

## OTOT-1000C

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

**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 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<sub>AC</sub> power supply. (24V<sub>DC</sub> optional)



The Olson Technology, Inc. *LaserLite* Model OTOT-1000C 1310nm, 48-1,000MHz 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-1000C 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-2000C or OTMN-II. Less demanding applications can operate to 25dB of loss or 70km (43 miles) distance.

The rugged, self-contained cast aluminum OTOT-1000C 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-1000C 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-1000C's in a 1RU space.

The Model OTOT-1000C is the perfect companion to Olson's OTPN-2000C 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.

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### 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 (4)                    | 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 <sub>AC</sub> |
| 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<br>Field-replaceable   |     |      |                 |
| Power Connector        | IEC 320 w/ 5x2.0 0.5A<br>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)<br>(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. Note that the CNR of transmitters with +15dBm optical output is 1dB lower than shown in the table.
- 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.
- 4) The CTB specification is 62dBc minimum for transmitters with +15dBm optical output.

### Ordering Information

OTOT-1000C-\*XX

Optical Transmitter, 1310nm, available in +3,6,8,9,10,12,13, and 15 dBm Optical Output