



CTDI Products: End-to-End Solutions



EPSP for PON





Broadband Innovation

Video is Your Core Business Your Optical Network Shouldn't Treat it as an 'Overlay'

The CTDI **Edge Passive Support for PON (EPSP)** line of passive optical products are designed to allow easy deployment of RF services over a passive, fiber optic network. CTDI provides the passive components necessary to support Broadcast video, Interactive RF services, and combined RF, Ethernet, RF Return path, and telephony applications operating on passive optical networks.



Forward and Return Path Services

The EPSP0101 is a WDM device designed to support 2 way RF services operating at the 1550nm forward path for video distribution, and the 1310nm return path. All connectors are SC/APC design for optimal power and reliability. A monitoring port allows head-end access to the fiber network without service disruption, and clear labeling for the service and network ports ensure easy installation and operation. This unit is a companion product for the MicroNode home receiver, and the MicroNode Neighborhood transceivers, and mounts in the EPSP optical termination shelf. This cassette is used in stand-alone MSO style, RF networks only.



The CTDI **EPSP** line of LGX cassette modules mounting chassis allows easy deployment of RF services over a passive fiber optic network. Whether the network is carrying RF forward and return paths, Ethernet, or combined RF and Ethernet services, CTDI provides the passive components optimized to support PON and RFoG topologies.



EPSP0101 Forward and Return Path WDM

The EPSP0101 is a WDM device that supports 2-way RF services operating with a 1550nm forward path and a 1310nm return path. All connectors are SC/APC design for optimal power and reliability.

A monitoring port offers test access to the fiber network without service disruption. This device mounts in the CTDI EPSP1201 optical termination shelf or any LGX mounting chassis, and is a companion product for the CTDI MicroNode™ RFoG ONUs.



EPSP0102 Forward Path + Hybrid RF PON WDM

The EPSP0102 is a WDM device that combines 1550nm RF transmission onto an ITU-based passive optical network system operating with a 1490nm downstream wavelength and a 1310 upstream wavelength. A monitoring port offers test access to the fiber network without service disruption. This device mounts in the CTDI EPSP1201 optical termination shelf or any LGX mounting chassis and is a companion product for CTDI edge OLTs, all Xgen and Home ONTs that have built-in forward path RF capabilities, and the MicroNode™ RFoG ONUs.



EPSP0104 Splitter Cassette Module

The EPSP0104 is a dual 1 x 2 splitter cassette for use with RF distribution and PON dual-fiber protection applications. This device mounts in the CTDI EPSP1201 optical termination shelf or any LGX mounting chassis and is a companion product for CTDI edge OLTs, Xgen and Home ONTs, and the MicroNode™ RFoG ONUs.



EPSP0105, EPSP0205 & EPSP0805 Forward and Return Path + Hybrid RF PON WDM

The EPSP0105 is a WDM device that combines 1550nm RF transmission onto an ITU-based passive optical network system operating with a 1490nm downstream wavelength and a 1310nm upstream wavelength. It also extracts the 1590 or 1610nm optical return path generated from the CTDI MicroNode 150 and MicroNode 190 RFoG ONUs for connection to a return receiver. A monitoring port offers test access to the fiber network without service disruption. The EPSP0205 is a dual version while the EPSP0805 is an 8 WDM version of the EPSP0105, using LC/APC connectors for improved connector density. An EPSP1201 fully loaded with the EPSP0805 provides support for 32 WDMs in 4RU of rack space. All three mount in the CTDI EPSP1201 optical termination shelf or any LGX mounting chassis, and are companion products for CTDI MicroNode™ line of RFoG ONUs.



EPSP1201 LGX Optical Cassette Shelf

The EPSP1201 is a general purpose optical termination shelf designed to hold 12 single-width LGX optical cassettes in a 19", 4RU rack-mounting space. It includes fiber management features, a protective cover, and a documentation panel to conveniently record fiber and service data. One EPSP1201 shelf can support 12 LGX cassettes. The EPSP1201 shelf may be used with CTDI's EPSP line of cassettes or any industry-standard LGX cassette.

