Optoelectronics

Laser Link®
Modular Optical Receivers

Description

The Laser Link® Forward Receiver (LLFR) receives optical signals, then converts them to RF and transmits them into the network. Up to 7 modular forward path receivers can be housed in the Laser Link Mainframe, or 2 modules in the Laser Link Mini-Mainframe, offering compact installation, improved system reliability and a telemetry interface for Network Management (status monitoring).

The ELLRR-S Reverse Receiver (ELLRR-S) receives analog or data upstream signals from a node or a hub location. Up to 14 modular return receivers can be housed in the Laser Link Mainframe or 4 modules in the Laser Link Mini-mainframe, offering compact installation, improved system reliability and a telemetry interface for Network Management (status monitoring).

LLFR Forward Receiver

Common Features

- Front fiber entry connector
- Easily accessible test points
- Front panel gain controls
- Front panel LEDs for easy set up
- TTL outputs for redundant switching
- 1310 or 1550 nm optical input operation
- SC/UPC or SC/APC connectors
- Redundant powering options available
- Network Management (status monitoring) ready

ELLRR-S
Reverse Receiver

LLFR Features

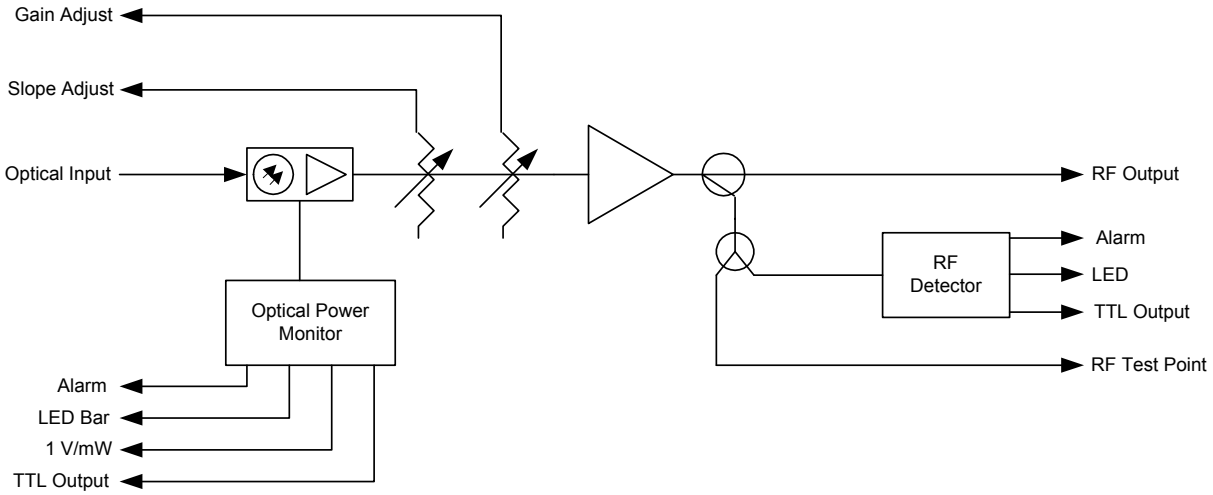
- 870 MHz RF bandwidth
- Front panel slope control

ELLRR-S Features

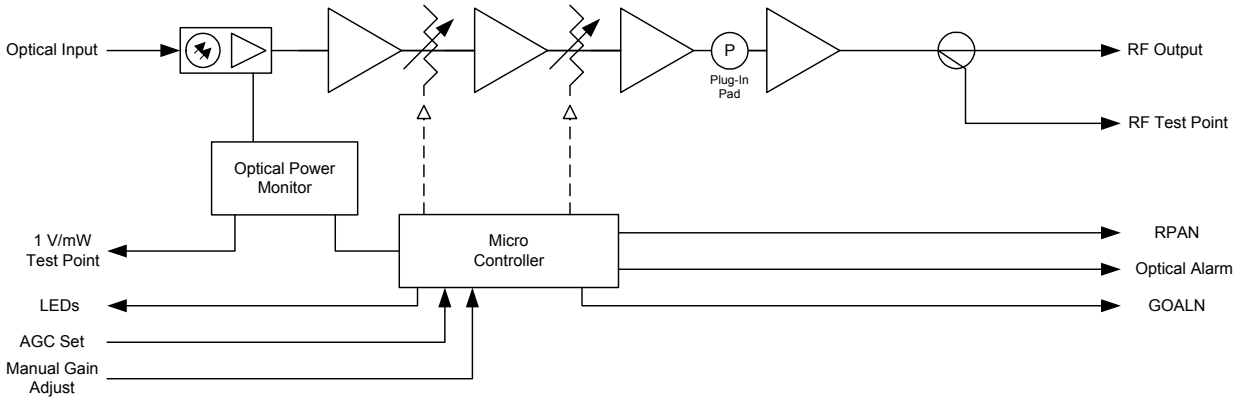
- Half-width module
- Optical AGC
- High output
- plug-in pad
- 5-210 MHz bandwidth

