≥30 dB	≥50 dB
Durability (耐久性)	<0.2 typical change, 500 matings			
Operating Temperature (工作温度)	-40 to +85°C			

MPO分支跳线用于将主干光缆上端接12芯MTP/MPO连接器分支接入到LC连接器。提供标准型和定制两种分支长度。当网络设备紧邻含有MTP连接器面板的配线架时，阶梯型分支跳线可以使光缆的余长降至最低。对于同一个机柜中安装的硬件和设备，较长分支的跳线可以提供任意位置的灵活性，分支部分可以盘入垂直光缆理线器中。



MTP/MPO Trunk Cable MTP/MPO 预端接光跳线

Pre-terminated trunk cable can be from 4 to 144 cores with 8/12-pin MTP connector at both ends. High-quality cable and MPO kits guarantee low insertion loss and high return loss for high-speed network. Its efficient plug-and-play structure greatly reduces the initial installation and routine maintenance costs. Pre-terminated trunk cables can also be used with plugand- play modules or MTP / MPO connector panels to achieve multi-level connection of the extension of the preterminated trunk cable can also be extended by MTP/MPO panel with plug-and play module. The extended trunk cable is to be connected with another panel or fan-out patch cords.

- Features**
- Array of connectors with high precision low loss MTP / MPO connectors
 - MTP/MPO connectors has been assembled at both ends of the cable.
 - The optical performance is 100% tested
 - A B C three polarity wiring options can be chosen from sufficient capacity can provide 4-144 cores fiber connections
 - Cable flammability rating: OFNR, OFNP, LSZH
 - The length of customized cable, trunk cable, extension cable, branch cable can be accurate
 - Traction tube is the optional for easy on-site installation
 - Minimize failures and reduces cabling space and installation time
 - Smooth upgrading to next generation data center for 40GbE and 100GbE
 - Outer jacket material option: PVC, LSZH and other selected materials

- 特点**
- 阵列连接器，采用高精度低损耗MPO/MTP光纤活动连接器
 - 预端接光缆成品两端已经安装好 MTP/MPO连接器，光学性能经工厂100%测试检验，产品两端有专业的抗压与抗拉的设计
 - ABC三种极性接线方式可供选择
 - 容量充足，提供4-144芯系列光纤连接
 - 线缆定制，主干缆，延长缆，分支缆可精准化长度
 - 牵引拉手，可选择配置，便于现场施工
 - 小型化最大限度减少故障并减少布线空间以及减少现场安装时间
 - 可以直接平滑升级到下一代数据中心40GbEt和100GbE的应用
 - 外护套材质，有PVC、LSZH等多种材料选择
 - 光缆防火等级：OFNR、LSZH

预端接主干光缆，支持4到144芯主干光缆，两端采用含导向针的8/12芯MTP连接器，采用高质量的光缆及MPO组件，低插入损耗，高回波损耗，完全可以满足苛刻的高速网络；另外其高效的即插即用结构大大降低了初始安装和日常维护成本。预接端主干光缆也可采用通过即插即用模块或MTP/MPO连接器面板实现多级连接的延长的预端接主干光缆。延长的主干光缆一端与解决方案主干光缆对接，另一端连接解决方案模块或分支跳线，用于IDC和大楼光纤预端接系统，系统满足以太网传输，可用于未来40G/100G系统应用的平滑升级。MPO 预端接光缆有利于快速部署的数据中心和光纤基础设施环境。跨越于MDA，HDA与EDA区域间模块盒或扇出光缆的连接。



Item	Single mode	Multimode
Insertion Loss (插入损耗)	Low loss ≤0.35 dB	Low loss ≤0.35 dB
	Standard Loss ≤0.7 dB	Standard Loss ≤0.5 dB
Return Loss (回波损耗)	≥60 dB	≥30 dB
Durability (耐久性)	<0.2 typical change, 500 matings	
Operating Temperature (工作温度)	Operating Temperature -40 to +85°C	
40G	8 Fiber	
100G	20 Fiber	

MPO Polarity Switchable Patch Cord
MPO 可换极性光跳线

The MPO Switchable Connector is a unique design that allows the use of round style. The housing of the MPO Switchable Connector can be Polarity change in the field without any tool, and simple gender change without taking off the housing. This connector allows the fiber polarity to be switched at the time of cable assembly installation without having to reterminate the connectors. This design is commonly used in data centers.

Features

- Low insertion loss and back reflection loss
- Polarity change in the field without any tool
- Simple polarity change without taking off the housing
- Good exchangeability
- Good Durability
- High temperature stability
- Various boots types available
- Standard: Telcordia GR-1435-CORE compliant

特点

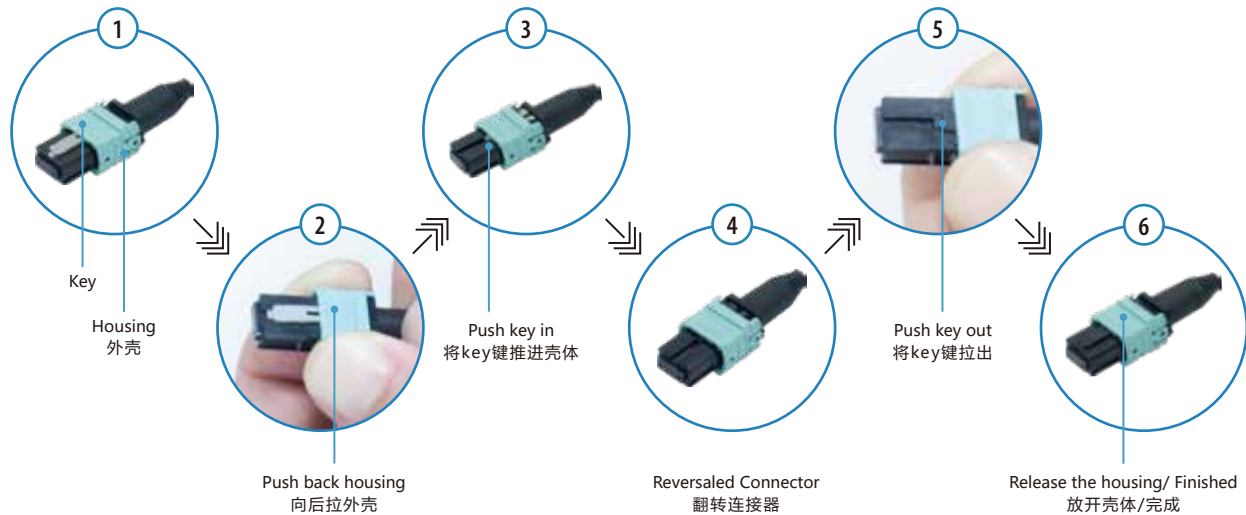
- 低插损，高回损
- 无需任何工具可实现现场极性转换
- 互换性好
- 重复性好
- 良好的温度稳定性能
- 各种尾套可选择
- 符合Telcordia GR-1435-CORE标准

极性可换MPO连接器是一种独特的设计，MPO极性可换连接器的外壳可以在不使用任何工具的情况下进行极性转换，而不需要去掉外壳即可实现简单的极性改变。该连接器允许在光缆现场安装时切换光纤极性，而无需重新终止连接器。这种设计使数据中心现场施工中操作更方便。



Item	Single mode		Multimode	
	Standard	Low loss	Standard	Low loss
Insertion Loss (插入损耗)	≤0.75 dB	≤0.35 dB	≤0.5 dB	≤0.35 dB
	typical≤0.5 dB	typical≤0.2 dB	typical≤0.35 dB	typical≤0.2 dB
Return Loss (回波损耗)	≥60 dB (APC)		≥30 dB (PC)	
Repeatability (重复性)	≤0.1dB			
Durability (耐久性)	≤0.2 dB typical change, 500 matings			
Interchangeability (互换性)	≤0.2dB			
Tensile Strength (拉力)	> 70N			
Operating Temperature (工作温度)	-40 to +85℃			

Switch Polarity (Sample: Aqua housing/3.0mm short mini boot)



Polarity Switchable Duplex LC Patch Cord
可换极性双芯一体式LC光跳线

Duplex Uniboot connector patch cord is designed by KOC. This highly flexible duplex cable reduces cabling congestion and improves patch cord management and installation, it improves cabling space.

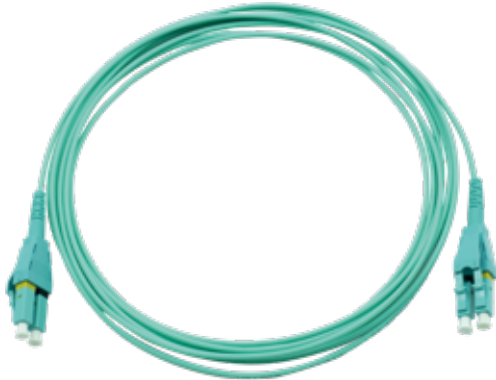
解决方案跳线提供自行设计的双芯Uniboot连接器，这种高度灵活的2芯单根光缆减少了光缆拥塞，提高跳线管理和敷设的便利性，并改善了配线空间。

Features

- Fiber polarity A -> A or A -> B can be switched by installer
- Thin round cable
- Duplex connectors with single boot which is highly integrated and easy for installation
- Standard compatible, simplex / duplex LC connectors. Other options: SC / FC
- High performance, 100% tested
- Cable flammability rating: OFNR, OFNP
- Customized patch cord length
- Two notches on the connectors for easy for installation and uninstallation
- Mini and flexible boot is available. Boot can be turned to any angle
- Quick deployment reduces installation time
- Fast upgrading supports parallel transmission system
- Outer jacket material, PVC, LSZH and other materials selection

特点

- 极性A -> A or A -> B 可现场装换
- 线缆，采用圆形细光缆
- 双工单尾套，高度集成，方便施工
- 标准兼容，双工LC连接器
- 传输性能，100%工厂测试
- 连接器两端有两个缺口，容易拆装
- Mini 尾套和任意角度可弯曲尾套可选
- 快速部署，减少现场施工时间
- 快速升级，支持并行传输系统应用
- 外护套材质，有PVC、LSZH 等多种材料选择
- 光缆材料，满足OFNR、OFNP阻燃等级
- 跳线长度可定制



Item	Single mode	Multimode
Insertion Loss (插入损耗)	≤0.30 dB	≤0.30 dB
Return Loss (回波损耗)	≥50 dB (PC) , ≥60 dB (APC)	/
Durability (耐久性)	<0.20 dB typical change, 1000 matings	/
Operating Temperature (工作温度)	-40 to +85°C	-40 to +85°C



High Density LC/MPO Duplex Pull-Tap Patch Cord 高密度拉扣式双芯LC/MPO光跳线

The High Density LC/MPO Duplex Uni-boot Patch Cord is available for high-density fiber patch panels. The highly flexible duplex cable reduces cable congestion and can be plug in and out of the panel easily and quickly so that it improves management and installation convenience.

Features

- Thin round cable
- Duplex LC/MPO with latched uniboot, easy for plug in and out among panels
- Standard compatible, duplex LC connectors/MPO;
- High transmission, 100% tested under IEC standards
- Quick deployment reduces installation time
- Fast upgrading supports parallel transmission system
- Outer jacket material, PVC, LSZH and other materials selection
- Cable flammability rating: OFNR, OFNP
- Customized patch cord length

特点

- 采用圆形细光缆
- 拉扣式双芯LC连接器结构，方便在密集型光纤配线架中插拔使用
- 标准兼容，单工LC/双工LC/MPO连接器
- 传输性能一致，符合国际标准，100%工厂测试
- 快速部署，减少现场施工时间
- 快速升级，支持并行传输系统应用
- 外护套材质，有PVC、LSZH 等多种材料选择
- 光缆材料，满足OFNR、OFNP阻燃等级
- 跳线长度可定制

解决方案跳线推出拉扣式双芯LC/MPO连接器可供选择，适用于密集型高密度光纤配线架，高度灵活的2芯单根光缆减少了光缆拥塞，并且在高密度配线架中可快速、便捷的插拔连接器，进一步提高了跳线管理和敷设的便利性。



Item	Single mode	Multimode
Insertion Loss (插入损耗)	≤0.30 dB	≤0.30 dB
Return Loss (回波损耗)	≥50 dB (PC) , ≥60 dB (APC)	/
Durability (耐久性)	<0.20 dB typical change, 1000 matings	/
Operating Temperature (工作温度)	-40 to +85°C	-40 to +85°C

High Density LC/MPO Push-pull Type Patch Cord 高密度推拉尾套LC/MPO光跳线

The High Density LC/MPO Push-pull type Patch Cord is available for high-density fiber patch panels. The highly flexible duplex cable reduces cable congestion and can be plug in and out of the panel easily and quickly so that it improves management and installation convenience.

