

## **LaserLite Model OTOT-1000-FQ 1GHz QAM DM Optical Transmitter, 1550nm, Standalone or 1RU 19" EIA Rackmount**

### **Features / Benefits**

#### **Low-cost Direct Modulated (DM) 1550nm QAM fiber optic transmitter.**

Available RF bandwidth of 550-1,000MHz for CATV digital multi-channel transport.

Electronic SBS dispersion compensation and advanced predistortion circuitry enables full digital QAM loading while minimizing second-order and third-order distortions.

Optical output of +9dBm drives multiple EDFA's.

Accommodates optical loss budgets up to 14dB or up to 20+km without an EDFA.

Optimized for fiber distances of 0-20km.

Forty-one (41) ITU grid wavelengths @ 100GHz spacing available; standard 1550nm  $\pm$  10nm wavelength option available for non-DWDM, CATV HFC and FTTX AON/PON deployments.

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<sub>AC</sub> power supply.



The Olson Technology, Inc. *LaserLite* Model OTOT-1000-FQ 1GHz, 1550nm QAM Broadcast Transmitter is a cost-effective, high quality, full-featured standalone or 1RU 19" EIA optical transmitter. Designed for optical transport of digital QAM broadcast signals, the transmitter is ideal for CATV Hybrid Fiber Coax (HFC) applications, as well as in newer Fiber-to-the-Premise (FTTP) deployments using Active/Passive Optical Network (AON/PON) architectures. Each transmitter's +9dBm optical output can directly feed up to 12 remote HFC nodes or receivers (via Model OTCP 1x12 optical coupler) or can be split externally (Models OTCP 1x2, 1x3 or 1x4) to drive up to four 16-port EDFA's to deliver multichannel CATV-style video and/or data to up to 2048 homes. The transmitter handles maximum runs of up to 20km of standard SMF-28 singlemode fiber. (NOTE: This unit is NOT suitable for long-haul CATV trunking applications).

The Model OTOT-1000-FQ transmitter utilizes a next-generation directly modulated, high-quality, low-chirp, optically isolated DWDM laser with a single +9dBm optical output. The Model OTOT-1000-FQ DM QAM transmitter can also achieve a high level of spectral purity, comparable to that of EM sources (but at <30% of the cost of comparable EM transmitters), making it the ideal choice for today's FTTH and CATV deployments.

The rugged, self-contained OTOT-1000 provides exterior RF and optical connections and 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 *LaserLite* Model OTOT-870-FQ is the perfect companion to Olson Technology's *LaserLite* OTEA-CO, OTEB-CO and OTEA-CL series EDFA's and the *MetroNode* Model OTMN-x and *PremiseNode* Model OTPN-x product families, but is also designed to operate seamlessly with EDFA's and optical receivers and/or nodes from most leading manufacturers.

## System Specifications

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

|                      | Min                                                       | Typ              | Max | Units |
|----------------------|-----------------------------------------------------------|------------------|-----|-------|
| Optical Output Power | +8                                                        | +9.0             | +10 | dBm   |
|                      | 6                                                         | 8                | 10  | mW    |
| SBS Threshold        | +10                                                       |                  |     | dBm   |
| Optical Connector    |                                                           | SC/APC<br>FC/APC |     |       |
| Wavelength Accuracy  |                                                           | ±0.1             |     | nm    |
| Wavelength Spacing   | ITU Channels 20-60<br>@100 GHz (0.8nm)<br>optical spacing |                  |     |       |

### RF and System Characteristics

|                              | Min  | Typ | Max   | Units   |
|------------------------------|------|-----|-------|---------|
| Frequency Range              | 550  |     | 1,000 | MHz     |
| Frequency Response           | -1.0 |     | +1.0  | dB      |
| Input Impedance              |      | 75  |       | Ohms    |
| Input Return Loss            | 15   |     |       | dB      |
| Input Level (320MHz Digital) |      | +10 |       | dBmV/Ch |
| CNR (1)                      | 48   |     |       | dB      |
| CSO @ 0-20km (1)             | 50   |     |       | dBc     |
| CTB @ 0-20km (1)             | 53   |     |       | dBc     |

(1) Measured with -2dBm input to Olson Model OTPN-400 reference receiver.

### 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      |                                        |     | 11.5 | 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 |     |      |                 |

### Physical Characteristics

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

### Transmitter Interfaces

|                              |                                                                       |
|------------------------------|-----------------------------------------------------------------------|
| RF Input Connector           | F-type, rear of module.                                               |
| RF Input Test Point (F-type) | +10dBmV/carrier @ 550MHz for optimal OMI and performance.             |
| Input Level Adjust           | +4dBmV to +14dBmV/carrier via variable attenuator on the front panel. |
| Optical Output Connector     | SC/APC standard, FC/APC optional, front or rear panel.                |
| Optical Power Test Jack      | 0.1V/mW                                                               |
| Laser Current Test Jack      | 1V/50mA                                                               |

### Part Numbers

|                        |                                                                     |
|------------------------|---------------------------------------------------------------------|
| Model OTOT-1000-9-FQzz | LaserLite Tx, 550-1,000MHz, +9dBm Optical Output, 75Ω, DWDM, SC/APC |
| Model OTLL-SCFCKIT     | LaserLite Optical Connector Adapter Kit, SC/APC to FC/APC           |
| Model OTLL-RMKIT-1     | LaserLite 1RU 19-inch Rackmount Adapter Kit; Up to 3 Modules        |

### Ordering Information

#### NOTES:

- 1) The lowercase "zz" in the part numbers specifies the ITU grid channel. See Olson's System Solution, "DWDM ITU Wavelengths" for details.
- 2) For standard 1550nm ± 10nm (non DWDM) operation, use "00" in place of the "zz."

