

Fiber Optic Products



Connecting the World and Light Up the Future

KOC, based in South Korea, is a globally recognized manufacturer of fiber optic products and specializes in integrated fiber optic solutions and service. KOC has been supplying high level of quality and cost-effective fiber optic products more than 30 countries around the world and have done our best to understand and meet our customer's requirements since 1997.

KOC possesses cutting edge manufacturing facilities, world-class technologies and a strong R&D capability. Our product range includes an extensive variety of optical connectors, Optical Patch Cords, Optical Adaptors, Fixed and Variable Optical Attenuators, MPO products, PLC Splitters, FDF, Optical Couplers / WDMs and so on. All the products are manufactured in ISO9001, ISO14001 and TL9000 certified facilities and comply with applicable international standards.

KOC's Optical Attenuators and Field Assembly Optical Connectors, MPO Products have been recognized as "Korean World-Class Product" by the Ministry of Commerce, Industry and Energy of Korea. In addition, We have been supplying over 4,000,000pcs of Fiber Optic products to KT(Korea Telecom), and SK broadband as their first vendor.

KOC has launched Optical MEMS Scanner certified by the Ministry Of Trade, Industry & Energy of Korean Government in 2014, which was hybrid technology of MEMS and Optics. KOC's Optical MEMS Scanner can be applied to various kinds of industry as the role of bio/industrial imaging or other scanning system for information technology.

Furthermore, KOC has stepped in the field of green energy industry through the intensive researching and successive development. Due to endless hard work, KOC has not only become the leading supplier of Energy Storage System and Solution to the worldwide, but also contributes to the environmental protection from pollution caused by depletion of fossil energy as a social enterprise. KOC will do its best to be a pioneer of the future technology and to remain continuously dedicated to the improvement of all its products and services.



KOC History

2016.06	Investment by Korea Development Bank
2015.03	Appointed as Samsung Electronics Venture Partner
2015.01	Designated as globally competitive hidden champions by Government.
2014.04	Certified as New Excellent Technology by Government with MEMS Scanner Chip
2013.12	Awarded as “Korean World Class product Award 2013” with MPO Ribbon Cable Unit
2013.05	Developed MEMS Scanner Chip
2013.01	Designated as Global Valuable Company Korea by Small and Medium Business Administration
2012.10	Approved E-2000 Patch cord quality by R&M
2012.02	Appointed as a superior partner by Korea Telecom
2011.12	Awarded as “Korean World Class product Award 2011” with FAOC
2011.02	Appointed as the first vendor of SK Broadband with FAOC
2010.05	Awarded KOTRA Seal of Excellence from Korea Trade-Investment Promotion Agency
2009.12	Appointed as KT’s first vendor with Optical Fiber Distribution Frame and Optical Patch Cords.
2008.08	BMT passed by Korea Telecom and appointed as their first vender with FAOC
2007.12	KOC’s passive components have been passed KT Bench Marking test
2007.08	Developed Field Assembly Optical Connector
2006.07	Developed 120Gbps Arrayed VCSEL transceiver module which was midterm challenge task of Ministry of Knowledge Economy, Korea
2005.02	INNO-BIZ certified by Small and Medium Business Administration
2002.12	Awarded as “Korea World-Class Product Award 2002” with Optical Attenuator
2002.01	TL9000-HR3.0 certified
2001.05	Small Business corporation investment (Capital sum total 702,000,000 won)
2000.06	ISO9001 certified
2000.05	New construction and relocation of factory / ISO9001 certified
2000.02	Venture enterprise awarded by Mayor of Gwangju city
1997.06	KOC established

Certificate



ISO9001



ISO14001



TL9000



WORLD-CLASS ATTENUATOR



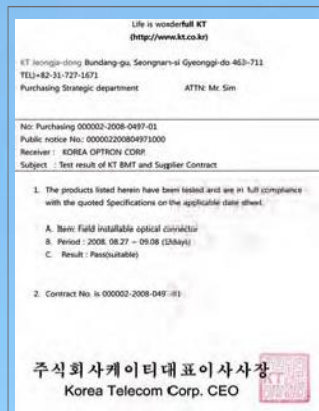
WORLD-CLASS FAOC



WORLD-CLASS MPO



SUPERIOR VENDOR
APPROVED FROM KT



KT BMT RESULT



SK BMT RESULT



KOTRA GLOBAL BRAND 2012



PROMISING EXPORT FIRM

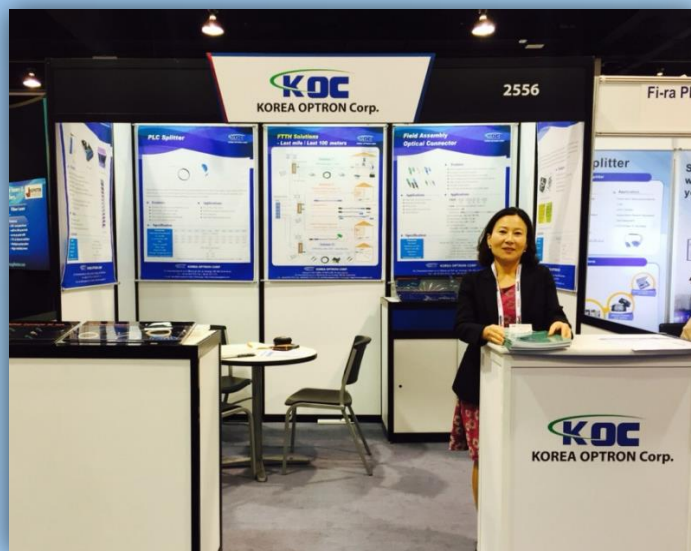


E-2000 R&M CERTIFICATE

Development Process

Project	Term	Authority
Development of mobile 3-dimensional MEMS Scanner probe applied SDPD and embedded software to detect skin cancers within 2mm depth	2016~2018	Small and Medium Business Administration
Development of 3-dimensional high speed inspection probe with 2-channel MEMS scanner for micro-defect detection on 6" mobile display panel	2016~2018	Ministry of Trade, Industry and Energy
Development of security finger vein Imaging Device using MEMS Scanner	2014~2015	Korea Industrial Complex Corp.
Packaging for commercialization of 2 degree of freedom MEMS scanner and secure responsibility	2014 ~2015	Korea Industrial Technology Association
Development of drug heart toxicity inspection system	2013 ~ 2017	Ministry of Commerce, Industry and Energy
Development of miniaturized (smaller than 5mm in diameter) optical probe for 3-diameter endoscopy	2012~2014	Gwangju Institute of Science and Technology
New product development under procurement conditions with Korea Telecom [multi-channel fiber optic cable FDF]	2011~2012	Small and Medium Business Administration
Development of LC Type Field Assembly Optical Connector	2008~2009	Small and Medium Business Administration
120 Gbps arrayed VCSEL transceiver development for parallel optical connection	2005~2009	Ministry of Commerce, Industry and Energy
Attenuated Patch Cord	2003~2004	Small and Medium Business Administration
Integrated TO can SFP type of WDM transceiver module development	2002~2005	Ministry of Commerce, Industry and Energy
VOA components analysis using MEMS technology	2002~2003	Inter-research Consortium
High reliability packaging technology for optical internet core components	2001~2004	Korea Electronics and Telecommunications Research Institute
Semiconductor optical device technology for optical information processing	2001~2002	Korea Advanced Institute of Science and Technology

Main Exhibitions



OFC

CommunicAsia

ECOC



**GITEX
DUBAI**



Field Assembly Optical Connector (V-groove Type)



SC type



LC type



ST type



FC type

KOC Field Assembly Optical Connector is designed for fast and simple field termination of single fiber, without polishing or epoxy. The FAOC is made with precision and high quality Zirconia ferrules and provides a highly reliable connection in most of the network application. The FAOC is available with 250/900 μ m buffered fiber, 2.0mm, 1.6mm x 2.0mm, 2.0mmX3.0mm and 3.0mm jacket cable.