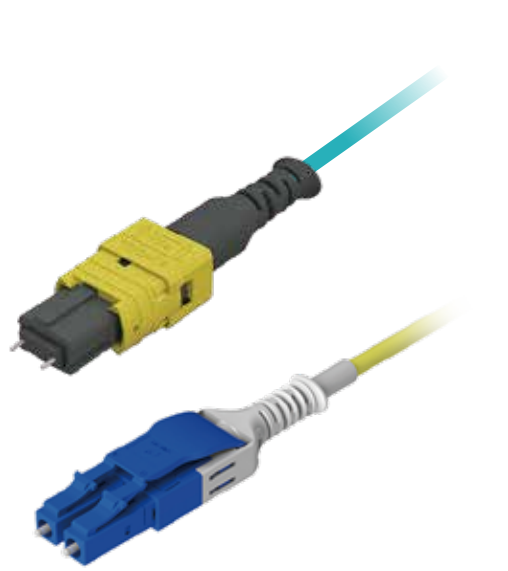
Features

- Thin round cable
- Duplex LC/MPO with latched uniboot, easy for plug in and out among panels
- Standard compatible, duplex LC connectors/MPO;
- High transmission, 100% tested under IEC standards
- Quick deployment reduces installation time
- Fast upgrading supports parallel transmission system
- Outer jacket material, PVC, LSZH and other materials selection
- Cable flammability rating: OFNR, OFNP
- Customized patch cord length

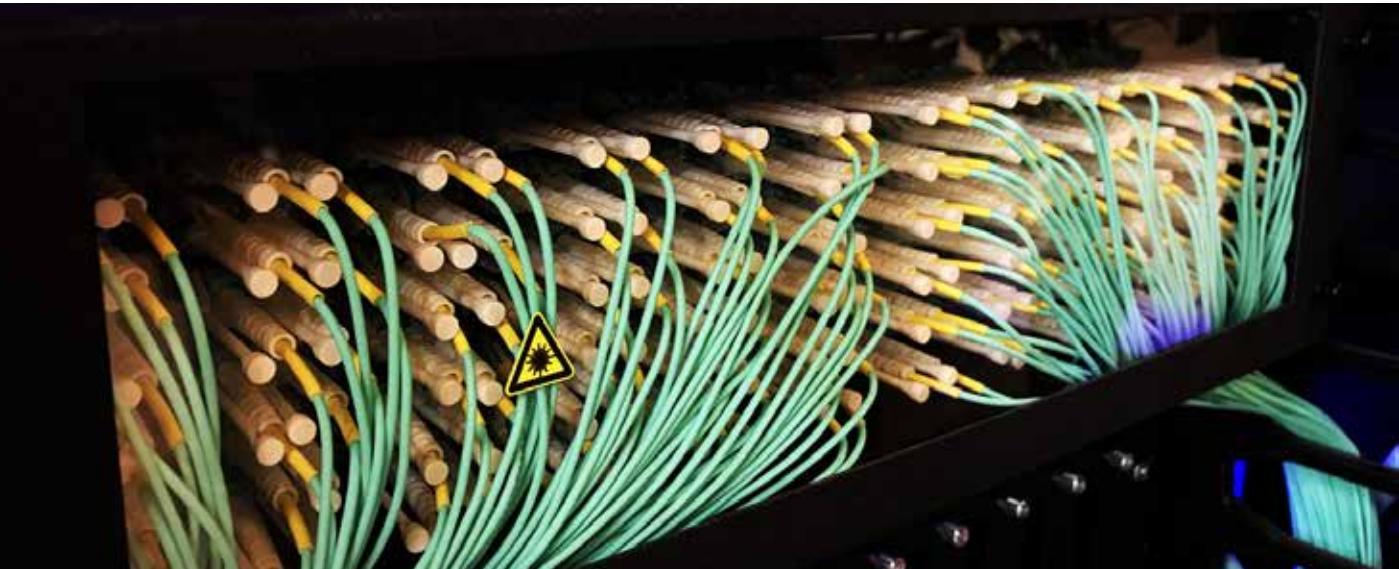
特点

- 采用圆形细光缆
- 推拉式双芯LC/MPO连接器结构，方便在密集型光纤配线架中插拔使用
- 标准兼容，单工LC/双工LC/MPO连接器
- 传输性能一致，符合国际标准，100%工厂测试
- 快速部署，减少现场施工时间
- 快速升级，支持并行传输系统应用
- 外护套材质，有PVC、LSZH 等多种材料选择
- 光缆材料，满足OFNR、OFNP阻燃等级
- 跳线长度可定制

解决方案跳线推出推拉式双芯LC/MPO连接器可供选择，适用于密集型高密度光纤配线架，高度灵活的2芯单根光缆减少了光缆拥塞，并且在高密度配线架中可快速、便捷的插拔连接器，进一步提高了跳线管理和敷设的便利性。



Item	Single mode	Multimode
Insertion Loss (插入损耗)	≤0.30 dB	≤0.30 dB
Return Loss (回波损耗)	≥50 dB (PC) , ≥60 dB (APC)	/
Durability (耐久性)	<0.20 dB typical change, 1000 matings	/
Operating Temperature (工作温度)	-40 to +85°C	-40 to +85°C



OM5 Product Series
OM5 系列产品

The OM5 fiber has been approved as a new multimode optical fiber for high-speed data center applications. and is designed to support at least four low-cost wavelengths in the 850-950 nm range, enabling optimal support of emerging Shortwave Wavelength Division Multiplexing (SWDM) applications that reduce parallel fiber count by at least a factor of four to allow continued use of just two fibers (rather than eight) for transmitting 40 Gb/s and 100 Gb/s and reduced fiber counts for higher speeds. SWDM has many applications in Data Centers and other applications.OM5 cabling fully compatible and intermateable with OM3 and OM4 cabling. The related OM5 patchcord, Cassette and Panels has attracted wide attention in the industry, and the patchcord cover also all type of fiber connectors.

- Features**
- Wavelength Range 850-953 nm
 - Low insertion loss and back reflection loss
 - High precision alignment
 - Good exchangeability
 - High temperature stability
 - Compatible with OM3 and OM4 patchcord

- Application**
- Telecommunication networks
 - Data Center
 - CATV , and Multimedia
 - Optical switch interframe connection
 - Asynchronous Transmission Mode (ATM)

- 特点**
- 波长范围850-953nm
 - 低插入损耗
 - 高回波损耗
 - 良好的互换性
 - 良好的温度稳定性能
 - 与OM3，OM4系列产品兼容

- 应用**
- 光通信网络
 - 数据中心
 - CATV 和多媒体
 - 光交换连接器网络
 - ATM

OM5光纤已被批准用于高速数据中心应用的新型多模光纤，其设计支持850-950纳米范围内至少四个低成本波长，能够为新兴短波波分复用（SWDM）技术提供最佳支持。该技术将并行光纤数量至少减少四分之三，使得40Gb/s和100Gb/s传输仅需两根光纤（而非八根），并在更高速率传输中显著降低光纤使用量。SWDM技术在数据中心及其他领域具有广泛应用前景。OM5布线系统与OM3、OM4完全兼容并可互联互通，相关OM5跳线、光纤盒与配线架产品已引起行业广泛关注，且跳线覆盖所有类型光纤连接器。



Item	Specification
Fiber Type (光纤类型)	OM5 (50μm multimode fiber)
Wavelength Range (波长范围)	850 - 953nm
Jacket Color (外护套颜色)	Lime Green
Furcation Color (分支护套颜色)	Lime Green
Connector Type (连接器类型)	MPO/MTP/LC/SC/FC/Customized
Connector Color (连接器颜色)	Customized
Regulatory Compliance (规范标准)	IEC 60793-2-10/TIA-492AAAE/RoHS/ISO9001
Operation Temperature (工作温度)	-40 to +85°C

Cassette and Adapter



Armored MPO Patch Cord
MPO 铠装缆

- Features**
- Good mechanical and environmental characteristics.
 - The flame retardant characteristics meet the requirements of relevant standards.
 - The mechanical characteristics meet the requirements of relevant standards.
 - It is soft, flexible, easy to lay and splice, and has a large capacity for data transmission.
 - Meet various requirements of the market and customers.
 - Armored protective tube.

- 特点**
- 良好的机械和环境特性。
 - 阻燃特性符合相关标准的要求。
 - 机械特性符合相关标准的要求。
 - 它柔软、灵活、易于铺设和拼接，并具有大的数据传输容量。
 - 满足市场和客户的各种要求。
 - 铠装保护管。



Item	Single mode	Multimode
Insertion Loss (光纤类型)	≤0.75dB	≤0.50dB
Return Loss (波长范围)	≥50dB(PC), ≥60dB(APC)	≥30dB(PC)
Durability (耐久性)	< 0.20dB typical change, 1000matings	
Operation Temperature (工作温度)	-40 to +85°C	

MTP/MPO Polarity Configurations 极性说明



12 Core Patchcord (12芯跳线)

End A		→→→	Polarity A	→→→	End B	
1/	Blue				1/	Blue
2/	Orange				2/	Orange
3/	Green				3/	Green
4/	Brown				4/	Brown
5/	Grey				5/	Grey
6/	White				6/	White
7/	Red				7/	Red
8/	Black				8/	Black
9/	Yellow				9/	Yellow
10/	Purple				10/	Purple
11/	Pink				11/	Pink
12/	Aqua				12/	Aqua

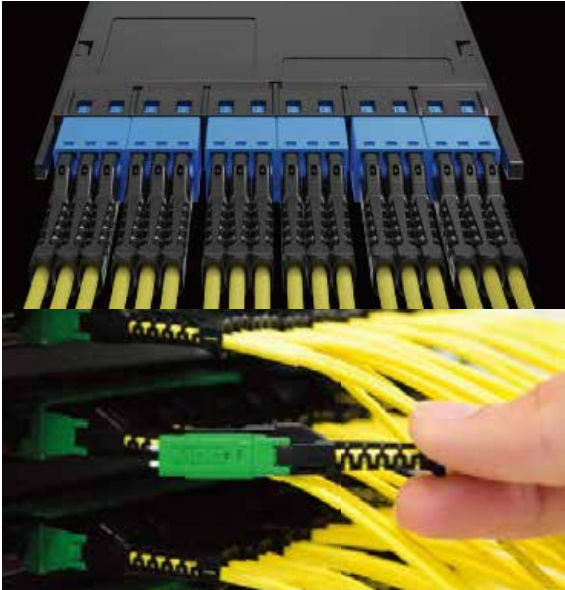
End A		→→→	Polarity B	→→→	End B	
1/	Blue				12/	Blue
2/	Orange				11/	Orange
3/	Green				10/	Green
4/	Brown				9/	Brown
5/	Grey				8/	Grey
6/	White				7/	White
7/	Red				6/	Red
8/	Black				5/	Black
9/	Yellow				4/	Yellow
10/	Purple				3/	Purple
11/	Pink				2/	Pink
12/	Aqua				1/	Aqua

End A		→→→	Polarity C	→→→	End B	
1/	Blue				1/	Orange
2/	Orange				2/	Blue
3/	Green				3/	Brown
4/	Brown				4/	Green
5/	Grey				5/	White
6/	White				6/	Grey
7/	Red				7/	Black
8/	Black				8/	Red
9/	Yellow				9/	Purple
10/	Purple				10/	Yellow
11/	Pink				11/	Aqua
12/	Aqua				12/	Pink

MDC Cable Assembly

MDC connector is a Very Small Form Factor (VSFF) duplex optical connector designed for termination of multi-mode and singlemode fiber cables up to 2.0mm in diameter. The MDC connector is manufactured with proven 1.25mm ferrule technology used in industry standard LC optical connectors. Individual connector access in the most extremely dense connector environments is easily accomplished using the revolutionary DirectConec™ push-pull boot technology.

MDC连接器是一款超小型双芯光纤连接器，支持端接直径不超过2.0毫米的多模与单模光缆。该产品沿用在行业标准LC光纤连接器中久经验证的1.25毫米陶瓷插芯技术，确保卓越的光学性能。其创新的DirectConec™推拉式护套技术，即使在极端高密度布线环境中也能实现单个连接器的便捷操作。



Quick and Simple Polarity Reversal

The polarity reversal of the MDC connector is effortless and does not expose or twist delicate fibers during the process. To change polarity, pull the boot from the connector housing, rotate the boot 180 degrees, and re-assemble the boot assembly back onto the connector housing. Polarity marks on the top and side of the connector and the MDC logo provide notification of reversed connector polarity.



