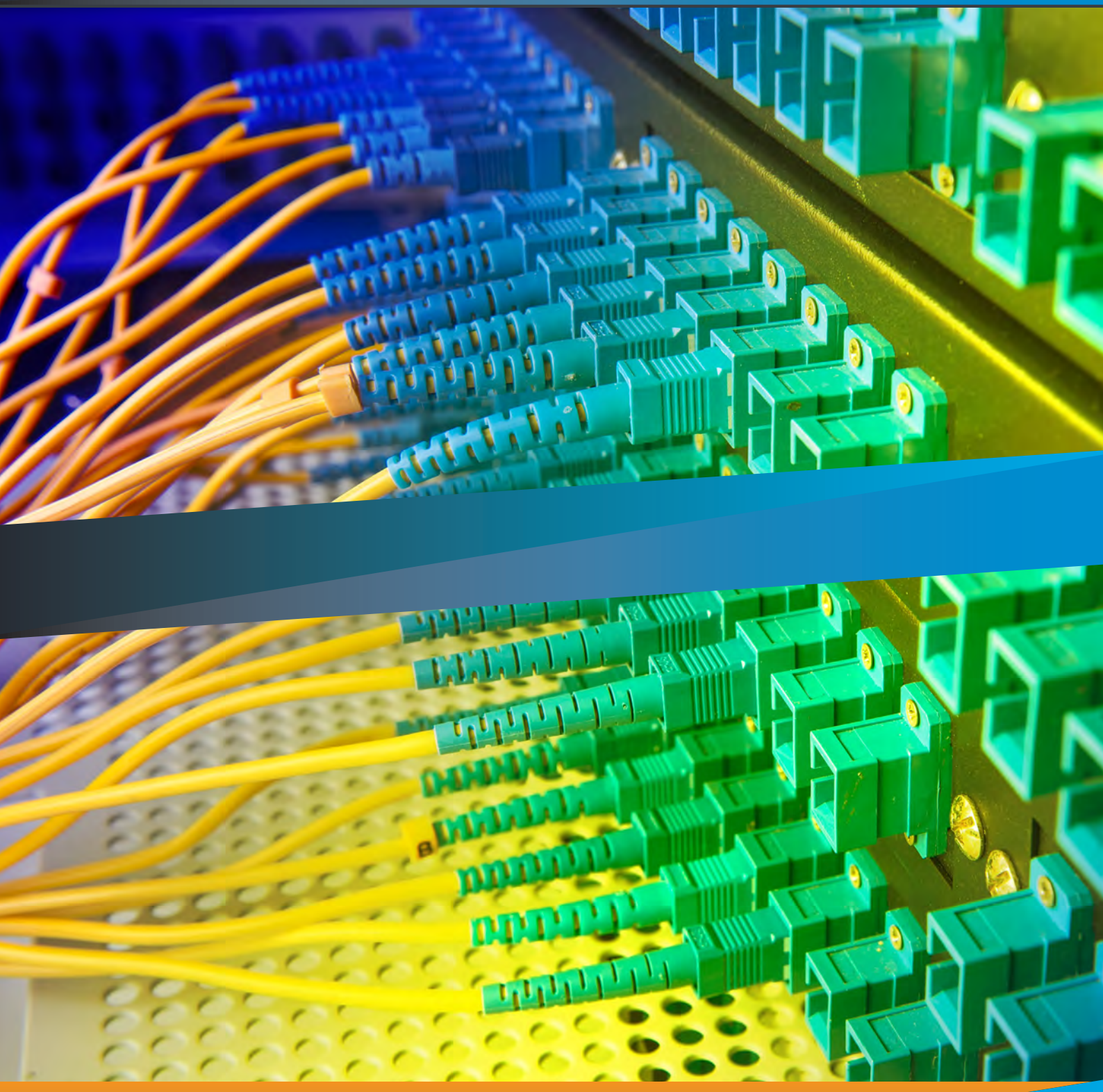
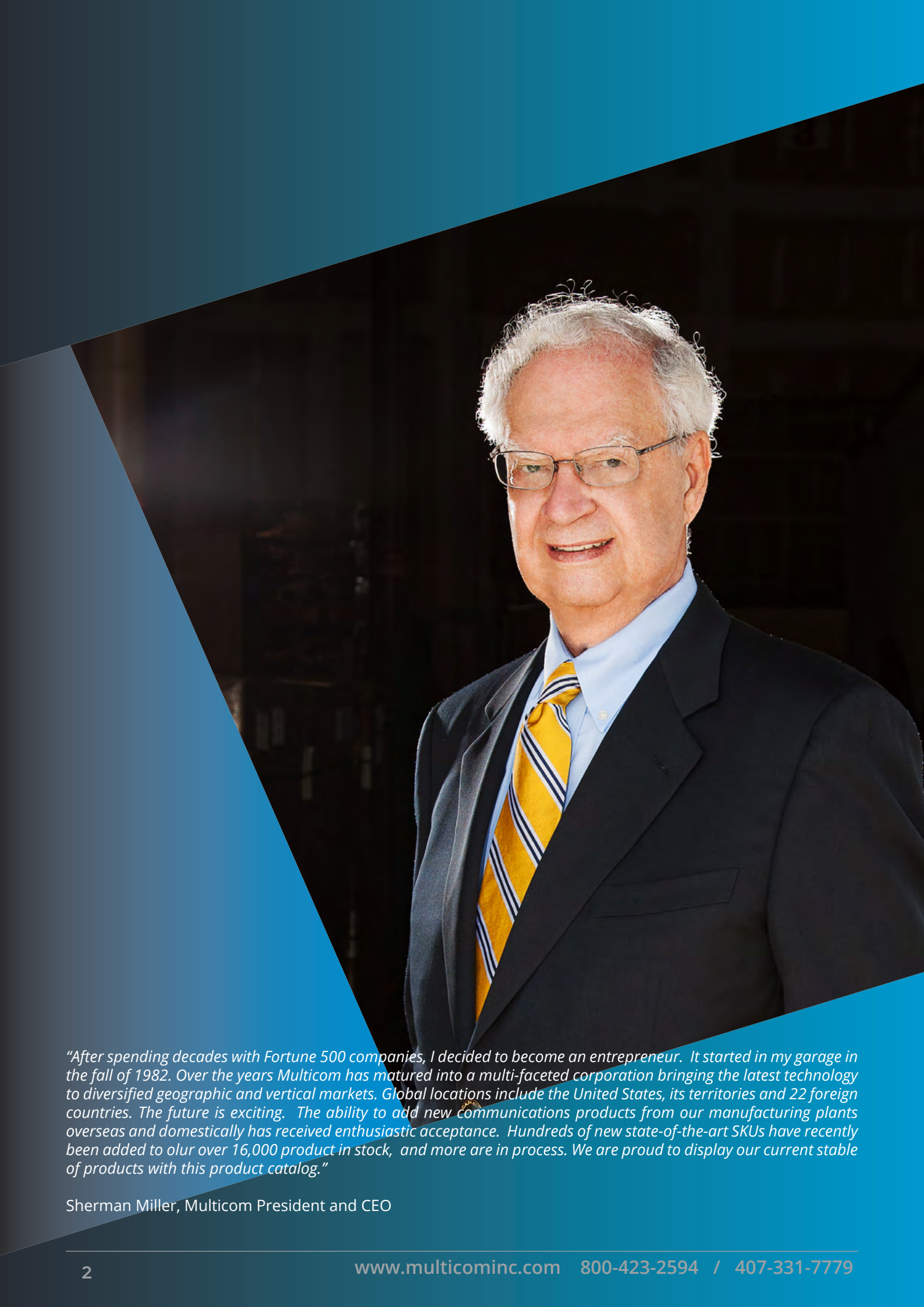
PRODUCT CATALOG

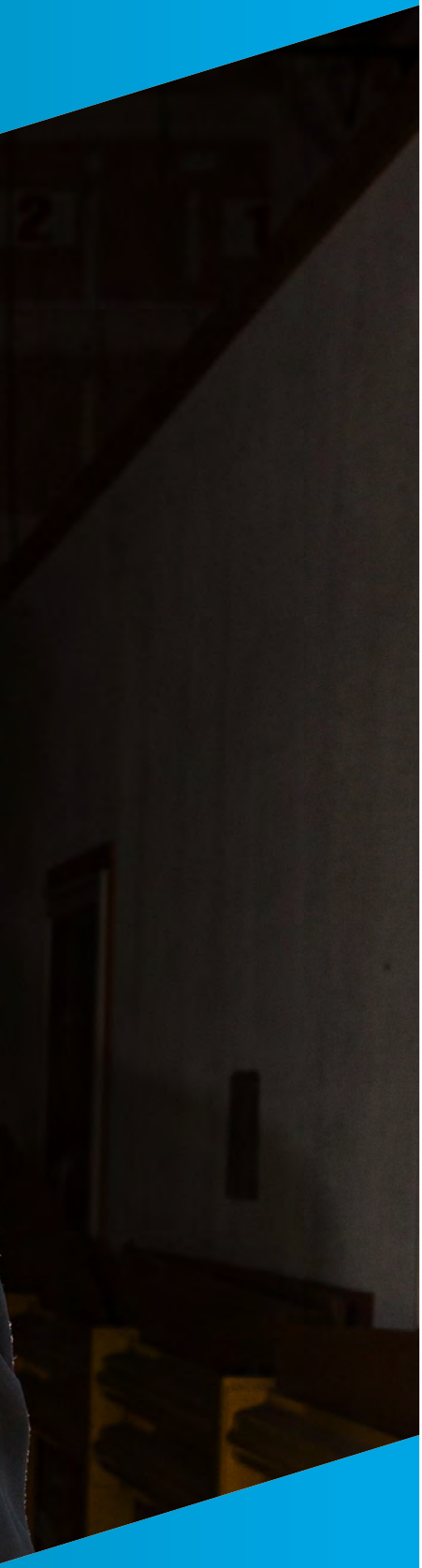


www.multicominc.com 800-423-2594 407-331-7779



"After spending decades with Fortune 500 companies, I decided to become an entrepreneur. It started in my garage in the fall of 1982. Over the years Multicom has matured into a multi-faceted corporation bringing the latest technology to diversified geographic and vertical markets. Global locations include the United States, its territories and 22 foreign countries. The future is exciting. The ability to add new communications products from our manufacturing plants overseas and domestically has received enthusiastic acceptance. Hundreds of new state-of-the-art SKUs have recently been added to olur over 16,000 product in stock, and more are in process. We are proud to display our current stable of products with this product catalog."

Sherman Miller, Multicom President and CEO



WELCOME

1982 was a significant year for Sherman Miller, Multicom's founder and president. It was that year that he started Multicom, Inc. – an event marked by the opening of the garage door of his home.

Entrepreneurs understand that unless you know your clients' problems, unless you identify their pain, you can't provide viable, desirable solutions.

Sherman G. Miller, president of Multicom Inc., a company he started in his garage and now reaches around the world, has been discovering and resolving his customers' pain points and delivering innovative solutions since 1982.

Since that time, Multicom has grown to be a cohesive team of experienced technicians, engineers, administrators, and sales people with decades of experience under their belt – many of our staff today are original hires and have worked at Multicom for more than a decade.

From the Orange County Convention Center and the Gaylord Palms Hotel/ Convention Center in Orlando to the José Miguel Agrelot Coliseum in San Juan, Puerto Rico, Multicom's products and expertise help make these venues the world- class destinations that they are.

Winner of the President's 'E' Award for outstanding contributions to the country's export expansion program, Multicom is a manufacturer and stocking distributor of over 16,000 products from 270 manufacturers. This enables us to facilitate everything from TV and Internet for hotel rooms, schools, college dorms and residential developments, to the traffic control systems that regulate your commute to work.

Multicom strives not only to develop and deliver the latest technology, but our products are designed to accommodate the constant evolution of new technology. Multicom offers from one source, multiple lines of products to completely build and maintain communication systems at cost effective prices.

Sherman Miller

Founder, President and CEO

ABOUT US

At Multicom, we strive to not only provide you with the high-quality products needed for the end-to-end integration of fiber optic and CATV distribution systems; but most importantly, we stress 'personal service' in order to understand your goals and implement the most efficient solution.

When you call us a real person answers the phone! You will be then be transferred to a qualified sales or technical engineer with the experience and expertise to provide the products and service you need, or answer your questions. We have been an industry leader and value the relationships we have built.

Since 1982, Multicom has grown to be a cohesive team of experienced technicians, engineers, administrators, and sales people with decades of experience under their belt – many of our staff today are original hires and have worked at Multicom since its inception. We look forward to serving you.

Multicom is the Proud Recipient of the President's 'E' Award for Outstanding Contributions to the Export Expansion Program of the U.S.A.

The President's 'E' Award was created by Executive Order of the President on December 5, 1961, to afford suitable recognition to persons, firms, or organizations which contribute significantly in the effort to increase United States exports.

The President's "E Star" Award, which was authorized by the Secretary of Commerce on August 4, 1969, affords continuing recognition of noteworthy export promotion efforts.

Multicom is a sustaining member of the U.S. District Export Council. The District Export Councils encourage and support exports of goods and services that strengthen individual companies, stimulate U.S. economic growth and create jobs.

Sherman Miller, President and CEO of Multicom, is an executive board member of the Orlando Regional Chamber of Commerce. The ORCC is specifically focused on regional entrepreneurship, serving the growing needs of businesses and entrepreneurs by 'Connecting our Members to Success', throughout Central Florida.

Multicom is also a sustaining member and affiliated with multiple associations and communities in the industry including these, and more:

Society of Cable Telecommunications Engineers

Sherman Miller is on the Board of Directors

National Systems Contractors Association

Satellite Broadcasting and Communications Association

International Municipal Signal Association

Hospitality Industry Technology Exposition & Conference

TABLE OF CONTENTS

OUTSIDE PLANT SOLUTIONS

Bring your network on-line quickly and efficiently while protecting your investment against the elements

Our outside plant portfolio is a perfect example of an extended family of CATV and fiber-rich solutions for every environment. Our new solutions exceed industry standards for aerial, underground, conduit and side-of-home applications and deliver rapid deployment and operational efficiency, superior mechanical and RF/optical performance, even in the harshest environments. With a broad and deep portfolio that includes high-capacity fiber and hybrid fiber coaxial systems — plus the networking expertise to help support all your applications.

DROP COAX CABLE

High-performance coaxial cable engineered for today's high-performance, high speed networks

Multicom has been a leader in the development and manufacture of the coaxial cable that keeps residential and commercial structures connected to today's advanced communications networks - whether they are suspended in the air, traversing the ductwork in the building, or buried underground.

Every foot of cable we produce is manufactured to our strictest specifications and quality-controlled tested every step of the way. The result is a cable that can reliably carry more bandwidth over longer distances, with unsurpassed signal clarity.

Features:

- PVC Jacket
- Foam Dielectric
- Swept to 3,500 MHz
- Impedance - 75 Ohm
- 1,000 Foot Reels
- CATV UL Listed Available
- Black or White
- Copper Clad Steel Center Conductor
- Messenger, Flooded, Tri-Shield
- 60%, 90% Aluminum Braid

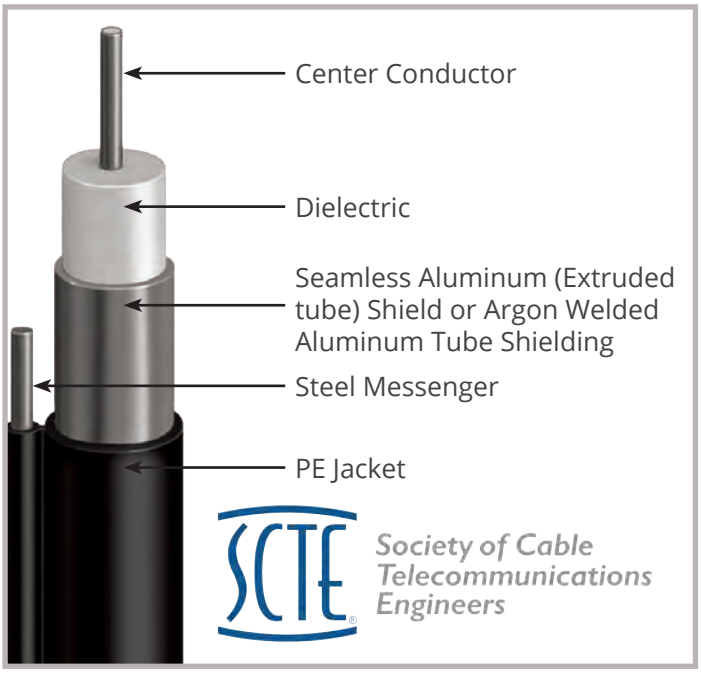
DID YOU KNOW?