The universal type FAOC is also available, which is suitable for all of the 250/900 μ m, 2mm and 3mm, 2.0mm x 3.0mm cable diameter. These connectors strictly conform to international standards and provide consistent long-term mechanical and optical performance.

The FAOC offers terminations in less than 1 min which allows you greatly to reduce the installation and set up time. The KOC's Field assembly Optical Connector has been recognized as a "Korean World-class Product" by the Ministry of Knowledge Economy.

Features

- Comply with TIA/EIA and IEC
- Quick and easy fiber termination
- RoHS compliant
- Reusable termination capability [up to 5 times]
- Easy to deploy fiber solution
- High success rate of connections
- Low Insertion & Back Reflection
- No special tools required

Applications

- All fiber interconnection
- Telecom Distribution and Local Area Networks
- FTTH and FTTx
- Passive optical networks [ATM, WDM, Ethernet]
- Broadband, Cable TV (CATV)

Specifications

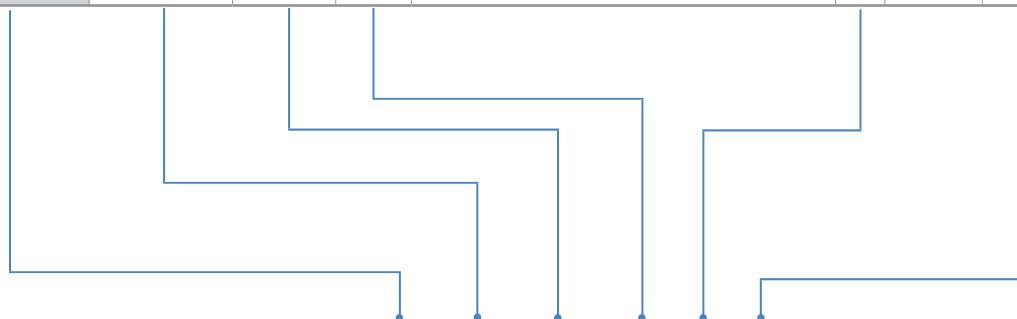
Insertion Loss	Typ. 0.3dB / Max. 0.5dB
Return Loss	PC type: ≥ 50 dB/ APC type: ≥ 55 dB
Endurance	1,000 mating cycles change in attenuation 0.1dB
Tension	≤ 0.2 dB change [2.0mm, 3.0mm, 1.6mm X 2.0mm, 2.0mm X 3.0mm] /3.0kg ≤ 0.2 dB change [250 μ m, 900 μ m]/0.75kg
Vibration	≤ 0.2 dB change / 10-55Hz / 0.75 amplitude
Temperature change	≤ 0.2 dB change / -40 to +75 $^{\circ}$ C/ 21 cycle

Interferometer	UPC type	APC type
Radius Of Curvature	7mm ~ 25mm	5mm ~ 12mm
Apex Offset	Max. 50μm	Max. 50μm
Fiber Height	-50nm ~ 50nm	-50nm ~ 50nm
Tilt Error on APC 8'	None	±0.3

	SC type	LC type	ST type	FC type
Conformance	TIA/EIA 604-3	TIA/EIA 604-10	TIA/EIA 604-2	TIA/EIA 604-4
Ferrule	Ceramic (Zirconia)			
Housing Color	Single Mode PC type: Blue Single Mode APC type : Green OM2 PC type: Beige OM3,4 PC type: Aqua			
Cable type	250μm/900μm 2.0mm/3.0mm 2.0mm X 3.0mm 1.6mm X 2.0mm Universal Type	250μm/900μm 2.0mm 1.6mm X 2.0mm	250μm/900μm 2.0mm	250μm/900μm 2.0mm/3.0mm 2.0mm X 3.0mm 1.6mm X 2.0mm Universal Type

Ordering Information

Item	Connector Type	Ferrule Type	Fiber Type		Cable Type		Cable Diameter	
Field Assembly Optical Connector	SC	UPC	SM	Single Mode Fiber	R	Round	20	2.0mm
	LC	APC	OM1	Multimode 62.5/125μm Fiber	F	Flat	30	3.0mm
	ST		OM2	Multimode 50/125μm Fiber			25	250μm
	FC		OM3	Multimode 50/125μm Fiber[10Gb/s]			25/90	900μm
			OM4	Multimode 50/125μm Fiber[100Gb/s]			21	2.0x1.6mm
							23	2.0x3.0mm
							UT	Universal type



Ordering code

FAOC - SC - UPC - SM - R - 90

Optical Fiber Patch Cords



SC Type



LC Type



FC Type



ST Type



E-2000 Type



MT-RJ Type



MU Type

KOC offers high performance and an extensive line of fiber optic patch cords for use in all types of fiber optic networks. The patch cords are manufactured using state-of-the-art controlled manufacturing processes to operate over a wide range of wavelengths, ranging from 850nm ~ 1300nm for Multimode and 1310nm ~ 1550nm for Single mode fiber. They are terminated with high quality connectors, which provide low insertion loss and high return loss. Each patch cord is individually tested and supplied with test reports.

Features

- Comply with TIA(GR-326-Core) / EIA and IEC
- Wide variety of connector options and cable options available
- Available in custom lengths meets your specific requirements
- All assemblies tested and inspected individually and test data available upon request
- RoHS compliant
- Easy to install

Applications

- FTTH deployments
- CATV, CCTV, LAN and Telecom networks
- Datacenter and Datacom
- Testing and measurement equipment
- Telecommunications

Specification

Insertion Loss	Typ. 0.2dB / Max. 0.3dB	
Return Loss	UPC type : ≥50dB / APC type : ≥ 60dB	
Durability	1,000 mating cycles change in attenuation 0.1dB	
Operating Temperature	≤0.2dB / -40℃ to +75℃	
Interferometer	UPC type	APC type
Radius Of Curvature	7mm ~ 25mm	5mm ~ 12mm
Apex Offset	Max. 50μm	Max. 50μm
Fiber Height	-50nm ~ 50nm	-50nm ~ 50nm
Tilt Error on APC 8'	None	±0.3

► Interferometer measuring equipment : CC6000 / Norland

Ordering Information

Item	Connector Type	Ferrule Type	Fiber Type		Cable Type		Cable Material		Cable Color		Cable Diameter		Cable Length	
Optical Patch-Cord	SC	UPC	SM	Single Mode Fiber	SX	Simplex	P	PVC	Y	Yellow	09	0.9mm	01	01m
	LC	APC	OM1	Multimode 62.5/125μm Fiber	DXZ	Duplex Zipcord	L	LSZH	O	Orange	20	2.0mm	02	02m
	ST		OM2	Multimode 50/125μm Fiber	DXF	Duplex Flat			W	White	25	2.5mm	03	03m
	FC		OM3	Multimode 50/125μm Fiber(10Gb/s)					G	Green	30	3.0mm	04	04m
	MU		OM4	Multimode 50/125μm Fiber(100Gb/s)					B	Blue			.....	.....
	MT : MT-RJ								A	Aqua				
	MD : MPO												98	98m
	EZ : E2000												99	99m

Ordering code

OJC - LC - UPC - SM - SX - P - Y - 09 - 02

Optical Fiber Pigtail



KOC manufactures the pigtails to be used for splice application when terminating outside plant cable. We offer a wide range of specialty pigtails using various connectors such as LC, SC, MU, MTRJ, MPO ribbon cable and more. We also offer individual single pigtails and 6 or 12 fiber jacketed pigtails.