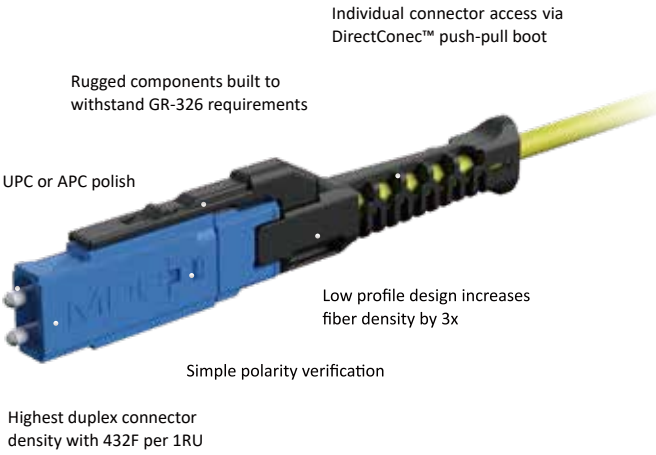
Separate connector housing from boot



Rotate 180°



Re-attach boot to connector housing



Features:

- 3x fiber cabling density over LC connectors, providing 216 duplex connectors (432 fibers) within 1 RU
- DirectConec™ push-pull boot for effortless connector insertion and extraction
- Simple polarity reversal with no exposed fibers
- Meets IEC Attenuation Grade B random mating requirements (0.12 dB mean, 0.25 dB maximum for ≥ 97% of the connectors)
- Telcordia GR-326 and TIA-568 compliant
- Designed for cables up to 2.0mm OD
- Multi-mode, Singlemode and Singlemode APC available

产品特性:

- 布线密度达LC连接器的3倍，1U空间支持216个双工连接器（432芯）
- 采用DirectConec™推拉式护套，实现无忧插拔
- 极性反转简易操作，全程光纤零裸露
- 满足IEC B级随机配接要求（97%以上连接器衰减值：均值≤0.12dB，最大值≤0.25dB）
- 符合Telcordia GR-326与TIA-568标准
- 适用外径≤2.0mm光缆
- 提供多模/单模/单模APC全系列抛光类型

快速极性反转功能

MDC连接器的极性反转操作简便安全，全程无需触及或扭转精密光纤。只需三个步骤即可完成极性转换：
1. 将护套从连接器主体向外轻拉分离
2. 将护套旋转180度
3. 将护套重新装配至连接器主体
连接器顶部与侧面的极性标识及MDC商标，共同构成可视化的极性状态指示系统。

CS Connectors is a registered trademark of SENKO.

CS Cable Assembly 1-Channel (2F) / 2.0mm and 3.0mm Cable

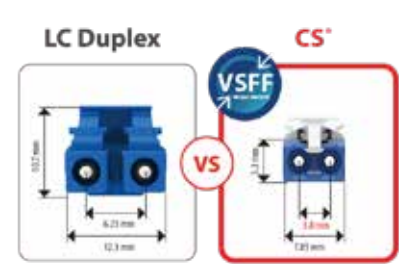
The CS® connector is the ultimate Base-2 connector combining ‘best-in-class’ packing density with carrier-grade performance and reliability. Designed and optimized for next-generation data rates, the CS® connector offers network operators the chance to densify their existing legacy infrastructure whilst at the same time providing an upgrade path to 400G and beyond.

The CS® Standard connector is suitable for termination to either 2.0 mm or 3.0 mm round cable that incorporates a ruggedized jacket and internal strain relief.

The CS® Standard connector has an integrated ‘push-pull’ boot that simplifies insertion and removal of the connector even in dense patch panels where finger access is limited. A gang-clip can be added to four individual CS® connectors allowing them to be patched simultaneously to either adapters or 4-channel transceivers (subject to product selection).

CS®连接器是终极Base-2解决方案，集业界领先的集成密度与运营商级性能可靠性于一身。该产品专为下一代数据传输速率优化设计，既能帮助运营商提升现有传统基础设施的端口密度，又为向400G及更高速率升级提供清晰演进路径。

标准版CS®连接器兼容2.0/3.0毫米圆形铠装光缆，配备加强型护套与内部应力消除结构。集成推拉式护套设计，即使在手指难以触及的高密度配线架中也能实现快速插拔操作。通过选配群组夹扣，可将四个独立CS®连接器组合成组，实现与适配器或四通道光模块的同步对接（具体取决于产品选型）。



- Features**
- IEC random mating Grade B
 - Very Small Form Factor (VSFF) connector, 4 times fiber cabling density over duplex LC
 - Duplex design utilizes a unique push-pull boot for simple installation and removal
 - Optimized for 400G data rates with QSFP-DD, OSFP and SFP-DD transceivers
 - Up to 4 x CS® connectors per transceiver
 - Allows simple transceiver breakout in spine/leaf architectures
 - Combines two 1.25 mm ceramic ferrules
 - Pre-assembled design for fast assembly

- Application**
- High-density patching
 - QSFP-DD, OSFP and SFP-DD transceiver links for higher data rates
 - Hybrid Base-2 cable assemblies combining CS® and other duplex connector types
 - Hyperscale, edge, enterprise and colocation data centers

- 产品特性**
- 符合IEC随机配接B级标准
 - 超小型连接器设计，光纤布线密度较双工LC提升4倍
 - 双工结构配备独创推拉式护套，实现快速插拔操作
 - 针对QSFP-DD/OSFP/SFP-DD光模块优化，完美支持400G传输速率
 - 单光模块最高支持4个CS®连接器对接
 - 实现脊叶架构中光模块的便捷分支部署
 - 集成两枚1.25mm陶瓷插芯
 - 预组装结构支持现场快速部署

- 应用领域**
- 高密度光纤配线系统
 - 支持QSFP-DD/OSFP/SFP-DD光模块链路，满足更高速率传输需求
 - 支持CS®与其他双工连接器混合的Base-2线缆组方案
 - 超大规模数据中心、边缘计算节点、企业数据中心及托管数据中心

40% SMALLER THAN LC

Compared to the legacy LC connector, CS has a narrower and shorter design, making it ideal for applications such as cassettes, modules, patch panels, and switches where higher density is required. Additionally, the CS’ s compact and sturdy design makes it a suitable choice for high-density cable assemblies that need to fit into tight spaces, and for easy insertion through ducts and conduits.

相比传统LC连接器，CS连接器体积缩小40%，采用更窄更短的结构设计，成为高密度应用场景的理想选择。该紧凑型坚固设计特别适用于：光纤配线架插框、光模块、配线面板及网络交换机等高密度设备，同时能完美适配狭窄空间内的高密度线缆组需求，并便于穿管施工。

Item	Single-mode(UPC)		Single-mode(APC)		Multimode(MM)
	SM Premium Low Loss	SM Premium	SM Premium Low Loss	SM Premium	Premium
Typical Insertion Loss (dB)*	0.05	0.08	0.07	0.12	0.05
Max Insertion Loss (dB)*	0.15	0.20	0.15	0.25	0.15
Typical Return Loss (dB)	≥55		≥65		≥25
Operating Temperature (°C)	-40 to +75				
Durability	<0.2dB typical change, 500 mating’ s				
Ferrule Ø	125.5µm				127µm

SN Connectors is a registered trademark of SENKO.

SN Cable Assembly 1-Channel (2F) / 2.0mm and 3.0mm Cable

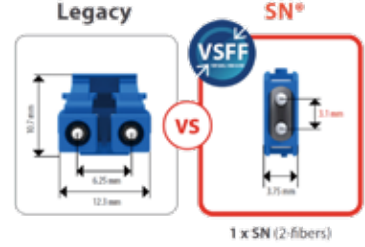
The SN® connector is the ultimate Base-2 connector combining ‘best-in-class’ packing density with carrier-grade performance and reliability. Designed and optimized for next-generation data rates, the SN® connector offers network operators the chance to densify their existing legacy infrastructure whilst at the same time providing an upgrade path to 400G and beyond.

The SN® Standard connector is suitable for termination to either 1.6 mm or 2.0 mm round cable that incorporates a ruggedized jacket and internal strain relief.

The SN® Standard connector has an integrated ‘push-pull’ boot that simplifies insertion and removal of the connector even in dense patch panels where finger access is limited. A gang-clip can be added to four individual SN® connectors allowing them to be patched simultaneously to either adapters or 4-channel (8 fibers) transceivers (subject to product selection).

SN®连接器作为终极Base-2解决方案，集业界顶尖的集成密度与运营商级性能可靠性于一体。该产品专为下一代数据传输速率优化设计，在帮助网络运营商提升现有传统基础设施密度的同时，更提供向400G及更高速率升级的清晰路径。

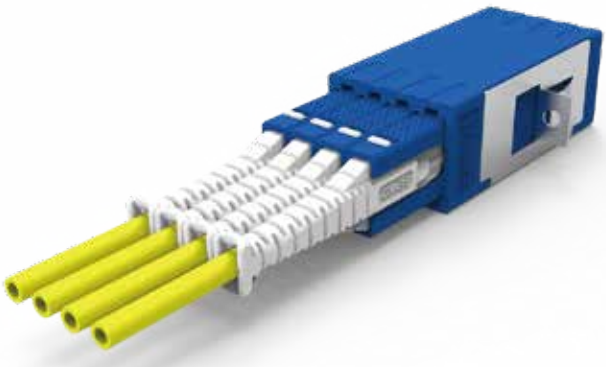
标准版SN®连接器支持1.6/2.0毫米两种规格圆形铠装光缆的端接，其加强型护套与内部应力消除结构确保机械可靠性。集成式推拉护套设计使连接器即使在手指难以触及的高密度配线架中也能实现便捷插拔。通过选配群组夹扣，可将四个独立SN®连接器组合成组，实现与适配器或四通道（8纤）光模块的同步对接（具体取决于产品选型配置）。



The SN connector is a Very Small Form Factor (VSFF) duplex optical connector designed for termination of single-mode and multi-mode fiber cables up to 2.0mm in diameter. The SN connector is manufactured using the same proven 1.25mm ferrule technology as the industry-standard LC connector, but with significantly reduced outer dimensions. This reduced footprint rewards network operators with a three-fold increase in packing density across all of their passive and active hardware.



Item	Single-mode(UPC)		Single-mode(APC)		Multimode(MM)
	SM Premium Low Loss	SM Premium	SM Premium Low Loss	SM Premium	Premium
Typical Insertion Loss (dB)*	0.05	0.08	0.07	0.12	0.05
Max Insertion Loss (dB)*	0.15	0.20	0.15	0.25	0.15
Typical Return Loss (dB)	≥55		≥65		≥25
Operating Temperature (°C)	-40 to +75				
Durability	<0.2dB typical change, 500 mating' s				
Ferrule Ø	125.5µm				127µm



- Features**
- Meets IEC random mating Grade B
 - Very Small Form Factor (VSFF) connector, 3 x fiber cabling density over Duplex LC
 - Unique push-pull boot for simple installation and removal
 - Optimized for 400G data rates with QSFP-DD, OSFP and SFP-DD transceivers
 - Up to 4 x SN connectors per transceiver
 - Direct transceiver breakout in spine/leaf architectures
 - Combines two 1.25 mm ceramic ferrules
 - Easy identification of the connector alignment key

- Application**
- High-density patching
 - QSFP-DD, OSFP and SFP-DD transceiver links for higher data rates
 - Hybrid Base-2 cable assemblies combining SN and other duplex connector types
 - Hyperscale, edge, enterprise and colocation data centers

- 产品特性**
- 符合IEC随机配接B级标准
 - 超小型连接器设计，光纤布线密度较双工LC提升4倍
 - 双工结构配备独创推拉式护套，实现快速插拔操作
 - 针对QSFP-DD/OSFP/SFP-DD光模块优化，完美支持400G传输速率
 - 单光模块最高支持4个CS®连接器对接
 - 实现脊叶架构中光模块的便捷分支部署
 - 集成两枚1.25mm陶瓷插芯
 - 预组装结构支持现场快速部署

- 应用领域**
- 高密度光纤配线系统
 - 支持QSFP-DD/OSFP/SFP-DD光模块链路，满足更高速率传输需求
 - 支持CS®与其他双工连接器混合的Base-2线缆组方案
 - 超大规模数据中心、边缘计算节点、企业数据中心及托管数据中心

SL Connector

Features

Four-core centering structure designed within the SC single-fiber interface dimensions
 100% higher transmission density than LC duplex in the same panel space
 Specially designed for Tx/Rx physical separation for AOC and MPO patch cables
 Universal 1.25mm ferrule design
 Optional push-pull latch structure for high-density installation applications
 IEC random mating interoperability tested to Grade B level
 Compliant with GR-326 reliability testing

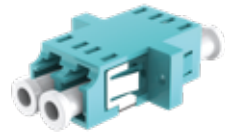


VS.