SCTE Society of Cable Telecommunications Engineers

Multicom's Premium Coaxial product line meets or surpasses the latest SCTE requirements. The products have successfully passed extensive SCTE 15 and 74 evaluation testing in an independent US laboratory.

Cable Type	Part #	Braid %	Color / Description
RG-59	M5960-BV	60%	Black
RG-59	M5960-BVV	60%	Black / CATV UL Listed
RG-6	M660-BV	60%	Black
RG-6	M660-BVW	60%	White
RG-6	M660-BVV	60%	Black / CATV UL Listed
RG-6	M660-BVVW	60%	White / CATV UL Listed
RG-6	M660-BVM	60%	Black / Messenger
RG-6	M660-BEF	60%	Black / Flooded
RG-6	M6Q-BVV	60%	Quad Shield / CATV UL Listed
RG-6	M690-BV	90%	Black
RG-6	M690-BVW	90%	White
RG-6	M690-BVV	90%	Black / CATV UL Listed
RG-6	M690-BVVW	90%	White / CATV UL Listed
RG-6	M690-BVM	90%	Black / Messenger
RG-6	**M660T-BVS**	**90%**	**SCTE Compliant / Tri-shield**
RG-11	M1160-BV	60%	Black
RG-11	M1160-BVV	60%	Black / CATV UL Listed
RG-11	M1160-BVM	60%	Black / Messenger
RG-11	M1160-BVF	60%	Black / Flooded
RG-11	M1190-BV	90%	Black
RG-11	M1190-BVV	90%	Black / CATV UL Listed
RG-11	M1190-BVM	90%	Black / Messenger
RG-11	**M1160T-BVS**	**90%**	**SCTE Compliant / Tri-shield**

.500 & .540 TRUNK CABLE



Multicom Premium Trunk Cable

The .500 trunk cable, M500-JCAM109-S, provides the exceptional performance of premium SCTE 15 - compliant product also at Multicom's popular pricing.

Part #	Description
M500-JCAM109	.500 / Extruded
M500-JCAM109W	.500 / Argon Welded
M500-JCAM109S	**.500 / SCTE Compliant**
M540-JCAM109	.540 / Argon Welded
M540-JCA-W	.540 (no messenger)

Multicom's Extruded and Welded .500, and .540 Messenger Trunk Cable are manufactured in an ISO 9001 Certified facility and has specifications that exceed industry standards - with low attenuation and inherent strength. Its proven performance and reliability make it the right choice for distribution applications.

HEAT SHRINK TUBING

M-HST-1500

Multicom's heavy-duty heat shrinkable tubing is designed for aerial and direct burial connections in CATV wiring including splices, taps, amplifiers and splitters. When the tubing is heated with either a heat gun or torch, the lining of adhesive sealant will flow for easy sealing and bonding.

Features

- Standard 48 inch lengths
- 1.5 inch inner diameter
- 52 mil wall thickness
- For .500 to .750 coax cable
- Easy to cut
- For use in aerial and below ground connections
- 10 tubes to a bag, 5 bags to a box

TRUNK CONNECTORS

Features

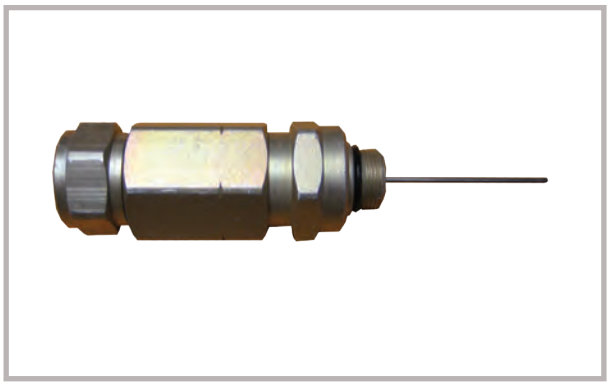
- Aluminum Alloy with Chromate Finish
- High RF performance in pedestal or straight through configurations
- "O" Ring Seals

FEED THRU

M500B-T10

The 500 Feed Thru Connector seizes the outer and center conductor of the coaxial cable. The cable center conductor extends thru this type of connector and is retained within the equipment housing.

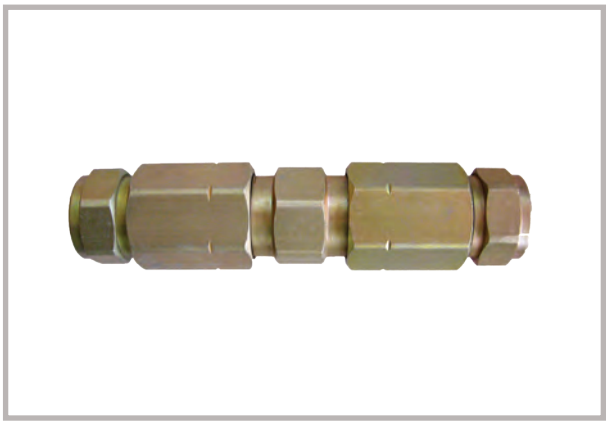
PIN



M500-CH3-T10
M540-CH3-T10
M625-CH3-T10
M750-CH3-T10
M875-CH3-T10

The three-piece Pin Type Connector seizes the outer and center conductor of the coaxial cable. A solid brass pin seizes and retains the cable center conductor. The pin then extends thru the body and is retained within the equipment housing. Also available in 540, 625, 750 and 875 sizes.

SPLICE CONNECTOR



M500-SP-T10
M625-SP-T10
M750-SP-T10

The 500 Splice Connector is used to join together two cables. It also seizes the outer and center conductors of the cable. Also available in 625 and 750 sizes

500 TO F-FEMALE

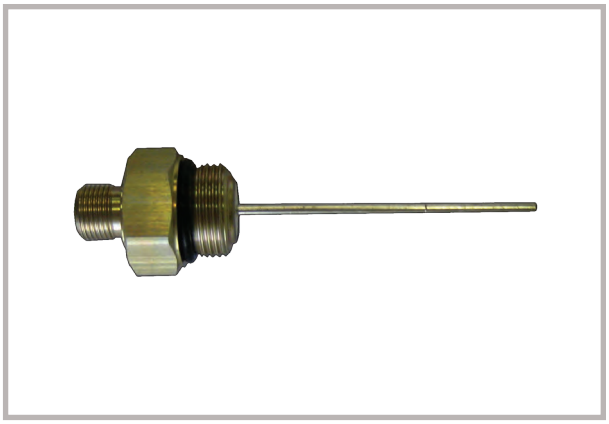
M500-BAFF-T10
M625-BAFF-T10
M750-BAFF-T10

The 500 to F-Female Connector is used when an F-Female port is required at the end of a cable. It also seizes the outer and center conductors of the cable. Also available in 625 and 750 sizes.

TRUNK CONNECTORS

Adapters are essential components for aerial and underground applications.

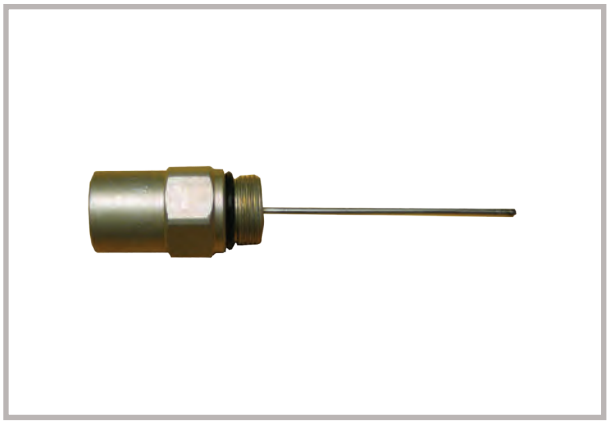
KS MALE TO F-FEMALE



MF-625-CH

The KS Male to F-Female adapter is used to change from Housing to F-Female Connector.

HOUSING TERMINATOR



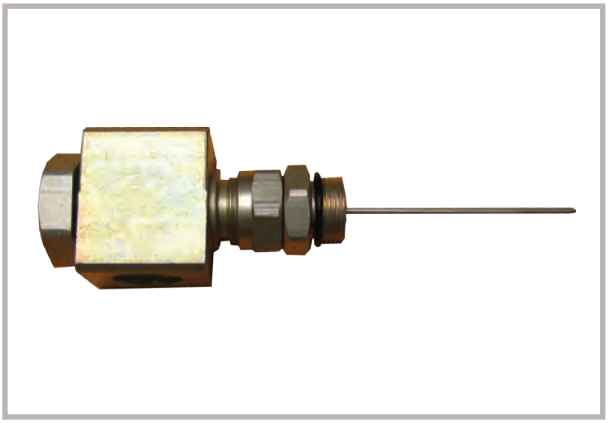
M-TRM

The Housing Terminator Connector is used in cable systems where it becomes necessary to terminate the RF signal power.

MLT-1 - Locking Terminator

LTL-7 Locking Terminator Tool

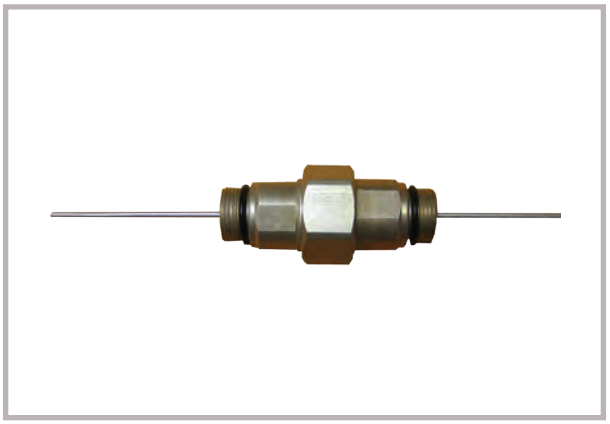
90° ADAPTER



M-90

The 90˚ Adaptor is designed for pedestal type installations where space restrictions require a right-angle connection between equipment and coaxial cables.

HOUSING TO HOUSING



M-HSG-HSG

The Housing to Housing Connector eliminates the need for jumpers and allows the connection of equipment without cable.

TRUNK CONNECTORS

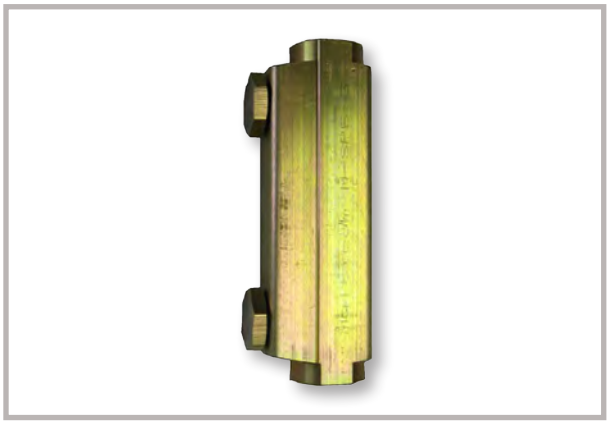
Adapters are used to change the direction of the cable where space is limited or where tight bends are required.

180° ADAPTER

M-180

The 180° Adaptor provides the connection between the amplifier and cable connector in a restricted space.

SPLICE BLOCK

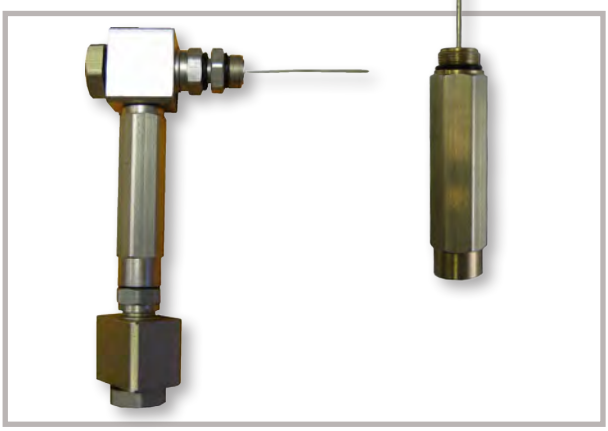


M-SPB

The Multicom Splice Block has been designed with superior electrical performance. The one-piece body is machined from a aluminum alloy to minimize moisture ingress paths. This product is designed to give high RF performance in pedestal or straight through configurations.

Part #	Description
M-SPB-2	2" Splice Black
M-SPB-3	2.75" Splice Black

180° ADAPTER & EXTENSION



MP-PA and M-EXT

Multicom's 180° Adapter designed for applications where space limitations require a 180 degree connection between cable and equipment. The design provides high current carrying capacity and exceptional return and insertion loss characteristics through 1 GHz.

Part #	Description
MP-PA-3.0-T	180 with 3" Extension
MP-PA-4.5-T	180 with 4.5" Extension
MP-PA-6-T	180 with 6" Extension
M-EXT-3	3" Extension
M-EXT-4.5	4.5" Extension
M-EXT-6	6" Extension

FEED-THRU

MCON-11

Housing to RG-11 Feed Thru Connector

FIBER OPTIC CABLE

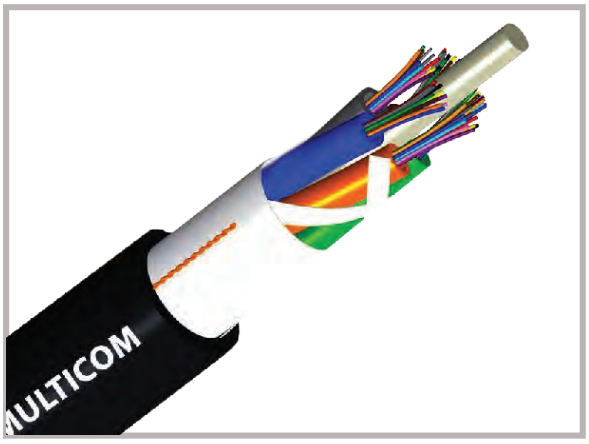
Future-proof fiber optic cable engineered for today's super high-speed and high-performance networks

Easy Cable Entry & Preparation
- 12 fibers per tube construction up to 144 fiber designs allow easy termination and mid-span fiber access
- Flexible buffer tubes enhance mid-entry

Flexible Routing & Customization
- Flexible buffer tubes simplify routing, storage and prep
- Available in singlemode fiber, loose tube

Versatile Installation & Use
- Tailored designs span distances up to 1200' (305m) without interrupting power
- Easy mid-entry is ideal for FTTx distribution applications

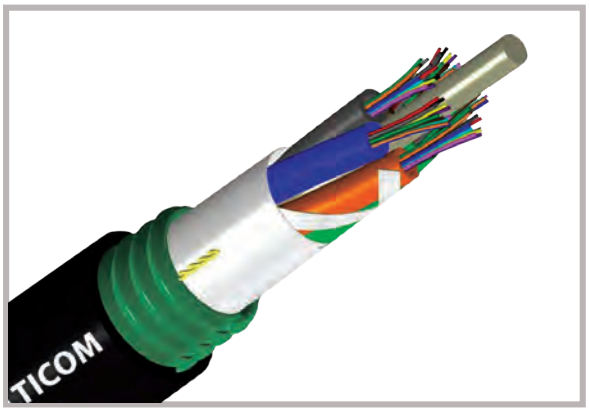
Reliable Lifetime Performance
- Custom engineered for operation under full load
- Guaranteed standards-based performance



ADSS

Multicom's All-Dielectric Self-Supporting (ADSS) Loose Tube Fiber Optic Cable is the best choice for short aerial cable spans ranging up to 600 feet (183 meters). This cable's low-cost installation, compact size and specialized design make it the ideal, cost-effective cabling solution for duct, Fiber-to-the-Home (FTTH) and short-span, self-supporting aerial drop applications.

Part #	Description
MADSS012SM-XXX	12 count/Singlemode/350 & 600 Ft. Span
MADSS024SM-XXX	24 count/Singlemode/350 & 600 Ft. Span
MADSS048SM-XXX	48 count/Singlemode/350 & 600 Ft. Span
MADSS096SM-XXX	96 count/Singlemode/350 & 600Ft. Span
MADSS144SM-XXX	144 count/Singlemode/350 & 600 Ft. Span



Armored

Highly durable and reliable for underground duct and lashed aerial installations (including duct-to-lashed aerial) as well as general Outside Plant installations, including direct buried in harsh environments.