Block Diagrams

LLFR Forward Receiver



ELLRR-S Reverse Receiver



Laser Link Modular Optical Receivers

Specifications

Optical	Units	LLFR Forward Receiver	ELLRR-S Reverse Receiver
Input Power	dBm	-10 to +3	-17 to +3
Optical Return Loss	dB	≥ 40	n/a
Equivalent Input Noise Current	pA/sqrtHz	≤ 7	≤ 7
Wavelength	nm	1290 – 1600	1290 – 1600
RF			
Impedance	ohms	75	75
Return Loss	dB	16 (45-550 MHz) 14 (550-870 MHz)	16
Output Level	dBmV	35 [1]	49 [3]
Level Adjustment	dB	6 [2]	25 w/o AGC 19 with AGC plus plug-in pad
AGC Range	dB	n/a	±2.0 [4]
Slope Adjustment	dB	+2 to -3	n/a
Frequency Response	MHz	45 – 870	5 - 210
Ripple (peak – to –valley)	dB	±1.0	±0.75
Test Point Attenuation)	dB	-30 ±1.0	-20 ±1.0
NPR@ 41 dB [5]	dB		>15
Power			
Supply Voltage	V dc	24	24
Supply Current	(mA)	600	430
Power Consumption	W	14.4	10.3
Physical			
Operating Temperature	°F (°C)	32 – 122 (0 – 50)	32 – 122 (0 – 50)
Relative Humidity Range (non condensing)	%	15 – 95%	5 – 95%
Optical Connector		SC/APC (Standard) SC/UPC (optional)	SC/APC (Standard) SC/UPC (Optional) E2000 (Optional)
Mounting		Laser Link Mainframe	Laser Link Mainframe
Dimensions (HxWxD)	in. (cm)	5.25x2.25x13.5 (13.3x5.72x34.3)	5.25x1.05x13.5 (13.3x2.66x34.3)
Weight	lbs (kg)	3 (1.35)	1.75 (0.79)

Notes:

1. Maximum gain, 0 dBm optical incident at 3.5% index of modulation.
2. Electrically variable; additional plug-in pad for coarse adjustment; assumes no contribution from the transmitter.
3. Maximum gain, -10 dBm optical incident at 10% index of modulation; responsivity of 0.85 mA/mW with AGC.
4. Based on a change in received optical power of up to +/-1 dB, over +1 to -10 dBm optical received power.
5. LLNTR Transmitter, optical input power from -6 to 0 dB with the output set to obtain a minimum of -28.5 dBmV/Hz with a 35MHz noise spectrum.

Laser Link Modular Optical Receivers

Ordering Information

Description	Model Number	Part Number
Forward Receiver, Laser Link, 50-870 MHz, Full-width Module, SC/UPC	LLFR-SC/UPC	252871
Forward Receiver, Laser Link, 50-870 MHz, Full-width Module, SC/APC	LLFR-SC/APC	252872
Reverse Receiver, Laser Link, 5-210 MHz, SC/UPC	ELLRR-S SC/UPC	253898
Reverse Receiver, Laser Link, 5-210 MHz, SC/APC	ELLRR-S SC/APC	253897
Reverse Receiver, Laser Link, 5-210 MHz, E2000	ELLRR-S E2000	253899

Laser Link products include some of the industry's most complete range of high performance optical components:

	For more information please refer to:
1310 nm Transmitters	Laser Link Data Sheet Part Number 7001673
1550 nm Transmitters	Laser Link Data Sheet Part Number 7001674
1550 nm Optical Amplifiers	Laser Link Data Sheet Part Number 7001675
Receivers	Laser Link Data Sheet Part Number 7001676
Ancillary Modules	Laser Link Data Sheet Part Number 7001677
Main Frame	Laser Link Data Sheet Part Number 7001678

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Scientific-Atlanta, Inc.
1-800-722-2009 or 770-903-6900
www.scientificatlanta.com

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