All fiber optic pigtails can be made to any length to fit your project. A fiber pigtail is a single short piece of optical fiber, that has an optical connector on one end and a length of exposed fiber at the other end. The end of the pigtail is stripped back and fusion spliced to another single fiber. All of our pigtails are factory inspected and tested, with available interferometer data upon request. And the unique serial number provides traceability of every single product.

Features

- Comply with TIA(GR-326-Core) / EIA and IEC
- Wide variety of connector options and cable options available
- All assemblies tested and inspected individually and test data available upon request
- Easy to install
- RoHS compliant
- Custom assemblies are available

Applications

- FTTH application
- Premise installations
- Data processing networks
- Wide Area Networks
- Telecommunications
- Industrial, mechanical and military

Specifications

Insertion Loss	Typ. 0.2dB / Max. 0.3dB	
Return Loss	UPC type : $\geq 50\text{dB}$ / APC type : $\geq 60\text{dB}$	
Durability	$< 0.1\text{dB}$ / 1000 mating	
Operating temperature	$\leq 0.1\text{dB}$ / -40°C to $+75^{\circ}\text{C}$.	
Interferometer	UPC type	APC type
Radius Of Curvature	7mm ~ 25mm	5mm ~ 12mm
Apex Offset	Max. 50 μm	Max. 50 μm
Fiber Height	-50nm ~ 50nm	-50nm ~ 50nm
Tilt Error on APC 8'	None	± 0.3

► Interferometer measuring equipment : CC6000 / Norland

Ordering Information

Item	Connector Type	Ferrule Type	Fiber Type		Core type		Cable Material		Type		Cable Diameter		Cable Length	
Optical Pigtail	LC	UPC	SM	Single Mode Fiber	04	4core	P	PVC	G00	General Pigtail type	09	0.9mm	01	01m
	SC	APC	OM1	Multimode 62.5/125 μm Fiber	08	8core	L	LSZH	D10	Distribution type 10cm breakout	20	2.0mm	02	02m
	ST		OM2	Multimode 50/125 μm Fiber	12	12core			D20	Distribution type 20cm breakout	25	2.5mm	03	03m
	FC		OM3	Multimode 50/125 μm Fiber(10Gb/s)	.....	.....			.....	.....	30	3.0mm	04	04m
	MU		OM4	Multimode 50/125 μm Fiber(100Gb/s)	144	144core			D99	Distribution type 99cm breakout			.....	.....
	MT: MT-RJ													
	MD: MPO												98	98m
	EZ: E2000												99	99m

Ordering code

OP - LC - UPC - SM - 12 - P - D30 - 09 - 02

Fiber Optic Attenuator (Fixed Type)



Fixed Attenuator SC



Fixed Attenuator ST



Fixed Attenuator MU



Fixed Attenuator LC



Fixed Attenuator FC

Attenuators are used to reduce excess optical power from the transmitter that can result in over-saturation of the receiver. These attenuators are available in SC, LC, ST, FC and MU style with APC and UPC.

The front of the attenuator is a male plug connector style that allows the attenuators to be plugged directly into receiver equipment or adaptors in patch panel.

KOC's optical attenuators have been recognized as "Korean World-class Products" by the Ministry of Knowledge Economy.

Features

- Wavelength insensitive
- Mode noise suppression
- Low polarization dependent loss
- High power endurance
- Fixed and variable attenuation
- Low polarization dependent loss
- High power endurance
- Fixed and variable attenuation

Applications

- Telecommunication Systems
- Cable Television Networks
- Test Equipment
- Data Communications Networks
- Local Area Networks

Product Specifications

Attenuation Range		1 to 30dB (1dB increment)	
Operating Wavelength		1310nm / 1550nm (SM), 850nm (MM)	
Tolerance	Attenuation 1 to 10dB	±0.5dB	
	Attenuation 11 to 30dB	±1.0dB	
Return Loss		UPC type : ≥50dB / APC type : ≥60dB	
Polarization Dependent Loss		≤0.5dB	
Operation Temperature		-40℃ to +75℃	
Interferometer		UPC Type	APC Type
Radius Of Curvature		7mm ~ 25mm	5mm ~ 12mm
Apex Offset		Max. 50μm	Max. 50μm
Fiber Height		-50nm ~ 50nm	-50nm ~ 50nm
Tilt Error on APC 8´		None	± 0.3

Design

		LC Type	SC Type	ST Type	FC Type	MU Type
International standard		Telcordia GR-910-CORE				
Ferrule		Ceramic(Zirconia)				
Housing Color	UPC	Blue	Blue & Metal Housing	Metal	Blue	Brown
	APC	Green	Green & Metal Housing		Green	

Ordering Information

Item	Connector Type	Ferrule Type	Fiber Type		Attenuation Value	
Optical Fiber Attenuator-Fixed Type	LC	UPC	SM	Single Mode Fiber	01	1dB
	SC	APC	OM1	Multimode 62.5/125μm Fiber	02	2dB
	ST		OM2	Multimode 50/125μm Fiber	03	3dB
	FC		OM3	Multimode 50/125μm Fiber(10Gb/s)	.....	.....
	MU		OM4	Multimode 50/125μm Fiber(100Gb/s)	30	30dB

Ordering code

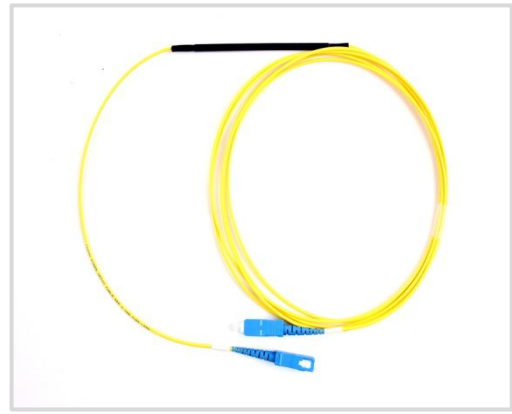
OFA-F - LC - UPC - SM - 01

Fiber Optic Attenuator

(Attenuated Patch cord / In-Line Attenuator)



Attenuated Patchcord



In-Line Attenuator

High performance Attenuated PatchCords are used to attenuate optical power in an optical system. The attenuated Patchcord can be used to replace the conventional cable assembly and attenuator combination.

It is compact, multi-purpose passive device designed to operate at the 1310 and 1550nm wavelengths. Korea Optron Corp. provides Attenuated PatchCords with various connector styles SC, ST, FC, LC, MU and hybrid type.

