1550 Externally Modulated Optical Transmitter

User's Manual

MODEL: SLT1550-E Series

CAUTION: SLT1550-E Series Transmitters should be operated by qualified personnel only.

I. Features

1. 1 Characteristics of the Transmitter

★ Both the external modulator and laser are imported from the United States or Japan.

★ Perfect pre-distortion circuit ensures the best CTB and CSO when the CNR is in high standard.

★ Perfect SBS suppress circuit and adjustable SBS in 13,16, 18，suitable for different types of CATV net.

★ AGC control.

★ Internal double power which can be changed automatically.

★ Automatically shell temperature control.

★ Internal microprocessor software has the function of laser monitoring, parameter display, fault

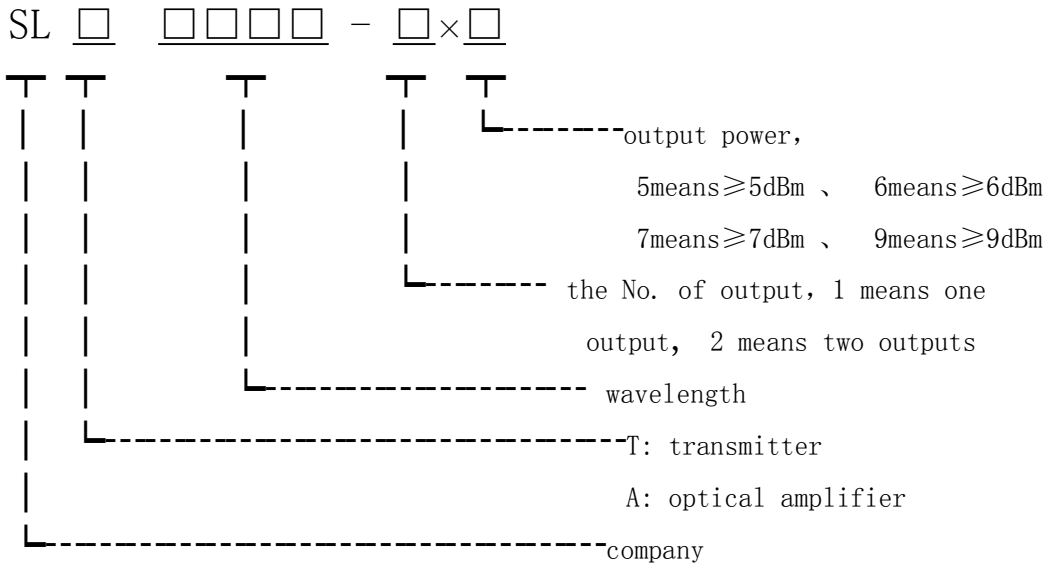
warning, net management and so on. Once the working parameter of the laser goes out of the fixed value of the software, the machine will warn.

★ The transmitter provides RJ45 and RS232 standard interface for the connecting the computer and monitoring.

1.2 Products series

SLT1550-1×5 （one output，≥5dBm）	SLT1550-1×6 （one output，≥6dBm）
SLT1550-1×7 （one output，≥7dBm）	SLT1550-1×9 （one output，≥9dBm）
SLT1550-2×5 （two outputs，≥5dBm）	SLT1550-2×6 （two outputs，≥6dBm）
SLT1550-2×7 （two outputs，≥7dBm）	SLT-1550-2×8 （two outputs，≥8dBm）
SLT1550-2×9 （two outputs，≥9dBm）	SLT-1550-2×10（two outputs，≥10dBm）

1. 3 Ordering Guide



II. Installation

2.1 Preparation before installation

2.1.1 Please examine the machine to see if there is distinct.

2.1.2 Please examine if the accessories is complete and the quality cards is here.

2.2 Installation

2.2.1 Please keep a space about 4.5cm between machines for ventilation.

2.2.2Please make sure: the socket works very well and earthed; The impedance ≤4Ω; 220V power with three cables，the middle one should connected to the ground.

