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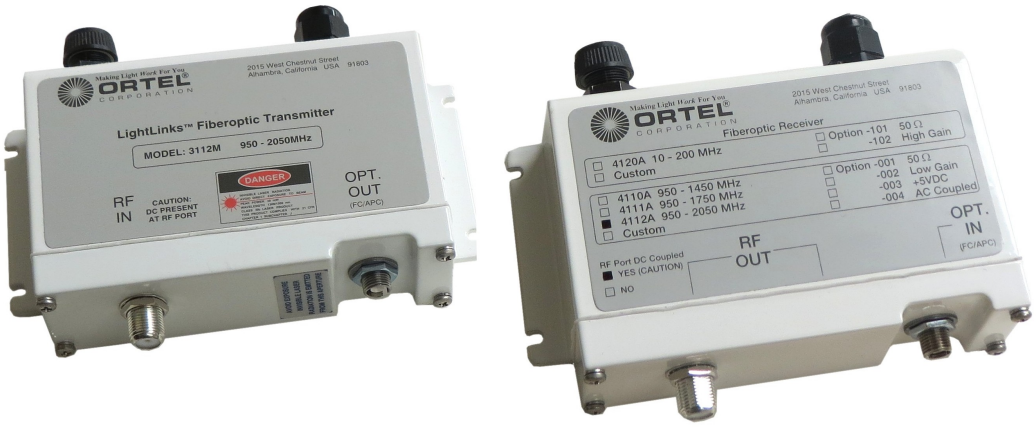
5100 Series

L-Band Fiber Optic Links



Ortel 3112 & 4112 LightLinks™ Transmitter & Receiver

Features

- 950-2050
- Flange Mount
- 75 Ohm "F" Connector
- 1310 nm
- Diplexed LNB Power
- 3112 Transmitter
- 4112 Receiver

The 5100-Series fiber optic inter-facility links (IFLs) are a high performance, cost-effective alternative to coaxial cable for 950 MHz to 2050 MHz L-Band satellite communications applications.

EMCORE's fiber optic IFLs, function as transparent links between satellite antennas and Network Operations Centers (NOC). These IFLs eliminate the limitations of copper systems by enabling longer transmission distance while retaining the highest level of signal quality.

In addition, EMCORE's fiber optics provide several other significant network advantages, including simplified network design, ease of installation, and immunity from EMI/RFI and lightning.

Performance Highlights

	Minimum	Typical	Maximum	Units
Wavelength	-	1310	-	nm
Transmitter Optical Output Power	-	0	-	dBm
Receiver Optical Input Power	-	-12	-	dBm
Link Gain @ 1 dB optical loss Standard High	 - -	 -4 13	 - -	dB
Temperature Range Flange Mount Rack Mount	 -40 0	 - -	 +65 +50	 ˚C ˚C
Frequency Range	950	-	2050	MHz

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Parameter	Symbol	Condition	Min	Max	Units
Operating Temperature Range Flange-mount Rack-mount	T_{OP}	-	 -40 0	 +65 +50	 ˚C ˚C
Storage Temperature Flange-mount Rack-mount	T_{STG}	-	 -40 -40	 +85 +85	 ˚C ˚C
DC Voltage	-	-	-	24	VDC
DC Current (Transmitter)	-	+8VDC	250	-	mA
DC Current (Receiver)	-	+8 VDC	200	-	mA

Electrical / Optical Characteristics

Parameter	Symbol	Condition	Min	Type	Max	Units
Wavelength (Transmitter)	-	-	1290	-	1340	nm
Optical Output Power (Transmitter)	-	-	-	1	-	mW
dc Responsivity (Receiver)	-	-	0.75	-	-	A/W
Fiber	-	Corning SMF-28 or equivalent	-	-	-	-
Connector	-	FC/APC Tight Fit, (Seikoh Giken or equivalent)	-	-	-	-
Connector Return Loss	-	-	60	-	-	dB

Link Characteristics, 1 dB Optical

Parameter	L-Band Performance			
Link Gain	-	Std.	Low	High
50 Ohm (At 25° C), min.	-	-4.00 dB	-15.00 dB	+13.00 dB
75 Ohm (At 25° C), min.	-	-4.00 dB	-15.00 dB	+13.00 dB
Amplitude flatness any 500 MHz any 40 MHz			 ± 1.50 dB ± 0.35 dB	
Gain vs. temp. (typ.)	-	± 0.75 dB		0.03 dB/°C

RF Characteristics, Tx

Parameter		Performance	
Tx Gain Option	-	Std.	-002 (high)
Tx Gain (TG) - 50 Ohm	-	-19.50 dB	-2.50 dB
Tx Gain (TG) - 75 Ohm	-	-17.75 dB	-0.75 dB
Noise figure, max	-	45 dB	28 dB
Input IP3, min.	-20° C -40° C	+7.5 dBm +4.5 dBm	-9.5 dBm -12.5 dBm
Input 1 dB compression, typical	–20° C -40° C	≥ 0 dBm ≥ -3 dBm	≥ -17 dBm ≥ -20 dBm
Gain vs. temp. (typ.)	-	0.09 dB/°C	0.12 dB/°C
Max RF input (Tx)	-	+3 dBm	-14 dBm
Amplitude flatness any 500 MHz any 40 MHz		 ± 0.75 dB ± 0.20 dB	
VSWR	Input	2.0:1	
Input Impedance	-	75 Ohm F, (50 Ohm SMA, option –001)	

RF Characteristics, Rx

Parameter		Performance	
Rx gain option	-	Std.	-002 (low)
Rx Gain (RG) - 50Ohm	-	+21.00 dB	+4.00 dB
Rx Gain (RG) - 75 Ohm	-	+19.25 dB	+2.25 dB
Gain vs. temp. (typ.)	-	0.06 dB/°C	0.03 dB/°C
Amplitude flatness any 500 MHz any 40 MHz		 ± 0.75 dB ± 0.15 dB	
VSWR	Output	1.8:1	
Output Impedance	-	75 Ohm F, (50 Ohm SMA, option –001)	

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