

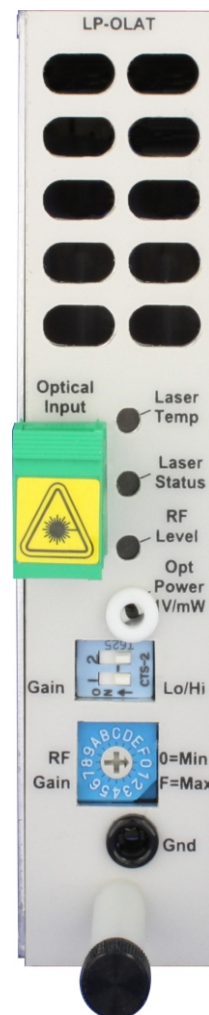
## Features and Benefits

- Fully compatible with all Olson Technology, Inc.'s L-Band receivers.
- Extreme bandwidth range of 10MHz up to 4,000MHz handles all stacked satellite signals.
- Excellent L-Band performance with digital gain control over a 25dB RF range in 1dB steps.
- Transmitter Input IP3 from -10dBm to +15 dBm (depending on digital gain setting).
- Transmitter Input P1dB from -12.5dBm to +12.5 dBm (depending on digital gain setting).
- Transmitter handles total RF Input Power from -25dBm to 0 dBm (depending on digital gain setting).
- 1310nm, 1550nm, CWDM, and DWDM wavelength DFB lasers.
- Built-In test points, LED indicators and alarms for easy setup and maintenance.
- 75 Ohm "F" RF connector standard, 50 Ohm SMA RF connector option.
- SC/APC optical connector standard, FC/APC connector optional.

The Olson *LaserPlus* LP-OLAT Advanced L-Band Transmitter offers a feature-rich, versatile system in a compact rack-mount package. The Advanced L-Band Transmitter has been engineered to meet today's high performance standards for L-Band transport with an extreme bandwidth range that will also allow the system to handle the next generation of satellite signals. The Advanced L-Band system is ideal for a wide variety of communications applications, including L-Band satellite antenna remoting, trunking radio, telemetry tracking, and time and frequency reference distribution. The extended frequency range to 4GHz allows this system to accommodate additional transponders coinciding with common European satellite communication applications.

The enhanced bandwidth to 4GHz 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 transmitter is offered with 75 Ohm impedance using "F" RF connectors or 50 Ohms with SMA RF connectors. Optical connector options include SC/APC and FC/APC. Built-in test points, LED indicators and alarms allow the receiver to be easily set up and maintained.

The LP-OLAT Transmitter is housed in a machined Aluminum enclosure that fits the standard *LaserPlus* chassis allowing up to 14 or 15 modules in a 3RU space. (The exact number is determined by the number of power supplies in the chassis, single or dual).



## Transmitter Specification

### Optical Characteristics (with SM 9/125µm Fiber)

	Min	Typ	Max	Units
Operating Wavelength		1310		nm
Operating Wavelength		1550		nm
Operating Wavelength (CWDM)	1290		1610	nm
Operating Wavelength (DWDM)	22		46	ITU ch
Tx Output Power (DFB)		+5 3		dBm mW
Tx Output Power (DFB, CWDM)		+4 2.5		dBm mW
Tx Output Power (DFB, DWDM)		+9 8		dBm mW
Tx Return Loss		>55		dB
Optical Connector (Standard)		SC/APC		
Optical Connector (Optional)		FC/APC		

#### NOTES:

- 1) The RF gain will change 2dB for each 1dB of optical loss.
- 2) The transmitter  $P_{1dB}$  and also IP3 varies dB per dB as the gain is changed. See the manual for detailed data.
- 3) Noise figure is a complex variable that is influenced by the Tx and Rx attenuator settings as well as the optical loss. See the manual for detailed data.
- 4) The Hi/Lo Gain switch on the front panel changes the gain by +10dB. The hexadecimal rotary switch on the front panel changes the gain in 1dB steps. The "0" setting on the rotary switch is the lowest gain (0dB). The "F" setting on the rotary switch is the highest gain (+15dB).