Part #	Description
MARMLT012SM	12 count / Singlemode
MARMLT024SM	24 count / Singlemode
MARMLT048SM	48 count / Singlemode
MARMLT096SM	96 count / Singlemode
MARMLT144SM	144 count / Singlemode

OUTDOOR POWER PASSING TAPS

Multicom stocks a complete line of quality outdoor taps with frequency coverage to 1 GHz. Available in two, four and eight port models that are capable of both stand and pedestal mounting.

These taps are constructed with the circuitry on a removable bottom plate for ease in changing tap values. Separate gaskets are used to provide weatherproofing and RFI integrity.

All taps feature plated brass F connectors on the tap ports, and 5/8 - 24 entry fittings on input and output ports. The housings are made with 360 aluminum alloy with a polyurethane coating to ensure maximum corrosion resistance.

Features:

- 1GHz passive
- 2,4 and 8 port models have brass F ports
- Power Passing - Uninterrupted service when faceplate is removed
- Nickel plated and epoxy sealed
- 120 dB RFI shielding
- Weather-proof gaskets
- Swivel-entry blocks for easy installation of connectors
- Frequency range 5-1000 MHz
- Power Rating: 15 amps, 60-90VAC
- Powder-coated 360 aluminum alloy die-cast housing
- Aerial or pedestal mounting
- Printed circuit board
- Blocking capacitors on the F ports for surge resistance

Common Specifications:

Tap Loss Tolerance (dB)	
5-10 MHz	±1.5
10-550 MHz	±1.0
550-1000 MHz	±1.5
Tap to Tap Isolation (dB)	
5-10 MHz	24
10-550 MHz	27
550-600 MHz	24
600-1000 MHz	23
Return Loss (dB)	
@5-10 MHz	16
@10-400 MHz	26
@400-550 MHz	18
@550-870 MHz	16
@870-1000	17
Impedance	
All Ports	**75Ω**
Power Passing (AC/DC)	6A

2-Port Outdoor Power Passing Tap

Insertion Loss (dB)	**4**	**8**	**11**	**14**	**17**	**20**	**23**	**26**	**29**	**32**	**35**
5-10 MHz	T	3.6	1.8	1.3	1.0	0.8	0.8	0.8	0.8	0.8	0.8
10-450 MHz	T	3.8	1.8	1.5	1.4	1.0	1.0	1.0	1.0	0.8	0.8
450-550 MHz	T	4.2	2.2	1.7	1.5	1.2	1.2	1.2	1.2	1.2	1.2
550-750 MHz	T	4.5	2.8	1.8	1.8	1.4	1.4	1.4	1.4	1.4	1.4
750-1000 MHz	T	4.8	3.8	2.4	2.2	1.7	1.7	1.5	1.5	1.5	1.5
Out to Tap Isolation											
5-10 MHz	-	21	21	22	25	26	29	32	32	32	33
10-450 MHz	-	26	26	26	31	33	35	36	40	42	46
450-550 MHz	-	32	25	25	30	33	35	38	40	42	45
550-750 MHz	-	22	23	25	28	30	32	36	37	40	42
750-1000 MHz	-	22	23	25	28	30	32	36	37	40	42

OUTDOOR POWER PASSING TAPS

4-Port Outdoor Power Passing Tap

Insertion Loss (dB)	8	11	14	17	20	23	26	29	32	35
5-10 MHz	T	3.2	1.8	1.3	1.0	0.8	0.8	0.8	0.8	0.8
10-450 MHz	T	3.5	1.8	1.4	1.2	0.8	0.8	0.8	0.8	0.8
450-550 MHz	T	4.0	2.3	1.6	1.4	1.2	1.0	1.0	1.0	1.0
550-750 MHz	T	4.4	3.0	1.8	1.6	1.4	1.2	1.2	1.2	1.2
750-1000 MHz	T	4.8	3.7	2.2	2.0	1.8	1.5	1.5	1.5	1.5
Out to Tap Isolation										
5-10 MHz	-	22	22	25	30	30	30	32	32	33
10-450 MHz	-	26	27	30	36	36	38	40	42	44
450-550 MHz	-	24	28	30	35	35	35	40	42	42
550-750 MHz	-	23	24	27	32	32	34	35	38	40
750-1000 MHz	-	23	24	27	32	32	34	35	38	40

8-Port Outdoor Power Passing Tap

Insertion Loss (dB)	11	14	17	20	23	26	29	32	35
5-10 MHz	T	3.6	1.8	1.4	1.0	1.0	1.0	1.0	1.0
10-450 MHz	T	4.2	2.2	1.6	1.1	1.1	1.1	1.1	1.1
450-550 MHz	T	4.5	2.5	2.0	1.5	1.2	1.2	1.2	1.2
550-750 MHz	T	4.6	3.0	2.2	1.8	1.3	1.3	1.3	1.3
750-1000 MHz	T	4.9	3.2	2.6	2.2	1.5	1.5	1.5	1.5
Out to Tap Isolation									
5-10 MHz	-	23	24	27	28	30	32	34	36
10-450 MHz	-	24	25	28	30	32	34	35	38
450-550 MHz	-	27	27	30	34	38	40	42	42
550-750 MHz	-	25	27	30	33	33	35	38	40
750-1000 MHz	-	25	27	30	33	33	35	38	40

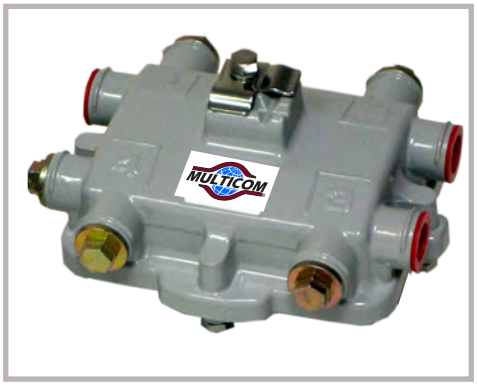
Tap Value (dB)	2-Way Power Passing Taps	4-Way Power Passing Taps	8-Way Power Passing Taps
4	MTSAG-204P		
8	MTSAG-208P	MTSAG-408P	
11	MTSAG-211P	MTSAG-411P	MTSAG-811P
14	MTSAG-214P	MTSAG-414P	MTSAG-814P
17	MTSAG-217P	MTSAG-417P	MTSAG-817P
20	MTSAG-220P	MTSAG-420P	MTSAG-820P
23	MTSAG-223P	MTSAG-423P	MTSAG-823P
26	MTSAG-226P	MTSAG-426P	MTSAG-826P
29	MTSAG-229P	MTSAG-429P	MTSAG-829P
32	MTSAG-232P	MTSAG-432P	MTSAG-832P
35	MTSAG-235P	MTSAG-435P	MTSAG-835P

OUTDOOR PASSIVES

Multicom's line of trunk line splitters are available in 2 and 3 way versions as well as single port directional coupler models with values of 8, 12 and 16dB. A power inserter model rounds out the series. All splitter, directional coupler and power inserter housings have 5/8-24 entry fittings on all ports and are made with the same corrosion resistant powder coated 360 aluminum alloy die-cast casting materials as the outdoor taps.

Features:

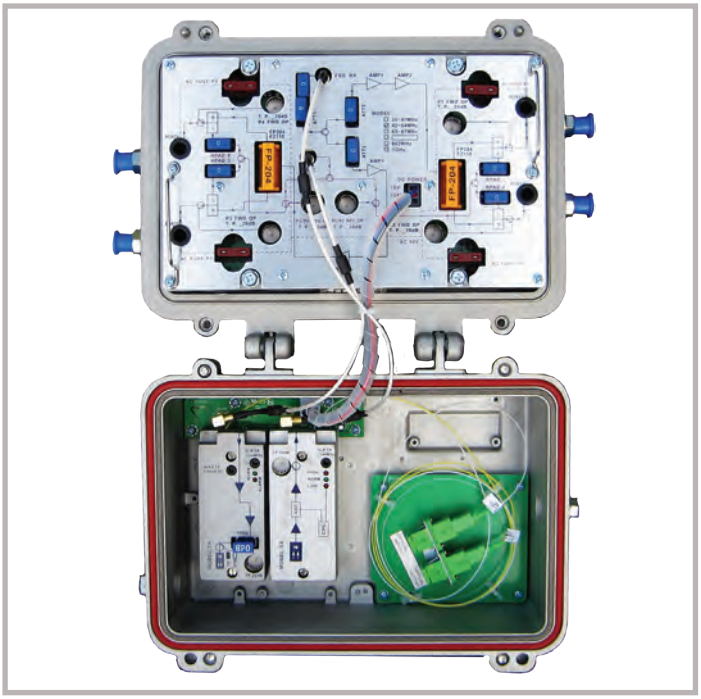
- 1 GHz Bandwidth
- 2, 4 and 8 port models have brass-plated F connectors
- 120 dB RFI shielding
- Weather-proof gaskets
- Powder-coated 360 aluminum alloy die-cast housing
- 5/8" Entry fittings and are available in 2 and 3 Way
- Splitters and 8, 12 and 16dB Directional Coupler



Part#	MPISAG	MDCSA8G	MDCSA12G	MDCSA16G	MSSA2G	MSSA3G
Product	**Power Inserter**	**8dB Directional Coupler**	**12dB Directional Coupler**	**16dB Directional Coupler**	**2-Way Splitter**	**3-Way Splitter**
Tap Loss						
5-300 MHz	-	±1.0	±1.0	±1.0	-	-
300-500 MHz	-	±1.0	±1.0	±1.0	-	-
500-1000 MHz	-	±1.5	±1.5	±1.5	-	-
Insertion Loss						
5-300 MHz	1.0	2.4	1.0	1.0	4.2	7.0
300-500 MHz	1.2	3.0	1.2	1.2	4.6	8.5
500-1000 MHz	1.4	3.2	2.2	2.2	5.2	9.0
Isolation Loss						
5-300 MHz	-	22	25	27	25	20
300-500 MHz	-	25	28	25	25	19
500-1000 MHz	-	22	20	22	20	18
Return Loss						
5-300 MHz	19	19	19	19	18	18
300-500 MHz	19	19	18	19	18	17
500-1000 MHz	17	17	17	17	17	17
Power Passing	10A	10A	10A	10A	10A	10A

OUTDOOR 4-PORT NODE

MUL-OFN-V-M-FP-4-M

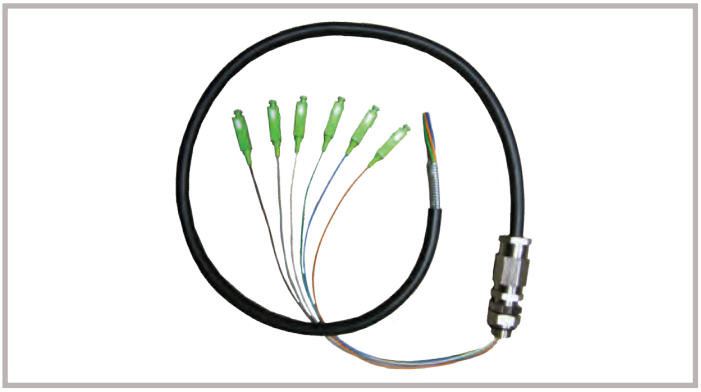


The Multicom MUL-OFN-V-M-FP-4-M 4-Port Outdoor Optical Node is a bi-directional node specifically developed for HFC broadband networks. It accommodates the FTTH (Fiber to the Home) network topology, while addressing the issues of CATV bi-directional return channel noise and high reliability network security transmission requirements of modern CATV networks.

This Outdoor 4-Port Optical Node uses a modular architecture allowing fast, easy servicing, a variety of configurations, and easy upgrading. The RF amplifier section and the switching power supply module are in one modular unit in the bottom cover. The top cover can be populated with 1 forward optical receiver module, 1 reverse optical transmitter module and 1optional Ethernet transponder/Network Management module.

Forward Optical Receiver	Specification
Optical Receive Power (dBm)	-6 ~ +2
Optical Return Loss (dB)	> 45
Optical RX Wavelength (nm)	1100 ~ 1600
Forward RF Parameters	**Specification**
Frequency Range (MHz)	54 ~ 1003
Rated Output Level (dBmV)	≥ +46 (≥ 106 dBµV)
Output Return Loss (dB)	≥ 16
Return Optical Transmitter	**Specification**
Optical TX Wavelength (nm)	1310 ±10
Laser Type	FP (DFB optional)
Optical Output Power (mW)	1
Return RF Parameters	**Specification**
Frequency Range (MHz)	5 ~ 42
Rated Input Level (dBmV)	+15 ~ +25 (75 ~ 85 dBµV)
Input Return Loss (dB)	≥ 16

NODE SERVICE CABLE



MNSC-xM-xF-xC-xx/xxx

- Connector Type
- # of Connectors
- # of Fibers
- Length in Meters

Multicom Node Service Cable utilizes a specialized 5/8"-24 feed-through adapter, featuring an anti-twist coupling. The anti-twist feature allows the coupling body to be secured to the outdoor housing, without twisting the cable.

Assemblies come standard in 16.5' (5m) lengths with six fibers and six SC/APC connectors, but can be custom built to specifications with all variation of lengths and connector options available.

Features

- Corning fiber
- Loose tube
- Armored
- Fully water blocked

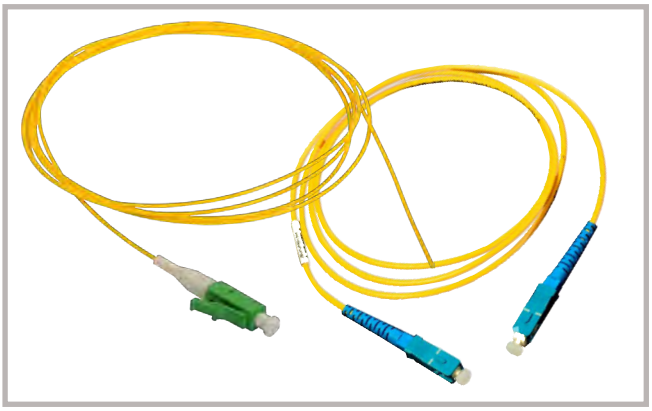
Parameter	Specification
Insertion Loss	<= 0.30dB
Return Loss	>= 60dB
Max Attenuation	1310nm <= 0.4dB/km
	1550nm <=0.3dB/km

FIBER MANAGEMENT

Multicom fiber optic systems meet today's requirements and provide a migration path for tomorrow's applications

Multicom provides the high bandwidth physical infrastructures needed for the data center, enterprise, and campus networks with comprehensive fiber optic systems that deliver high performance, reliability and scalability. By leveraging our experience with innovative design and cable management expertise, These components provide complete solutions for today's high data rate fiber networks and Ethernet applications, and support future readiness for 40 Gb/s and 100 Gb/s data rates, maximizing physical infrastructure performance, modularity, and scalability.

JUMPERS & PIGTAILS



Multicom manufactures a large selection of Singlemode and Multi-Mode fiber optic Jumpers and Pigtails with a selection of industry standard connectors.

Features

- Custom lengths
- Corning fiber used in all jumpers and pigtails
- 2mm jacket for more flexibility and capacity in tight spaces
- Meets all standard panel interfaces
- All cables serialized and test results are recorded
- High bandwidth, high tensile strength, small bend radius

Applications:

- Trunking lines direct to telecommunication closets
- Fiber patch panel within communication closets
- Links between electronic equipment and fiber patch panel

Singlemode Fiber with FC, ST and SC Connectors				Multi-Mode Fiber
Contact Mode	PC	UPC	APC	PC
Insertion Loss (dB)	≤0.2			≤0.3
Temperature (°C)	-40 to +80			-40 to +80
Repeatability (dB)	≤0.1			≤0.1
Interchange (dB)	≤0.2			≤0.2
Return Loss (dB)	≥45	≥50	≥65	≥35
Cable Diameter	2mm, (0.9mm and 3mm also available)			
Ferrule Material	Zirconia Ceramic			

DID YOU KNOW?

