



## **OTLT-87XX-40-SA**

### **L-Band DWDM Transmitter**



### **Instruction Manual**

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## Table of Contents

<b>SAFETY WARNINGS</b> .....	3
<b>INTRODUCTION</b> .....	4
<b>INSTALLATION / ENVIRONMENTAL</b>	
<b>CONSIDERATIONS</b> .....	4
<b>OPTICAL CONNECTORS AND</b>	
<b>CLEANING</b> .....	5
<b>INTERNAL CONTROLS</b> .....	5
<b>EXTERNAL CONTROLS AND TEST</b>	
<b>POINTS</b> .....	6
<b>INITIAL SETUP</b> .....	6
<b>ACCESSORIES</b> .....	6



## **SAFETY WARNINGS**

### **LASER RADIATION**



The OTOT-87XX laser transmitters emit invisible radiation that can cause permanent eye damage. ***AVOID DIRECT***

***EXPOSURE TO BEAM.*** Operate the transmitter only with the proper optical fiber installed in the transmitter optical connector. Power to the OTOT-87XX should be turned-off or preferably, disconnected whenever the optical connector cover is opened and there is no installed fiber (as when the fiber connector is being installed or removed from the transmitter connector).

***NEVER USE ANY OPTICAL INSTRUMENT TO VIEW THE OUTPUT OF THE LASER TRANSMITTER. "OPTICAL INSTRUMENT" INCLUDES MAGNIFYING GLASSES, ETC.***

***NEVER LOOK INTO THE OUTPUT OF THE LASER TRANSMITTER***

***NEVER LOOK INTO THE OUTPUT OF A FIBER CONNECTED TO A LASER TRANSMITTER.***

***NEVER LOOK INTO OR USE ANY OPTICAL INSTRUMENT TO VIEW THE DISTANT END OF A FIBER THAT MAY BE CONNECTED DIRECTLY OR VIA AN OPTICAL SPLIT, TO A TRANSMITTER THAT MAY BE OPERATING. THIS SPECIFICALLY APPLIES TO FIBERS THAT ARE TO BE CONNECTED TO RECEIVERS OR OTHER DEVICES AT ANY DISTANCE FROM THE LASER TRANSMITTER.***

### **HIGH VOLTAGE**

The inside of the OTOT-87XX contains no user serviceable parts. There is exposed high voltage inside this unit. Only factory service technicians should open the unit with power applied.

### **FIRE HAZARD**

The AC line input fuse is contained in the IEC 320 power input connector. This fuse is a 250V, 0.5A, 5x20mm, slow blow fuse. To avoid a risk of fire, this fuse should be replaced only with an identically rated fuse.

### **SHOCK HAZARD**

The OTOT-87XX is designed for indoor use only. Direct exposure to moisture must be avoided .

## **INTRODUCTION**

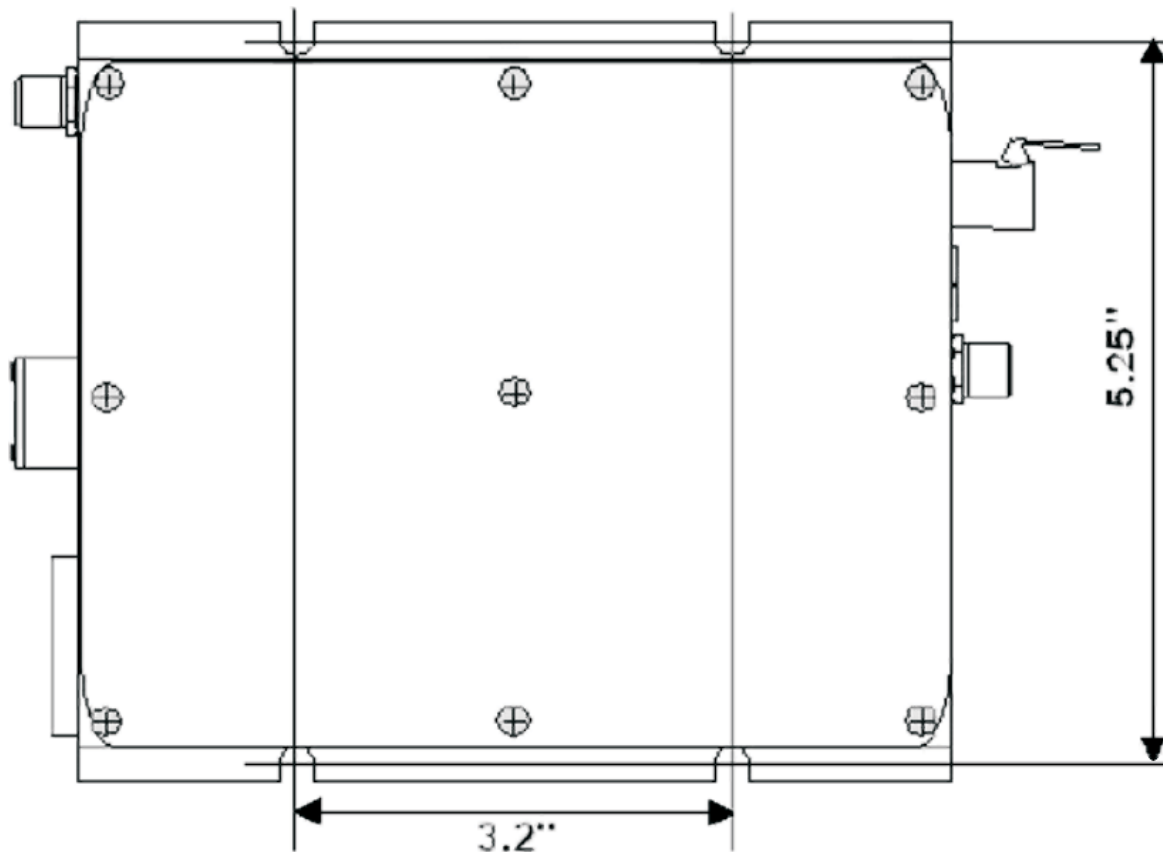
The Olson Technology OTLT-87XX-40-SA is a very cost effective indoor wideband laser transmitter with an RF passband of 10 to 4,000MHz typical, 10-3,600MHz guaranteed. These transmitters are intended for indoor applications. They combine the transmitter and universal AC power supply in one compact housing that has a footprint of 7.5" x 5.5" x 1.6". The optical output power of each transmitter is 10dBm. Each transmitter has a universal power supply and will operate from 90 to 240V<sub>AC</sub> at 50 or 60 Hz and consumes about 10 Watts.

