

50MHz to 3000MHz DWDM Wideband Optical Link

Optiva® DWDM Wideband fiber-optic links send RF in the 50 to 3000 MHz frequency range providing transparent signal transportation for satellite antenna applications. The unique features of the OTS-1LDT series include simple push button peaking for optimum performance and our patent-pending SmartGain™ Control, which ensures consistent performance over varied signal conditions. As with all Emcore optical products, the highest quality components and modern production techniques insure that intra-facility links provide the highest performance as a cost-effective alternative to coaxial cable. They provide much longer transmission distances than copper cables, simplify network design, ease installation and even enhance immunity from EMI, RFI and lightning. These transmitters and receivers take the high RF performance and diverse features of Emcore's Ortel technology and combine them into a compact package compatible with the Optiva® OT-CC-16 chassis.

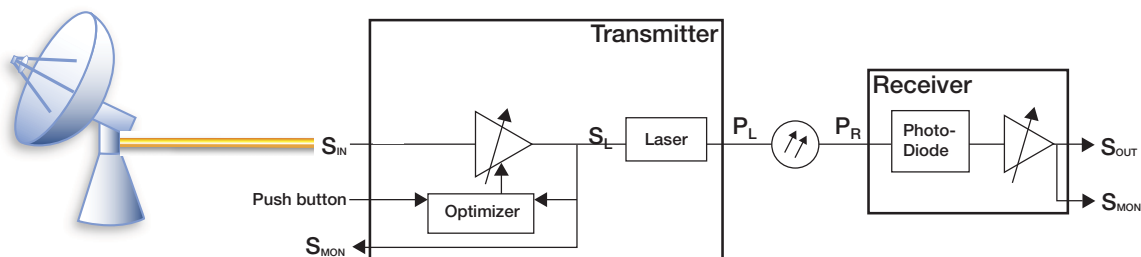


Features

- 50 to 3000 MHz optimized for IF, L and S band satellite signals
- DWDM on the ITU grid
- 30 dB adjustable gain range provides perfect level match for signal distribution
- Unique peak optimizer and SmartGain™ control
- 75 Ohm BNC or 50 Ohm SMA
- Tx & Rx RF power monitors via LED, SMA & remote
- SNMP monitoring and control
- High-dynamic-range, isolated, cooled DFB
- Fits in Optiva® enclosures, which support Daisy Chain™ video, audio and data links.
- Hot swap redundant power supplies virtually eliminate downtime
- 16, 4, 2, & 1 slot enclosures available
- CE & CSA Certified, ROHS

System Design

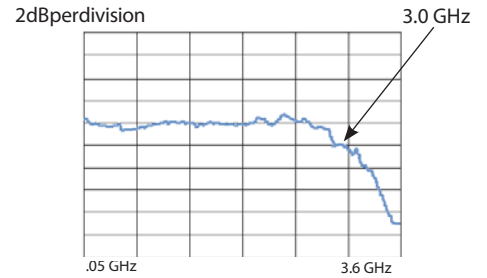
Optiva® is a completely modular hot-swappable platform. Both 19" rack mount and compact tabletop or wall-mountable enclosures are available. The 19" rack-mount enclosure (Model OT-CC-16) can support up to 16 insert cards and provides a single power supply (Model PS-200), or a dual-redundant, hot-swappable power supply option. Compact enclosures are available with 1, 2 or 4 slots. The one slot (OT-DTCR-1) and two slot (OT-DTCR-2) enclosures both use an external power supply (PS-9012) and optionally have a standard 2-pin DC power connector for more custom applications. The four-slot 1 RU enclosure (OT-CC-4) uses an integrated power supply. The Optiva® family's existing wide range of video, audio and data transport products include a unique Daisy-Chain™ feature that multiplexes multiple electrical inputs onto a single fiber, thus resulting in an extremely capable, yet conveniently flexible, signal transport system.