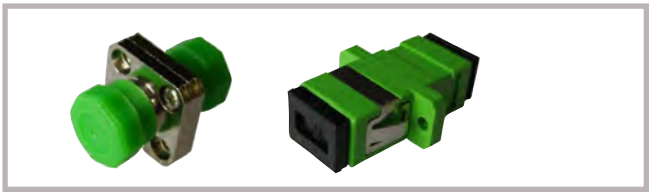
CORNING

Multicom uses only Corning fiber-based fiber optic passives

FOJ-2M-SM-SC/APC-S-SC/APC

- FOJ = Fiber Optic Jumper, FOP = Fiber Optic Pigtail
- xM = Length in Meters, xFT = Length in Feet
- Blank if 1, or Number of Fibers
- SM = Singlemode, MM = Multi-Mode
- First Connector Type
- S = Simplex, D = Duplex
- Second Connector Type

MATING SLEEVES



Mating Sleeves with high-precision sleeves enable reliable mating of the ferrule diameters, ensuring low insertion and return loss. All connectors available.

FOMS-XX/XXX-XDB

- Connector Type
- Decibels (dB)

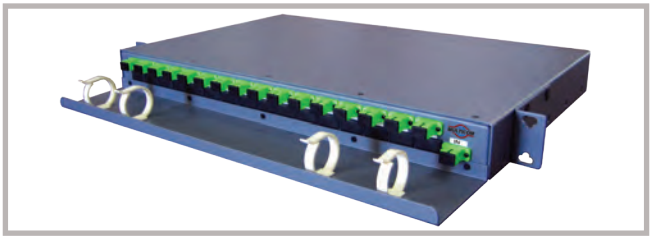
ATTENUATORS

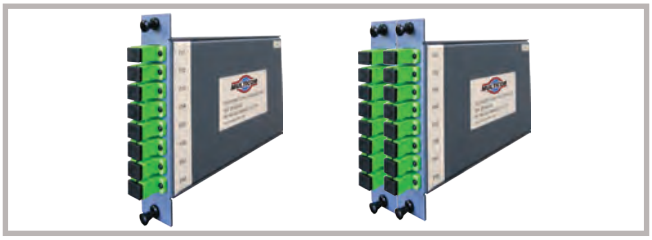
Fixed-value Attenuators reduce the signal level without appreciably distorting the waveform. Available in 1dB increments. All connectors available.

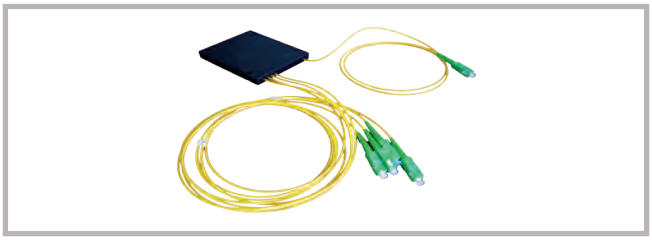
FOATT-XX/XXX-XDB

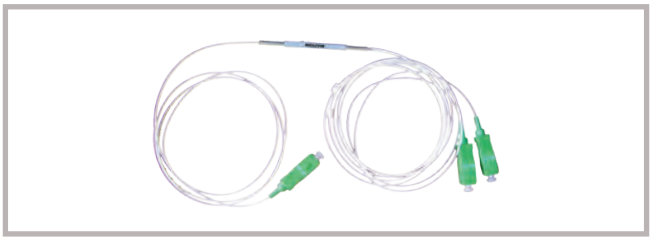
- Connector Type
- Decibels (dB)

PLC OPTICAL SPLITTERS









The Multicom fiber optic line of PLC splitters include Box, Tube, Cassette and Rack Mount configurations. They offer superior performance and field-proven reliability in harsh environments.

Our Planar Lightwave Circuit (PLC) splitters are fabricated using silica optical waveguide technology. Features include small size, high reliability and a wide operating wavelength. The PLC splitter is widely used in all fiber optic networks to realize optical signal power splitting. All products are GR-1221-CORE compliant.

Features

- Corning fiber
- Low insertion
- Even or various splitting ratios
- 1x2 through 1x64 configurations
- Bidirectional, compact
- Environmentally stable
- Wide wavelength range
- High uniformity
- Telcordia GR-1221-CORE compliant

Applications:

- Long-haul tele/data communications
- Fiber optic equipment and systems
- CATV systems
- Local Area Network, PON, and FTTH
- Fiber sensors
- DWDM networks

Parameter	1x2	1x4	1x8	1x16	1x32	1x64
Operating Wavelength (nm)	1260-1650					
Insertion Loss Typical/Max (dB)	<4.0/4.2	<7.2/7.5	<10.5/11	<13.5/14	<16.5/17.5	<19.5/21
Loss Uniformity (dB)	<0.4	<0.6	<0.8	<1.2	<1.7	<2.0
Return Loss (dB)	>50					
Polarization Dependent Loss (dB)	<0.3					
Directivity (dB)	>55					
Wavelength Dependent Loss (dB)	0.3	0.3	0.3	0.5	0.5	0.5
Operating/Storage Temperature (°C)	-40 to 85					

FOSPL-C-1/8-60/40-SM-SC/APC

- Connector Type
- S=Singlemode, M=Multi-mode
- 60%/40% of Split, or E=Even
- Number of Splits (1x2, 1x4, 1x8, etc.)
- T=Tube, B=Box, C=Cassette, RM=Rack Mount

WDM

Parameter	Specification
Wavelength Range - 1310nm (max/min)	1270/1350
Wavelength Range - 1490nm (max/min)	1480/1500
Wavelength Range - 1550nm (max/min)	1550/1560
Wavelength Range - 1590/1610nm (max/min)	1580/1620
Insertion Loss (dB - typical/max)	17.5/18.0
Insertion Loss Uniformity (dB - max)	2.0
Band Isolation (dB)	30
Directivity (dB)	50
Return Loss (dB)	50
Optical Power Handling (mW)	300

Today's FTTH systems demand innovative products for a variety of applications. The Multicom WDM (Wavelength Division Multiplexor), supports any 2-way RFoG/PON services operating with a 1550/1490nm Forward Path and 1310/1590/1610nm Return Path - over a single fiber - for seamless integration of video, voice, and data services.

Features:

- Standard LGX Form Factor
- Mounts in a Standard LGX Chassis
- Low Insertion Loss
- Ultra-High Isolation
- Wide Operating Temperature Range
- Telcordia GR-1221-Core Compliant
- Front-Located Ports for Easy Access
- All connectors are SC/APC design for optimal power and reliability
- 1550nm Forward Port, 1310/1490nm PON Port, and Common Port

Applications:

The WDM is ideally suited for use in two-way and high density MDU, CATV, PON, FTTH and RFoG applications as well as in many other fiber optic-based data, video, and voice networks.

MUL-WDM-F-S-1310/1550-SC/APC

- Connector Type
- Wavelength/s, or Application (PON, FTTH, RFOG)
- S=Single, D=Dual Port

LGX CASSETTE CHASSIS

Capacity:

- 12 - Single wide LGX cassettes
- 6 - Double wide LGX cassettes
- 4 - Triple wide LGX cassettes

MUL-FOCH-CASS

Multicom's Rack-Mounted LGX Cassette Chassis is designed for use with any standard plug-and-play single, double and triple wide LGX 2 to 32 port cassette splitter modules in FTTX networks.

These chassis are designed for use in mid-rise and high-rise Multiple Dwelling Unit (MDU) equipment rooms suited for centralized Optical Network Terminal (ONT) applications.

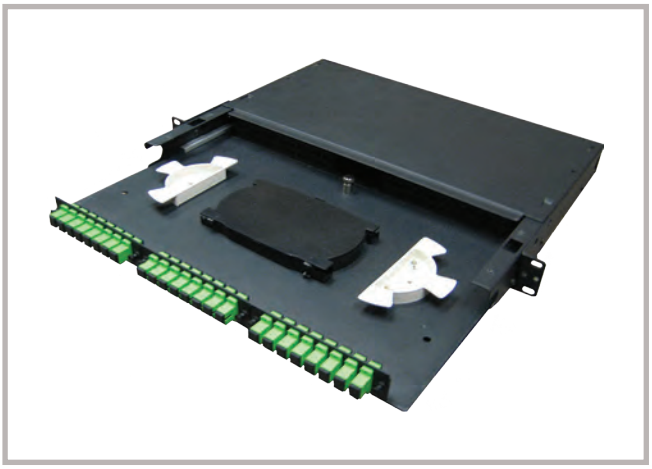
Features:

- Complies with all LGX Form Factor Cassette Splitter Modules
- 4 RU
- Transparent dust cover on front hinge

Applications:

Optical Access Network, WAN, LAN, CATV Systems

PATCH & SPLICE ENCLOSURE



Parameter	Specification
Suitable for module type	LGX adapter panels
Number of module positions	3 - can be simplex or duplex
Material	16 gauge, cold-rolled steel
Material finish	Black, powder coated

The Multicom 1 RU Patch and Splice Enclosure is designed to accept up to 3 LGX Adapter Panels with the ability to use a full array of connector types. This enclosure offers a flexible solution, enabling the incorporation of a multi-functional chassis that allows easy access during installation or re-work with no disturbance of the existing fiber cable - making this one of the most flexible enclosures on the market.

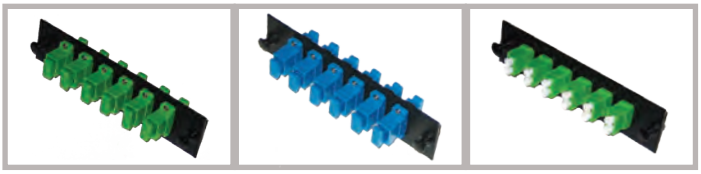
Features:

- Custom loaded to your specific configuration
- 1.5M Pigtails included in loaded enclosures
- Splice tray and cable management spools included
- Accepts up to three LGX Adapter Panels
- Hinged front and rear Plexiglass doors
- Side patch and exit ports
- Fully removable sliding-out tray for easy access
- Assorted strain relief and fiber accessories included
- Provides higher patch field density in fewer rack units saving valuable rack space

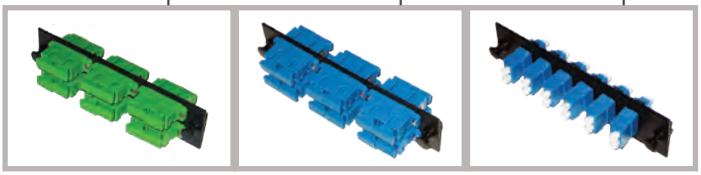
MUL-RM-8F-PS-SC/APC-S

- S = Simplex, D = Duplex
- F/O Connector Type
- PS = Patch and Splice, PO = Patch Only
- Number of Fibers - xF
- RM = Rack Mount, WM = Wall Mount

ADAPTER PANELS



SC/APC Simplex | SC/UPC Simplex | LC/APC Duplex



SC/APC Duplex | SC/UPC Duplex | LC/UPC Duplex

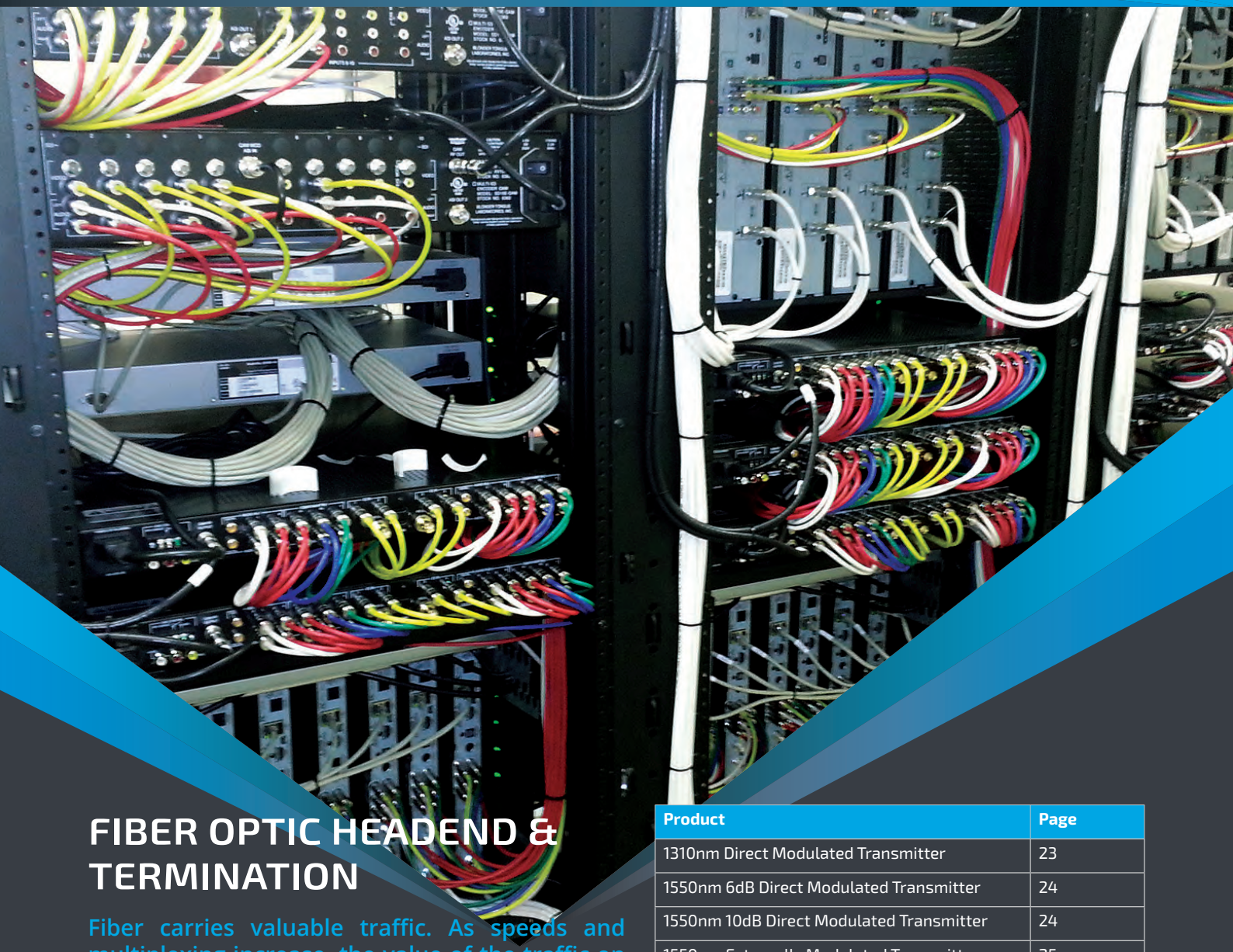
Multicom's Fiber Optic Adapter Panels are compatible with all LGX style rack and wall fiber distribution units. Panels are available in Simplex and Duplex adapter formats.

Features:

- LGX form factor compatible with Multilink, AFL, Wirewerks, FIS, and other rack and wall fiber distribution units
- RoHS Compliant
- Loaded with TIA/EIA-604 FOCIS-3/10 compliant adapters
- Built with ceramic split sleeves to fit specific network requirements
- 18-gauge cold rolled, electrostatic polyester powder coated steel
- All panels are pre-loaded for quick deployment

FOAP-6-SM-SC/APC

- Connector Type
- SM = Singlemode, MM = Multi-Mode
- Number of Adapters (6, 8)



FIBER OPTIC HEADEND & TERMINATION

Fiber carries valuable traffic. As speeds and multiplexing increase, the value of the traffic on each fiber multiplies. The interruption of signal on just one fiber for a few seconds can cost a carrier's customer thousands of dollars, and can cost the carrier that customer. Multicom manufactures and stocks only the high-quality and most cost-effective products.

Public networks for video, data and voice are using more and more optical fiber. Fiber-based communications networks have clear advantages over other media in cost, reliability, and capacity, spurring increased deployment on high-capacity networks. All public network applications are making wide-spread and growing use of fiber optics. This growth means that thousands of fibers are terminating in Central Offices (COs) and cable-TV headends. Multicom stocks a full line of fiber optic headend and termination products for every network - large or small.

1310nm DIRECT MODULATED TRANSMITTER

Optical Parameter	Unit	Spec
Optical output power	dBm	7.7, 10, 12 ,14, 14.9
Optical wavelength	nm	1310 ±20
Laser type		ORTEL DFB
Optical modulation type		Direct
Frequency range	MHz	47-750/862/1003
RF input level	dBmV	+12 - +28

The MUL-1310TX-V-1-X intelligent directly modulated optical transmitter is mainly used in 1310nm optical fiber transmission systems. It uses an ORTEL DFB laser with an optical output power of 7.7, 10, 12, 14 and 14.9 dBm, and advanced intelligent electronic predistortion compensation technology.