CTDI Edge Passive Support for PON

Specifications

EPSP0101 WDM Cassette

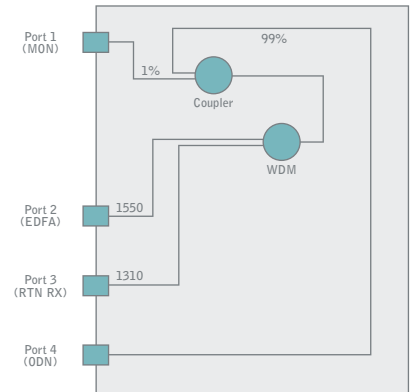
- Package: Single-width LGX cassette
- 4 SC/APC connectors (ODN, EDFA, RTN RX, MON)
- Specifications

Parameter	Specifications		Unit	Note
	Min.	Max.		
1310 Band Operating Wavelength	1295~1325		nm	
1550 Band Operating Wavelength	1545~1565		nm	
Insertion Loss	1310 Band to 99% & 1550 Band to 99% (Port 2 to 4 & Port 3 to 4)	1.1	dB	1
	1310 Band to 1% & 1550 Band to 1% (Port 2 to 1 & Port 3 to 1)	24.3		
Passband Ripple	1310 Band to 99% & 1550 Band to 99% (Port 2 to 4 & Port 3 to 4)	0.3	dB	
	1310 Band to 1% & 1550 Band to 1% (Port 2 to 1 & Port 3 to 1)	0.5		
PDL	1310 Band to 99% & 1550 Band to 99% (Port 2 to 4 & Port 3 to 4)	0.15	dB	
	1310 Band to 1% & 1550 Band to 1% (Port 2 to 1 & Port 3 to 1)	0.3		
Return Loss with Connectors	55		dB	
Directivity	50		dB	

Front Panel Placement



Cassette Block Diagram



EPSP0102 WDM Cassette

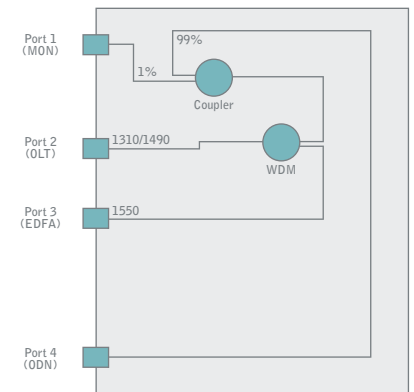
- Form factor: Single-width LGX cassette
- 4 SC/APC connectors (ODN, OLT, EDFA, MON)
- Specifications

Parameter	Specifications		Unit	Note
	Min.	Max.		
1310 Band Operating Wavelength	1260~1360		nm	
1490 Band Operating Wavelength	1480~1500		nm	
1550 Band Operating Wavelength	1550~1565		nm	
Insertion Loss	1310/1490 Band (Port 2 to 4)	1.2	dB	1
	1550 Band (Port 3 to 4)	1.0		
	1310/1490 Band (Port 2 to 4)	24.5		
	1550 Band (Port 3 to 4)	24.3		
Passband Ripple		0.5	dB	
PDL		0.3	dB	
Isolation	1310/1490 port@ 1550 Band	40	dB	
	1550 port@ 1310/1490 Band	30	dB	
Return Loss with Connectors	55		dB	
Directivity	50		dB	

Front Panel Placement



Cassette Block Diagram



CTDI Edge Passive Support for PON

EPSP0104 Dual Splitter Cassette

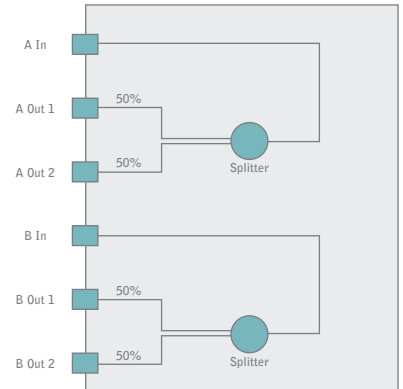
- Form factor: Single-width LGX cassette
- 6 SC/APC connectors (A1 In, A1 Output, A2 Output, B1 In, B1 Output 1, B2 Output)
- Specifications

Parameter	Specifications		Unit	Note
	Min.	Max.		
1310 Band Operating Wavelength	1260~1360		nm	
1550 Band Operating Wavelength	1545~1565		nm	
Insertion Loss		3.8	dB	1
Uniformity		0.9		
PDL		0.20	dB	
Return Loss with Connectors	55		dB	
Directivity	50		dB	

Front Panel Placement



Cassette Block Diagram

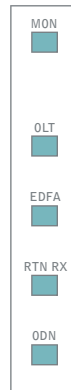


EPSP0105, EPSP0205 & EPSP0805 WDM Cassette

- Form Factor: Single-width LGX cassette
- 5 SC/APC, 5 LC/APC or 20 LC/APC connectors (ODN, OLT, EDFA, RTN RX, MON)
- Specifications