### RF and System Characteristics

	Min	Typ	Max	Units
Frequency (non-DWDM Models)	10		4,000	MHz
Amplitude Flatness	Any 500MHz / $\pm 1.5$ Any 40MHz / $\pm 0.35$			dB dB
Return Loss	10			dB
Output Impedance (Standard)		75		Ohms
Output Impedance (Optional)		50		Ohms
Link Gain	-50		+30	dB
Noise Figure (See manual)	10		45	dB
Tx Input IP3	-10		+15	dBm
Tx Input $P_{1dB}$	-12.5		+12.5	dBm
Tx Input/Rx Output VSWR	1.9:1			
Tx Total RF Input Power	-25		0	dBm
Hi/Lo Gain Switch	0		+10	dB
Hexadecimal Rotary Gain Switch	0		+15	dB

### Physical Characteristics

	Min	Typ	Max	Units
Tx Weight		14.1 0.40		oz. kg
Transmitter Dimensions	4.5H x 1.125W x 8.75D 114H x 29W x 222Dmm			in. mm

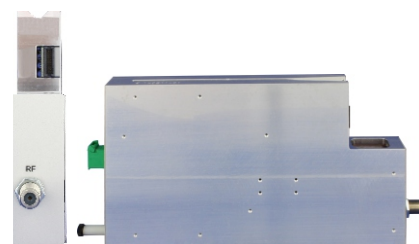
### Ordering Information

LP-OLAT-X4013-D5-xx-SA	Transmitter, 4GHz, 1310nm, +5dBm/3mW DFB Laser, SC/APC
LP-OLAT-X4013-D5-xx-FA	Transmitter, 4GHz, 1310nm, +5dBm/3mW DFB Laser, FC/APC
LP-OLAT-X4015-D4-xx-SA	Transmitter, 4GHz, 1550nm, +4dBm/2.5mW DFB Laser, SC/APC
LP-OLAT-X4015-D4-xx-FA	Transmitter, 4GHz, 1550nm, +4dBm/2.5mW DFB Laser, FC/APC
LP-OLAT-X40zz-C4-xx-SA	Transmitter, 4GHz, CWDM Wavelengths, +4dBm/2.5mW DFB Laser, SC/APC
LP-OLAT-X40zz-C4-xx-FA	Transmitter, 4GHz, CWDM Wavelengths, +4dBm/2.5mW DFB Laser, FC/APC
LP-OLAT-X40yy-E10-xx-SA	Transmitter, 4GHz, DWDM Wavelengths, +10dBm/10mW DFB Laser, SC/APC
LP-OLAT-X40yy-E10-xx-FA	Transmitter, 4GHz, DWDM Wavelengths, +10dBm/10mW DFB Laser, FC/APC

#### NOTES:

- 1- The "zz" in the CWDM number may be 47, 49, 51, 53, 55, 57, 59, 61, for each of the eight available ITU-grid CWDM wavelengths.
- 2- The "yy" in the DWDM number may be 22, 23, ...45, 46 for each of the available ITU-grid DWDM wavelengths (Note: Availability of some DWDM channels is limited at times).
- 3- The "xx" in the part number is the impedance. "xx" = 50 for 50 Ohm, SMA connector. "xx" = 75 for 75 Ohm, F connector.

Rear and Side Views of the LP-OLAT LaserPlus Advanced L-Band Transmitter



## Features and Benefits

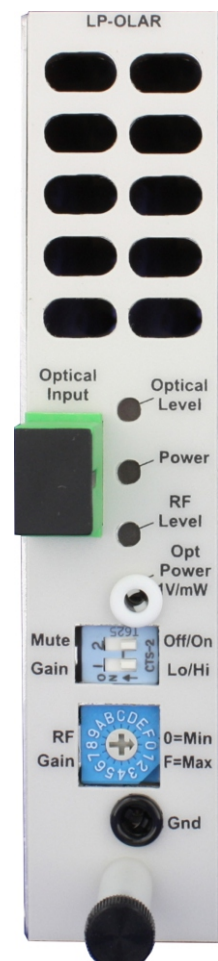
- Fully compatible with all Olson Technology, Inc.'s L-Band transmitters.
- Extreme bandwidth range of 10MHz to 4,000MHz handles all satellite signals.
- Excellent L-Band performance with digital gain control over a 25dB RF range in 1dB steps.
- Optional APD Detector for enhanced sensitivity. PIN detector is standard.
- Optical input range from -15dBm to +3dBm with standard PIN detector or -22dBm to -3dBm with optional APD detector.
- Operational wavelengths range from 1270nm to 1610nm.
- Built-In test points, LED indicators and alarms for easy setup and maintenance.
- Available with a variety of 75 Ohm or 50 Ohm Connectors. 75 Ohm "F" connector is standard.
- SC/APC optical connector standard, FC/APC connector optional.

The Olson *LaserPlus* LP-OLAR Advanced L-Band Receiver offers a feature-rich, versatile system in a compact rack-mount package. The Advanced L-Band Receiver has been engineered to meet today's high performance standards for L-Band transport with an extreme bandwidth range that will also allow the system to handle the next generation of satellite signals. The Advanced L-Band system is ideal for a wide variety of communications applications, including L-Band satellite antenna remoting, trunking radio, telemetry tracking, and time and frequency reference distribution. The extended frequency range to 4GHz allows this system to accommodate additional transponders coinciding with common European satellite communication applications.