Features:

- High linearity, optically isolated, distributed AM feedback ORTEL DFB laser
- Transmits NTSC, PAL, ATSC, and related digital information for CATV and/or telephony applications
- 47-1003MHz RF input bandwidth
- Front panel RF test point
- Automatic Gain Control (AGC) and Manual Gain Control (MGC) override
- Integrated SNMP network interface
- Dual hot-pluggable redundant power supplies

MUL-1310TX-V-1-10

└ Output Power (dBm) - 7.7, 10, 12, 14, 14.9

1550nm 6dB DIRECT MODULATED TRANSMITTER

Optical Parameter	Unit	Spec
Optical output power	dBm	6
Optical wavelength	nm	1550 ±10
Laser type		ORTEL DFB
Optical modulation type		Direct
Frequency range	MHz	47-750/862/1003
RF input level	dBmV	+12 - +28

The MUL-1550TX-V-1-6 intelligent directly modulated optical transmitter is mainly used in 1550nm optical fiber transmission systems. It uses an ORTEL DFB laser with an optical output power of 6dBm, and advanced intelligent electronic predistortion compensation technology.

Features:

- High linearity, optically isolated, distributed AM feedback ORTEL DFB laser with an optical output power of 6dBm
- Transmits NTSC, PAL, ATSC, and related digital information for CATV and/or telephony applications
- 47-1003 MHz RF input bandwidth
- Front panel RF test point
- Automatic Gain Control (AGC) and Manual Gain Control (MGC) override
- Integrated SNMP network interface
- Dual hot-pluggable redundant power supplies

MUL-1550TX-V-1-6

└ Output Power (dBm) - 6

1550nm 10dB DIRECT MODULATED TRANSMITTER

The MUL-1550TX-V-1-10 intelligent directly modulated optical transmitter is mainly used in 1550nm optical fiber transmission systems. It uses an ORTEL DFB laser with an optical output power of 10dBm, and advanced intelligent electronic predistortion compensation technology (adjustable up to 50km in 1km steps).

Optical Parameter	Unit	Spec
Optical output power	dBm	10
Optical wavelength	nm	1550 ±10
Laser type		ORTEL DFB
Dispersion compensation distance	Km	≤50
Optical modulation type		Direct
Frequency range	MHz	47-862/1003
RF input level	dBmV	+15 - +25

Features:

- High linearity, optically isolated, distributed AM feedback ORTEL DFB laser with an optical output power of 10dBm
- Transmits NTSC, PAL, ATSC, and related digital information for CATV and/or telephony applications
- 47-1003 MHz RF input bandwidth
- Front panel RF test point
- Automatic Gain Control (AGC) and Manual Gain Control (MGC) override
- Integrated SNMP network interface
- Dual hot-pluggable redundant power supplies

MUL-1550TX-V-1-10

└ Output Power (dBm) - 10

1550nm 10dB EXTERNALLY MODULATED TRANSMITTER

The MUL-1550TXEM-V-2 Externally Modulated Optical Transmitter is a state-of-the-art high-performance fiber optic transmitter specially developed for CATV signal distribution in HFC networks, and the long-distance transmission of cable phone and cable data. Optimized for a variety network applications, this two-ORTEL DFB laser transmitter couples the optical output powers of 7, 8, 9 and 10dBm each, with low optical linewidth resulting in unmatched performance.

Optical Parameter	Unit	Spec
Optical output power	dBm	2 x (7, 8, 9, 10)
Optical wavelength	nm	1545 ~ 1560
Laser type		ORTEL DFB
Wavelength adjustment range	GHz	± -50
Relative intensity noise	dB/Hz	< -160
Frequency range	MHz	47 ~1003
RF input level	dBmV	+20

Features:

- ORTEL DFB laser
- Two high linearity, optically isolated, distributed AM feedback ORTEL DFB lasers
- Transmits NTSC, PAL, ATSC, and related digital information for CATV and/or telephony applications
- 47-1003 MHz RF input bandwidth
- Front panel RF test point
- Integrated SNMP network interface
- Dual hot-pluggable redundant power supplies

MUL-1550TXEM-V-2-10

└ Output Power (dBm) - 7, 8, 9, 10

└ Output Port(s)

1550nm EDFA

Optical Parameter	Unit	Spec
Operating bandwidth	nm	1535-1565
Optical input power	dBm	-5 ~ +10
Optical output power	dBm	18 or 24
Output power stability	dBm	± 0.2
Return loss - Input port	dB	≥45
Return loss - Output port	dB	≥45

MUL-EDFA-V-1-18

- Output Power (dBm) - 18, 24
- Output Port

The MUL-EDFA-V-1 1550nm Erbium Doped Fiber Amplifier (EDFA) is a low noise 1550nm optical amplifier, designed using advanced optical principles. The hot pluggable, redundant power EDFA is flexible enough to perform in numerous upstream and downstream applications, including supertrunk transmission, hub interconnects and 1310/1550nm overlays.

Features:

- JDSU laser
- Automatic control of the output optical power
- Output optical power attentuation is adjustable
- High-performance erbium doped fiber amplifier, high efficiency energy conversion
- Advanced 32 bit processor, with automatic monitoring circuitry. Accurately monitors and controls the optical output power and various parameters of the pump laser, ensures stable optical output power and can effectively extend the working life of the pump laser

8 PORT HIGH POWER 1550nm EDFA

Optical Parameter	Unit	Spec
Operating bandwidth	nm	1545-1565
Optical input power	dBm	-5 ~ +10
Optical output power	dBm	19 - 26
Output power stability	dBm	± 0.5
Return loss - Input port	dB	≥45
Return loss - Output port	dB	≥45

MUL-EDFA-V-4-26

- Output Power/Port (dBm) - 19 - 26
- Output Ports - 8

The Multicom High Power 1550nm Erbium Doped Fiber Amplifier (EDFA) is equipped with up to eight output ports, and with low noise and high linearity, this High Power EDFA can be used in the transmission of video, voice and data signals making it the ideal optical amplification solutions for long links, redundant rings, blast and split, and other applications. It offers a flexible and low-cost solution for CATV large area coverage of metropolitan and medium-sized cities.

Features:

- JDSU laser
- Uses Er Yb co-doped double-clad fiber technology
- Output ports: 4 (1 to 8, optionally)
- Optional: Internal WDM port configurations for GPON
- Optical output power from 19 to 26dBm
- Advanced 32 bit processor, with automatic monitoring circuit. Accurately monitors and controls the optical output power and various parameters of the laser, ensures stable optical output power and can effectively extend the working life of the laser

16/32 PORT HIGH POWER 1550nm EDFA

Optical Parameter	Unit	Spec
Operating bandwidth	nm	1545-1565
Optical input power	dBm	-5 ~ +10
Optical output power	dBm	see chart below
Output power stability	dBm	± 0.5
Return loss - Input port	dB	≥45
Return loss - Output port	dB	≥45

Model #	Total Output Power (dBm)	Output Ports	Output Power/ Port (dBm)
MUL-EDFA-V-16-29	29	16	15
MUL-EDFA-V-16-30	30	16	16
MUL-EDFA-V-16-31	31	16	17
MUL-EDFA-V-16-32	32	16	18
MUL-EDFA-V-16-33	33	16	19
MUL-EDFA-V-16-34	34	16	20
MUL-EDFA-V-16-35	35	16	21
MUL-EDFA-V-16-36	36	16	22
MUL-EDFA-V-32-33	33	32	16
MUL-EDFA-V-32-34	34	32	17
MUL-EDFA-V-32-35	35	32	18
MUL-EDFA-V-32-36	36	32	19
MUL-EDFA-V-32-37	37	32	20

The Multicom 16/32 Port High Power 1550nm Erbium Doped EDFA is a low noise 1550nm optical amplifier designed to amplify 1550nm optical signals to increase the optical transmission distance over fiber, and can be used in conjunction with the Multicom 1550nm optical transmitters.

Equipped with up to 32 output ports and the option of internal GPON WDM ports, this EDFA provides low noise and high linearity. The MUL-EDFA-V-XX-XX can be used in the transmission of video, voice and data signals making it the ideal optical amplification solutions for long links, redundant rings, blast and split, and other applications. It offers a flexible and low-cost solution for CATV large area coverage of metropolitan and medium-sized cities.

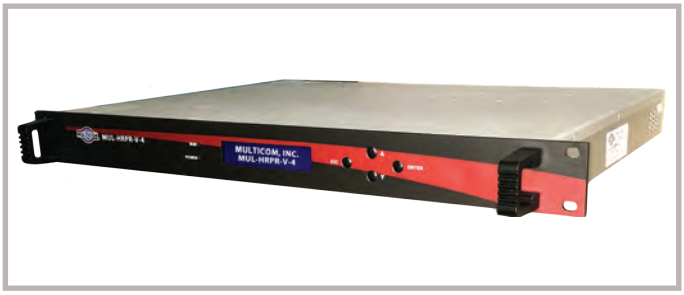
Features:

- JDSU laser
- Uses Er Yb co-doped double-clad fiber technology
- Output ports: 16/32
- Optical output power up to 37dBm and 20 dBm optical output over all 32 ports
- Available with optional internal GPON WDM ports
- Low noise figure: <5dB when input is 0dBm
- Advanced 32 bit processor, with automatic monitoring circuit. Accurately monitors and controls the optical output power and various parameters of the laser, ensures stable optical output power and can effectively extend the working life of the laser.
- Front panel LCD Status Display shows all status parameters and provides ability to set parameters on the EDFA
- 2RU standard 19" rackmount cabinet, equipped with standard IEEE802.3 10Base-T Ethernet interface and RS232 interface, for network management monitoring and control console

MUL-EDFA-V-XX-XX

- XX (second) — Output Power/Port (dBm) - see chart
- XX (first) — Output Ports - 16/32

HEADEND RETURN PATH RECEIVER



Parameter		Spec
Optical	Wavelength (nm)	1100 - 1600
	Input power level (dBm)	-10 ~ 0
	Optical AGC range	-10 ~ 0
	Return loss (dB)	>45
	Output fiber connector	SC/APC
RF	RF Bandwidth (MHz)	5 - 200
	RF output level (dBmV)	≥45
	RF gain adjustment range (dB)	10 - Normal mode
	Flatness (dB)	±1
	Return loss (dB)	≥16
	RF connector (Main input)	F type
	NPR (dB)	≥15 DFB, ≥10FP laser

The Multicom MUL-HRPR-V-4 Optical Return Path Receiver is ideally suited for use in optical headends and many other fiber optic-based data, video, and voice networks. With dual redundant power supplies, SNMP, excellent AGC characterisics and a unique Burst Mode, this return path receiver provides a cost effective solution for HFC, RFoG and FTTH networks.

The HRPR's state-of-the-art features include an industry-leading 4 port, 45dBmV individually adjustable RF outputs, 5 - 200MHz return bandwidth, wide optical input range down to -10dBm, and a unique backlit front panel control display.

Features:

- Four receivers in 1RU unit with Dual Redundant Power Supplies and SNMP
- Wide optical Input Range 1100 - 1600nm
- 45dBmV typical RF output for each of the 4 individually adjustable ports
- 5 - 200MHz return bandwidth
- Wide optical input range and low noise design allows error free detection down to -10dBm
- Configuration and status monitoring on the easy-to-view backlit front panel display

MUL-HRPR-V-4

OPTICAL TRANSPORT CHASSIS

The MUL-OTC-CH-V is an Optical Transport Chassis with universal CATV applications, high density, and powerful functionality and flexibility. The galvanized steel 4RU module shelf, CMM Display and Control Module, and Plug-in Power Modules are the basis of this product. The standard 19 inch shelf has 16 universal slots and fan cooling. The plug-in CMM Status Display and Control Module has a LCD status display and front panel pushbutton operation. Installing the Plug-in Application Modules into the shelf and putting the shelf into the cabinet creates an entire HFC headend in very little space.

Plug-in Application Modules

Depending on optical fiber network design requirements, users can select the following optional Application Modules:

- MUL-OTC-1310TX-V-X - 1310nm Forward Path Optical Transmitter Module
- MUL-OTC-1550TX-V-X - 1550nm Forward Path Optical Transmitter Module
- MUL-OTC-RPR4-V - Four-channel Return Path Optical Receiver Module
- MUL-OTC-EDFA-V-X - EDFA Optical Amplifier Module

MUL-OTC-CH-V

1310nm TRANSMITTER MODULE

The MUL-OTC-1310TX-V Intelligent Directly Modulated Optical Transmitter Module is designed to be used in the Multicom Optical Transport Chassis MUL-OTC-CH-V, and is mainly used in 1310nm optical fiber transmission systems. This 1310nm Module uses an ORTEL DFB laser with an optical output power options of 3, 6, 7.8, 10, 12 and 14.2dBm, and advanced intelligent electronic predistortion compensation technology.

MUL-OTC-1310TX-V-X

└— Output Power (dBm) - 3, 6, 7.8, 10, 12, 14.2

1550nm TRANSMITTER MODULE

The MUL-OTC-1550TX-V Intelligent Directly Modulated Optical Transmitter Module is designed to be used in the Multicom Optical Transport Chassis MUL-OTC-CH-V, and is mainly used in 1550nm optical fiber transmission systems. This 1550nm Module uses an ORTEL DFB laser with optical output power options of 3, 6, 7.8, 10, 12 and 14.2dBm, and advanced intelligent electronic predistortion compensation technology.

MUL-OTC-1550TX-V-X

└— Output Power (dBm) - 3, 6, 7.8, 10, 12, 14.2

EDFA MODULE

The MUL-OTC-EDFA-V-X 1550nm Erbium Doped Fiber Amplifier (EDFA) Module is a low noise 1550nm optical amplifier designed to be used in the Multicom Optical Transport Chassis MUL-OTC-CH-V. Available optical output levels range from 13 to 24dBm.

The EDFA Module includes input and output optical power detection to adjust the JDSU laser pump automatically and keep the output optical power of the EDFA module constant. Internal control circuitry accurately maintains the output power and temperature of the laser.

MUL-OTC-EDFA-V-X

└— Output Power (dBm) - 13 - 24

4 CH RETURN PATH RECEIVER MODULE

The MUL-OTC-RPR4-V Four-channel Return Path Optical Receiver Module uses E-O optical receiving devices and the signal amplifier incorporates a low noise GaAs module to ensure a high quality signal output. Each RPR4 Module includes four optical receivers to receive four optical inputs and convert them into CATV RF, and then pre-amplify them independently.

MUL-OTC-RPR-HFC-V

HIGH-POWER MICRO-NODE

MUL-MN-V-TR-HP

The MUL-MN-V-TR-HP optical node was specifically developed for HFC and FTTH network topologies, while addressing the issues of CATV bidirectional return channel noise and the high reliability network security transmission requirements of modern CATV networks.

Features:

- Uses an advanced optical AGC circuit design, with an optical AGC control range of: +2dBm ~ -9/-8/-7/-6/-5/-4dBm adjustable
- Features the high quality, high reliability DFB laser
- Forward operating frequency up to 1GHz, RF amplifier uses a high performance low power consumption GaAs amplifier, maximum output level up to 52dBmV
- EQ and ATT both use an advanced electric control circuit for setting the operating parameters, making the setup easier and more accurate

Forward Optical Receiver	Unit	Parameter
Optical Receiving Power	dBm	-9 ~ +2
Optical AGC Range	dBm	+2 ~ -9 to -4 adj.
Optical Return Loss	dB	> 45
Optical Receiving Wavelength	nm	1260 ~ 1620
Forward RF Parameters		
Frequency Range	MHz	54 ~ 1000
Flatness in Band	dB	± 0.75
Rated Output Level	dBmV	≥ +48
Output Return Loss	dB	≥ 16
Return Optical Transmitter	**Unit**	**Parameter**
Optical Transmit Wavelength	nm	1310 ±10
Laser Type		DFB
Optical Output Power	mW	1 ± 0.5
Return RF Parameters		
Frequency Range	MHz	5 ~ 42
Flatness in Band	dB	± 1
Input Level	dBmV	+15 ~ +25

MICRO-NODE

MUL-MN-V-TR

The MUL-MN-V-TR optical node was specially developed for HFC broadband networks, accommodates FTTH (Fiber to the Home) network topology, while addressing the issues of CATV bidirectional return channel noise and high reliability network security transmission requirements of modern CATV networks.

