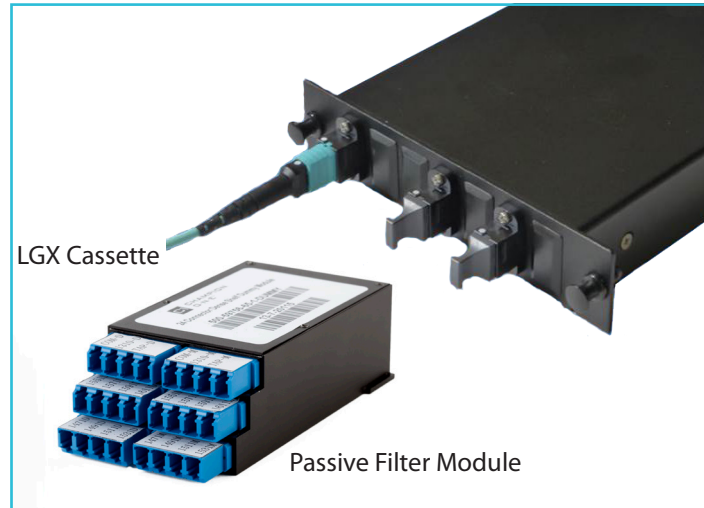




# FTTX PASSIVES



Multi-Service Aggregation Multiplexer (MSAM)



FttX OSP Optical Taps



FttX OSP Optical Splitters

**FLEXIBLE, CUSTOMIZABLE, AFFORDABLE**

# MULTI-SERVICE AGGREGATION MULTIPLEXER (MSAM)



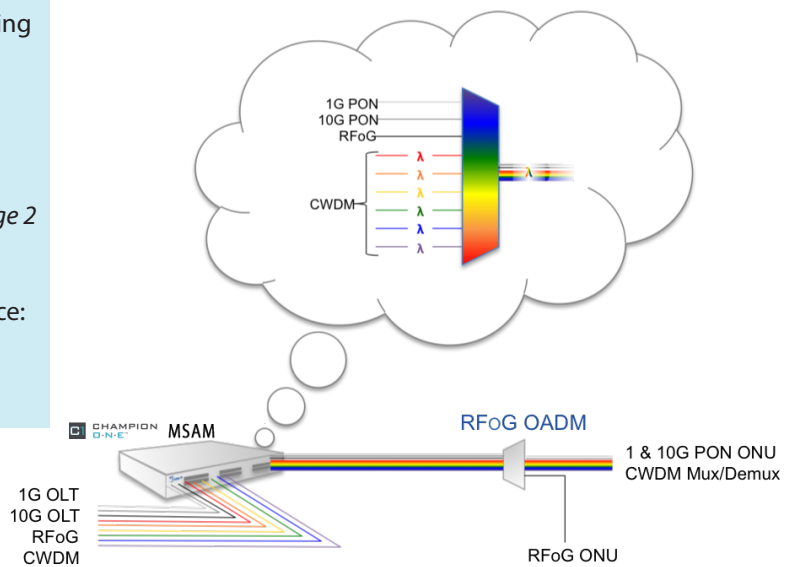
Raise your network's IQ with Champion ONE's Intelliport™ optical networking products. From electric-to-optical media conversion and optical media extenders, to switches that protect your signal, to Smart Transceivers that allow you to actively monitor data transmission, Intelliport covers everything you need to make your network bigger, stronger, and smarter.

Champion ONE's multi-service aggregation multiplexer (MSAM) is the industry's first solution to provide support for 1/10Gbps PON, CWDM, and RFoG services over a single fiber with an integrated monitoring port. This revolutionary device prevents frequency issues between 10G PON and RFoG at the subscriber, allowing operators to implement a high-capacity access solution without compromising performance. It will also reduce the footprint of passive solutions, and allow FTTP service providers to maximize their ROI on existing infrastructure.

## KEY FEATURES AND BENEFITS

- Up to 2 multi-service multiplexers in a single module, serving up to 4 OLT ports, 2 RFoG ports, and 12 CWDM ports
- Integrated tap-on COM port for non-intrusive monitoring
- Low insertion loss, high isolation
  - Refer to the "Technical Specifications" table on page 2 for more details.
- Two compact package options for deployment convenience:
  - Standard LGX cassette
  - Champion ONE Passive Filter Module