Features

- Provides the functions of attenuator and patch cord assembly simultaneously
- Connector varieties available
- Conform to the requirements of EIA/TIA standards
- 100% Insertion Loss testing
- Wavelength insensitive
- Mode noise suppression
- Low polarization dependent loss
- High laser power endurance
- Fixed and variable attenuation

Applications

- Telecommunication systems
- Cable television networks
- Test equipment
- Data communications networks
- Local Area Networks

Product Specifications

Attenuation		1 to 30dB (1dB increment)
Operating Wavelength		1310nm / 1550nm
Tolerance	Attenuation 1 to 10dB	±0.5dB
	Attenuation 11 to 30dB	±1.0dB
Attenuated Patch cord Length		Up to 2m
In-Line Attenuator Length		Up to 10m
Return Loss		UPC type : ≥50dB / APC type : ≥60dB
Polarization Dependent Loss		≤0.5dB
Operation Temperature		-40°C to +75°C

Interferometer	UPC Type	APC Type
Radius Of Curvature	7mm ~ 25mm	5mm ~ 12mm
Apex Offset	Max. 50μm	Max. 50μm
Fiber Height	-50nm ~ 50nm	-50nm ~ 50nm
Tilt Error on APC 8'	None	± 0.3

Ordering Information

CODE	Connector Type	Ferrule Type	Fiber Type		Attenuation Value		Cable Diameter		Cable Length	
Attenuated Patchcord	LC	UPC	SM	Single Mode Fiber	01	1dB	09	0.9mm	01	01m
	SC	APC	OM1	Multimode 62.5/125μm Fiber	02	2dB	20	2.0mm	02	02m
	ST		OM2	Multimode 50/125μm Fiber	03	3dB	25	2.5mm		
	FC		OM3	Multimode 50/125μm Fiber(10Gb/s)	.....	.....	30	0.9mm		
	MU		OM4	Multimode 50/125μm Fiber(100Gb/s)	30	30dB				

Ordering code

OFA-AP - LC - UPC - SM - 02 - 09 - 01

Item	Connector Type	Ferrule Type	Fiber Type		Attenuation Value		Cable Diameter		Cable Length	
In-Line Attenuator	LC	UPC	SM	Single Mode Fiber	01	1dB	09	0.9mm	03	03m
	SC	APC	OM1	Multimode 62.5/125μm Fiber	02	2dB	20	2.0mm	04	04m
	ST		OM2	Multimode 50/125μm Fiber	03	3dB	25	2.5mm	05	05m
	FC		OM3	Multimode 50/125μm Fiber(10Gb/s)	.....	.....	30	0.9mm	.....	.....
	MU		OM4	Multimode 50/125μm Fiber(100Gb/s)	30	30dB			10	10m

Ordering code

OFA-IN - LC - UPC - SM - 02 - 09 - 03

PLC Splitter



Optical splitters are main FTTH products which can be provided from the chip to the module. Single mode 1xN & 2xN splitter divides uniformly optical signals from input ports to multiple outputs. Splitters can also be operated in the reverse direction to combine multiple wavelengths into one or two fibers.

Features

- Optimum insertion loss and reflection loss
- Fan-out type / Non Fan-out type
- SC / LC / ST / FC connector types
- Wide range of operating wavelength
- Up to 64 ports

Applications

- Fiber optic equipment & systems
- CATV networks
- Data communications
- Passive optical networks (ATM, WDM, Ethernet)

Optical Specification (without connector)

Parameter	1x2	1x4	1x8	1x16	1x32	1x64	2x4	2x8	2x16	2x32	2x64
Operation Wavelength	1260nm to 1650nm										
IL max(dB)	≤3.8	≤7.5	≤10.5	≤13.6	≤17.0	≤20.2	≤4.4	≤11.0	≤14.3	≤17.5	≤21.2
IL Uniformity(dB)	≤0.6	≤0.6	≤1.0	≤1.0	≤1.3	≤1.8	≤0.8	≤1.0	≤1.5	≤1.8	≤3.0
PDL(dB)	≤0.2	≤0.2	≤0.3	≤0.3	≤0.3	≤0.3	≤0.3	≤0.3	≤0.3	≤0.3	≤0.4
Return Loss(dB)	≥ 55										
Directivity(dB)	≥ 55										
Storage Temperature(°C)	-40 ~ +85										
Operation Temperature(°C)	-40 ~ +85										

(Insertion Loss with connector = Insertion Loss without connector +0.3dB)

Mechanical Specification

Parameter	Unit		Specifications					
			1x2	1x4	1x8	1x16	1x32	1x64
Module size	Width	mm	7	7	7	12	20	40
	Height		4	4	4	4	6	6
	Length		55	55	55	60	80	100
Fiber type			G.657A1					
Input fiber type (Color)			900um tight buffered fiber (White Color)					
Input fiber length	mm		1,500 (+50mm/-0mm)					
Output fiber type			900um loose tube (Hytrel)					
900um tube color			White Color					
Output 900um tube length	mm		1,500 (+50mm/-0mm)					
Connector type - IN			SC-UPC connector					
Connector type - OUT			SC-UPC connector					

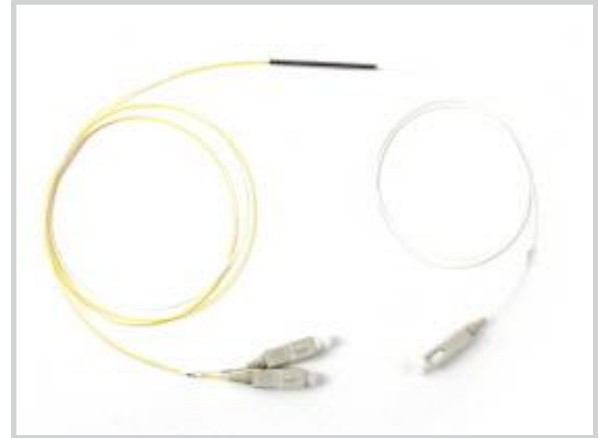
Ordering information

CODE	Configuration		Connector Type	Ferrule Type	Fiber Type		Splitter Type		Package		Cable Length	
											Input	Output
PLC Splitter	0102	1 x 2	SC	UPC	SM	Single Mode Fiber	FO	Fan-out	B	250μm Buffered Fiber	0	0
	0104	1 x 4	LC	APC	OM1	Multimode 62.5/125μm Fiber	NFO	Non Fan-out	L	Loose Tube	1	1
	0108	1 x 8	FC		OM2	Multimode 50/125μm Fiber			C	Cord	2	2
	0116	1 x 16	ST		OM3	Multimode 50/125μm Fiber(10Gb/s)					3	3
	0132	1 x 32			OM4	Multimode 50/125μm Fiber(100Gb/s)					4	4
	0164	1 x 64									5	5
	0204	2 x 4									6	6
	0208	2 x 8									7	7
	0216	2 x 16									8	8
	0232	2 x 32									9	9
	0264	2 x 64										

Ordering code

PLCS - 0102 - SC - UPC - SM - FO - B - 11

Fiber Optic Coupler



Features

- Low excess loss and high performance
- PCB mountable
- Excellent uniformity
- Low polarization dependent loss
- Coupling ratio of 50:50 or as customer ordered

Applications

- Telecommunication systems
- Cable television networks
- Test equipment
- Fiber optic sensor