Features:

- The laser control circuit uses advanced circuit design, insuring reliable and stable operation
- Provides excellent AGC characteristics, when the input optical power range is within -7 ~ +2dBm, the RF output level remains unchanged, CTB and CSO basically remain unchanged
- Optimized circuit design, SMT production process, optimizing the entire signal path, makes the optical signal transmission more stable, RF linear indicators higher

Forward Optical Receiver	Unit	Parameter
Optical Receiving Power	dBm	-7 ~ +2
Optical Return Loss	dB	> 45
Optical Receiving Wavelength	nm	1260 ~ 1620
Forward RF Parameters		
Frequency Range	MHz	54 ~ 1000
Flatness in Band	dB	± 0.75
Rated Output Level	dBmV	≥ +32
Output Return Loss	dB	≥ 16
Return Optical Transmitter	**Unit**	**Parameter**
Optical Transmit Wavelength	nm	1310 ±10
Laser Type		DFB
Optical Output Power	mW	1 ± 0.5
Return RF Parameters		
Frequency Range	MHz	5 ~ 42
Flatness in Band	dB	±0.75
Input Level	dBmV	+15 ~ +25

MICRO-NODE RECEIVER

MUL-MN-V-R

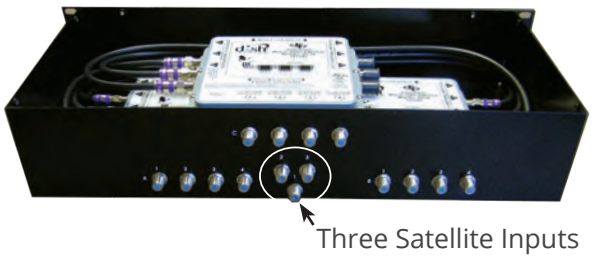
The MUL-MN-V-R Optical Micro-Node Receiver is equipment that was specially developed for HFC broadband networks, accommodating FTTH (Fiber to the Home) network topology.

Features:

- Receive only
- Mini size, easy to install
- Operating frequency up to 1GHz
- RF amplifier uses a high performance low power consumption GaAs amplifier
- 12VDC power supply

Optical Parameters	Unit	Parameter
Optical Receiving Power	dBm	-15 ~ +2
AGC Range	dBm	-7 ~ +2
Optical Return Loss	dB	> 45
Optical Receiving Wavelength	nm	1100 ~ 1600
RF Parameters		
Frequency Range	MHz	45 ~ 1003
Flatness in Band	dB	± 0.75
Rated Output Level	dBmV	≥ +28 (≤88 dBμV)
Output Return Loss	dB	≥ 16

SATELLITE MULTISWITH CHASSIS & KIT



Three Satellite Inputs

Rear of assembled unit with lid removed

Multicom is providing this unique rack-mountable 3 in x 12 out Satellite Multiswitch system providing input connectivity for up to three DISH Network Satellite 500 and/or 300 dishes and outputs for up to 12 receivers all within a single compact rackmount unit.

The MUL-MS34-CH/A incorporates three DISH Network Model DP34 Multi-Dish Switches with the highest quality headend connectorization and cabling.

Part#s and Configurations

- MUL-MS34-CH/K - Rack Mount Kit for three DISH Network Model DP34 Multi-Dish Switches including the Chassis and all of the necessary Jumper Cables and Connectors to assemble the complete unit. Does not include the DP34s.
- MUL-MS34-CH/A - Completely assembled rackmount unit including three DISH Network Model DP34 Multi-Dish Switches (as shown above).

Features:

- Highly recommended for new installations to provide the quality and performance of DISH Network's Pro Series dishes and receivers
- Ideally suited for MDU, hotel/motel, and all other multi-dish headend applications
- Rackmount - 2RU high
- Compact, Simple to use
- Can be purchased as a kit or fully assembled

CHANNEL ELIMINATION FILTER/MODULATOR

Rack mount

Wall mount

Make Reinsertion Projects Easy and Economical: The Multicom Channel Elimination Filter / Modulator Combination Unit incorporates a channel elimination filter with a single channel modulator. This allows the removal of a selected channel or frequency to make way for the reinsertion of a premium digital channel or locally originating signal.

Features:

- Channel Elimination and Modulator incorporated in one package
- No need for expensive processors
- Able to eliminate and reinsert either digital or analog signals
- Easy installation
- No external coupling required
- 1 RU rack mount or wall mount

Channel Elimination Filter Parameter	Spec
Channels	2 through 125
Passband	5 MHz - 1GHz
Channel rejection	-55dB
Adjacent carrier loss	-3.0dB
Insertion loss	-1dB
Impedence	75 Ohm
Modulator Parameter	**Spec**
Frequency selection	CATV channels 2-125, with automatic FCC frequency offsets
Output level	+33 dBmV adjustable to +23dBmV, with internal 12dB Directional Coupler
Inputs - Video	1 V peak to peak, RCA female
Inputs - Audio	50 mV peak to peak, RCA female

Additional Options:

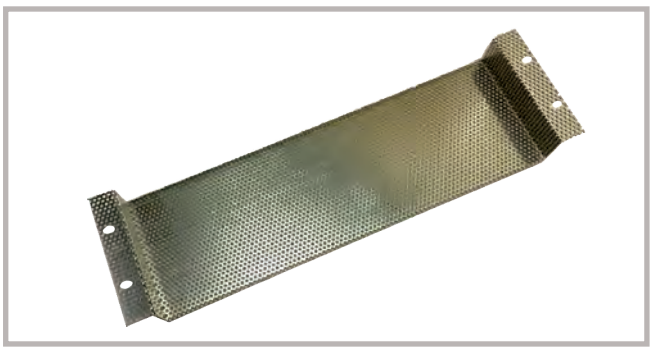
- M-CEFMOD-AG-NN-X - Agile Video Modulator
- M-CEFMOD-AS-NN-X - Agile Stereo Video Modulator

M-CEFMOD-NN-X

R=Rack, W=Wall
Channel Number

IRH PANEL

M-IRH-PANEL



The M-IRH-PANEL is a professional quality, headend rack product designed for wall mount components on a standard 19" rack.

- Dimensions: 19"W x 5.25"H x 1.75"D

RFOG ONU - NANO-NODE

Features:

- Complies with SCTE standards and all RFoG network topologies
- High quality, High performance, Cost effective
- Available in 1550nm downstream, either 1310nm or 1610nm upstream
- Small form factor with all electrical and optical connections on side panel
- 12V positive voltage can be applied to either DC jack or F connector
- Wide input voltage range from 12V to 18V, with surge protection
- LEDs indicate power, burst mode and alarm
- Optimal design for single-family dwellings and MDU applications

MUL-RFOGONU-1310

Upstream Wavelength (nm)
1310, 1610

The MUL-RFOGONU-X Nano-Node, or Forward and Return Path RFoG ONU, delivers advanced bi-directional, interactive RF services over a passive fiber optic distribution network. The RFoG ONU serves as the transport layer for RF video, voice, and DOCSIS technologies in deep fiber and FTTH access networks.

The RFOG ONU provides services over extended RF frequencies (up to 1.1Ghz), while compatible with both headend and customer premises equipment (CPE), and preserving today's operating processes.

Forward Optical Receiver	Unit	Parameter
Optical Receiving Power	dBm	-6 ~ +1
Optical Return Loss	dBm	-13
Optical Receiving Wavelength	nm	1550 ~ 1560
Forward RF Parameters		
Frequency Range	MHz	52 ~ 1002
Flatness in Band	dB	-1 ~ +1
Rated Output Level	dBmV	16 - 20
Output Return Loss	dB	16 - 18
Return Optical Transmitter	**Unit**	**Parameter**
Transmit Wavelength - 1310	nm	1260 - 1360
Transmit Wavelength - 1610	nm	1595 - 1630
Optical Output Power - 1310	dBm	2 - 4
Optical Output Power - 1610	dBm	4 - 6
Return RF Parameters		
Frequency Range	MHz	5 ~ 42
Flatness in Band	dB	-1 - +1
Input Level	dBmV	+20 ~ +45

SATELLITE DISHES AND LNBFS

Television has been called the most important means of distributing information on a global basis

Over one billion homes on our planet have television and these homes collectively receive over 25,000 TV channels by satellite. Today's high powered satellites have inherent operational and cost advantages that make them superior to other technologies when it comes to video distribution.

Multicom manufactures and stocks all of the products needed for the reception and distribution of satellite audio and video signals for private use or retransmission.

60CM DTH SATELLITE DISH

MUL-60CM-KU

The MUL-60CM-KU 60CM Direct to Home (DTH) KU band satellite dish provides strong, clear reception. This high quality dish is designed to withstand high winds, minimize rain fade and improve signal strength. Made with high strength galvanized steel, it's simple to assemble and install, making it a excellent choice for cost effective installations.

Specifications	Parameter
Dish Type	Offset-fed, Elyptical
KU Band Gain (dB)	38.52 @12.5GHz
Frequency Range (GHz)	10.7 - 12.75
Mount	Universal

75CM DTH SATELLITE DISH

MUL-75CM-KU

The MUL-75CM-KU 75CM Direct to Home (DTH) KU band satellite dish provides strong, clear reception. This high quality dish is designed to withstand high winds, minimize rain fade and improve signal strength. Made with high strength galvanized steel, it's simple to assemble and install, making it a excellent choice for cost effective installations.

Specifications	Parameter
Dish Type	Offset-fed, Elyptical
KU Band Gain (dB)	38.52 @12.5GHz
Frequency Range (GHz)	10.7 - 12.75
Mount	Universal

90CM DTH SATELLITE DISH

MUL-90CM-KU

The MUL-90CM-KU 90CM Direct to Home (DTH) KU band satellite dish provides strong, clear reception. This high quality dish is designed to withstand high winds, minimize rain fade and improve signal strength. Made with high strength galvanized steel, it's simple to assemble and install, making it a excellent choice for cost effective installations.

Specifications	Parameter
Dish Type	Offset-fed, Elyptical
KU Band Gain (dB)	38.52 @12.5GHz
Frequency Range (GHz)	10.7 - 12.75
Mount	Universal

100CM DTH SATELLITE DISH

MUL-100CM-KU

The MUL-100CM-KU 100CM Direct to Home (DTH) KU band satellite dish provides strong, clear reception. This high quality dish is designed to withstand high winds, minimize rain fade and improve signal strength. Made with high strength galvanized steel, it's simple to assemble and install, making it a excellent choice for cost effective installations.

Specifications	Parameter
Dish Type	Offset-fed, Elyptical
KU Band Gain (dB)	38.52 @12.5GHz
Frequency Range (GHz)	10.7 - 12.75
Mount	Universal

1.2M DTH SATELLITE DISH

MUL-1.2M

The MUL-1.2M 1.2-Meter KU band Satellite Dish is a rugged, reliable antenna system that will operate at KU-band frequencies with high efficiency and at the same time successfully withstand the effects of the environment. It can be installed on a pole. ground or rooftop.

Specifications	Parameter
Dish Type	Offset-fed, Elyptical
KU Band Gain (dB)	43 @12.5GHz
Frequency Range)GHz)	10.7 - 12.75
Mount	Universal

1.8M PRIME FOCUS SATELLITE DISH

MUL-1.8M

The MUL-1.8M 1.8-Meter Prime Focus Satellite Dish is a rugged, reliable antenna system that will operate at C-band frequencies with high efficiency and at the same time successfully withstand the effects of the environment. It can be installed on a pole. ground or rooftop.

Specifications	Parameter
Dish Type	Prime Focus, Center-fed
C Band Gain (dB)	36 @4GHz
Frequency Range (GHz)	3.7 - 4.2
Mount	Pole, Ground, Non-Pen Roof

2.4M PRIME FOCUS SATELLITE DISH

MUL-2.4M

The MUL-2.4M 2.4-Meter Prime Focus Satellite Dish is a rugged, reliable antenna system that will operate at C-band frequencies with high efficiency and at the same time successfully withstand the effects of the environment. It can be installed on a pole. ground or rooftop.

Specifications	Parameter
Dish Type	Prime Focus, Center-fed
C Band Gain (dB)	38.39 @4GHz
Frequency Range (GHz)	3.7 - 4.2
Mount	Pole, Ground, Non-Pen Roof

SINGLE LNBF

MUL-SINGLE-LNBF

Specifically designed for the DTH markets. This LNBF provides optimized reception capabilities. This Single Port LNBF enables the reception of signal from one satellite and its distribution to a single-tuner set-top boxes and is ready for HD transmission and provides excellent noise figure performance. this LNBF is an ideal solution for the satellite broadcast reception across Europe and South America.

Specifications	Parameter
Ports	1
Noise Figure	0.5dB typical
Conversion Gain	60dB min.

TWIN LNBF

MUL-TWIN-LNBF

Specifically designed for the DTH markets. This LNBF provides optimized reception capabilities. This two-port LNBF enables the reception of signal from one satellite and its distribution to two set-top boxes and is ready for HD transmissions and provides excellent noise figure performance. This LNBF is an ideal solution for the satellite broadcast reception across Europe and South America.

Specifications	Parameter
Ports	2
Noise Figure	0.5dB typical
Conversion Gain	60dB min.

QUAD LNBF

MUL-QUAD-LNBF

Specifically designed for the DTH markets, this LNBF provides optimized reception capabilities. This four-port LNBF enables the reception of signal from one satellite and its distribution to four set-top boxes and is ready for HD transmissions and provides excellent noise figure performance. This LNBF is an ideal solution for the satellite broadcast reception across Europe and South America.

Specifications	Parameter
Ports	4
Noise Figure	0.5dB typical
Conversion Gain	60dB min.

OCTO LNBF

MUL-OCTO-LNBF

Specifically designed for the DTH markets, this LNBF provides optimized reception capabilities. This eight-port LNBF enables the reception of signal from one satellite and its distribution to eight set-top boxes and is ready for HD transmissions and provides excellent noise figure performance. This LNBF is an ideal solution for the satellite broadcast reception across Europe and South America.

Specifications	Parameter
Ports	8
Noise Figure	0.5dB typical
Conversion Gain	60dB min.

INDOOR PRODUCTS

Bring more your network online quickly and efficiently with the highest-quality products backed by a company that prides itself on trusted relationships built over time

Our inside products portfolio combines the perfect marriage of quality products built in ISO 9001 approved facilities, and cost-effective prices - all backed by Multicom's exclusive customer service and over 35+ years of experience. Our products have not only exceeded industry standards for quality, but set industry standards for the best pricing. Multicom has an expansive indoor product portfolio that includes everything from amplifiers and adapters, to every imaginable communication cable — plus the networking expertise to help support all your indoor applications needs.

INDOOR DISTRIBUTION AMPLIFIER

MCA-40860

Specification	Unit	Parameter
Bandwidth	MHz	40-860
Forward Gain	dB	40
Max. Output @135 Ch. Loading	dBmV	50
Noise Figure	dB	6

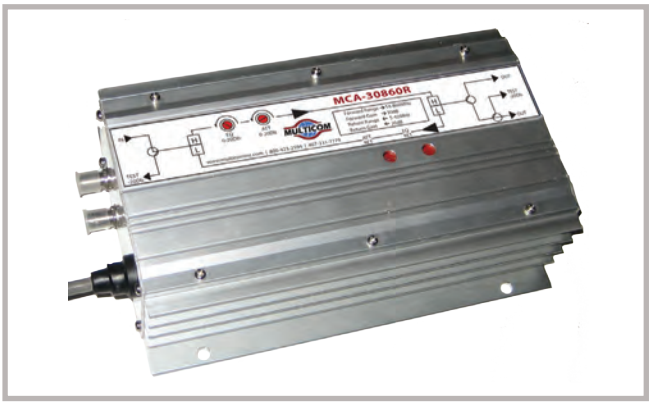
The MCA-40860 is a superior quality push-pull wall-mounted distribution amplifier producing signals with low-noise and harmonic distortion. The The MCA-40860 serves as an ideal distribution system amplifier for heavily loaded MDU (multi-dwelling units, i.e. apartment complexes), commercial areas, educational institutions, hotels, and broadband CATV or SMATV systems. The distribution amplifier is capable of broadband 135-channel operation over the 40-860 MHz range.

Features:

- Broadband 40-860 MHz frequency range 40 dB gain for optimal carrier-to-noise ratio and superior picture quality
- +1.0 dB flatness across band provides low distortion and excellent frequency response
- Employs hybrid push-pull module design for distortion-free audio-video quality
- Built in adjustable slope and gain controls for easy system balancing

FORWARD & REVERSE DISTRIBUTION AMPLIFIER

MCA-30860R



Specification	Unit	Parameter
Frequency - Forward	MHz	54-860
Frequency - Reverse	MHz	5 - 42
Gain - Forward	dB	30 ±1.5
Gain - Reverse	dB	20 ±1.5
Max. Output @135 Ch. Loading	dBmV	2 Outputs @50
Noise Figure - Forward	dB	<6
Noise Figure - Reverse	dB	<8

The MCA-30860R has been specifically designed for use in multi-dwelling environments such as hospitals, apartment complexes and hotels. This high-gain unit has a bandwidth of 860MHz, allowing effective transmission of large volumes of data within the CATV network. The built-in equalizer and attenuator allow for increased flexibility and easy adjustment of the signal output.