LC Duplex connector

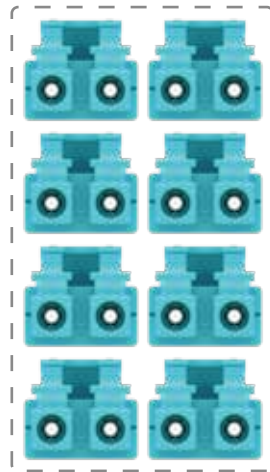
SL Quad connector



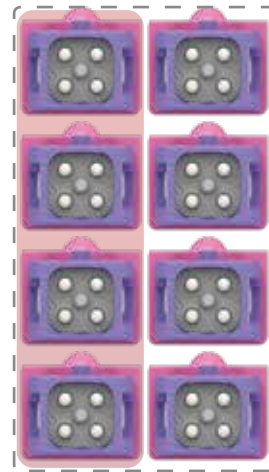
Adapter



Compatible with
LC duplex adapter panels
Easy upgrade for data centers



Connector



Module

100%

Transmission density
increases by 100% over LC.



24 Cores Module



48 Cores Module

Easily upgraded from
24-fiber LC adapter panel to a 48-fiber SL adapter panel
without changing many hardware.

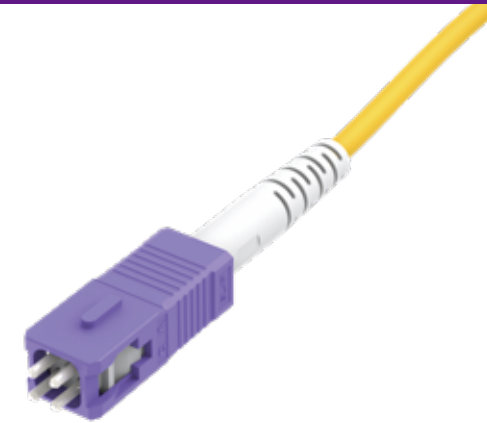
96
Cores

1U **LC** Patch Panel
Max. support for 96 cores

Panel

1U **SL** Patch Panel
Max. support for 192 cores

192
Cores



Universal 1.25mm ferrule



With push-pull latch
Easy operation in high-density environments.

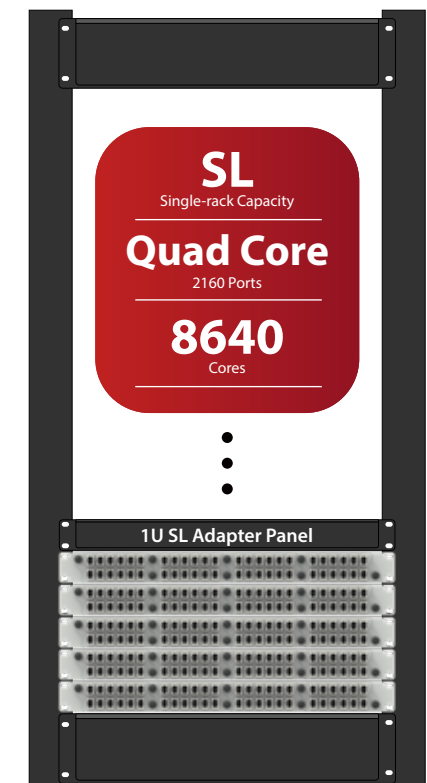
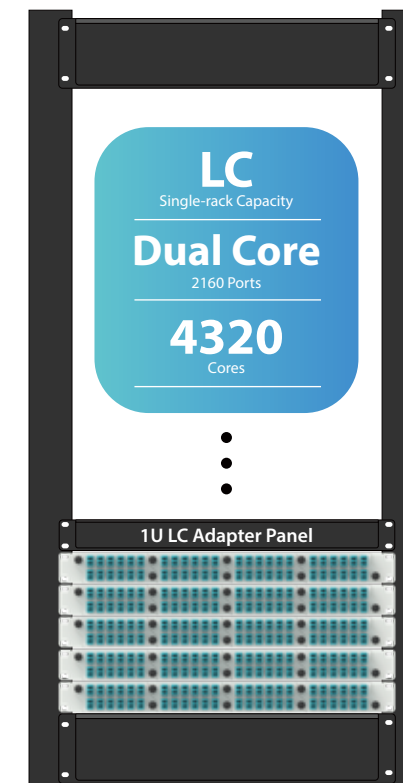


Integrated with AOC modules for applications
with 8 core or 16 core configurations



New MPO-LC cabling systems

45U Cabinet Cabling Comparison



Adapter Panel

The adapter panel provides fast and efficient port management for MTP/MPO or LC/SC connectors. It is applicable for next-generation high-density data center solutions. The panel reaches the connection and deployment of the patch cords and pigtailed between the devices and patch panels. The panel is used with the field mounting connectors, or with the pre-terminated cables device to the interconnect hardware.

适配器面板为MTP/MPO及LC/SC连接器提供高效快捷的端口管理解决方案，专为新一代高密度数据中心架构设计。该面板可实现设备与配线架之间跳线及尾纤的快速连接与部署，既能配合现场端接连接器使用，也可与预端接光缆设备无缝对接互联硬件。



Features

- High-density ports, single adapter panel Configurable with 24 IP adapter ports or 6 SC adapter ports or 6 MPO / MTP adapter ports;
- High-quality cold-rolled steel, compliant with European ROHS standards
- Clear connector coding mark
- Flexible structure, adapter port configuration can be flexibly selected
- Applicable to all types of industrial standard adapters
- Cartridge installation for easy installation
- Easy to upgrade to 40G / 100G network without changing the fiber management structures
- Compliant with TIA / EIA604-D-2007, IEC61754-7-2008 series

特点

- 高密度端口配置
- 单个适配器面板支持以下模块化配置：24个LC适配器端口，6个SC适配器端口，6个MPO/MTP适配器端口

- 坚固结构与环保标准
- 采用优质冷轧钢板制造，全面符合欧盟ROHS环保指令

- 智能化设计特征
- 清晰的连接器编码标识，适配器端口支持灵活选配，兼容所有工业标准适配器类型，采用卡匣式安装结构，简化装配流程

- 平滑升级能力
- 无需改造光纤管理架构，即可直接升级至40G/100G网络

- 标准合规性
- 完全符合TIA/EIA-604-D-2007与IEC 61754-7-2008系列标准

1U - 4U Modular MPO-LC Distribution Frame 模块式MPO-LC光纤配线箱

According to the needs of data center setup, we recommend to use HDF high-density rack-mounted cabinet; for data center with MDA, IDA or HDA wiring area fiber trunk connection and management. It is installed in 19-inch rack or cabinet with Pre-terminated MPO adapter module or MPO adapter front panels. This economical design of Highdensity and module reduces the number of frames, saving valuable rack space.

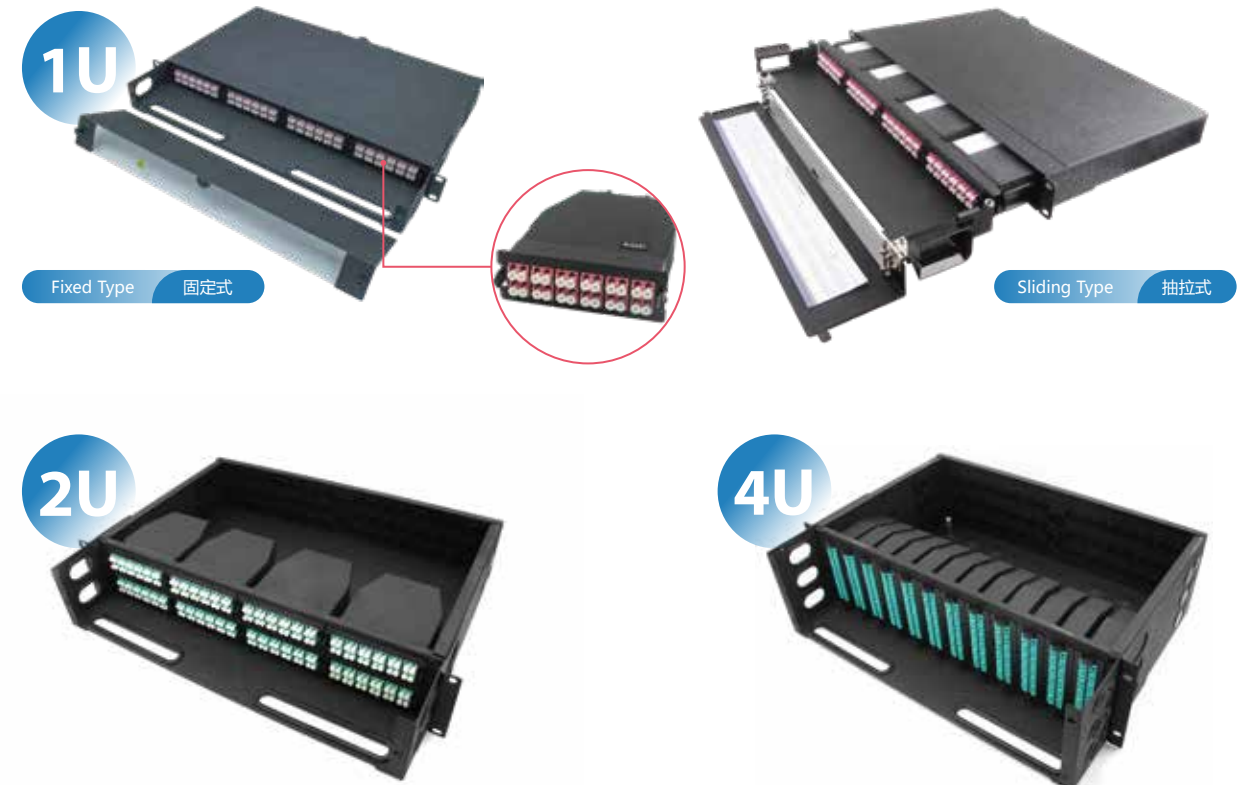
Features

- 1U optical fiber patch panel can accommodate 4 MPO pre-terminated cassettes. If MPO panels are installed, the maximum cores can reach 288
- 2U optical fiber patch panel can accommodate 8 MPO pre-terminated cassettes. If MPO panels are installed, the maximum cores can reach 576
- 4U optical fiber patch panel can accommodate 12 MPO pre-terminated cassettes. If MPO panels are installed, the maximum cores can reach 864
- Made of high quality cold rolled steel plate;
- Multiple cable entry and patch cord exit for easy operation and management
- More than four times the density of traditional patch panels, greatly save the space of the cabinet
- Compliant with TIA / EIA604-D-2007, IEC61754-7-2008 series standards
- Modular design, 19-inch rack mount, easy for future expansion

根据数据中心建设需要，推HDF高密度机架式光纤配线架，用于数据中心MDA，IDA 或HDA配线区域光纤主干连接及配线管理，安装于19英寸机架及机柜中，可安装预连接MPO转接模块或MPO适配器前面板。高密度，模块化设计，这种经济的设计减少了需要安装的配线架数量，节约了宝贵的机架空间。

特点

- 模块化设计，19英寸机架安装，方便后期扩容
- 1U光纤配线箱可安装4个MPO预端接盒，端接盒安装双工 LC适配器最大可管理光纤芯数达96芯，端接盒安装单工SC适配器最大可管理光纤达 48 芯，如安装MPO 适配器板最大可管理光纤达 288 芯。
- 2U光纤配线箱可安装8个MPO预端接盒，端接盒安装双工 LC适配器最大可管理光纤芯数达192芯，端接盒安装单工SC适配器最大可管理光纤达96芯，如安装MPO适配器板最大可管理光纤达576芯。
- 4U光纤配线箱可安装12个MPO预端接盒，端接盒安装双工LC适配器最大可管理光纤芯数达288芯，端接盒安装单工SC适配器最大可管理光纤达144芯，如安装MPO适配器板最大可管理光纤达864芯。
- 采用优质冷轧钢板制作
- 多个光缆进线与跳线出口位置，方便操作管理
- 是传统熔纤配线架的密度的四倍，大大节约机柜的空间，提高机柜利用率，为数据中心建设创造价值，采用模块化的结构升级维护便利
- 满足TIA/EIA604-D-2007、IEC61754-7-2008系列标准



High Density MPO Pre-terminated Patch Panel
高密度MPO预端接配线架

MTP * / MPO fiber distribution frame is a scalable solution mainly used in high-density 10 Gigabit Ethernet applications. There are Main Distribution Area (MDA) and Horizontal Distribution Area (HDA) terminal cabling products. There are usually three designs: 1U, 2U, 4U. According to data center setup needs, it simplifies the field installation, improves system performance and achieves higher system density, modular system management and pre-assembled components so that it reduces the installation time and achieves the movement and expansion in the fastest way.