Specifications - Single mode fiber optic coupler

Model	SMSC0102			SMSC0103, 0303		SMSC0104, 0404		SMSC0108, 0808	
Configuration	1×2, 2×2			1×3, 3×3		1×4, 4×4		1×8, 8×8	
Wavelength(nm)	1310 or 1550			1310 or 1550		1310 or 1550		1310 or 1550	
Grade	S	A	B	A	B	A	B	A	B
Typ. Excess Loss(dB)	0.07	0.1	0.15	0.25	0.3	0.3	0.5	0.5	0.9
Max. Insertion Loss(dB)	3.4	3.7	4.3	5.5	5.7	6.8	7.2	10	11
Uniformity(dB)	0.6	1.0	1.5	1.2	1.5	0.8	1.2	1.2	3.0
Directivity(dB)	>55			>55		>55		>55	
PDL(dB)	<0.1			<0.1		<0.1		<0.1	
Dimension(nm)									
S type	Ø3.0×54			Ø3.0×54		Ø3.0×54		100×80×7.5 136×96×7.5	
L type	Ø3.0×70			Ø4.0×70		Ø4.0×70			
A type(L×W×H)	85×17.5×7.5			100×80×7.5		100×80×7.5			

Specifications – Multimode fiber optic coupler

Model	MMSC0102, 0202		MMSC0103, 0303		MMSC0104, 0404		MMSC0108, 0808	
Configuration	1×2, 2×2		1×3, 3×3		1×4, 4×4		1×8, 8×8	
Wavelength(nm)	1310 or 1550		1310 or 1550		1310 or 1550		1310 or 1550	
Grade	A	B	A	B	A	B	A	B
Typ. Excess Loss(dB)	1.0	1.5	1.5	1.0	1.5	2.0	2.0	2.5
Max. Insertion Loss(dB)	4.0	4.8	6.5	7.0	7.5	8.5	11	12
Uniformity(dB)	0.5	1.0	1.0	1.2	1.0	1.5	1.0	2.0
Directivity(dB)	>40		>40		>40		>40	
Dimension(nm)								
S type	Ø3.0×54		Ø3.0×54		Ø3.0×54			
L type	Ø3.0×70		Ø4.0×70		Ø4.0×70		100×80×7.5	
A type(L×W×H)	85×17.5×7.5		100×80×7.5		100×80×7.5		136×96×7.5	

Ordering Information

Item	Configuration		Coupling Ratio		Fiber		Package		Connector Type	Ferrule Type	Cable Length	
											Input	Output
Fiber optic coupler	0102	1x2	5050	50%:50%	SM	Single Mode Fiber	B	250µm Buffered Fiber	SC	PC	0	0
	0104	1x4	1090	10%:90%	OM1	Multimode 62.5/125µm Fiber	L	Loose Tube	FC	APC	1	1
	0108	1x8	1111	Uniform	OM2	Multimode 50/125µm Fiber	C	Cord	ST		2	2
					OM3	Multimode 50/125µm Fiber(10Gb/s)			BI		3	3
					OM4	Multimode 50/125µm Fiber(100Gb/s)			D4		....	....
											9	9

Ordering code

FOC – 0102 – 5050 – SM – B – SC –PC – 11

FTTH Drop Jumper Cord (Standard)

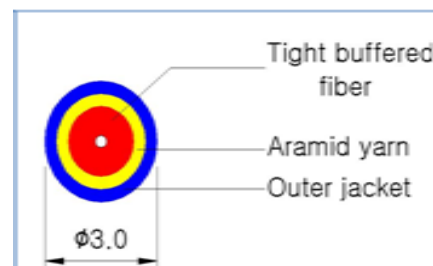
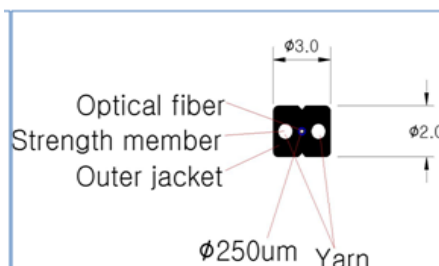
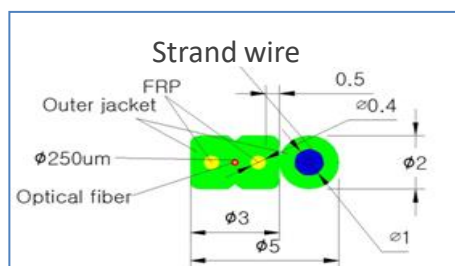


KOC's FTTH drop cable jumper is for connecting to customer premises. It has stable curvature property and high tensile strength considering laying strength. Also it is superior mechanical and environmental characteristics for external pressure and impact, climate changes.

Features

- Move closer to end-user
- Superior fiber optic characteristics
- Appropriate tensile strength in the field
- Easy cable pulling as lighter weight and smaller size than loose tube type
- Excellent flexibility and bending characteristics
- Various connector termination : SC, LC, ST, FC type
- Available drop cable jumper length : 1~100mtr
- Customized packing method
 - Protection cap or pulling eye as individual packing

Cable Structure






Cable Specifications

Standard		IEC794-1, EIA455		
Cable type		Round(O) type	8type	Square(□) type
Fiber type		Singlemode (9/125) / G657A1 / G657A2 / G657B3		
Cable diameter		3.0mm	3.5mmX6.5mm	2.0mmX3.0mm
Cable jacket color		Black / Gray/White		
Tight buffer fiber color		Blue /Gray		
Cable weight		8kg/km	20kg/km	7~10kg/km
Tensile strength		50kgf		
Bending Radius	During installation	20times of cable outer diameter		
	After installation	10times of cable outer diameter		
Operating temperature		-40°C ~ +70°C		

Specifications

Standard	TIA/EIA-604-3[SC], TIA/EIA-604-10[LC], TIA/EIA-604-2[ST], TIA/EIA-604-4[FC]
Connector type	SC / LC / ST / FC
Ferrule type	UPC / APC
Connecting type	Both ends connector / One side end connector
Length	1mtr ~ 100mtr
Insertion loss	Typ.0.2dB / Max.0.3dB
Return loss	PC type ≥ 50dB / APC type ≥ 60dB
Durability	<0.2dB / 500 times reconnection
Operating temperature	<0.2dB / -40°C ~ +75°C

Packing Model

Type 1	Both ends: Protection cap on the connector housing	
Type 2	End 1: Protection cap on the connector housing End 2: Protection cap on the connector frame + connector housing (separately)	
Type 3	End 1: Protection cap on the connector housing End 2: Adding to pulling eye mesh on the protection cap on the connector frame + connector housing (separately)	

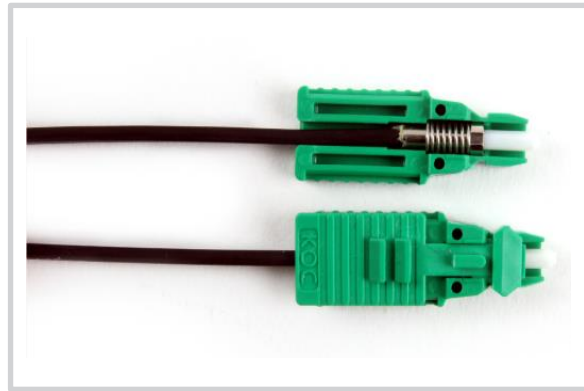
Ordering Information

Item	A Type		B Type		Fiber Type		Cable Type		Cable Material		Cable Diameter		Cable Length	
	Connector Type	Ferrule Type	Connector Type	Ferrule Type										
FTTH Drop Jumper	SC	UPC	SC	UPC	SMD	SM 652D	R	Round	p	PVC	20	2.0mm	1	1m
	FC	APC	FC	APC	SM1	SM 657A1	F	Flat	L	LSZH	1620	1.6X2.0mm	2	2m
	LC		LC		SM2	SM 657A2			U	PU	30	3.0mm	3	3m
	ST		ST		SM3	SM 657B3					23	2.0X3.0mm	.	.
													.	.
													.	.
													100	100m

Ordering code

FDJ-SC-UPC-SCUPC-SMD-R-P-20-1

FTTH Mini Drop Jumper Cord



The FTTH Mini Drop Jumper Cord of SC type connector is used to connect to an optical modem in the customer's. One side has a standard sized connector, but the other side has a small size connector that consists of a Ferrule with Flange and Body. Because of the small size connector, installer just need the minimum size of hole in window or wall of the subscriber's house. It also has superior mechanical and environmental characteristics for external pressure, impact and climate changes.