The OTLT-87XX-40-SA is an ideal for putting satellite signals on to fiber. Test points are provided for laser output power and current to allow for historical review of operating parameters. Positive cooling is provided by means of a small, high-MTBF fan, which may be replaced in the field without interrupting the operation of the unit. The OTOT-87XX has flanges on the bottom to allow mounting it to a flat surface. The available OTLL-RMKIT-1 will allow mounting up to three of these units in a standard 19" rack.

## **INSTALLATION / ENVIRONMENTAL CONSIDERATIONS**

The OTOT-87XX transmitter is specified to operate from -10°C to +55°C. They usually do not require an air-conditioned environment. They should be mounted in an adequately ventilated area. Like all electronic equipment, it will generally have a longer life span if it is not operated at the upper limit of the temperature range. Installation in wet areas or areas of extremely high humidity should be avoided. Extremely dirty or dusty areas should be avoided if possible. Objects or debris should not be allowed to block the openings in the housing or the fan. The unit should not be installed in areas that are accessible to children.

The OTOT-87XX may be installed and operated in any position on a flat surface. The unit has four slots in the bottom plate to accommodate mounting hardware. If mounting requires a wood screw, use #6 or #8 (maximum) pan-head sheet metal screws. These are commonly available at hardware stores. If mounting with a machine screw (to tapped holes), use 6-32 pan-head screws.



**FIGURE 1 - OTOT-87XX MOUNTING DIAGRAM**

## **OPTICAL CONNECTORS AND CLEANING**

The standard optical connector is an SC/APC. In order to use FC/APC connectors, you must order a conversion kit, OTLL-SCFCKIT. The standard optical connector location is on the opposite side from the RF connector. The connector can be moved to the other side by swapping it with a cover plate. Only a screwdriver is required for this operation.

The fiber ends can be damaged by the insertion of contaminated connectors. Some types of customer damage to connectors are not covered under warranty. Fiber connectors should never be left uncovered. Prepackaged alcohol wipes are the most convenient means of cleaning optical connectors. Clean alcohol and lint free wipes or swabs may also be used.

## **INTERNAL CONTROLS**

There are no internal user adjustments. The only reason to open the unit would be to move the fiber connector to the other end of the unit. This should be done before the unit is attached to a rack mount kit. The unit should not be operated for long periods of time without a top cover.

This can cause RF radiation and ingress problems. The internal cooling is also reduced when uncovered.

Be sure to replace and tighten all top cover screws. Oscillation or RF radiation can be caused by loose or missing screws. There is no user adjustable internal laser power adjustment. Any change to the laser power will result in poorer modulation characteristics and reduced link performance.

## **EXTERNAL CONTROLS AND TEST POINTS**

There are two external DC test points. One reads laser current at 1V per 50mA. A typical laser current of 30mA would read 0.6V at this test point. The laser power test point is 0.1V per mW. This is for historical tracking. The optical power meter is a much more accurate means of measuring power. Both of these test points should be measured with a high impedance voltmeter.

## **INITIAL SETUP**

Mount the unit and apply power. The laser is temperature controlled. The unit will operate immediately after turn on, but requires about 5 minutes to temperature stabilize. Measure and record the optical output with a power meter. Measure and record the laser current and optical power readings at the external test points.

## **ACCESSORIES**

<b>MODEL</b>	<b>DESCRIPTION</b>
OTLL-SCFCKIT	SC/APC to FC/APC Optical Connector Adapter
OTLL-RMKIT-1	Rack Mount Kit (Holds 3 OTLT-87XX)
OTOA-XXXX	Optical Attenuators
OTLL-FANKIT	Replacement Fan Assembly