The enhanced bandwidth to 4GHz 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 receiver is offered with 75 Ohm impedance using "F" connectors or 50 Ohms with SMA connectors. Optical connector options include SC/APC and FC/APC.

The standard PIN-detector receiver offers high sensitivity for a maximum optical link budget. An optional APD detector increases optical sensitivity by 7dB. Built-in test points, LED indicators and alarms allow the receiver to be easily set up and maintained.

The LP-OLAR Receiver is housed in a machined Aluminum enclosure that fits the standard *LaserPlus* chassis allowing up to 14 or 15 modules in a 3RU space. (The exact number is determined by the number of power supplies in the chassis, single or dual).



## Receiver Specification

### Optical Characteristics (with SM 9/125µm Fiber)

	Min	Typ	Max	Units
Operating Wavelength	1290		1610	nm
Optical Input Power (PIN)	-15		+3	dBm
Optical Input Power (APD)	-22		-3	dBm
Optical Return Loss		>55		dB
Optical Loss Budget (PIN)	7		25	dB
Optical Loss Budget (APD)	13		32	dB
Optical Connector (Standard)		SC/APC		
Optical Connector (Optional)		FC/APC		

#### NOTES:

- 1) The RF gain changes 2dB for each 1dB of optical loss.
- 2) The receiver  $P_{1dB}$  and IP3 is almost constant over the full RF gain range.
- 3) Noise figure is a complex variable that is influenced by the Tx and Rx attenuator settings as well as the optical loss. See the manual for detailed data.
- 4) The Hi/Lo Gain switch on the front panel changes the gain by +10dB. The hexadecimal rotary switch on the front panel changes the gain in 1dB steps. The "0" setting on the rotary switch is the lowest gain (0dB). The "F" setting on the rotary switch is the highest gain (+15dB).
- 5) Optical Loss Budget based on +10dBm transmitter launch power (DWDM DFB Laser).

### RF and System Characteristics

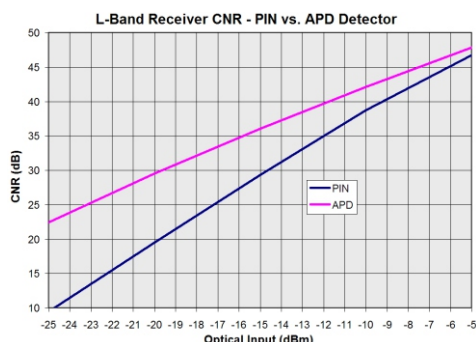
	Min	Typ	Max	Units
Frequency Response	10		4,000	MHz
Amplitude Flatness	Any 500MHz / $\pm 1.5$ Any 40MHz / $\pm 0.35$			
Return Loss	10			dB
Output Impedance (Standard)		75		Ohms
Output Impedance (Optional)		50		Ohms
Link Gain	-50		+30	dB
Noise Figure (See manual)	10		45	dB
Rx Output IP3		+12		dBm
Rx Output $P_{1dB}$		-2		dBm
Hi/Lo Gain Switch	0		+10	dB
Hexadecimal Rotary Gain Switch	0		+15	dB

### Physical Characteristics

	Min	Typ	Max	Units
Rx Weight		14.1		oz.
		0.40		kg
Receiver Dimensions	4.5H x 1.125W x 8.75D 114H x 29W x 222Dmm			in. mm

### Ordering Information

LP-OLAR-X4000-75-FA	LaserPlus Advanced L-Band Receiver, 4GHz, PIN Detector, 75 Ohm F Connector, FC/APC
LP-OLAR-X4000-75-SA	LaserPlus Advanced L-Band Receiver, 4GHz, PIN Detector, 75 Ohm F Connector, SC/APC
LP-OLAR-X4000-50-FA	LaserPlus Advanced L-Band Receiver, 4GHz, PIN Detector, 50 Ohm SMA Connector, FC/APC
LP-OLAR-X4000-50-SA	LaserPlus Advanced L-Band Receiver, 4GHz, PIN Detector, 50 Ohm SMA Connector, SC/APC
LP-OLAR-X4000S-75-FA	LaserPlus Advanced L-Band Receiver, 4GHz, APD Detector, 75 Ohm F Connector, FC/APC
LP-OLAR-X4000S-75-SA	LaserPlus Advanced L-Band Receiver, 4GHz, APD Detector, 75 Ohm F Connector, SC/APC
LP-OLAR-X4000S-50-FA	LaserPlus Advanced L-Band Receiver, 4GHz, APD Detector, 50 Ohm SMA Connector, FC/APC
LP-OLAR-X4000S-50-SA	LaserPlus Advanced L-Band Receiver, 4GHz, APD Detector, 50 Ohm SMA Connector, SC/APC



Adv. L-Band Rx CNR with PIN & APD

Rear and Side Views of the LP-OLAT LaserPlus Advanced L-Band Receiver

