

Model OLMR Miniature L-Band Receiver

Features and Benefits

Compact wide-bandwidth L-Band receiver offers excellent performance at low cost.

Wide bandwidth; 10-3,600MHz handles all CATV and satellite signals including up to four stacked polarizations.

Receiver models available with 75Ω output/"F" connector or 50Ω/SMA connector

Wide usable optical input range from -15dBm to +3 dBm

Wide operating wavelength range, 1270-1610nm.

APD option is available for the receiver offers extreme optical sensitivity. PIN Detector is standard. The APD Option typically increases sensitivity by 7dB.

An LED indicator is provided for easy setup and maintenance. The tri-color indicator LED is yellow when the optical input is low, red when the optical input is high and is green when the optical input is in the usable range, -15dBm to +3dBm.

SC/APC optical connector standard. FC/APC optional.



The Olson Model OLMR Miniature L-Band Receiver offers a high performance, versatile receiver in a very compact package. The Model OLMR Miniature L-Band Receiver has been engineered to meet today's high performance standards for L-Band transport. Its extreme bandwidth range allows the system to handle the next generation of satellite signals. The receiver may be used with any L-Band transmitter from Olson Technology, Inc. It is ideal for a wide variety of communications applications including L-Band satellite antenna remoting, trunking radio, telemetry tracking, plus GPS time and frequency reference signal distribution. The extended frequency range to 3.6GHz allows this system to accommodate additional transponders coinciding with common European satellite communication applications.

The enhanced bandwidth to 3.6GHz is also unique in that it facilitates stacked LNB applications to accommodate additional transponders containing enhanced DBS programming services (e.g., HDTV, local channels, etc.) over single-mode fiber for DBS television distribution in campus, fiber-to-the-premise (FTTx), and multiple dwelling unit (MDU) environments. The OLMR offers 75Ω output impedance standard, or 50Ω optional. Optical connector options include FC/APC and SC/APC. Power is via an Olson Model OTPS-12A power supply.

System Specifications

Optical Characteristics (with SM 9/125µm Fiber)

	Min	Typ	Max	Units
Operating Wavelength	1270		1610	nm
Rx Opt. Input Power (PIN)	-15		+3	dBm
Rx Opt. Input Power (APD)	-22		-4	dBm
Tx/Rx Opt. Return Loss		>55		dB
Optical Loss Budget: **				
4dBm DFB Laser	1		19	dB
5dBm DFB Laser	2		20	dB
10dBm DFB Laser	7		25	dB
Optical Connector		FC/APC SC/APC		

**Numbers shown are for PIN Detector. Add 7dB to the for an APD.

RF and System Characteristics

	Min	Typ	Max	Units
Frequency Response	10		3,600	MHz
Amplitude Flatness (>50 MHz)	Any 500MHz / ±1.5 Any 40MHz / ±0.35			
Return Loss	10	14		dB
Output Impedance ("F")		75		Ω
Output Impedance (SMA)		50		Ω
Link Gain (PIN Model)		-4 ± 5		dB
Link Gain (APD Model)		+7 ± 5		dB
Noise Figure (See Table 1)	13		45	dB
CNR (BW 27MHz):				
@ +7dBmV Tx RF Input		13		dB
@ +12 dBmV Tx RF Input		18		dB
@ +17 dBmV Tx RF Input		23		dB
Rx Output 1 dB Compression		>-20		dBm

Electrical and Environmental Characteristics

	Min	Typ	Max	Units
Power Supply Voltage (DC)	10	12	15	V _{DC}
Operating Temp. Range	0		+55	°C
Storage Temp. Range	-20		+70	°C
Humidity	5		95	%

Physical Characteristics

	Min	Typ	Max	Units
Rx Weight		5		oz.
		140		g
Rx Dimensions (w/o mtg flanges)	3.25 x 2.84 x 0.87			in.
	83 x 72 x 22			mm

NOTES:

- 1) The link optical budget specification assumes most of the loss is via the optical coupler with <1km between the transmitter and receiver.
- 2) RF Specifications are cited at 12dB optical loss and better than -55dB optical back-reflection. If the link optical loss differs from 12dB, the RF gain will change 2dB for each 1dB of optical loss. When optimizing RF performance, the main concern involves setting the RF signal level.
- 3) Link gain values, CNR & Noise Figures are nominal when used with Olson OLRT-X3613-D5-75-SA, L-Band transmitter.

Table 1 - Typical Noise Figure vs. Rx Optical Power

Typical NF vs. Rx Power	
Rx Optical In	Typical NF
(dBm)	(dB)
3	13
0	16
-3	20
-6	25
-9	30
-12	35
-15	40
-18	45

Ordering Information

Receiver Part Numbers

OLMR-X3600-75-SA	Mini L-Band Receiver, 10MHz-3.6GHz, PIN Detector, SC/APC Opt Conn, 75Ω (F-Style)
OLMR-X3600-75-FA	Mini L-Band Receiver, 10MHz-3.6GHz, PIN Detector, FC/APC Opt Conn, 75Ω (F-Style)
OLMR-X3600S-75-SA	Mini L-Band Receiver, 10MHz-3.6GHz, High Sensitivity APD, SC/APC Opt Conn, 75Ω (F-Style)
OLMR-X3600S-75-FA	Mini L-Band Receiver, 10MHz-3.6GHz, High Sensitivity APD, FC/APC Opt Conn, 75Ω (F-Style)
OLMR-X3600-50-SA	Mini L-Band Receiver, 10MHz-3.6GHz, PIN Detector, SC/APC Opt Conn, 50Ω (SMA-Style)
OLMR-X3600-50-FA	Mini L-Band Receiver, 10MHz-3.6GHz, PIN Detector, FC/APC Opt Conn, 50Ω (SMA-Style)
OLMR-X3600S-50-SA	Mini L-Band Receiver, 10MHz-3.6GHz, High Sensitivity APD, SC/APC Opt Conn, 50Ω (SMA-Style)
OLMR-X3600S-50-FA	Mini L-Band Receiver, 10MHz-3.6GHz, High Sensitivity APD, FC/APC Opt Conn, 50Ω (SMA-Style)

Power Supply Part Number

Model OTPS-12A	Universal AC Power Supply, +12 Volts DC, 1.5 Amps
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