## NETWORK DIAGRAM



## TECHNICAL SPECIFICATIONS

Champion ONE MSAM	
Parameter	Specification
Operating Wavelength (nm)	1260-1660
Center Wavelength (nm)	1311,1491, 1431, 1451, 1471, 1511, 1531, 1551, 1591, 1611; 1260-1280, 1575-1581, 1624-1660
Passband Ripple (dB)	≤ 0.5
Insertion Loss (dB)	≤ 4.8 (COM/MON) ≤ 2.5 (1/10G PON) ≤ 3.3 (RFoG) ≤ 4.8 (CWDM)
Isolation (dB)	≥ 30
PDL (dB)	≤ 0.2
PMD (Ps)	≥ 0.15
Return Loss (dB)	≥ 45
Directivity (dB)	≥ 50
Optical Power (mW)	≤ 500
Fiber Type	Single-mode 9/125
Temperature (°C)	-10 to 70 (Operating) -40 to 85 (Storage)
Relative Humidity (%)	5 - 95
Connectors	In: LC or MTP Out: LC (dual mux in same package requires MTP)
Dimensions (mm)	LGX Cassette: 130 x 130 x 30 (LxWxH) Passive Filter Module: 125.48 x 64.00 x 35.81 (LxWxH)
Warranty	5 Years

## ORDERING INFORMATION

Champion ONE MSAM	
C1 Part Number	Description
MSAM-AR01M-DLA	11 chl CWDM MSAM, 1GE PON, 10GE PON, RFoG, 1431-1650nm, with DWDM port, 1%Mon, HD, LC/APC
MSAM-AR02M-DLA	12 chl CWDM MSAM, 10GE PON, RFoG, 1311-1650nm, with DWDM port, 1%Mon, HD, LC/APC
MSAM-AR03M-DLA	4 chl MSAM, 10GE PON, RFoG, OTDR Port, 1%Mon, HD, LC/APC
MSAM-AR04M-DLA	6 chl MSAM, 1GE PON, 10GE PON, RFoG, Express Port, OTDR Port, 1%Mon, HD, LC/APC



# BROAD SPECTRUM FTTX OSP OPTICAL TAPS

The Champion ONE FttX optical tap system is designed to accommodate easy installation access to GPON/EPON/RFoG optical distribution networks (ODN). The robust cassette design can accommodate a wide variety of splice enclosures. The taps are broad spectrum single mode fiber devices that pass all the standard wavelengths of current and future Passive Optical Network (PON) technologies.

The tap module is spliced in-line with the OSP fiber, taps off some of the power from the distribution fiber, and divides it to the fiber drop that feeds the individual service locations. The tap ports can be connectorized or provided as unconnectorized to facilitate fusion splicing.

This system is similar to the traditional Hybrid Fiber Coax (HFC) Radio Frequency (RF) network that cable television operators build.

## TECHNICAL SPECIFICATIONS

### GENERAL SPECIFICATIONS

Parameter	Value
Fiber Type	900 $\mu$ m, no connectors
Operating Temperature	-40° to 85° C
Humidity	5% to 95%
Telcordia Standards	GR-1221-CORE GR-1209-CORE

Cassette-style enclosure allows for mounting in customer-provided splice trays (metal and plastic options).

### OPTICAL PERFORMANCE

Parameter	Value
Operating Wavelength	1250 – 1620nm
Port-to-Port Isolation	> 55 dB
Tap-to-Through-Leg Isolation	> 55 dB
Return Loss	> 55 dB

2-Port					
C1 Part Number	Value	Typical Insertion Loss (dB)	Max Insertion Loss (dB)	Typical Tap Loss (dB)	Max Tap Loss (dB)
PLCS-2P-17-1M	17	0.5	0.6	15.0	17.1
PLCS-2P-15-1M	15	0.7	0.8	14.0	15.4
PLCS-2P-14-1M	14	1.0	1.2	12.3	13.4
PLCS-2P-12-1M	12	1.2	1.3	11.7	12.1
PLCS-2P-10-1M	10	1.9	2.1	9.3	10.2
PLCS-2P-8-1M	8	2.5	2.8	8.2	8.8
PLCS-2P-7-1M	7	3.9	4.4	6.4	7.3
PLCS-2P-5-1M	5	5.7	6.3	5.4	6.0
PLCS-2P-4T-1M	4T	TERMINATED	TERMINATED	3.6	3.8

4-Port					
C1 Part Number	Value	Typical Insertion Loss (dB)	Max Insertion Loss (dB)	Typical Tap Loss (dB)	Max Tap Loss (dB)
PLCS-4P-17-1M	17	1.0	1.2	15.8	17.1
PLCS-4P-15-1M	15	1.2	1.3	14.6	15.8
PLCS-4P-13-1M	13	1.9	2.1	12.9	13.9
PLCS-4P-11-1M	11	2.5	2.8	11.9	12.5
PLCS-4P-10-1M	10	3.9	4.4	10.1	11.0
PLCS-4P-9-1M	9	5.7	6.3	9.0	9.7
PLCS-4P-7T-1M	7	TERMINATED	TERMINATED	7.1	7.5