- Features
- 19-inch rack mount for easy installation and expansion.
 - High-density application, Sliding tray design.
 - Double rail design, easy to assemble and manage.
 - Lightweight ABS material for MPO module.
 - Customized color & logo.
 - High quality metal sheet technology and fogging coating.
 - High quality Fiber management and structural accessories.

- 特点
- 标准机架安装
- 采用19英寸标准机架式结构，便于快速部署与扩展
 - 高密度滑动架构

滑动式托盘设计，适配高密度应用场景
 - 创新导轨系统

双导轨结构实现便捷组装与智能管理
 - 轻量化材料科技

MPO模块采用高强度ABS工程塑料

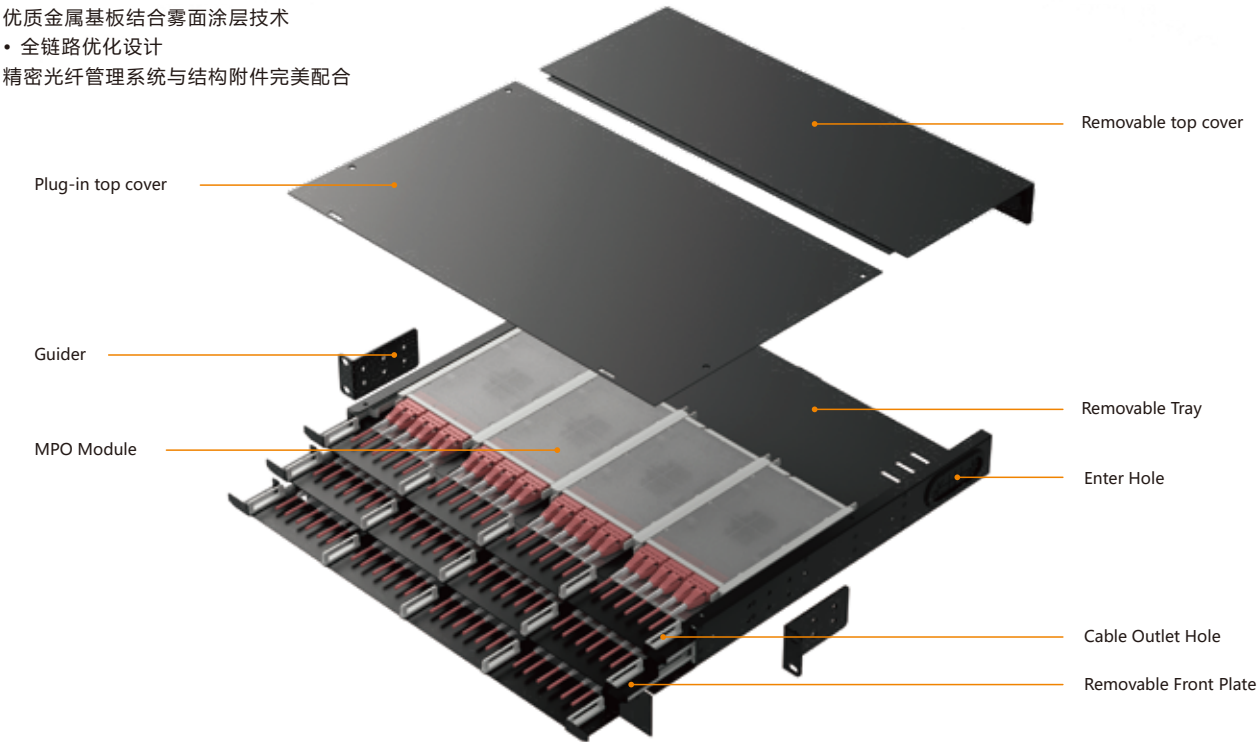
 - 个性化定制服务

支持定制化色彩方案与企业标识
 - 精工制造工艺

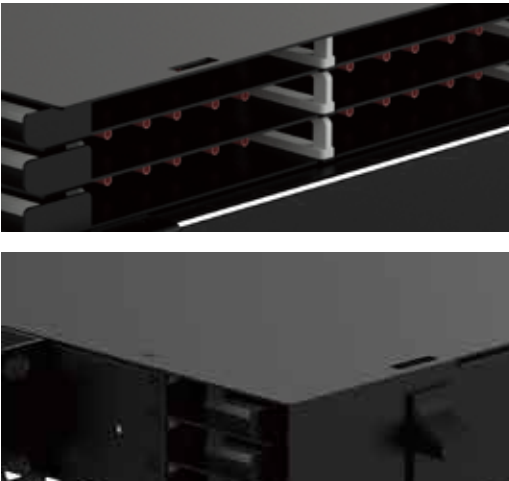
优质金属基板结合雾面涂层技术

 - 全链路优化设计

精密光纤管理系统与结构附件完美配合

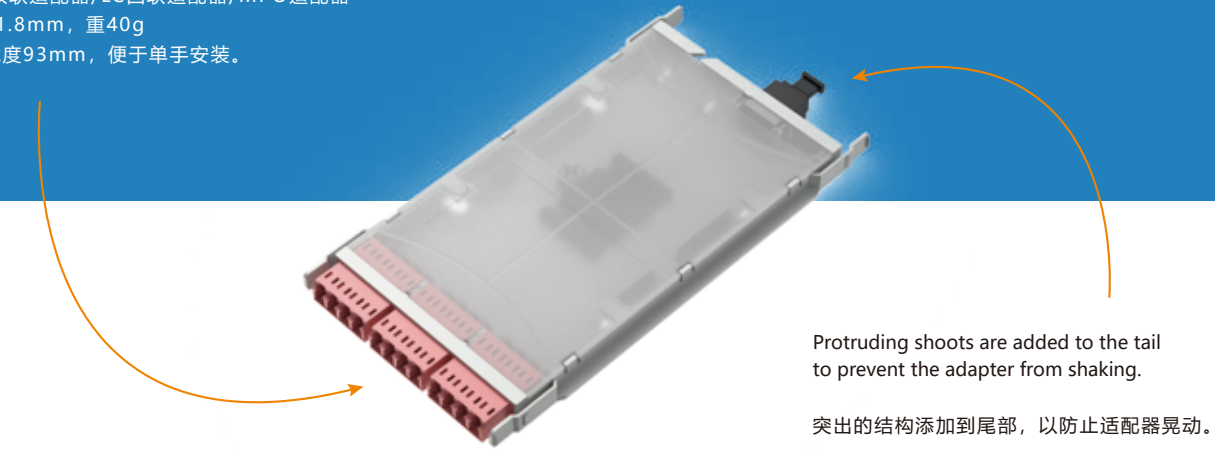


MTP*/MPO光纤配线架是可扩展的高密度解决方案，主要应用于10G以太网场景。产品涵盖主配线区（MDA）与水平配线区（HDA）终端布线系统，提供1U/2U/4U三种标准规格。该解决方案严格遵循数据中心建设需求，通过简化现场安装流程、提升系统性能、实现更高密度布局，配合模块化管理系统与预组装组件，显著缩短安装周期，助力数据中心实现快速灵活扩容与架构优化。

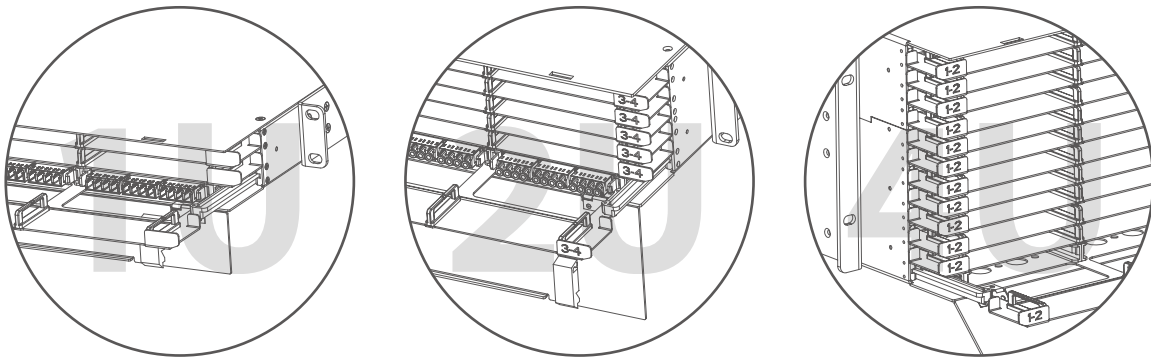


Light weight module for special up and down
SC Duplex Adapter / LC Quad Adapter / MPO Adapter
Height 11.8mm, Weight 40g
Total width 93mm, easy for one-hand installation.

用于特殊上下的轻质模块
SC双联适配器/LC四联适配器/MPO适配器
高11.8mm，重40g
总宽度93mm，便于单手安装。



Item	HDFDF-1U	HDFDF-2U	HDFDF-4U
Size (尺寸) W*D*H	482.6(19")x464.9(18.3")x44.2	482.6(19")x464.9(18.3")x87.3	482.6(19")x464.9(18.3")x174.6
Cores (芯数)	144 Cores	288 Cores	576 Cores
Net Weight (重量)	6.8kg	12.0kg	18.5kg
Material (材料)	Stainless Steel & Aluminum Alloy 不锈钢和铝合金		
Accessories (配件)	Cable tie / Magic stick strip / Winding pipe 扎带/魔术棒条/缠绕管		
Support Installation (支持安装)	SC Duplex Adapter / LC Quad Adapter / MPO Adapter SC双联适配器/LC四联适配器/MPO适配器		



72FO MTP/MPO - LC Sliding Type Fiber Optical Cassette
72芯MTP/MPO-LC 滑动式光纤盒

MPO fiber cassette is mainly used for data center with the security transactions between MPO pre-terminated trunk cable and LC or SC connectors. They are installed in the 19" 1U-3U fiber patch panels. LC or SC adapters are installed in the front panels. MPO adapters and pre-terminated trunk cable are installed in the rear panels. Plug-and-play modular structure enables quick deployment of data center fiber infrastructure and improve troubleshooting and reconfiguration after relocating, increasing and changing the cables. 100% of the terminals are terminated in the factory and rigorously tested to ensure minimal insertion loss. They are applicable to IDC and FTTB pre-wired systems and to Ethernet transmission. The cassettes are suitable for future 40G/100G system applications. They are able to meet the full demands of high speed networks with convenient for upgrading.

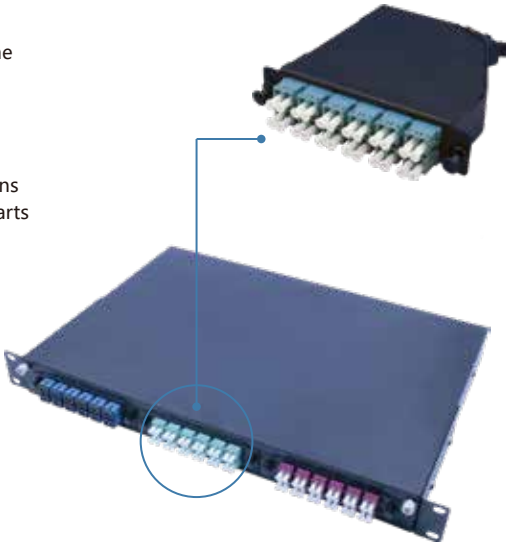
Features

- Excellent transmission performance is 100% factory pre-terminated and tested
- The adoption of universal polarity design ensures the correct fiber polarity and the variety of polarity to be chosen in the system
- Flexible expansion, modular design
- Super bend-bright fiber, minimum fiber bending radius, minimized structure
- One-hand operation
- Smooth upgrade to next generation data center of 40GbE and 100GbE applications
- Metal shell design, good intensity, effective protection for internal fiber branch parts
- Compliant with TIA / EIA604-D-2007, IEC61754-7-2008 series standards

特点

- 传输性能，100%工厂预接端并测试
- 采用通用极性设计确保了系统中正确的光纤极性，多种极性可供选择
- 灵活扩容，模块化设计
- 超强抗弯光纤，最小光纤弯曲半径，结构小型化
- 单手操作-可以直接平滑升级到下一代数据中心40GbEt和100GbE 的应用
- 采用金属外壳设计，强度好，有效保护内部光纤分支部件
- 满足TIA/EIA604-D-2007、IEC61754-7-2008系列标准

MPO光纤转接盒主要用于数据中心MPO预端接主干光缆与LC或SC连接器之间的安全过渡，安装于19" 1U-3U光纤配线架。模块盒前面板装配LC或SC适配器用于相互配线或连接设备跳线，后面板装配MPO适配器用于连接MPO预连接主干光缆。即插即用模块式结构可以快速部署数据中心光纤基础设施，以及提高光缆在移动过程中的故障排除和重新配置，添加和更改。100%在工厂内端接，并严格进行连接测试，以保证最小的插入损耗用于IDC和大楼光纤预端接系统，系统满足以太网传输，适用于未来40G/100G系统应用的平滑升级，完全可以满足要求苛刻的高速网络。



96FO MTP/MPO - LC Fixed Type Fiber Optical Cassette
96芯MTP/MPO-LC 96芯固定式光纤盒 (Snap-in Modular)

MTP / MPO-LC fiber optic cassette is a closed-type of device with a 12/24-core fiber patch cords for branching 12-core MTP / MPO trunk cable to LC Connectors so that the system appliances are easily be connected to the ports or panels. The cassette can be quickly deployed to 24 LC or 12 SC adapters and can be easily installed in HDF high-density rack-mounted ODF. The modular structure is high manageable and flexible. With the future requirements on the connectivity, the modules can be changed to meet the corresponding needs. In the meanwhile, the existing trunk cabling structure remains unchanged.