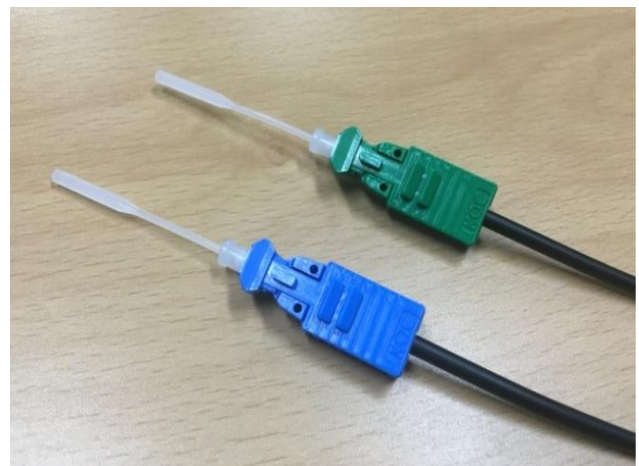
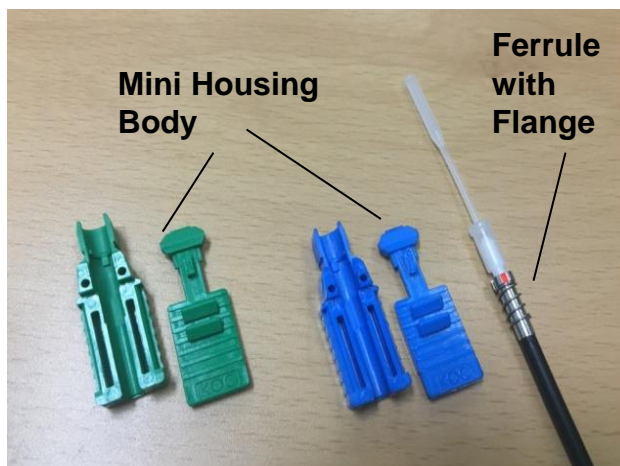
*** Patent Pending[KOR] 10-2015-0147434**

Features

- Installable with small hole($\Phi 4.5$) of the window or wall in subscriber's house($\Phi 11 \rightarrow \Phi 4.5$)
- Easy to assemble with Ferrule with flange and Body
- Superior fiber optic characteristics
- Excellent tensile strength
- Easy to install because of lighter weight and smaller size than loose tube type
- Excellent flexibility and bending characteristics

Applications

- Fiber Optic Telecommunication
- Fiber Distribution Frame
- FTTH Outlets
- Optical Cable Interconnection



Specifications

Standard	TIA/EIA-604-3[SC]
Connector type	SC
Ferrule type	UPC / APC
Connecting type	Standard connector / Mini housing connector
Length	1mtr ~ 100mtr
Insertion loss	Typ.0.2dB / Max.0.3dB
Return loss	PC type \geq 50dB / APC type \geq 60dB
Durability	<0.2dB / 500 times reconnection
Tension	10kgf
Operating temperature	<0.2dB / -40°C ~ +75°C

Ordering Information

Item	A Type		B Type		Fiber Type		Cable Type		Cable Material		Cable Diameter		Cable Length	
	Connector Type	Ferrule Type	Connector Type	Ferrule Type										
FTTH Mini Drop Jumper	SC	UPC	MSC (MINI SC)	UPC	SMD	SM 652D	R	Round	p	PVC	20	2.0mm	1	1m
		APC		APC	SM1	SM 657A1	F	Flat	L	LSZH	1620	1.6X2.0mm	2	2m
					SM2	SM 657A2			U	PU	30	3.0mm	3	3m
					SM3	SM 657B3							.	.
													.	.
													.	.
													100	100m

Ordering code

FMDJ-SC-UPC-MSC-OPC-SMD-R-U-30-1

Multi-fiber Fan-out Patch Cord



Multi-fiber Fan-out patch cord is composed of several jacketed simplex optical fibers packaged together inside an outer jacket.

It is suitable for a short riser and plenum applications and also for use in conduits, where a very simple cable run is planned to avoid the use of any splice box or spliced fiber pigtails.

Both ends of breakout cable patch cord are assembled with connectors in factory to be used immediately in the field.

Features

- Conform to IEC, EIA-TIA, and Telcordia performance requirements
- Available in different connector type of both ends.
- Available in standard and custom lengths
- High Reliability and Stability
- Low Insertion loss, high return loss

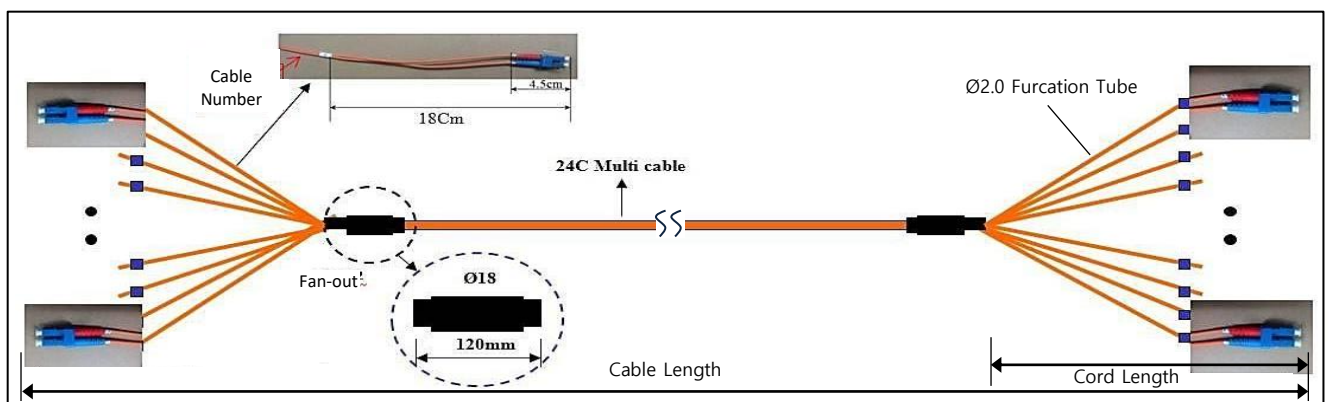
Applications

- Fiber Optic Telecommunication Networks
- Fiber Distribution Frame
- CATV Systems, FTTX/FTTH, LAN
- Mobile Station Application
- Optical Repeater System

