LaserLight

1.22GHz 1310nm FTTP/CATV Optical Transmitter
OTOT-1220E

Features and Benefits

Rugged and compact CATV fiber optic transmitter.

- *Available enhanced RF bandwidth of 48-1,220MHz broadcast transport applications.*
  That support Docsis 3.0 and 3.1, and most Analog Application.
- *Wide range of 2mW to 31mW DFB laser options for Tx launch powers from +3dBm to +15dBm.*
- *Frequancy range can be extended to 1500 Mhz future for deployments.*
- *Unsurpassed MER and distortion performance at all optical powers. >42 MER over 20km of fiber.*
- *External RF and optical-test points facilitate optical circuit set-up and maintenance.*
- *Field-configurable front or rear panel SC/APC optical output connector. (FC/APC optional)*
- *Self-contained, low profile, rugged flange mount cast Aluminum housing.*
- *Optional 19" EIA rackmount kit for up to three (3) transmitters on a 1RU (1.75" high) chassis panel.*
- *Low power consumption, runs cool, integrated 90-240V„ power supply. (24V„ optional)*



The Olson Technology, Inc. LaserLite Model OTOT-1220E 1310nm, 48-1,220MHz high-performance CATV Broadcast Transmitter is a high quality, full-featured standalone or 1RU 19" optical transmitter. Designed for optical transport of analog and QAM digital broadcast signals, the transmitter is ideal for CATV Hybrid Fiber Coax (HFC) applications, as well as direct transmission of CATV RF signals in industrial, corporate, gov't, educational, and other applications.



The Model OTOT-1220E transmitter uses state-of-the-art RF and optical component technology. A comprehensive lineup of DFB laser offerings provides superior performance over a wide range of optical budgets (up to 16cIB of loss), allowing unrepeatered spans of over 45km (28 miles) when used in conjunction with high performance, high sensitivity node receivers such as the Olson Technology Model OTPN-2200 or OTPN Series. Less demanding applications can operate to 25dB of loss or 70km (43 miles) distance. The rugged, self-contained cast aluminum OTOT-1220E provides exterior RF input and optical output connections, plus front panel RF and laser test points. The field-configurable SC/APC (or optional FC/APC) connector can be mounted on the front or rear panel of the unit. The OTOT-1220E is cooled with forced air via an external high MTBF fan designed to be field-replaceable without interrupting operation. The standalone unit can be rack-mounted using the Model OTLL-RMKIT-1 to mount up to three OTOT-1220E in a 1RU space. The Model OTOT-1220 is the perfect companion to the high output OTPN-2200 mini-node series. It is also designed to operate with optical receivers from most leading manufacturers. The companion OTOR-300 return receiver works with all RF return path optical transmitters in the 5MHz to 300MHz frequency range.

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RF & LINK PERFORMANCE PARAMETERS:	
Frequency Range	48MHZ to 1.220MHz
Frequency Response	+-1.0dB
Input Impedance	75 ohms
Input Return Loss	>16 dB
Nominal Input Level	+19 dBmV for 77 NTSC Analog Channels from 55.25MHz to 547.25MHz
	+13 dBmV for Docsis 3.0 and 3.1 from 51MHz to 1220MHz
Distortion Performance	
Analog	77 NTSC channel loading 10km of fiber + passive loss. 0bBm Rx Input
	CNR > 53dBc
	CSO > 60 dBc @ 0-5km, @ 53dBc 5-10km
	CTB > 63 dBc
Docsis 3.0 & 3.1 MER	160 Channels SC-QAM with 192MHz OFDM Block channel loading
	10km of fiber + passive loss. 0 dBm Rx input
	> 42db MER

Notes (1) 77 Channer loading 10km of Fiber + Passive 0dBm RV Input.
(2) 160 Channerls SC-QAM with 192 MHZ of DM Loading Out to 1213 Mhz
Measured with R+S(LGI) Docsis Generator & R+S Dsa Docsis Analyzer.

Transmitter Interface	
RF Input Connector	F-type
Optical Output Connector	SC/APC std FC/APC opt, front or rear panel
Optical Power test Jack	0.1 V/mW
Laser Current Test Jack	1V/50mA

ELECTRICAL, ENVIRONMENTAL & MECHANICAL PARAMETERS:	
Dimensions	5.5"W x 1.6"H x 7.5"D (140mm W x 41mm H x 190mm D)
Weight	1.5 lbs
Operating Temperature Range	-10°C to +55°C
Cooling	Forced Air Fan Field replaceable
Humidity (Rh Non Con.)	5 to 95% (For use only in non-condensing environments)
Power Supply Voltage / Frequency	90 - 240V Ac@ 50-60Hz; <11.5Watts
Power Connector	IEC 320 with 5x20, 0.5A SloBlo Fuse

TRANSMITTER INTERFACES:	
RF Test Point (laser drive)	NTSC analog channels = +10 dBmV/ch @ 547.25 MHZ for optimal OMI and
	CNR Performance
	Docsis channels = +4 dBmV/ch @ 555MHz for optimal D 3.0 and D3.1 MER performance
Optical Output Connector	SC/APC standard; FC/APC optional(front or rear panel)
Optical Power Test Jack	0.1 V/mW
Laser Current Test Jack	1 V/50mA
RF Laser Drive (Fine Adjustment)	+-2 dB range (via variable attenuator on front panel.)

Note: Frequance range can be used to 1500 MHZ for future Docsis 3.1deployment

Typical MER Performance 1310 nm			
Rx Power (dBm) (Note 1)	Docsis 3.0 & 3.1 Channer Loading 51 - 1220 Mhz		
	All Passive	Passive +10K	Passive +20K
+2 dBm	45.0	44.5	43.6
+1 dBm	45.0	44.5	43.6
0 dBm	44.6	44.0	43.4
-1 dBm	44.3	44.0	43.0
-2 dBm	44.0	43.7	43.0
-3 dBm	43.5	43.3	42.5
-4 dBm	43.0	42.8	42.5

ORDERING INFORMATION	
OTOT-1220E-3-XX	Optical Tranmitter, 1310nm, +3dBm Optical Output
OTOT-1220E-6-XX	Optical Tranmitter, 1310nm, +6dBm Optical Output
OTOT-1220E-8-XX	Optical Tranmitter, 1310nm, +8dBm Optical Output
OTOT-1220E-9-XX	Optical Tranmitter, 1310nm, +9dBm Optical Output
OTOT-1220E-10-XX	Optical Tranmitter, 1310nm, +10dBm Optical Output
OTOT-1220E-12-XX	Optical Tranmitter, 1310nm, +12dBm Optical Output
OTOT-1220E-13-XX	Optical Tranmitter, 1310nm, +13dBm Optical Output
OTOT-1220E-14-XX	Optical Tranmitter, 1310nm, +14dBm Optical Output
OTOT-1220E-15-XX	Optical Tranmitter, 1310nm, +15dBm Optical Output

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