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OTS-1L

Wideband Optical Link

Features

- 50 to 3000 MHz Optmized for IF, L and S band Satellite Signals
- Supports 30 km Links
- Supports 1310nm
- 30 dB Tx Adjustable Gain Range
- 30 dB Rx Adjustable Gain Range
- Peak Optimizer for Quick and Easy Setup
- SmartGain for Enhanced AGC Performance
- 50 & 75 Ohm BNC or 50 Ohm SMA
- Tx & Rx RF power Monitors via LED, SMA & SNMP
- LNB Power
- SNMP Monitoring and Control
- Optically-Isolated un-cooled DFB Lasers En able High Dynamic Range Links
- Fits in Optiva Enclosures, Which Support Daisy Chain Video, Audio, and Data Links
- 16, 6, 2, & 1 Slot Enclosures Available
- CE & CSA Certified, ROHS

50 MHz to 3 GHz Wideband Optical Link

The Optiva OTS-1L wideband fiber-optic links are optimized to perform in the 50 MHz to 3 GHz frequency range providing transparent signal transportation for satellite antenna applications.

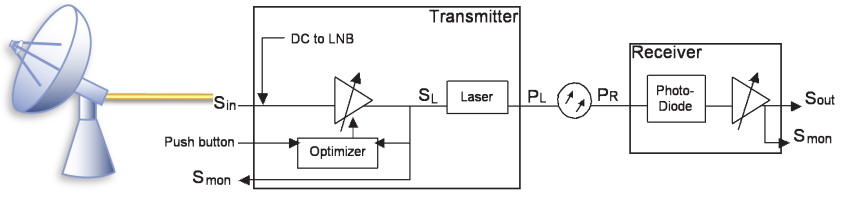
EMCORE's satellite and microwave transmitters / receivers are SNMP compliant, making them able to be housed in the same chassis as with Optiva HD video, audio, serial data and USB extension / distribution cards, and monitored by the same Network Management System (NMS).

System Design

The Optiva platform includes a wide range of transport solutions over fiber for satellite and microwave communications applications, including constructing transparent links for antenna remoting, inter- and intra-facility video transport links, as well as high-dynamic-range applications such as electronic warfare systems.

Optiva insert cards support both 19" rackmount and compact tabletop or wall-mountable enclosures. The 3RU 19" rackmount enclosure (Models: OT-CC-16 and OT-CC-16F) can support up to 16 insert cards as well as dual-redundant, hot-swappable power supplies utilizing two 100 watt or two 200 watt power supplies. Also available in the rackmount form factor is our 1RU enclosure (Model: OT-CC-6-1U) which can accommodate six insert cards and utilizes two 60 watt power supplies. For desktop or wall mounting applications there are one-slot (Model: OT-DTCR-1) and two-slot (Model: OT-DTCR-2) enclosures. Both use an external wall mount power supply.

Block Diagram



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OTS-1L

Wideband Optical Link

Performance Highlights

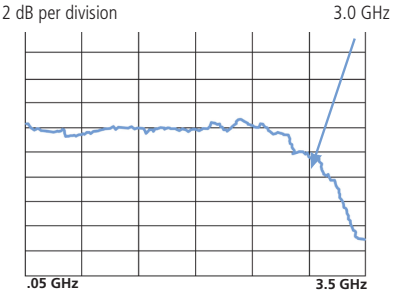
	Parameter	Min	Typical	Max	Units^
Link	Frequency Range				
	50 Ohm	50	-	3000	MHz
	75 Ohm	50	-	2500	MHz
	Link Gain, 1 dBo Loss @ Max Gain**				
	Standard RX (OTS-1LR)	-	25	-	dB
	Hi-Sensitivity RX (OTS-1LSR)	-	32	-	dB
	Optical Loss (C/N > 10 dB, BW 36 MHz, Carrier Level -35 dBm)				
	Standard RX (OTS-1LR)	-	-22	-	dBo
	Hi-Sensitivity RX (OTS-1LSR)	-	-27	-	dBo
	Noise Figure (TG at max, 2150 MHz, 1 dBo loss)	-	12	-	dB
	Input IP3 (TG max, 2150 MHz, 1 dBo loss)	-	1	-	dBm
	Spur Free Dynamic Range (1 dBo loss)	-	108	-	$dB/Hz^{2/3}$
	Operating Temperature (Air)	-10	-	50	°C
TX	RF Input within SGC range*	-	0 to -35	-	dBm
	TX Gain (TG) at max, 1 GHz	-2	5	-	dB (W/A)
	TG Adjustment Range (reduction from max)	30	-	-	dB
	Frequency Response				
	Any 36 MHz	-	+/- 0.2	-	dB
	950-2150 MHz	-	+/- 1.5	-	dB
	50-3000 MHz	-	+/- 2.0	-	dB
	Wavelength	1300	-	1320	nm
	Input Return Loss				
	50-200 MHz	10	15	-	dB
	950-2150 MHz	13	18	-	dB
	50-3000 MHz	8	13	-	dB
	LNB Voltage	16	17	19	V
	Current	-	-	350	mA
	Optical Power	3	5	6	dBmo
	DC Power	-	12	-	V
	LNB Off	-	-	350	mA
RX	RF Output (TX at peak, 1 dBmo into Rx)	-	-8 to -25	-	dBm
	RX Gain (RG), at max, 1 GHz				
	Standard RX (OTS-1LR)	20	22	-	dB (A/W)
	Hi-Sensitivity RX (OTS-1LSR)	25	29	-	dB (A/W)
	RG Adjustment Range (reduction from max)	30	-	-	dB
	Output IP3 (2150 MHz)	23	25	-	dBm
	Output 1dB compression (2150 MHz)	-	15	-	dBm
	Receiver Sensitivity				
	Standard RX (OTS-1LR)	-	-20	-	dBmo
	Hi-Sensitivity RX (OTS-1LSR)	-	-25	-	dBmo
	Output Return Loss				
	50-200 MHz	8	10	-	dB
	950-2150 MHz	13	15	-	dB
	50-3000 MHz	8	10	-	dB
	DC Power	-	12	-	V
		-	-	300	mA

*Wider RF inputs are acceptable, but will set the RF amp gain to its limit.

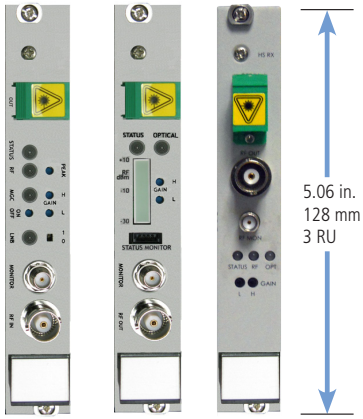
**Link RF $Gain_{dB}$ = TG + RG – 2*$FiberLoss_{dBo}$ (assumes Rin = Rout)

^dBmo and dBo indicate optical power and loss, in order to minimize confusion with RF dBm and dB

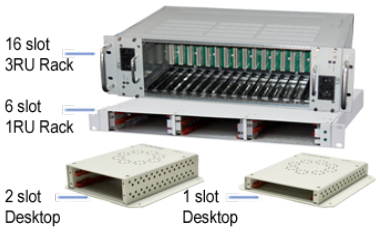
Typical S21



OTS-1L (TX & RX)



Enclosure Options



FCC PART 15 COMPLIANT CE MADE IN USA

Specifications Subject To Change Without Notice

Rev 06-14

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