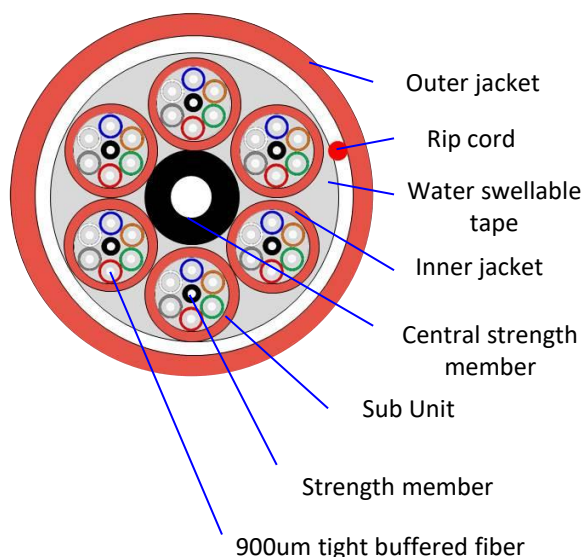
Connector Specification

Item	Specification		
Standard	TIA / EIA 604 (SC, FC, LC, MU)		
Insertion Loss	Typ. 0.2dB / Max. 0.3dB		
Parameter	Singlemode UPC	Singlemode APC	Multimode UPC
Insertion Loss	≤0.3 dB	≤0.3 dB	≤0.3 dB
Return Loss	≥50 dB	≥60 dB	≥20 dB
Temperature Cycle	-40°C to +75°C		
Durability	1000 matching		

Configuration



Cable Structure



<Cross Section>

Cable Specification

Item	Specification		
Fiber	- SMF: G652D, G657		
	- MMF: OM1, OM2, OM3, OM4		
Tight Buffer	Material	PVC, LSZH, Nylon	
	Diameter	0.90 ± 0.05mm	
Sub Unit	Strength member	Aramid yarn	
	Jacket material	PVC, LSZH	
	Jacket Diameter	4.50 ± 0.3mm Jacket thickness: 0.5 ± 0.2mm	
Outer Jacket	Central Strength member	FRP	1.0 or 2.0
		Jacket	PVC, LSZH
	Strength member	Aramid yarn	
	Water swellable tape	Only 24, 36C	
	Material	PVC, LSZH	
Attenuation Coefficient	@ 1310 nm	≤0.37 dB/km	
	@ 1550 nm	≤0.28dB/km	

Fiber Count	8	12	16	24	36
Outer Diameter(mm)	6.1 ± 0.3	6.5 ± 0.3	8.0 ± 0.3	13.5 ± 0.5	16.0 ± 0.7
Weight(kg/km)	35	41	53	122	190
Max pulling Strength	800N	800N	800N	1,200N	1,600N

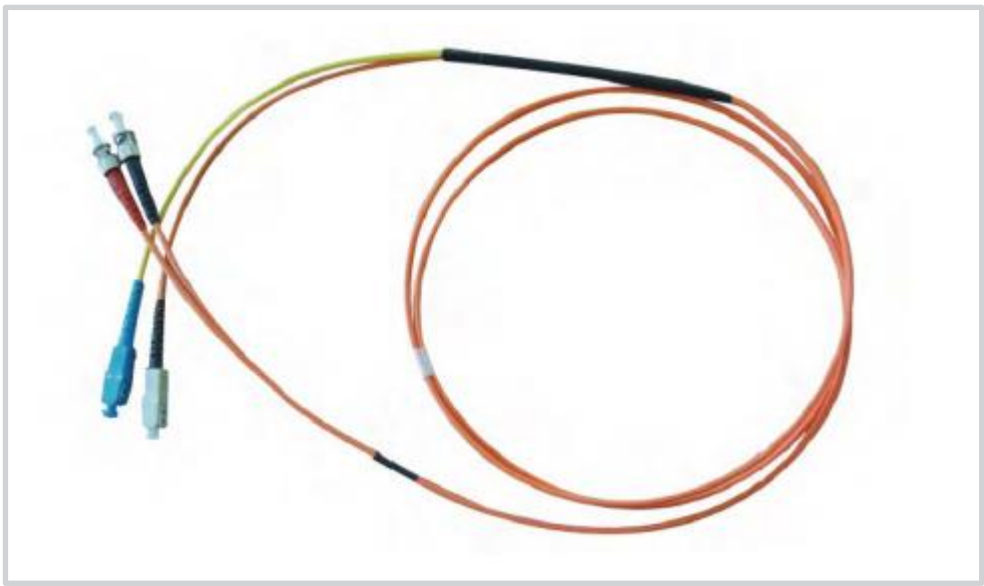
Ordering Information

Item	Connector type & Ferrule type				Fiber type		Cord Length		Cable Length	
	Input		Output							
Multi-fiber Patch Cord	SC	UPC	SC	UPC	SM1	Singlemode, G652D	1	01m	1	01m
	LC	APC	LC	APC	SM2	Singlemode, G657	2	02m	2	02m
	FC		FC		OM1	Multimode 62.5/125um Fiber				
	MU		MU		OM2	Multimode 50/125um Fiber				
					OM3	Multimode 50/125um Fiber(10Gb/s)				
					OM4	Multimode 50/125um(100Gb/s)	99	99m	99	99m

Ordering code

BCP – SCPC – SCPC – SM1 – 1 – 10

MCP (Mode Conditioning Patch Cord)



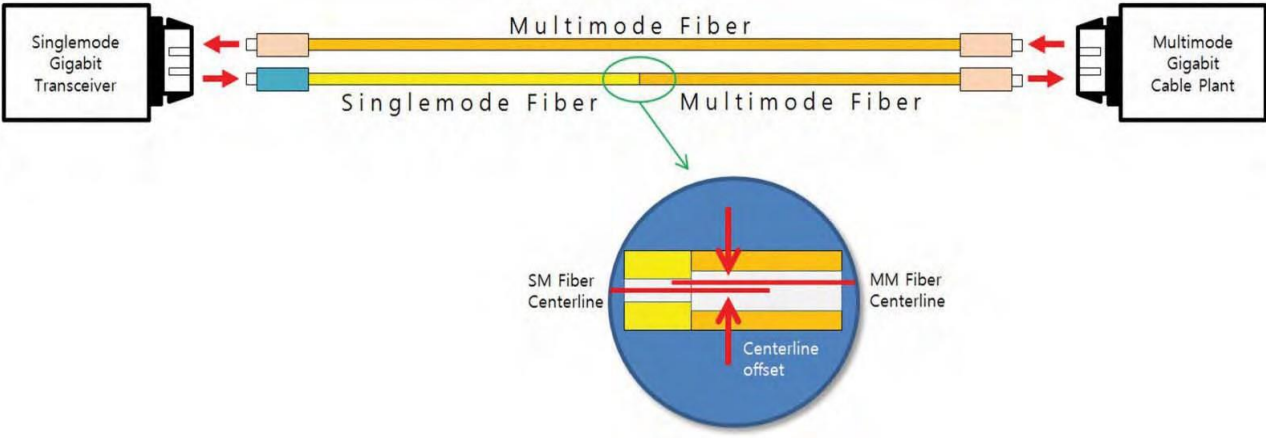
Specifications

Operating wavelength		1310nm
Fiber type		SM(9/125μm) and MM(62.5/125μm, 50/125μm)
Insertion Loss		≤0.3dB(against master connector)
Return Loss (End of SM)	UPC	≥55dB
	APC	≥65dB
Optical offset		IEE802.5
Durability		≤0.1dB / 1,000 mating
Operating temperature		≤0.3dB / -40℃ ~ 75℃

Applications

Apply for connecting between exit multi-mode (50/125μm fiber, 62.5/125μm fiber) cable and Gigabit Ethernet 1000base Lx Router, Switch.