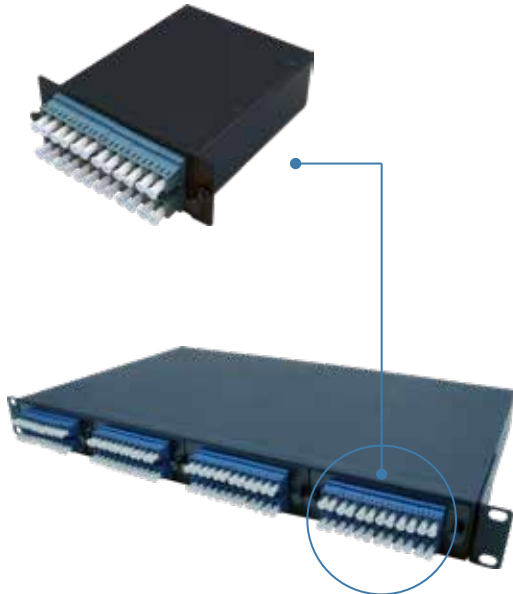
Features

- Excellent transmission performance is 100% factory pre-terminated and tested
- The adoption of universal polarity design ensures the correct fiber polarity and the variety of polarity to be chosen in the system
- Flexible expansion, modular design
- One-hand operation
- Metal shell design, good intensity, effective protection for internal fiber branch parts
- Compliant with TIA / EIA604-D-2007, IEC61754-7-2008 series standards
- Super bend-bright fiber, minimum fiber bending radius, minimized structure
- Smooth upgrade to next generation data center of 40GbE and 100GbE applications

特点

- 传输性能，100%工厂预接端并测试
- 采用通用极性设计确保了系统中正确的光纤极性，多种极性可供选择
- 灵活扩容，模块化设计
- 超强抗弯光纤，最小光纤弯曲半径，结构小型化
- 单手操作
- 可以直接平滑升级到下一代数据中心40GbEt 和100GbE的应用
- 采用金属外壳设计，强度好，有效保护内部光纤分支部件
- 满足TIA/EIA604-D-2007、IEC61754-7-2008 系列标准

MPO/MTP-LC光纤转接盒是一种封闭式设备，盒内预端接有12/24芯分支光纤跳线，用于将主干光缆上端接的12芯MTP/MPO连接器分支转换到LC连接器，以方便接到系统设备端口或光纤面板中。这种光纤接头盒可以在一个盒式结构上快速部署24个LC 或12 个SC光纤接口。此模块可方便的安装与HDF高密度机架式ODF中，这种模块化的基础架构具有高度的可管理性和灵活性。随着未来连接性要求的不断变化，可以轻松更换模块以满足相应需求，同时继续保留现有的主干光缆基础架构。



Item	Single mode Module IL (Max)	Multimode Module IL (Max)
Standard (标准)	1.0 dB	1.0 dB
Low Loss (低损耗)	0.7 dB	0.7 dB
Ultra-Low-Loss (超低损耗)	0.5 dB	0.35 dB

Modular Simple Distribution Frame 模块式简易型机架

This Subrack design to accommodate MPO terminals. Suitable for different kinds of equipment which is designed according to 19” cabinet. 3U 4U Subrack Can loaded with Max.12pcs16pcs MPO cassettes. Comply to ETSI standard.

模块式简易型机架设计可容纳MPO适配器。适用于19寸机柜设计的各种设备。3U/4U机架最多可装载12/16个MPO盒。符合ETSI标准。



- Features**
- Standard 19”
 - 1U, up to 576F
 - Compact design for space saving
 - Manual Screws fixation,Easy for management and operation
 - Customized color & logo
 - High quality metal sheet technology and fogging coating
 - High quality fiber management and structural accessory

- 特点**
- 标准19”
 - 1U，最高576F
 - 紧凑设计，节省空间
 - 手动螺钉固定，易于管理和操作
 - 定制颜色和徽标
 - 高品质金属板技术和雾化涂层
 - 高品质纤维管理和结构配件

Item	Specification
Dimensions (尺寸)	482mm(Width) x 416.6mm(Depth) x 44mm(Height)
Materials (材料)	Black Powder coated rolled steel, Code color RAL 9005
Plastic (塑料)	Random
Maximum capacity (最大容量)	SC Duplex Adapter 48F / LC Quad Adapter 96F / MPO Adapter 576F / RJ45 Adapter 24
Number of cassettes (模块盒数量)	4
Operating Temperature (工作温度)	-25℃ ~ +55℃ (5% to 95% relative humidity)
Weight (重量)	2.8Kg

Fiber Distribution Frame 光纤配线架

The manufacturer specialized in data center cabling products and high precision connecting components. Its MTP * / MPO connector advanced capabilities provide guaranteed and reliable connection for 40G / 100G data centers. KOC high-density fiber pre-connected system deploys high-density data center easily and quickly in horizontal area and storage area of the network. The maintenance and expansion in the future is very simple. MTP / MPO pre-terminated cabling system consists of three parts: trunk cable, MTP / MPO pre-terminated module and patch panel. KOFDS series of Fiber Distribution Frames, designed for Central Data Office or the building MDF room, provides high-density fiber management and distribution. The modular design ensures the easily maintenance and efficient management for your fiber cabling systems.

- Features**
- Indoor cable distribution
 - Fiber entries on top or bottom available
 - High-density and modular design
 - Max. capacity up to 792 fibers
 - No tools are needed during operation
 - Customizable
 - 19” standard cabinet
 - Accomplishing scientific arrangement for patch cords with fiber storage units
 - suitable for inserting installation of SC, FC and ST adaptors
 - Safety design in grounding and security door
 - Top, bottom and rear openings for cable entry covered with removable blank panels.

- 特点**
- 室内光缆分布
 - 高密度和模块式设计
 - 最大容量可容纳792芯
 - 无需任何操作工具
 - 19”标准机柜
 - 光缆存放区可科学管理跳线
 - 可安装SC/FC/LC/ST连接器
 - 拥有接地设施和安全门
 - 顶部，底部，后面门均可打开，以方便光缆进入
 - 可定制

专注于数据中心布线产品以及高精度光缆连接器组件的制造公司。先进的MTP*/MPO连接器制造能力为各大数据中心40G/100G平滑升级提供可靠的连接保证。KOC 高密度数据中心布线系统可以帮助用户方便、快速的部署高密度数据中心水平区域和存储区域的网络，即使是在后期的维护扩容上也非常简单。MTP*/MPO数据中心布线系统主要由三个部分组成，即主干光缆、MTP*/MPO预连接模块和配线架组成。KOFDS系列光纤配线架是为办公数据中心和MDF而设计，提供了高密度光纤管理和分布。模块化设计确保了光纤布线系统易于维护和高效管理。



Testing and Tools
光纤清洁检查工具

PRODUCT SERIES III

MPO-MPO/LC Testing Master Cord

Fiber standard reference test line as a fiber optic patch-cord insertion loss test standard reference line, with high reliability, high stability characteristics, widely used in optical testing equipment, research institutes, laboratory agencies, optical devices, manufacturers and other test areas.

Features

- High precision ceramic ferrule
- High precision connector
- High standard ferrule grinding geometric 3D control precise control of concentricity direction
- low insertion loss, low return loss
- SC, LC, FC, MU and other models

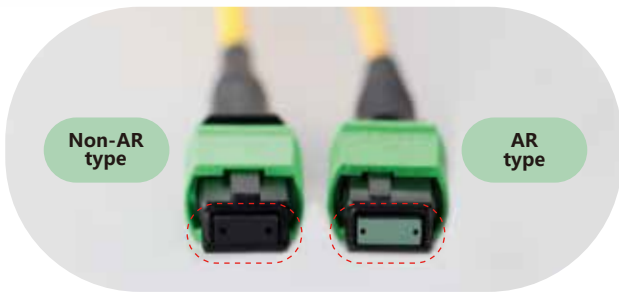
光纤标准参考测试线作为光纤跳线插入损耗测试的标准参考线路，具有高可靠性、高稳定性的特点，广泛应用于光学测试设备、科研院所、实验室机构、光学器件制造企业等测试领域。

产品特点

- 高精度陶瓷插芯
- 精密连接器结构
- 采用高标准插芯研磨几何3D控制技术，精确控制同心度
- 低插入损耗，低回波损耗
- 支持SC、LC、FC、MU等多种接口型号

The MPO test master cord is mainly applied to the experimental testing, production testing and on-site testing of optical modules, optical transceivers, AOC active optical cables and parallel photo-electric packaging products with MPO interface types. Our MPO test master cord adopts high-precision MT ferrules and unique manufacturing processes to ensure that each product has reliable repeatability, durability and low loss. Its service life is superior to other similar products, effectively reducing the cost of product testing consumables for customer.

MPO测试线主要应用于MPO接口类型的光模块、光收发器、AOC有源光缆、平行光电封装产品的实验测试、生产测试、已经用户现场测试的用途。我们的MPO测试线所采用的是高精度的MT插芯，以及特有的制作工艺，确保每一条产品具有可靠的重复性、耐久性、以及低损耗。使用寿命优于其他同类产品，能有效降低用户的产品测试耗材成本。

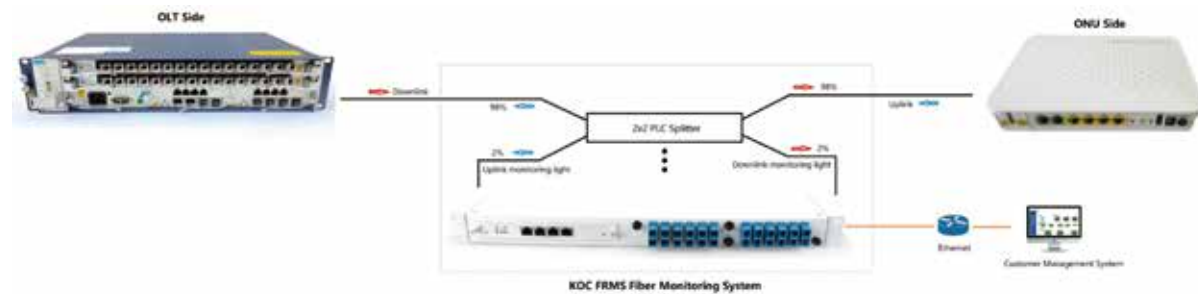


Item	APC	UPC
Insertion loss	≤ 0.10dB	≤ 0.10dB
Return loss	APC≥ 65dB	UPC≥ 55dB
2.5mm Ferrule grinding radius ROC	6~11mm	12~25mm
1.25mm ferrule end face radius ROC	6~11mm	7~20mm
Vertex offset	≤ 30μm	≤30μm
Angle deviation	8°±0.2	0°±0.2
Fiber height	±50μm	
Concentricity offset angle	±45°	
Mechanical durability	Change amount <0.20dB, 1000 repetitions	
Operating temperature	-40 to + 75 °C	

Item	Single mode	Multimode
Insertion Loss	Standard Loss≤0.75dB, typical≤0.5dB Low loss≤0.35dB, typical≤0.2dB	
Return Loss	≥ 60dB (APC)	≥30dB (PC)
Repeatability	≤0.1dB	
Durability	400 matings, Non-AR type: 200 matings	
Interchangeability	≤0.2dB	
Tensile Strength	> 70N	
Operating Temperature	-40 to +85°C	