Parameter	Specifications		Unit	Note
	Min.	Max.		
1310 Band Operating Wavelength	1260~1360		nm	
1490 Band Operating Wavelength	1480~1500		nm	
1550 Band Operating Wavelength	1549~1560		nm	
1590/1610 Band Operating Wavelength	1580~1620		nm	
Insertion Loss	1310/1490 Band (Port 2 to 5)	1.2	dB	1
	1550 Band (Port 3 to 5)	1.4		
	1590/1610 Band (Port 4 to 5)	1.5		
	1310/1490 Band (Port 2 to 1)	24.5		
	1550 Band (Port 3 to 1)	24.7		
	1590/1610 Band (Port 4 to 1)	24.8		
Passband Ripple		0.5	dB	
PDL		0.3	dB	
Isolation	1310/1490 port@ 1550 Band	40	dB	
	1310/1490 port@ 1590/1610 Band	40		
	1550 port@ 1310/1490 Band	30		
	1550 port@ 1591 Band	15		
	1590/1610 port@ 1310/1490/1550 Band	30		
Return Loss with Connectors	55		dB	
Directivity	50		dB	

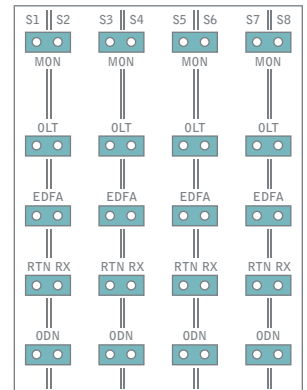
Placement EPSP0105



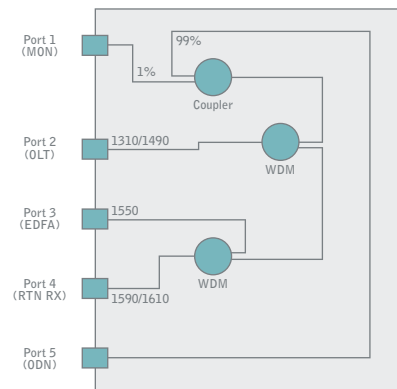
Placement EPSP0205



Front Panel Placement EPSP0805

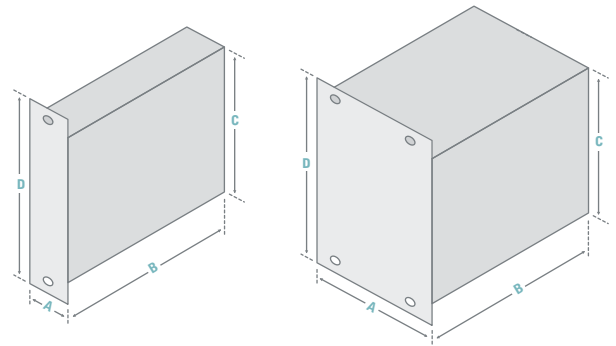


Cassette Block Diagram



Specifications common to all cassettes

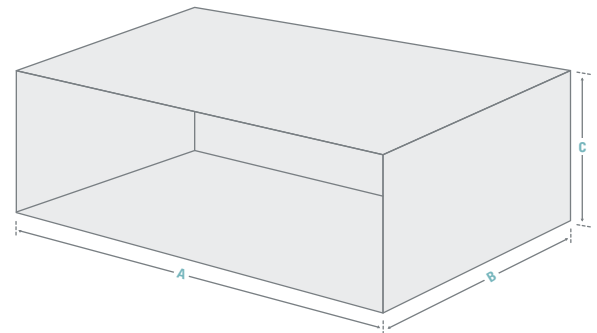
Parameter		Specifications		Unit	Note
		Min.	Max.		
Operating Power			500	mW	
Operating Temperature	EPSP0101 EPSP0102 EPSP0104	0	70	°C	
	EPSP0105 EPSP0205 EPSP0805	-40	85	°C	
Operating Relative Humidity		5	95	%	2
Storage Temperature		-40	85	°C	
Storage Relative Humidity		0	100	%	2



Specification Notes

- 1 Connectors are included. Full passband, all operating temperatures
- 2 Not to exceed industrial standard of 0.024kg water per kg of air under non-condensing conditions

Part #	DIM A Max	DIM B Max	DIM C Max	DIM D Max
EPSP0101	1.13" 2.9cm	5.75" 14.6cm	3.98" 10.1cm	5.07" 12.9cm
EPSP0102				
EPSP0104				
EPSP0105				
EPSP0205				
EPSP0805	3.43" 8.7cm			
EPSP1201	19" 78.3cm	10.75" 27.3cm	5.25" 13.4cm	



Ordering Information

Ordering Information

Part #	Description
EPSP0101	WDM cassette, RF + return
EPSP0102	WDM cassette, PON + RF
EPSP0104	Dual 1x2 splitter cassette
EPSP0105	WDM cassette, PON + RF+ return
EPSP0205	Dual WDM cassette, PON + RF+ return
EPSP0805	Octal 3-wide WDM cassette, PON + RF + Return
EPSP1201	LGX termination shelf, 12 position



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PRODUCTS

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