Structure



Ordering Information

Item	Connector Type		Fiber Type				Cable Diameter		Cable Length	
	Input (SM)	Output (MM)	Input (SM)		Output (MM)					
Mode conditioning Patchcord	SC	SC	SM	Single Mode Fiber	OM1	Multimode 62.5/125μm Fiber	09	0.9mm	01	01mm
	LC	LC			OM2	Multimode 50/125μm Fiber	20	2.0mm	02	02mm
	ST	ST			OM3	Multimode 50/125μm Fiber(10Gb/s)	25	2.5mm	03	03mm
	FC	FC			OM4	Multimode 50/125μm Fiber(100Gb/s)	30	3.0mm	04	04mm
									99	99mm

Ordering code

MCP – SCSC – SMOM1 – 09 – 01

MPO High-density Fiber Optic Connectivity Solutions

MPO Patchcord

MPO jumpers and pigtails provide high-density connections in a small footprint and MPO fan-outs provide dependable, high-quality transitions from ribbon fibers or cables to individual fiber connection ports. MPO fan-outs are available with up to 24 cores featuring SC and LC connectors. These fan-outs offer low insertion loss and reflectance, and are available in both ruggedized and bare ribbon formats

Our MPO patch cords are 100% tested at our factory to deliver optimal performance and reliability. KOC's MPO patch cords are Telcordia GR-1435 compliant and also complies with industry green initiative.



MPO-MPO Ribbon Cable



MPO-MPO Round Cable



MPO-Fan-out

Features & Benefits

- Improves and simplifies fiber routing
- Decrease fiber management space
- OEM or customized for special applications
- Low insertion loss and reflectance
- High Density

Applications

- Patch cords and Fan-Out assemblies
- Optical system Access Network
- Telecommunications networks
- Broadband/CATV networks

Specification

Fiber Count available	12ch or 24ch
Fiber type	Single Mode Fiber : G652D, G657A1, G657A2 Multi-Mode Fiber : OM1, OM2, OM3, OM4
Connector Options	Option#1 MPO to MPO Option#2 MPO to Connector (Connector type : SC and LC)
Cable type	Round Cable, Ribbon Cable, Ribbon Fiber

NOTE All cable types are based on distribution cable, only jacket type is different

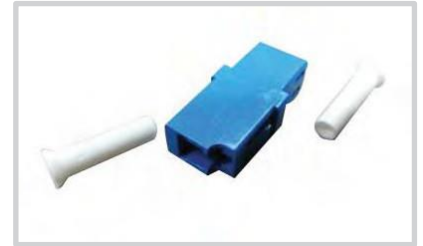
Optical Adapter



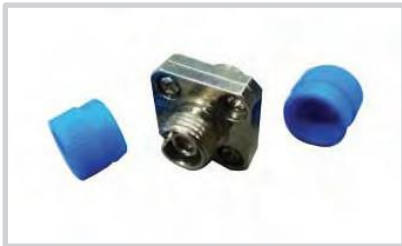
SC Adapter



ST Adapter



LC Adapter



FC Adapter



SC-FC Hybrid Adapter



ST-FC Hybrid Adapter



SC-LC Hybrid Adapter



MU Adapter



E-2000 Adapter

KOC's Adapters offer great performance with very high repeatability and low insertion loss. KOC's Adapters are available in snap and flange mount options and support single mode and multimode applications, including OM3 fiber specifications, making them suitable for 10G applications.

Features

- Excellent changeability and directivity
- 100% Optic test (Insertion Loss)
- Ceramic and phosphor bronze sleeve tube optional
- Accurate mounting dimensions
- ITU standard

Applications

- Fiber optic transmission system
- Optical Fiber CATV networks
- Optical Fiber LAN
- Testing and Medical Devices

Specifications

Insertion Loss	≤0.3dB
Durability	≤0.2dB / 1000 matings
Operating temperature	-40℃ ~ 75℃

Item	Connector Type	Ferrule Type	Sleeve Type		Channel		Clip Type	
Optical Fiber Adapter	SC	UPC	ZR	Zirconia	SX	Simplex	WC	With Clip
	ST	APC	BR	Phosphor Bronze	DX	Duplex	WOC	Without Clip
	LC				QX	Quadruple		
	FC							
	SC-FC							
	ST-FC							
	SC-LC							
	MU							
	EZ : E2000							

Ordering code

OFAD - SC - UPC - ZR - SX - WC

Optical Connector Kits



MPO connector kit



E-2000 connector kit



FC connector kit



SC connector kit



ST connector kit



LC connector kit



MU connector kit



MT-RJ connector kit

KOC's Connector Kits offer superior performance with very high repeatability. These products are fully satisfied with IEC61754/GR326 International Standard and deliver long term stability under a wide range of applications and conditions.

Features

- High precision
- High connect ability
- Low back reflection
- Easy to handle
- Environmentally stable

Applications

- High Speed Transmission System
- Fiber Optic Telecommunications
- Optical Network Equipment
- CATV System

Specifications

Insertion Loss	$\leq 0.2\text{dB}$	
Durability	$\leq 0.1\text{dB}$	1,000 matings
Humidity Cycling	$\leq 0.2\text{dB}$	75°C, 95% / 336hr
Impact	$\leq 0.2\text{dB}$	1.5m Drop / 8 times
Coupling	$\leq 0.2\text{dB}$	40N \pm 1N / 120sec
Vibration	$\leq 0.2\text{dB}$	10 ~ 55Hz / 2hrs
Temperature Cycling	$\leq 0.2\text{dB}$	-40°C ~ 75°C / 42Cycles

Ordering Information

Item	Connector Type	Ferrule Type		Fiber Type	Boot Color		Cable Diameter	
Optical Fiber Connector Kit	SC	UPC	SM	Single Mode Fiber	GR	Green	09	0.9mm
	FC	APC	QM1	Multimode 62.5/125 μm Fiber	BL	Blue	20	2.0mm
	ST		QM2	Multimode 50/125 μm Fiber	BE	Beige	30	3.0mm
	LC		QM3	Multimode 50/125 μm Fiber(10Gb/s)	BK	Black		
	MU		QM4	Multimode 50/125 μm Fiber(100Gb/s)	YL	Yellow		
	MT : MT-RJ							
	MD : MP0							
	EZ : E2000							

Ordering code

OFC - SC - UPC - SM - GR - 09

- All product available customized specifications.

Fiber Optic Splice Closure



Splice closures offer a versatile, watertight and UV stabilized hardened plastic closure and they withstands impact, freeze-thaw stresses add rodents. Each closure can be mounted in a variety of ways such as cabinet, aerial, wall, above ground, aerial tap mount bracket and pedestal.

Features

- Quick and convenient installation
- Up to 6 round ports for single cable entry
- Maximum 29mm cable diameter
- Large fiber optic splice up to 320 fibers

Applications

- Telecommunication network
- Fiber in the Loop
- Local Area Networks
- Wide Area Networks

Specifications

Parameter	Small Size	Large Size
Dimension	330(L) X 186(W) X 125(H) mm	574(L) X 222(W) X 138(H) mm
Weight	2.2 kg (excluding trays)	4.55 kg (excluding trays)
Max. diameter of cable	Ø17	Ø27
Cable inlet ports	6 (3 ports at each ends)	6 (3ports at each ends)
Air pressurization valve	1(for testing air leakage)	1(for testing air leakage)
Max. stack of trays	4 (max.3 trays for attaching splitter)	6 (max.5 trays for ribbon-fibers connecton)



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