Features:

- Extremely low distortion and harmonic content
- Suitable for HDTV, CATV, Off-air analog and digital RF distribution applications
- Continuously adjustable equalizer and gain control

AC POWER ADAPTERS

Typical Desktop

Typical Wall Mount

Yes, I know we need better pics

Multicom's AC Adapters are reliable, compact, and efficient. These regulated 5 and 12 volt DC power supplies provides ample current to run many popular devices. Use them to replace a lost or damaged power supply for cable modems, AV equipment, office devices, battery chargers, and other electronic components. UL listed and FCC approved.

The AC Power Adapters listed have a variety of Output Power Connectors (A-Z). Connectors and power cord length, as well as other characteristics of these adapters can be customized to your needs.

Features:

- Universal Input: 100-240VAC 50/60Hz
- Highly efficient with low power consumption
- Short-circuit protection
- Over-current protection
- Over-voltage protection
- Lightweight and compact
- Available in various power cord lengths
- Center positive

		Output				DC Connector (mm)		
Part Number	Input (Amp)	VDC	Rated Load	Power (W)	Location	OD	ID	Barrel Length
M-CPE-5-150-A-W-US	0.3	5.0	1.5	7.5	Wall-mount	4.0	1.7	9.5
M-CPE-5-250-C-W-US	0.4	5.0	2.5	12.5	Wall-mount	5.0	2.1	9.5
M-CPE-12-100-B-W-US	0.4	12.0	1.0	12.0	Wall-mount	5.0	2.1	10.0
M-CPE-12-150-B-W-US	0.5	12.0	1.5	18.0	Wall-mount	5.0	2.1	10.0
M-CPE-12-150-C-W-US	0.5	12.0	1.5	18.0	Wall-mount	5.0	2.1	9.5
M-CPE-12-200-C-W-US	0.6	12.0	2.0	24.0	Wall-mount	5.0	2.1	9.5
M-CPE-12-200-F-W-US	0.6	12.0	2.0	24.0	Wall-mount	5.5	2.5	11.0
M-CPE-12-200-G-W-US	0.6	12.0	2.0	24.0	Wall-mount	5.5	2.1	11.0
M-CPE-12-270-E-D-US	0.85	12.0	2.7	32.4	Desktop	5.5	2.1	9.5
M-CPE-12-300-E-D-US	0.9	12.0	3.0	36.0	Desktop	5.5	2.1	9.5
M-CPE-15-130-D-D-US	0.5	15.0	1.3	19.5	Desktop	5.5	2.0	8.5
M-CPE-15-150-A-D-US	0.65	15.0	1.5	22.0	Desktop	4.0	1.7	10.0

M-CPE-12-100-B-W-US-18

- Power Cord Length - 1=1M, 12=1.2M, 15=1.5M, 18=1.8M
- Plug Type - US=US Configuration
- Model Type - D=Desktop, W=Wall
- Output Power Connector - A-Z (Various)
- Milliamps Out - 250=2.5A, 200=2.0A, 150=1.5A, 100=1.0A, 08=0.8A
- Volts DC - 5, 12, 15

HIGH SPEED HDMI CABLES

Multicom's High Speed HDMI cable provides a reliable, high quality connection between audio and video components. Featuring a durable molded PVC housing, gold plated contacts and corrosion resistant connectors with V3 shielding, this HDMI cable consistently delivers excellent picture and sound quality for today's discriminating A/V enthusiasts.

Features:

- Supports high definition 1080p, Adobe RGB Color, Deep Color, 3D, sYCC601 Color, and Adobe YCC601 to accurately display natural, vivid colors
- Supports Dolby Digital, DTS, Dolby True HD, DTS-HD MasterAudio, Audio Return Channel and Lip Sync to deliver the highest quality and duplication of sound
- Compatible with the lossless compressed digital audio formats

Specification	Parameter
Connector Type	HMDI Male A to HDMI Male A
Wire Guage	30 AWG
Conductors	Solid Copper
Bandwidth	10.2 Gbps
Connector Contacts Finish	Gold Plated
Compliance	RoHS, UL

MUL-HDMI 2.0-1.5M-MA-MA-HS-30

- 2.0 — Cable Type: HDMI 1.3, 1.4, 2.0
- 1.5M — Cable Length: M=Meters, FT=Feet
- MA — Conn #1: M=Male, F=Female; Type: A,B,C...
- MA — Conn #2: M=Male, F=Female; Type: A,B,C...
- HS — Speed: STD=Standard, HS=High Speed
- 30 — Wire Gauge: AWG

CAT5E PATCH CABLE

Multicom's superior quality Cat5e booted, snagless Unshielded (UTP) Network Patch Cable is designed for network adapters, hubs, switches, routers, DSL/cable modems, patch panels and other high performance networking applications.

Specifications	Parameter
Cable	24 AWG, 4 Pair, PVC Jacket
Connector	RJ45 (8P8C) Male CAT5E Type
Conductor	Stranded Copper
Contacts	Brass. Gold Plated 3u'
Certifications	ISO/IEC 11801, EN 50288, TIA/EIA 568B.2
Compliance	RoHS

MUL-CAT5E-1.5M-W-24-STR-UTP

- UTP — Twisted Pair Shielding - UTP=Unshielded, STP=Sheilded
- STR — Conductor - STR=Stranded, SOL=Solid
- 24 — Wire Gauge - AWG
- W — Color - W=White, B=Black, BL=Blue, BR=Brown...
- 1.5M — Length - Meter (M), or Feet (FT)

RCA AUDIO/VIDEO PATCHCORDS

Multicom's high quality RCA Audio/Video Patchcord provides a reliable, high quality connection between audio and video components such as cable and satellite set-top boxes, DVD players, A/V receivers, gaming consoles, and much more.

Featuring a durable molded PVC housing, nickel-plated copper corrosion resistant connectors, this RCA patchcord consistently delivers excellent picture and sound quality for today's discriminating A/V enthusiasts.

Parameter	Specification
Connector Type	RCA Male, side A and side B
Connector Finish	Nickel Plated Copper
Conductors	Stranded, 10 x .10mm CCS
Shielding	28 x .10mm CCS
Connector Housing Material	Molded PVC, Red, White, Yellow
Number of Conductors	2, 3, 4, 5, 6
Length	1.5 Meters (5 Feet)
Cable Jacket	PVC, Black
Connector Finish	Nickel Plated Copper
Attenuation (at 10MHz)	0.047 dB/m (max)
Compliance	RoHS, ISO 9001

MUL-RCA-3-1.5M-M-M-2.7-NI

- Conductor Plating NI=Nickel, GD=Gold
- Conductor Dia (mm) - 2.7 or 5.0
- End #2 - M or F
- End #1 - M or F
- Length - Meter (M), or Feet (FT)
- # of Conductors - 2, 3, 4, 5, 6

RJ-11 MODULAR FLAT TELEPHONE CABLE

Multicom's superior quality RJ-11 Unshielded (UTP) Telephone Patch Cable is constructed from heavy duty 26 AWG wire with a silver satin PVC jacket. This cable has gold-plated connectors for clearer communication. Its 4-wire construction handles dual phone lines while the heavy duty PVC jacket protects the cable's integrity.

This telephone cable designed for all telephone communications, VoIP applications, modems, and other high performance telephony applications.

Specifications	Parameter
Conductors	4 (2 pair), 26 AWG, Solid Copper, 0.51 mm
Connectors	RJ-11 Male, both ends
Outer Diameter, Jacket	5mm, Polyvinyl Cloride (PVC)
Contacts	Brass, Gold Plated
Terminal Resistance	20 Ohm maximum
Insulation Resistance	>1G Ohm

MUL-RJ11-1.5M-26

- Wire Gauge: AWG
- Cable Length: M=Meters, FT=Feet

REFURBISHED CABLE MODEMS

Multicom stocks these premium manufacturers, and many more:

MOTOROLA

CISCO

ubee

NETGEAR
Connect with Innovation™

SMC Networks

Multicom markets a wide variety of refurbished Cable Modems with an enhanced quality selection to meet your needs:

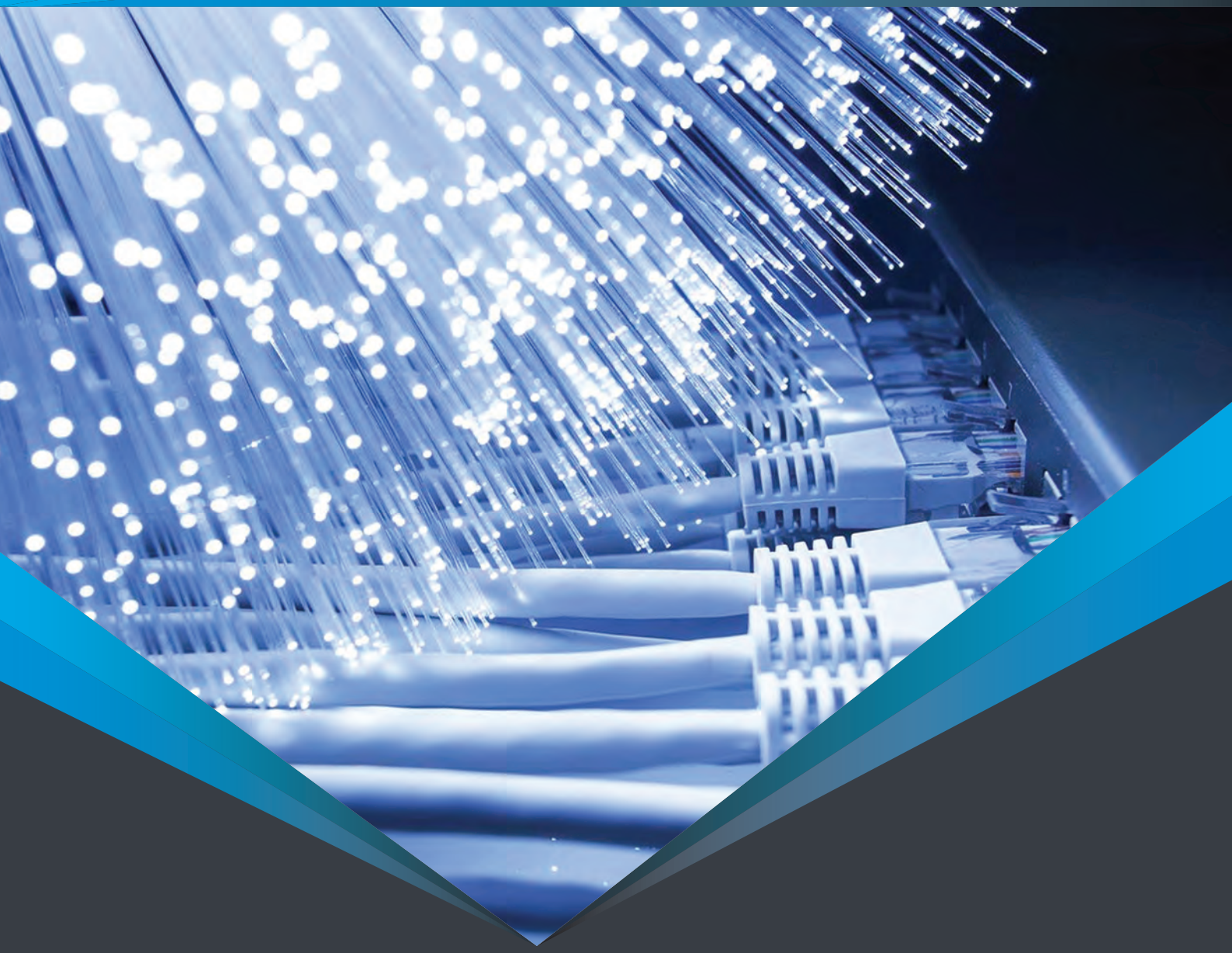
- **FIELD PULLED**
  Sold 'as is' for the best price, and shipped in bulk

- **REFURBISHED & TESTED**
  Tested and certified by Multicom technicians to be in perfect working order, and shipped in bulk

- **REFURBISHED, TESTED & BOXED**
  Tested and certified by Multicom technicians to be in perfect working order, and individually boxed

Features:

- DOCSIS 2.0
- DOCSIS 3.0
- WiFi
- Gateways



IT / DATA PRODUCTS

Fiber carries critical traffic. As speeds and multiplexing increase, the value of the traffic on each fiber multiplies. The interruption of signal on just one fiber can cost a carrier's customer thousands of dollars, and can cost the carrier that customer.

Public networks for video, data and voice are using more and more optical fiber. Fiber-based communications networks have clear advantages over other media in cost, reliability, and capacity, spurring increased deployment on high-capacity networks. Whether you are working with long-haul trunking or local distribution networks, Multicom manufactures and stocks only the highest-quality and most cost-effective IT/Data products for every application.

SFP/XFP OPTICAL TRANSCEIVER MODULES

Multicom SFP Optical Transceiver Modules give you a wide variety of Ethernet connectivity options for data center, enterprise wiring closet, and service provider transport applications. Multicom stocks a diverse range of industry-compliant SFP modules in the configuration you need for Ethernet deployments in any networking environment.

Features:

- Industry's smallest 10G form factor for greatest density per chassis
- Hot-swappable input/output device that plugs into an Ethernet SFP port of a any compatible switch (no need to power down if installing or replacing)
- Digital optical monitoring capability for strong diagnostic capabilities
- Optical interoperability with 10GBASE XENPAK, 10GBASE X2, and 10GBASE XFP interfaces on the same link

The Part#s represent the majority of SFP configurations. However additional variations are available including connector type, transmission distance and manufacturer-specific SFPs.

M-SFP-S-SLC-15-20

- Transmission Distance - 550M, 10KM, 20KM
- Wavelength (nm) - 850, 1310, 1550
- Connector Type - Single LC, Dual LC
- Fiber Mode - SM=Single Mode, MM=Multimode
- Transceiver Type - SFP, SFP+, XFP

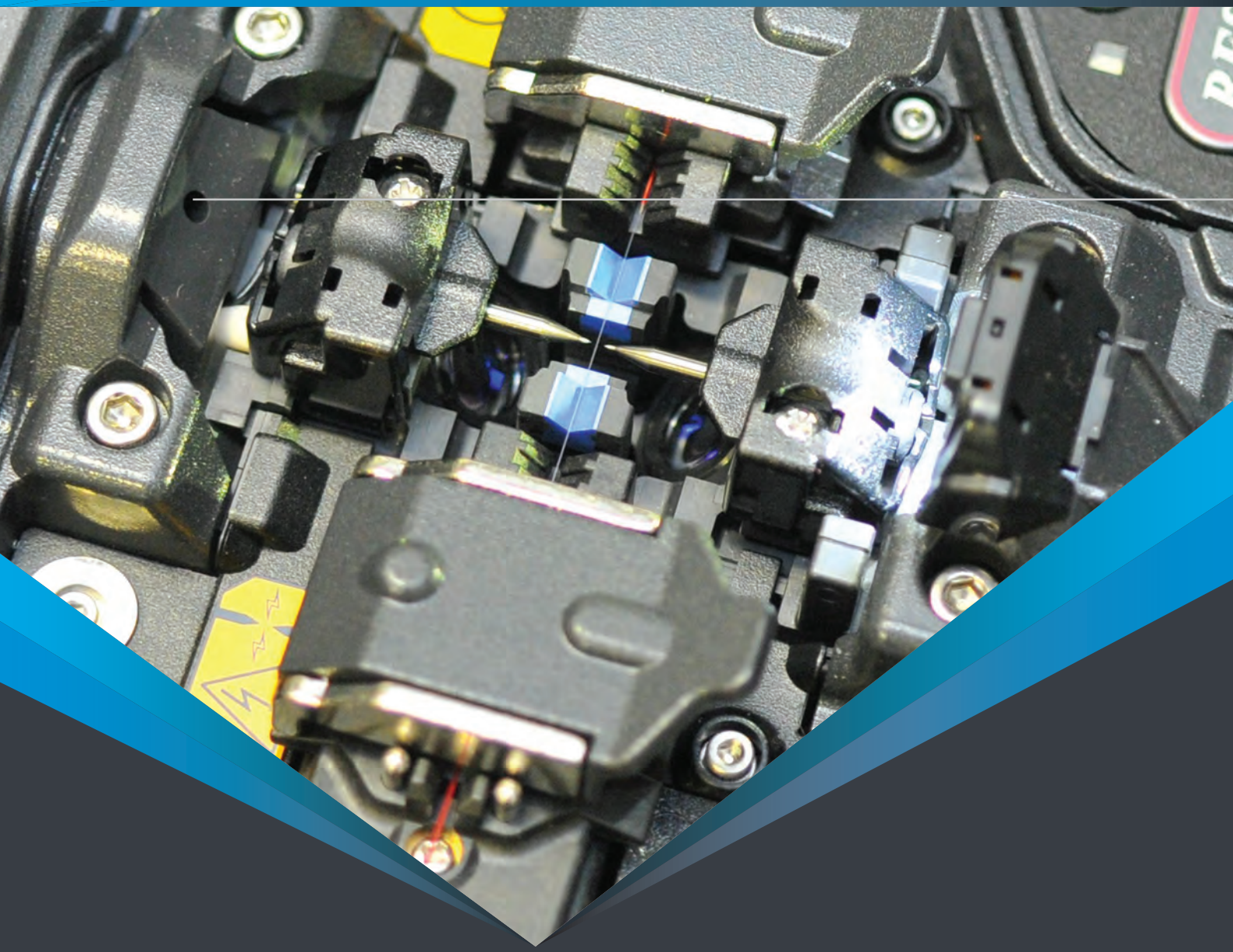
FIBER OPTIC MEDIA CONVERTER

Multicom supplies a wide range of 10/100Base Ethernet Fiber Media Converters, 1000Base Gigabit Fiber Media Converters and SFP Fiber Media Converters, Options include singlemode dual fiber, multi-mode dual fiber and singlemode single fiber.