On-line Fiber Monitoring System

Based on our new patent design of 2*2 Tap Waveguide Chip, we integrated N - 2*2 PLC splitter in one mini type PLC splitter. Each 2*2 PLC Splitter is 98:2 non-uniform channel and both end 2% ports are for downlink/uplink channel monitoring. FRMS fiber monitoring system is a flexible design which can be easy to integrate into customer' s fiber ODF system for in-line real time monitoring. The schematic diagram of the system is shown as below:

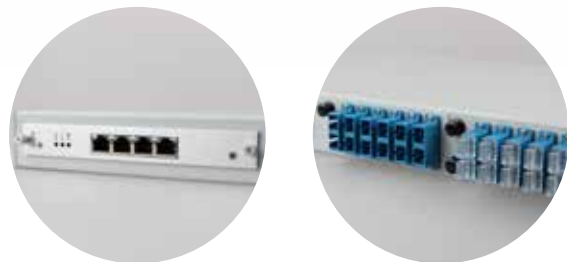


Features

- Continues real time fiber path monitoring
- Using 2% operating light for in-line monitoring
- 2% operating light only use for event monitoring, such as fiber link disconnect /power abnormal drop down at any time
- Anti-light stolen design
- Optic-electric system without decoding chip, ensure the customer signal safety
- Customized package design

特点

- 实时持续监测光纤路径状态
- 采用2%业务光进行在线监测
- 2%光信号仅用于链路事件监控（随时检测光纤断开/功率异常跌落）
- 防光窃取结构设计
- 无解码芯片的光电系统，确保客户信号安全
- 支持定制化封装方案



根据我们创新的2x2锥形波导芯片专利设计，本产品将N个2x2平面光路分路器集成于微型PLC分路器模块中。每个2x2分路器采用98:2非均匀分光比，两端2%端口分别用于下行/上行通道监测。

光纤远程监测系统采用柔性设计架构，可便捷集成至用户现有光纤配线系统，实现在线实时监测。系统架构示意图如下：

You can do more under in-line monitoring status

- Real-time monitoring at the physical level of fiber optic throughout the network can be implemented, providing a practical and feasible solution for future intelligent network management.
- Real-time monitoring of business operation status within fiber optic channels has been truly achieved, including optical power levels, optical power anomalies, routing composition, channel occupancy status, channel abnormal occupancy, etc
- The abnormal working status alarm of the fiber optic routing channel includes abnormal line and equipment. The alarms are preventable.
- After an alarm, the backup router quickly and accurately searches and queries so as to avoid manual search delays and line disconnection time.
- Access to the network management system and connect with operations and maintenance enable the quick troubleshoot and improvement of network security efficiency.
- Effective cleaning and management of dummy so as to reduce duplicate investments, and eliminate resource waste.

特点

- 全域光纤物理层实时监控
- 实现全网光纤物理层的实时监控，为未来智能网络管理提供切实可行的解决方案。
- 业务运行状态多维感知
- 真正实现光纤通道内业务运行状态的实时监控，包括光功率水平、光功率异常、路由组成、通道占用状态、通道异常占用等关键参数。
- 智能预警与可预防告警
- 光纤路由通道异常工作状态（含线路与设备异常）实时告警，支持事前预警机制。
- 智能倒换与快速自愈
- 触发告警后，备用路由可快速精准完成智能检索与切换，有效避免人工排查延迟及线路中断时长。
- 网管对接与运维协同
- 支持网络管理系统对接，打通运维环节，实现快速故障定位与网络安全运行效率提升。
- 无效资源清理与优化管理
- 有效清理和管理无效资源，减少重复投资，消除资源浪费。

Application Case:

As one of the typical application, the PLC splitters can be integrated into a standard 12fo fiber splice tray, Show as below:

应用案例:

作为典型应用方案之一，该PLC分路器可集成至标准12芯光纤熔配盘内，具体结构如下图所示：



Each tray can be used for 12 fiber channels monitoring, for one 4U ODF unit there are 6pcs trays total 72 fiber channels.

每块监控盘可实现对12芯光纤通道的监测，标准4U光纤配线单元可安装6块监控盘，共计实现72芯光纤通道的集中监控。



4U ODF Unit

Can use one 4U monitoring controlling unit in each fiber distribution rack for signal management: Each 4U monitoring controlling unit can be used for max. 1152 fiber channels monitor.

每个光纤配线架可配置1套4U监控管理单元进行信号管理：单套4U监控管理单元最高支持1152芯光纤通道的监控容量。



4U Monitoring Controlling Unit

Fiber Optic Cleaner Pen

Fiber Optic Cleaner Pen is designed to specially work well with the female connectors, this instrument cleans the ferrule end faces removing dust, oil, and other debris without nicking or scratching the end face.

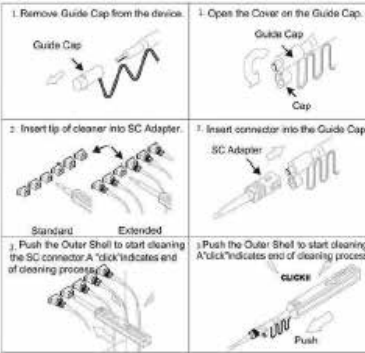
Ordering
Part # CLEP 2.5
FC/SC/ST Cleaner Pen, universal 2.5mm;
Part # CLEP 1.25
LC/MU Cleaner Pen, universal 1.25mm.

光纤清洁笔专为母头连接器设计，能有效清洁插芯端面的灰尘、油渍及其他污染物，且不会划伤或磨损端面。

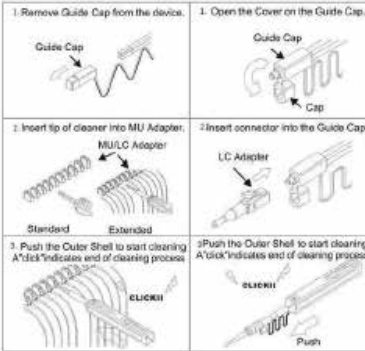
订购信息
型号 CLEP 2.5
FC/SC/ST通用清洁笔，适用2.5mm接口；
型号 CLEP 1.25
LC/MU通用清洁笔，适用1.25mm接口。



FC/SC/ST Application



MU/LC Application



CLE-BOX-MPO

CLE-BOX-MPO is essential accessory to maintain and guarantee good quality of fiber optic connection. It is the best non-alcohol cleaning method for various fiber optic terminations which is simply and swiftly used. It is refillable, offering low cleaning cost, whose cover is made from ESD material. Suitable for connectors such as MPO, MT, etc.

- Features**
- Special non-alcohol superfine fiber .
 - Well handled and anti-static.
 - Friendly using ,efficient cleaning.
 - Easy to replace the tape, no pollution.
 - Cleaning time 500+.
 - Level of cleaning is 100.

CLE-BOX-MPO是维护和保障光纤连接质量的重要工具。作为各类光纤终端的最佳非酒精精清洁方案，其操作简便快捷。该产品采用防静电材料外壳，支持重复填充，有效降低清洁成本，适用于MPO、MT等多种光纤连接器。

- 产品特点**
- 特制超细无纺布材质
 - 防静电精细工艺
 - 操作便捷，清洁高效
 - 替换胶带无污染
 - 单卷可清洁500+次
 - 清洁等级达100级



Item	Specification
Application	MPO/MTP(w/o pins), MT,(w/o pins)
Volume	130mm* 60mm* 30mm
Service Life	Over 500 times per cassette

One Push MPO/MTP Optic Cleaner

CLE-MPO-T is specially designed to clean MPO/MTP connectors. Made of non-alcohol high density clean cloth, it can effectively wipe 12 cores at a time. It can clean both male and female MPO/MTP connectors. One push operation offers great convenience.

- Features**
- Effectively clean all kinds of dust, oil and debris
 - Compatible with FOCIS-5 (MPO) connector
 - Easily clean adapters
 - For both male and female connectors
 - Smart and small, access to crowded panels
 - One push operation
 - Over 550 times clean per unit

- Applications**
- Singlemode and multimode MPO
 - MPO adapter
 - MPO ferrule

CLE-MPO-T是专为清洁MPO/MTP连接器设计的工具。采用非酒精高密度洁净布材质，可一次性有效清洁12芯连接器，同时适用于公头与母头MPO/MTP连接器的清洁。一键式操作设计带来卓越的便捷性。

- 产品特点**
- 有效清除各类灰尘、油污及碎屑
 - 兼容FOCIS-5 (MPO) 标准连接器
 - 可轻松清洁适配器
 - 公母头连接器通用
 - 精巧设计，适用于密集面板环境
 - 一键式操作
 - 单件可完成550+次清洁

- 应用场景**
- 单模/多模MPO连接器
 - MPO适配器
 - MPO插芯



CLEP-MPO-W CLEANER

CLEP-MPO-W is high-performance cleaning tool for MPO&MTP connectors. Alcohol free material can efficiently clean the optical fiber end faces. Either 12 core or 16 core models can be cleaned at one time. It can clean ferrule(male) and adapter(female). The bent design well adapts to narrow space of working environment.

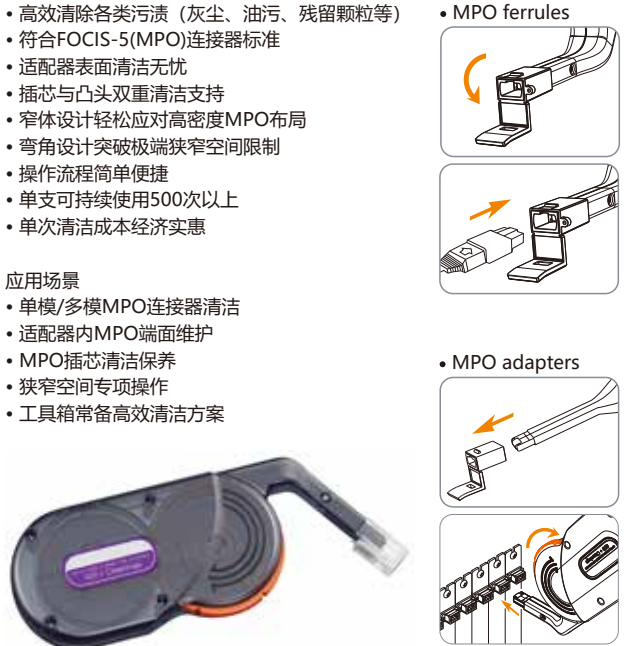
- Features**
- Effectively clean all kinds of stains, such as dust, oil, residual debris, etc
 - Applied to FOCIS-5(MPO) connector
 - Capable to clean the surface of adapters
 - Capable to clean both ferrules & bulheads
 - Narrow design easily cleans densely distributed MPO
 - Bent design adapts to extremely narrow space
 - Easy to operate
 - Over 500 times cleaning per unit
 - Low single cleaning cost

- Applications**
- Cleans SM/MM MPO connectors;
 - Cleans MPO end face in adapters;
 - Cleans MPO ferrules;
 - Adapts to narrow spaces;
 - Highly effective cleaner in tool cases

CLEP-MPO-W是一款专为MPO&MTP连接器设计的高性能清洁工具。采用无酒精特殊材质，可高效清洁光纤端面，同时支持12芯与16芯连接器的一次性清洁。本产品兼具插芯（公头）与适配器（母头）的清洁能力，其独特的弯角设计能完美适应狭窄工作环境。

- 产品特点**
- 高效清除各类污渍（灰尘、油污、残留颗粒等）
 - 符合FOCIS-5(MPO)连接器标准
 - 适配器表面清洁无忧
 - 插芯与凸头双重清洁支持
 - 窄体设计轻松应对高密度MPO布局
 - 弯角设计突破极端狭窄空间限制
 - 操作流程简单便捷
 - 单支可持续使用500次以上
 - 单次清洁成本经济实惠

- 应用场景**
- 单模/多模MPO连接器清洁
 - 适配器内MPO端面维护
 - MPO插芯清洁保养
 - 狭窄空间专项操作
 - 工具箱常备高效清洁方案



MODEL	DESCRIPTION	OTHER
TQ-CLEP-MPO-W12	For 12 / 24 / 36 cores MPO/MTP	500+ cleans per unit
TQ-CLEP-MPO-W16	For 16 / 32 / 48 cores MPO/MTP	500+ cleans per unit

Fiber Optic Cleaner Box

CLE-BOX is essential accessory to maintain and guarantee good quality of fiber optic connection. It is the best non-alcohol cleaning method for various fiber optic terminations which is simply and swiftly used. Box tape replacement is offered to make sure low cleaning cost .Suitable for connector such as SC、FC、MU、LC、ST、D4、DIN、E2000 etc.

