

LaserLite Model OTOT-1000 Standalone or 1RU 19" EIA Rack-Mount 1310nm Optical Transmitter

Features / Benefits

Rugged and compact CATV fiber optic transmitter.

Available enhanced RF bandwidth of 48-1,000MHz supports most analog and QAM digital broadcast transport applications.

Wide range of 2mW to 31mW DFB laser options for Tx launch powers from 3dBm to 15dBm.

Unsurpassed noise and distortion performance at all optical powers.

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 package.

Optional 19" EIA rackmount kit for up to three (3) transmitters on a 1RU chassis panel.

Low power consumption, runs cool, integrated 90-240V_{AC} power supply. (24V_{DC} optional)



The Olson Technology, Inc. *LaserLite* Model OTOT-1000 1310nm, 48-1,000MHz high-performance CATV Broadcast Transmitter is a high quality, full-featured standalone or 1RU 19" EIA 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, government, educational, and other applications.

The Model OTOT-1000 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 16dB of loss), allowing unrepeated spans of over 45km (28 miles) when used in conjunction with high performance, high sensitivity node receivers such as the Olson Technology Model OTPN-2000 or OTMN-II. Less demanding applications can operate to 25dB of loss or 70km (43 miles) distance.

The rugged, self-contained OTOT-1000 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) optical output connector can be mounted on the front or rear panel of the unit. The OTOT-1000 is cooled with forced air via an external high MTBF fan designed to be field-replaceable without interrupting operation. The stand-alone unit can be rack-mounted using the Model OTLL-RMKIT-1 to mount up to three OTOT-1000's in a 1RU (1.75") 19" space.

The Model OTOT-1000 is the perfect companion to Olson Technology's OTPN-2000 and OTMN-II optical nodes. 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.

System Specifications

RF and System Characteristics

| | Min | Typ | Max | Units |
|----------------------------|------|-----|-------|---------|
| Frequency Range | 48 | | 1,000 | MHz |
| Frequency Response | -1.0 | | +1.0 | dB |
| Input Impedance | | 75 | | Ohms |
| Input Return Loss | 16 | | | dB |
| Input Level (+3 to +6dBm) | | +18 | | dBmV/ch |
| Input Level (+8 to +15dBm) | | +19 | | dBmV/ch |
| CSO | 63 | | | dBc |
| CTB | 65 | | | dBc |
| Input Adjustment Range (1) | 4 | | | dB |
| RF Test Point (2) | | +10 | | dBmV/Ch |

Physical Characteristics

| | Min | Typ | Max | Units |
|------------------------|-----------------|------|-----|-------|
| Weight | | 1.5 | | lbs. |
| | | 0.68 | | kg |
| Dimensions (W x H x D) | 5.5 x 1.6 x 7.5 | | | in. |
| | 140 x 41 x 191 | | | mm |



Electrical and Environmental Characteristics

| | Min | Typ | Max | Units |
|------------------------|---------------------------------------|-----|------|-----------------|
| Power Supply Voltage | +90 | | +240 | V _{AC} |
| Power Supply Frequency | 50 | | 60 | Hz |
| Power Consumption | | | 10 | W |
| Operating Temp. Range | -10 | | +55 | °C |
| Humidity (RH Non Con.) | 5 | | 95 | % |
| Cooling | Forced Air Fan Field-replaceable | | | |
| Power Connector | IEC 320 w/ 5x2.0 0.5A Slo-Blo Fuse | | | |

NOTES:

- 1) To +22dBmV/carrier.
- 2) Set for 77 analog channels, full QAM digital loading.

Transmitter Interfaces

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

Typical CNR Performance

| Rx Power (dBm) (Note 1) | Low Ch. Load (77 NTSC) CNR (dB) | | | High Ch. Load (110 NTSC) CNR (dB) | | |
|----------------------------|---------------------------------|----------------------|--------------------|-----------------------------------|----------------------|--------------------|
| | All Passive | Passive +3.5dB Fiber | Passive +7dB Fiber | All Passive | Passive +3.5dB Fiber | Passive +7dB Fiber |
| +2dBm | 56.0 | 55.1 | 54.3 | 55.0 | 54.1 | 53.3 |
| +1dBm | 55.5 | 54.6 | 53.8 | 54.5 | 53.6 | 52.8 |
| 0dBm | 55.0 | 54.1 | 53.3 | 54.0 | 53.1 | 52.3 |
| -1dBm | 54.0 | 53.1 | 52.3 | 53.0 | 52.1 | 51.3 |
| -2dBm | 53.0 | 52.1 | 51.3 | 52.0 | 51.1 | 50.3 |
| -3dBm | 52.0 | 51.1 | 50.3 | 51.0 | 50.1 | 49.3 |
| -4dBm | 51.0 | 50.1 | 49.3 | 50.0 | 49.1 | 48.3 |

Notes

- 1) For example, a +8dBm transmitter thru 10dB of passive optical loss with *Low Ch. Load* would be looked up as "-2dBm" in the first column in this case yielding 53.0dB typical CNR.
- 2) Loading refers to total modulated analog channels loading. Power levels are per channel peak envelope power.
- 3) All CNR is measured at +18dBmV/carrier.

Ordering Information

| | |
|-----------------|--|
| OTOT-1000-3-XX | Optical Transmitter, 1310nm, +3dBm Optical Output |
| OTOT-1000-6-XX | Optical Transmitter, 1310nm, +6dBm Optical Output |
| OTOT-1000-8-XX | Optical Transmitter, 1310nm, +8dBm Optical Output |
| OTOT-1000-9-XX | Optical Transmitter, 1310nm, +9dBm Optical Output |
| OTOT-1000-10-XX | Optical Transmitter, 1310nm, +10dBm Optical Output |
| OTOT-1000-12-XX | Optical Transmitter, 1310nm, +12dBm Optical Output |
| OTOT-1000-13-XX | Optical Transmitter, 1310nm, +13dBm Optical Output |
| OTOT-1000-14-XX | Optical Transmitter, 1310nm, +14dBm Optical Output |
| OTOT-1000-15-XX | Optical Transmitter, 1310nm, +15dBm Optical Output |

Note: : The "XX" in the part numbers specifies the optical connector type. SA = SC/APC; FA = FC/APC.