Instead of costly, across-the-board upgrades, media converters can extend the productive life of the existing cabling as well as the active equipment.

Features:

- Extends traditional Ethernet networks over long distances via Fiber Optics
- 10/100/1000Mb Ethernet speeds
- LED status display
- Power supply Included
- Dual and Single Fiber Available
- Protocols: IEEE802.3, IEEE802.3u, IEEE802.3x



TOOLS & TEST EQUIPMENT

These days fiber optic installers in the field need a complete set of high quality fiber optic tools and reliable test equipment which give them both the ability to splice and terminate fiber optic cables, and to test and troubleshoot the installation.

For decades, fiber optics have been inspected and cleaned to ensure the proper passage of light. While this process is not new, it is growing in importance as our our dependence on the capacity and other benefits of fiber optics surges.

Multicom manufactures and stocks only the high-quality and most cost-effective products. Whether you're working in a local area network (LAN), a data center, or an office, we've got the tools you need to clean, cut, inspect, measure, strip and terminate your fiber cables.

FUSION SPLICER

Parameter	Specification
Applications	SM (Singlemode - ITU-T G.652), MM (Multi-mode - ITU-T G.651), DS (Dispersion displacement, ITU-T G.653, NZDS (Non-zero dispersion displacement, ITU-T G.655)
Splice loss	0.02dB (SM), 0.01dB (MM), 0.04dB (DS), 0.04dB (NZDS)
Return loss	> 60dB
Operation mode	Full auto, semi-auto, manual
Average splicing time	8 - 10 seconds
Average heating time	36 seconds
Fiber aligning method	Core, clad, manual alignment
Fiber diameter	Cladding diameter: 80 ~ 150μm, coating diameter: 100 ~ 1000μm
Fiber cleaved length	10 ~ 16mm (coating diameter <250μm), 16mm (coating diameter: 250 ~ 1000μm)
Lens magnification	Vertical double display: 310x, horizontal double display: 155x
Display	High Definition 5.1 inch, 640 x 480 LCD
Battery capacity splice-heat cycles	400 typical
Battery full charge time	3 hours - unit is able to operate/splice during charging process
Battery life	300 ~ 500 charging cycles
Power display	Real-time remaining power is displayed on screen
Electrode life	5000 splice cycles typical, easily replaceable electrodes (included)

The MUL-FSPLICE-100 Fiber Optic Fusion Splicer employs high-speed image processing technology and special positioning technology, allowing the total process of fusion splicing to be finished within 8 to 10 seconds. The large-screen LCD clearly demonstrates every stage of optical-fiber fusion splicing process as it occurs and allows for high magnification inspection and quality assessment by the operator.

Features:

- State-of-the-art core-to-core fiber Profile Alignment System (PAS)
- Fully-automatic, semi-automatic and manual operating modes
  Automatic detection of fiber cleaved face quality
- Automatic display of cleaved fiber and the offset angles
- Automatic analysis and estimation of splice loss
- Automatic detection of bad/faulty splice
- Automatic detailed data report record and memory storage for each splice (up to 2,000 splices)
- Automated 2N splice tension test
- Handy, easy-to-carry, solid and durable with shock-resistant design

Fiber Optic Fusion Splicer Kit Includes:

- MUL-FSPLICE-100 Fiber Optic Fusion Splicer
- Fiber optic cable/fiber/connector fixture-clamp sets for FTTH,
  PON: .9, 3.0, PX, SC connector
- Heatshrink Connector Fixture-Clamp
- Precision Optical Fiber Cleaver and case
- Fiber Stripper • Tweezers
- Alcohol bottle with dab-action auto-closing top (empty)
- USB Thumb Drive with manual, USB PC drivers, splice file viewer
- Cotton “Q-tip” pack
- AC Adapter
- Spare Electrodes
- Heat Shrink Cooling Tray
- Heavy Duty Carrying Case
- Operating Manual

MUL-FSPLICE-100

OPTICAL TIME DOMAIN REFLECTOMETER

Parameter	MUL-OTDR-200	MUL-OTDR-300
Wavelength	1310/1550nm ±20nm	1310/1550nm ±20nm
Type of compatible applicable fibers	Singlemode	Singlemode
Dynamic Range	15/16dB (40-50km)	30/32dB (100-110km)
Minimum event deadzone	1.6m (singlemode)	
Ranging accuracy	±(1m + sampling interval + 0.003% x distance), (excluding refractive index imbedding error)	
Resolution of ranging	12 - 16m	
Loss threshold value	0.01dB	
Linearity	0.05dB/dB	
VFL output power	5mW	
Measurement range	4, 8, 16, 32, 48, 64, 128, 256 Km (singlemode)	
Pulse width	10, 30, 80, 160, 320, 640, 1280, 2560, 10240ns	
Number of sampling points	65K	
Waveform storage capacity	1,000 frames	
Range of refractive index	1.00000 ~ 2.00000	
Range of optical-cable corrrec-tion factor	0.800000 ~ 1.00000	
LCD display	640 x 480, 5.1" color	
Port	USB	
Optical output port	FC/PC	

The MUL-OTDR-200 and MUL-OTDR-300 handheld Optical Time Domain Reflectometer is a new generation of intelligent optical-fiber test equipment. It is widely used in the construction, maintenance, measurement, and emergency repair of optical-fiber communication systems networks as well as the development, manufacturing and measurement of optical fibers and optical cables.

Able to Measure & Display

- Length of optical fiber
- Distance between any two points in the curves of optical fiber
- dB loss between any two points in the curves
- Connecting loss at the joints of the curves
- Value of reflection loss
- Distance between two event points
- Loss between two event points
- Average loss between two event points
- Waveform storage
- Identify the connecting fault and disconnecting locations of optical fibers and optical cables
- Indicate the power level of intelligent batteries
- Work as a real-time measurement instrument, this increases the convenience on observing real-time connecting effects/ events of optical fibers

Features:

- Graphical window operating interface
- VFL (Visual Fault Location) function
- Color LCD display
- Handheld device, light, easy to carry, solid and durable
- Intelligent battery power indicator & auto power-off at low voltage
- Able to transfer data to PC via USB cable

MUL-OTDR-300
Model - 200, 300

OPTICAL POWER METER AND VISUAL FAULT LOCATOR

Parameter	Specification
Wavelength range	800 to 1700nm
Connectors	SC, FC, ST
Measurement range	-70 to +10dBm
VFL wavelength	650nm
VFL power	>1mW
Detector type	InGaAs
Uncertainty	±5%

The MUL-OPM-VFL-1 Optical Power Meter (OPM) and Visual Fault Locator (VFL) is a handheld optical power meter which also conveniently incorporates a laser-based Visual Fault Locator - all in a single handheld unit. This ergonomically designed instrument uses advanced technology for outstanding functionality and durability.

The OPM uses microprocessor control and includes a variety of advanced features and user selectable settings. It is used for optical signal power measurement at a variety of wavelengths from 800-1700nm. It can be used to inspect optical fiber and connectors for potential failures and issues when connected to an optical interface and/or with a singlemode or multi-mode optical fiber.

Features:

- Use with a wide variety of wavelengths from 800 to 1700nm
- 48 hours of operation (typical)
- Standard AA alkaline batteries
- Rugged and weather resistant
- Self-shutoff - backlight and unit link

MUL-OPM-VFL-1

VISUAL FAULT LOCATOR

Parameter	Specification
Operation	2 to 4Hz
Wavelength	630 to 645nm
Power output	0.6mW typical
Distance range	5Km
Operation mode	Pulse and CW
Laser class	2

The MUL-VFL-1MW is the easiest way to identify fibers from end to end and locate polished connector endfaces. The red laser shines through most yellow-jacketed fibers to help you precisely identify breaks, bends, faulty connectors, splices and other causes of signal loss. Reaching of up to 5 km, the MUL-VFL-1MW locates faults visually by creating a bright red glow at the exact location of the fault on both singlemode or multi-mode fibers.

Robust design - Due to its small size and durable yet lightweight design, this handy tool can accompany you to the most demanding environments. To ensure ruggedness, it features rubber seals, a fully enclosed laser head and a long-lasting Continuous Wave (CW)/Off/Pulse switch. It has been tested to provide reliable operation under intensive use and harsh conditions.

Features:

- Bright red laser at 635-645nm
- Continuous Wave (CW)/Off/Pulse operation
- 50 hours of operation (typical)
- Standard AAA alkaline batteries
- Rugged and weatherproof
- 2.5 mm universal connector

MUL-VFL-1MW

HIGH PRECISION FIBER OPTIC CLEAVER

MUL-FCLEAV-200

Specification	Parameter
Fiber count	Single fiber, up to 12 ribbon fiber
Cleaving length	10mm
Fiber holder	Universal, interchangeable
Application fibers	Singlemode, Multi-mode
Bare fiber diameter	125µ (250-900mm coating)
Cleaving angle	0.5° with single fiber
Blade life	48,000 fiber cleaves
Blade positions	3 heights, 16 rotating positions

The MUL-FO-CLEAV-200 is ideal for single fiber and ribbon fiber FTTx applications. The 16-position blade yields 48,000 single-fiber cleaves, or 4,000 12-fiber ribbon cleaves before requiring replacement.

The easy-to-use precision cleaver provides reliable, repeatable results and includes safety features to protect the operator and extend the life of the tool.

Features:

- Compact body and high precision design
- Applicable for single fiber and up to 12-count fiber ribbon
- For use on Singlemode and Multi-mode fiber
- 48,000 fiber cleaves life (1,000 fibers x 3 heights x 16 positions)
- Includes hard carrying case and additional fiber holder

FIBER OPTIC CLEAVER

MUL-FCLEAV-100

Specification	Parameter
Fiber count	Single fiber
Cleaving length	10-16mm
Fiber holder	Universal, interchangeable
Application fibers	Singlemode, Multi-mode
Bare fiber diameter	125µ (250-900mm coating)
Cleaving angle	0.5° with single fiber
Blade life	36,000 fiber cleaves
Blade positions	3 heights, 16 rotating positions

The MUL-FCLEAV-100 is ideal for single fiber FTTx applications. The 16-position blade yields 36,000 single-fiber cleaves before requiring replacement. This easy-to-use precision cleaver provides reliable, repeatable results.

Features:

- Compact body and high precision design
- Applicable for single fiber
- For use on Singlemode and Multi-mode fiber
- 36,000 fiber cleaves life (1,000 fibers x 3 heights x 12 positions)
- Includes soft carrying case and fiber guide tool

FIBER OPTIC CLEANER - 1 CLICK

MUL-FO-CLEAN-1CLICK

Single fiber port cleaner for 1.25 mm SC connector end faces for both APC and UPC polishes. An integrated dust cap allows for cleaning unmated connector end faces. This one-click fiber optic cleaner is easy to use and offer over 800 cleanings per unit.

Features:

- One-action – one-click cleaning system
- Over 800 one-click cleanings per unit
- Cleaning system rotates 180 degrees
- Extendable tip
- Fiber cleaning action dissipates static

FIBER OPTIC CLEANER - CASSETTE

MUL-FO-CLEAN-CASS

The MUL-FO-CLEAN-CASS Fiber Optic Cleaner Cassette is the most effective high-end cleaning solution available. This cassette cleaner features a 25 foot densely-woven dry cloth reel which provides superior cleaning performance while minimizing static charge. The 25 feet cloth can be used over 500 times.

Features:

- Minimizes static attraction
- Ultra clean micro-fiber cloth captures debris and other contamination
- The cloth is robust, it does not fray or leave any fibrous materials behind

FIBER OPTIC SPLICE SLEEVES

MUL-FO-SP-SLEEVE

The 60mm translucent plastic tube and stainless steel rod Fiber Optic Splice Sleeves are designed to prevent stress and protect fusion fiber optic splices in both field and factory operations.

Sleeves shrink tightly under heat to eliminate air and hold the rod firmly preventing abrasion of delicate glass fibers.

Features:

- Provide protection and increased stability to splices
- 60mm, heat Activated, translucent

FIBER CABLE STRIPPER

MUL-FO-STRIP-CFS2

The MUL-FO-STRIP-CFS2, 2-Hole Fiber Optic Stripper performs all common fiber stripping functions:

- The first hole strips the 1.6-3mm fiber jacket down to the 600-900 micron buffer coating
- The second hole is used to strip the 600-900 micron buffer coating down to the glass fiber without nicks or scratches
- Handle is made of TPR (Thermoplastic Rubber)

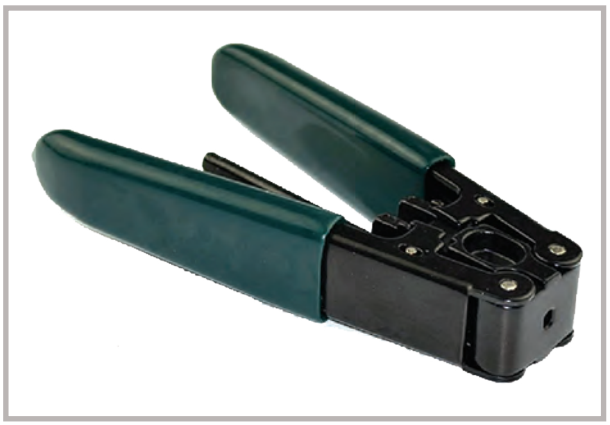
FIBER CABLE STRIPPER

MUL-FO-STRIP-CFS3

The MUL-FO-STRIP-CFS3 Three-hole Fiber Optic Stripper performs all common fiber stripping functions, and more:

- The first hole strips the 1.6-3mm fiber jacket down to the 600-900 micron buffer coating
- The second hole strips the 600-900 micron buffer coating down to the 250 micron coating
- The third hole is used to strip the 250 micron cable down to the glass fiber without nicks or scratches
- Handle is made of TPR (Thermoplastic Rubber)

FIBER DROP CABLE STRIPPER



MUL-FO-STRIP-DROP1

The MUL-FO-STRIP-DROP1 is multi-functional cable stripping tool for use with 2mm fiber optic cables. It has a compact rugged design and incorporates a fixed-length cable positioning measurement post for consistant cable stripping.

- Made of zinc alloy steel
- Universal Stripper for 2.0mm FTTH fiber optic drop cables

FIBER SHEARS

MUL-FO-SHEAR-K

The MUL-FO-SHEAR-K Fiber Optic Kevlar Cutters, or Shears, are specifically designed for cutting fiber optic kevlar. The cutting blades are micro-serrated, especially designed to avoid sliding or slipping when cutting kevlar. The handle is made from molded and durable plastic making these shears easy to grip and operate.

- Made of carbon steel

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