Performance Highlights

	Parameter	Min	Typical	Max	Units	
Link	Frequency Range					
	50 Ohm	50	-	3000	MHz	
	75 Ohm	50	-	2500	MHz	
	Fiber Distance	0	-	100	Km	
	Optical Loss	0	-	13	dBo	
	Air Temperature	-10	-	50	°C	
TX	RF Input within SGC range ¹	-	0 to -35	-	dBm	
	TX Gain (TG) at max, 1 GHz ²	9	17	-	dB (W/A)	
	TG Adjustment Range (reduction from max)	30	-	-	dB	
	Noise Figure (TG at max, 2150 MHz, 1dBo loss)	19	13	-	dB	
	Spur Free Dynamic Range (1dBo loss)	100	103-108	-	dB/Hz ²	
	Wavelengths (see table to the right for specific channel center)	1534		1562	nm	
	Optical Power	8	9	10	dBmo	
	DC Power	-	12	-	V	
	RX	RF Output (Tx at peak, 1 dBmo into Rx)	-	-8 to -25	-	dBm
		RX Gain (RG), at max, 1 GHz ²	20	22	-	dB (A/W)
RG Adjustment Range (reduction from max)		15	-	-	dB	
Output IP3 (2150 MHz)		20	25	-	dBm	
Output 1dB compression (2150 MHz)		-	15	-	dBm	
Optical Input		-12	-	10	dBmo	
Optimal		-6	-	10	dBmo	
DC Power		-	12	-	V	
			-	250	mA	

Typical S21



Center Wavelengths

Ch.	nm	Ch.	nm	Ch.	nm
54	1534.25	42	1543.73	30	1553.33
53	1535.04	41	1544.53	29	1554.13
52	1535.82	40	1545.32	28	1554.94
51	1536.61	39	1546.12	27	1555.75
50	1537.40	38	1546.92	26	1556.56
49	1538.19	37	1547.72	25	1557.36
48	1538.98	36	1548.51	24	1558.17
47	1539.77	35	1549.32	23	1558.98
46	1540.56	34	1550.12	22	1559.79
45	1541.35	33	1550.92	21	1560.61
44	1542.14	32	1551.72	20	1561.42
43	1542.94	31	1552.52	19	1562.23

1. Wider RF inputs are acceptable, but will set the RF amp gain to its limit.
2. Link RF Gain_{dB} = TG + RG - 2*FiberLoss_{dB} (assumes Rin = Rout). EDFA gain should be included in the Fiber Loss.
3. dBmo & dBo indicate optical power & loss to minimize confusion with RF dBm & dB.

Ordering Information

Product Code	Specifications
OTS-1LDT/S5-xx08-SA	Transmitter, 50-3000 MHz, SMA 50 ohm, Channel xx, 8dBm (min), SC/APC
OTS-1LDT/B7-xx08-SA	Transmitter, 50-2500 MHz, BNC 75 ohm, Channel xx, 8dBm (min), SC/APC
OTS-1LR/S5-SA-IC	Receiver, 50-3000 MHz, SMA 50 ohm, SC/APC
OTS-1LR/B7-SA-IC	Receiver, 50-2500 MHz, BNC 75 ohm, SC/APC
OPV-CTLR-IC	NMS SNMP Controller Card & MIB for Optiva Family
OTP-1ETR-A2/A2	Optical Tcvr, 1Ch, Ethernet, SM, Dual LC
OT-CC-16-01	Chassis, Rack Mount, 16 Slot, 3RU, Rear Access
PS-200-(xx)	PowerSupply, 12Vdc, 100to240Vac, 50/60Hz, (Specify powercord (NA,EU,UK))
OT-CC-4-1U-(xx)	Chassis w/ built-in Power Supply, 1 RU, 4 slots, 110-240 AC input, Power Cord
OT-DTCR-1 / OT-DTCR-2	Chassis, flange-mount, w/ Power Supply, 1 slot / 2 slot

Enclosure Options



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