8-Port					
C1 Part Number	Value	Typical Insertion Loss (dB)	Max Insertion Loss (dB)	Typical Tap Loss (dB)	Max Tap Loss (dB)
PLCS-8P-17-1M	17	1.9	2.1	16.0	17.3
PLCS-8P-15-1M	15	2.5	2.8	14.5	15.9
PLCS-8P-14-1M	14	3.5	4.4	13.7	14.4
PLCS-8P-12-1M	12	5.7	6.3	11.8	13.1
PLCS-8P-11T-1M	11T	TERMINATED	TERMINATED	10.2	11.0

Custom enclosure options are also available. Please contact your Champion ONE sales representative for more information.



# FTTX OSP OPTICAL SPLITTERS

The Champion ONE FttX optical splitter is designed to accommodate easy installation access to GPON/EPON/RFoG optical distribution networks (ODN). The robust cassette design can be customized to accommodate a wide variety of splice enclosures, fiber management racks or stand alone “pizza box” configurations.

The splitters are broad spectrum single mode fiber device that pass all the standard wavelengths of current and future Passive Optical Network (PON) technologies.

The splitter module ports can be connectorized or provided as unconnectorized to facilitate fusion splicing. Please consult your Champion ONE sales representative to customize the splitter to your application.

## TECHNICAL SPECIFICATIONS

### GENERAL SPECIFICATIONS

Parameter	Value
Fiber Type	900µm
Operating Temperature	-40° to 85° C
Humidity	5% to 95%
Telcordia Standards	GR-1221-CORE GR-1209-CORE

### OPTICAL PERFORMANCE

Parameter	Value
Operating Wavelength	1250 – 1620nm
Port-to-Port Isolation	> 55 dB
Return Loss	> 55 dB

Cassette-style enclosure allows for mounting in customer-provided splice trays (metal and plastic options).

## ORDERING INFORMATION\*

FttX Splitters	
C1 Part Number	Description
PLCS-C1-02-1M	FttX splitter, cassette 1 Svc, 1x2 1260-1620nm, 1M pigtailed
PLCS-C1-04-1M	FttX splitter, cassette 1 Svc, 1x4 1260-1620nm, 1M pigtailed
PLCS-C1-08-1M	FttX splitter, cassette 1 Svc, 1x8 1260-1620nm, 1M pigtailed
PLCS-C1-16-1M	FttX splitter, cassette 1 Svc, 1x16 1260-1620nm, 1M pigtailed
PLCS-C1-32-1M	FttX splitter, cassette 1 Svc, 1x32 1260-1620nm, 1M pigtailed
PLCS-L1-02-SA	FttX splitter, LGX 1 Svc, 1x2 1260-1620nm, SC/APC
PLCS-L1-04-SA	FttX splitter, LGX 1 Svc, 1x4 1260-1620nm, SC/APC
PLCS-L1-08-SA	FttX splitter, LGX 1 Svc, 1x8 1260-1620nm, SC/APC
PLCS-L1-16-SA	FttX splitter, LGX 1 Svc, 1x16 1260-1620nm, SC/APC
PLCS-L1-32-SA	FttX splitter, LGX 1 Svc, 1x32 1260-1620nm, SC/APC

\*Common example part numbers listed here. Additional custom options are available.

## SERVICE AND SUPPORT

Running a network or selling network services and products can be a highly competitive endeavor. To help differentiate your business and enable you to provide more cost effective infrastructure, you require a partner that provides competitive pricing and vertical market expertise. At Champion ONE we understand your needs. We leverage our skills and relationships to:

- Provide network design services and help you explore alternative network designs you may not have considered
- Provide technical and sales support when you need it
- Accept orders for same day shipment up to 3:00 PM EST
- Offer some of the longest warranties in the industry
- Offer a 30-day return policy
- Build a long- term supplier partnership with you

You can rely on Champion ONE, not only for the highest levels of availability for the products you need, but the technical support, customer service and cost consideration you deserve. Our goal is your complete satisfaction.

## THE CHAMPION ONE COMMITMENT



For over twenty years, we at Champion ONE have been delivering great value to our customers through high-quality products at competitive prices. As one of the leading suppliers of compatible optical transceivers and a major supplier of optical networking solutions, we take great pride in building long-term relationships as a trusted partner. In this spirit, everything we bring to market bears the Champion ONE Shield™, which strengthens this trust through five core promises: Performance, Availability, Compatibility, Protection, and Value.

## GLOBAL HEADQUARTERS

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