Features

- Special non-alcohol superfine fiber .
- Well handled and antistatic.
- Friendly using ,efficient cleaning.
- Easy to replace the tape, no pollutions.
- Cleaning time 500+ .
- Level of cleaning is 100.

Applications

- SC,FC,ST,MU,LC,MPO,MTRJ (w/o pins)
- Dimensions: 115mm×79mm×32mm
- Cleaning times: 500+ per box.

CLE-BOX是维护和保障光纤连接质量的重要工具。作为各种光纤终端的最佳非酒精清洁方案，其操作简便快捷。可替换式盒带设计确保较低清洁成本，适用于SC、FC、MU、LC、ST、D4、DIN、E2000等多种光纤连接器。

产品特点

- 特制超细无纺布非酒精材质
- 防静电设计，持握舒适
- 操作便捷，清洁高效
- 胶带更换轻松，无污染
- 单盒清洁次数500+
- 清洁等级达100级

应用范围

- 适用于SC、FC、ST、MU、LC、MPO、MTRJ（无插针）等连接器
- 外形尺寸：115mm×79mm×32mm
- 单盒清洁次数：500+次



Fiber Connector Cleaner

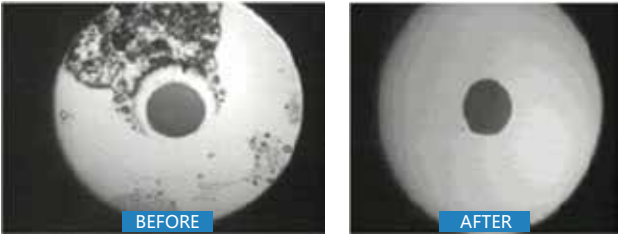
Features

- Safe and environment friendly: No chemicals and other waste such as alcohol, methanol, cotton tips or lenstissue; Safe to operator and no hazard to environment; No ESD contamination.
- User friendly: With few simple steps, ideal cleaning result can be achieved, whether the connector iscontaminated by oil or dust.
- Excellent result: Fast, effective, repeatable cleanings.
- Economical: New design for low cost; One unit is good for over 500 cleaning; the cartridge is replaceable;Easy to replace. Wide application areas: It can be used in lab environment. It is also suitable for fiber opticconstruction, maintenance, and quipment manufacture.
- Wide usability: It can be used for SC, FC, ST, D4, LC, DIN & Bionic connectors. Cleaning tape is replaceable, thus reducing the long-term cost.



产品特点

- 安全环保：无需化学溶剂，杜绝酒精、甲醇、棉签、擦镜纸等废弃物；操作安全且对环境无害，有效避免静电污染
- 操作便捷：通过简单步骤即可实现理想清洁效果，轻松应对油污与灰尘污染
- 卓越性能：清洁快速高效，效果持久可靠
- 经济实用：创新设计降低成本；单支可完成500次以上清洁；替换式卡匣设计，更换轻松
- 应用广泛：适用于实验室环境、光纤工程建设、设备维护及产品制造等领域
- 兼容性强：支持SC、FC、ST、D4、LC、DIN及Bionic等多种连接器；可替换清洁带设计显著降低长期使用成本



Type	Fiber Connector Cleaner
Cleaning Times	Over 500 times per reel
Cleaning Result	-20 to -50 dB （Return Loss）
Operating Temperature	-10°Cto +50°C
Weight	100g

Fiber Optic Cleaning Kits

Correctly cleaning a fiber optic connection is the first step to assure a low loss fiber optic signal anywhere along the network to your customer's location.Fiberstore supplies the tools you need to quickly clean connectors and ports. Proprietary Combination Cleaning process give you clean connections every time.

正确清洁光纤连接是确保从网络任意节点到用户终端之间实现低损耗光信号传输的首要步骤。Fiberstore 提供各类专业工具，可快速清洁连接器与端口。独创的复合清洁工艺确保每次都能获得洁净无尘的光纤连接。



The combination of KC-710B cleaning tools and proper cleaning of optical fiber connections is the first step to ensure that the low loss optical fiber signals reach the location of your customers along the network. Kit kit suits you to meet the tools you need to quickly clean connectors and ports. The special combination cleaning process gives you clean connections every time. Improve faster network transmission speed.

KC-710B清洁工具与规范操作相结合，是确保低损耗光纤信号沿网络传输至用户终端的重要前提。该工具套装备快速清洁连接器与端口所需的全部配件，独特的复合清洁工艺可始终保持连接界面的洁净度，有效提升网络传输速率。

■ KC-710A

1.	Prewetted alcohol cloth IPA	预湿型酒精布IPA
2.	Fiber Optic Cassette Cleaner	光纤清洁器
3.	Replacement Tape for Fiber Optic Cassette Cleaner	光纤清洁器替换带芯
4.	Fiber Cleaning Wipes(7.5×7.5mm, 50/pkg)	光纤清洁无尘纸
5.	Leakproof alcohol bottle 250ML	防漏酒精瓶250ML
6.	1.25mm Fiber Optic Cleaning Swab	1.25光纤清洁棒
7.	2.5mm Fiber Optic Cleaning Swab	2.5光纤清洁棒
8.	200X Hand Held Fiber Microscope	简易型光纤放大镜200X
9.	LED flashlight	LED手电筒
10.	Carrying Tool Bag (240×150×210mm)	高级预湿型酒精布IPA工具包

■ KC-710B

1.	LED mini flashlight	LED迷你手电筒
2.	Fiber Optic Cassette Cleaner	光纤清洁器
3.	Replacement Tape for Fiber Optic Cassette Cleaner	光纤清洁器替换带芯
4.	Fiber Cleaning Wipes(7.5×7.5mm, 50/pkg)	光纤清洁无尘纸
5.	Leakproof alcohol bottle 250ML	防漏酒精瓶250ML
6.	2.5mm Fiber Optic Cleaning Swab	2.5光纤清洁棒
7.	Fiber cleaning pen 1.25MM	光纤清洁笔1.25MM
8.	Fiber cleaning pen 2.5MM	光纤清洁笔2.5MM
9.	Handheld fiber magnifier 400X	手持式光纤放大镜400X
10.	Clean gas of optical fiber dust removal(selection)	光纤除尘清洁气体（选配）
11.	Fiber cleaning pen (liquid selection)	光纤清洁笔(液体选配)
12.	Carrying Tool Bag (240×150×210mm)	高级IPA工具包

AutoGet Fiber Endface Microscope

Fiber Endface Microscope is equipped with newest hardware and software, and with functions of auto focus, auto exposure, auto analysis, auto generate report, auto image transmission, etc. 400X Autoget can detect the defects such dirts, scratches clearly by its software.

光纤端面检测仪搭载最新硬件与软件系统，集成自动对焦、自动曝光、自动分析、自动生成报告及自动图像传输等先进功能。凭借专业分析软件，400倍放大模式下可清晰识别污渍、划痕等光纤端面缺陷。

Features

- Auto focus / Auto exposure setting / Auto centering
- Auto analysis / Auto reporting in Excel format
- High image quality
- LED indicator for working status
- Compact and Slim
- Compatible with IEC 61300-3-35
- Quick and one-click measurement

Applications

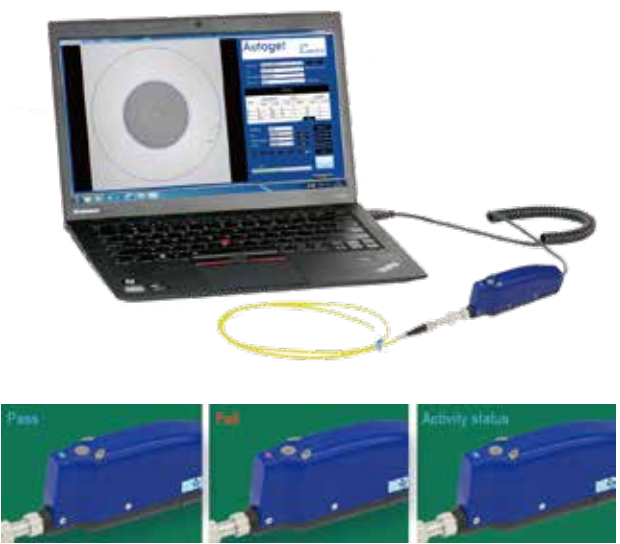
- Mainly used for data center, base station, equipment detection, and other outdoor environments, single-fi ber, multi-fiber endface detection.

特点

- 自动对焦/自动曝光调节/自动定心
- 智能分析/Excel格式自动报告
- 卓越成像品质
- 工作状态LED指示
- 紧凑轻薄设计
- 符合IEC 61300-3-35标准
- 一键快速测量

应用领域

- 适用于数据中心、基站建设、设备检测等户外作业场景，可实现单芯/多芯光纤端面的精准检测。



MTP/MPO Optical Loopback/Attenuator

MPO Loopback is widely used in testing environment or fiber network system for providing a return testing signal from the TX port to RX port. It can bring help to test and analyze the performance of network system and equipment. The MPO loopback structure supports the direct mating with parallel optical device such as a Quad Small Form Factor Pluggable(QSFP), and it also can simulate network distances within the device.

Features

- SM, MM(OM1/OM3/OM4) available
- 8/12/16/ 24 Fibers optional
- Supporting for 40G~1.6T network testing
- Female and Male MTP/MPO optional
- Factory Terminated and Tested
- MTP/MPO Interface feature superior optical and mechanical properties
- TIA/EIA-568-C.3 and IEC-61754-7 compliance
- RoHS compliant

MPO回环器广泛用于测试环境或光纤网络系统，可将发射端信号回传至接收端，为网络系统和设备的性能测试与分析提供支持。该回环结构支持与并行光学器件（如四通道小型可插拔模块）直连，并能模拟设备内的网络传输距离。

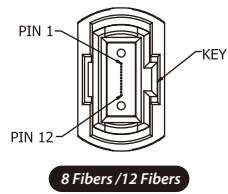
产品特点

- 支持单模/多模光纤（OM1/OM3/OM4）
- 8/12/16/24芯可选
- 适用于40G~1.6T网络测试
- 母头/公头MTP/MPO接口可选
- 出厂端接与测试保障
- 具备优异光学与机械性能的MTP/MPO接口
- 符合TIA/EIA-568-C.3与IEC-61754-7标准
- 满足RoHS环保要求

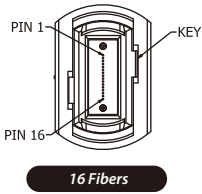


Item	Standard Type		Attenuation Type
Fiber Count	8 Fibers /12 Fibers / 16 Fibers / 24 Fibers		
Fiber Type	MM: OM1/OM3/OM4		SM: G657A2
Polishing Type	MM: PC or APC		SM: APC
Housing	MPO / MTP		
Housing Color	MM (Beige), OM3 (Aqua), OM4(Purple), SM(Green)		
Insertion Loss	SM<0.7dB, MM<0.7dB(Low loss),		1~5dB +/-0.5 dB
	SM<1.5dB, MM<1dB(Standard loss)		6~30dB +/-10% dB
Return Loss	SM>60dB; MM>20dB		
3D Standards	3D Meets IEC61755-3-31		
Operating Temperature	-20°C ~ 65°C		
Storage temperature	-40°C ~ 85°C		
Dimension	60 x 20 x 6.5mm (L x W x H)		

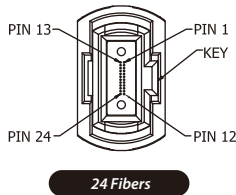
Polarity Type



TYPE A: 1-12、2-11、3-10、4-9、5-8、6-7
TYPE B: 1-7、2-8、3-9、4-10、5-11、6-12
TYPE C: 1-2、3-4、5-6、7-8、9-10、11-12



TYPE A: 1-16、2-15、3-14、4-13、5-12、6-11、7-10、8-9
TYPE B: 1-9、2-10、3-11、4-12、5-13、6-14、7-15、8-16
TYPE C: 1-2、3-4、5-6、7-8、9-10、11-12、13-14、15-16



TYPE A: 1-13、2-14、3-15、4-16、5-17、6-18、7-19、8-20、9-21、10-22、11-23、12-24
TYPE B: 1-24、2-23、3-22、4-21、5-20、6-19、7-18、8-17、9-16、10-15、11-14、12-13
TYPE C: 1-14、2-13、3-16、4-15、5-18、6-17、7-20、8-19、9-22、10-21、11-24、12-23

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