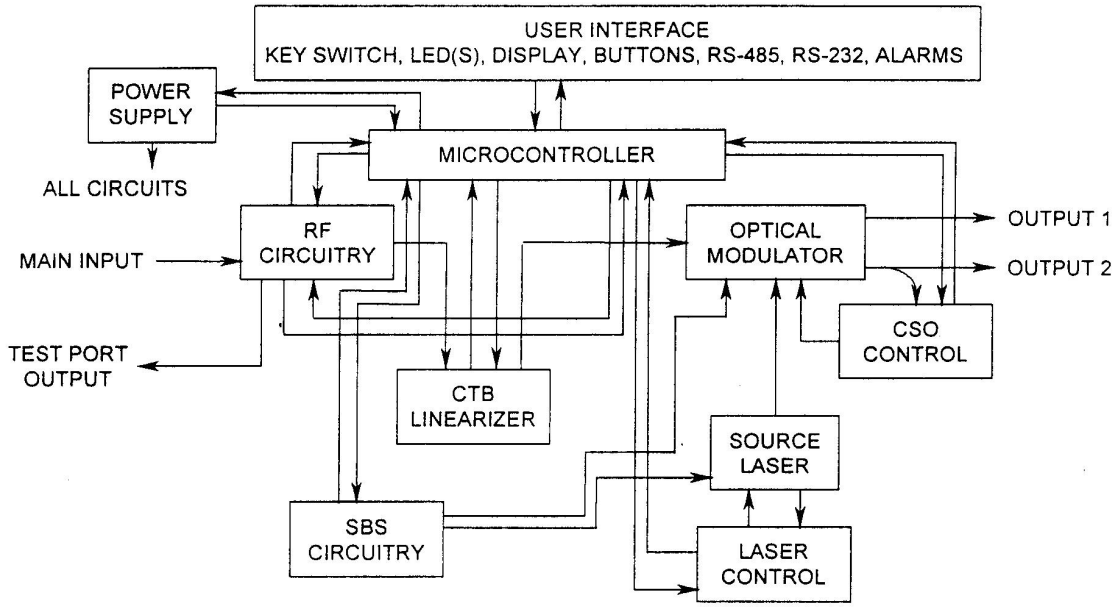
2.2.3Please makes sure the key is turned to OFF and before the power is connected.

2.2.4 Please keep the interface of the fiber clean before connecting the fiber. The connector

could choose FC/APC or SC/APC.

III. Operation

3.1 Diagram

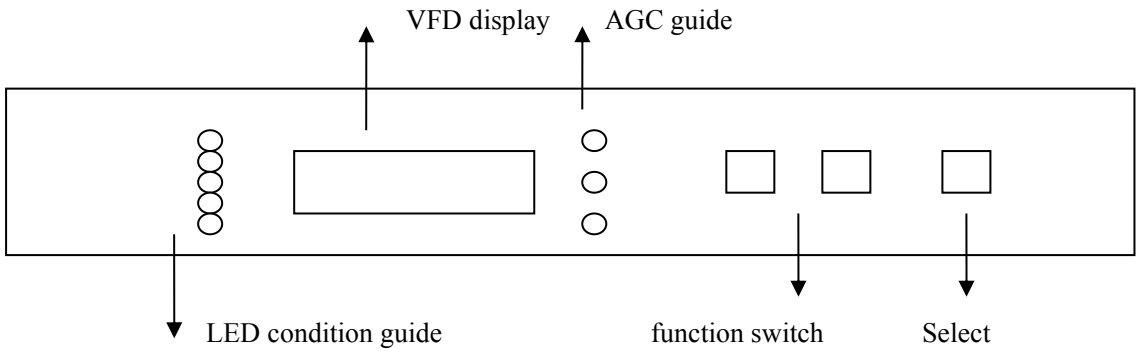


3. 2 Main Technical Parameters

Parameter		Index	Remarks
Optical Parameters	Wavelength (nm)	1550±10	
	Output power (dBm)	2×7	Or 1×5,1×6,1×7, 1×9,2×5,2×6,2×9
	Optical return loss (dB)	≥60	
	Connector type	FC / APC	Or SC / APC
RF parameters	bandwidth (MHz)	45-862	
	Input level (dBmV)	23±5	AGC
	Flatness (dB)	≤±0.75	45~862MHz
	Return loss (dB)	≥16	45~750MHz

	Input inpedance （Ω）	75	
Link Parameters	channels	PAL-D/60ch	
	CNR （dB）	≥52	65Km fiber，Receive0dBm
	CTB （dB）	≥65	
	CSO （dB）	≥65	
	SBS （dBm）	≥16.0	13,16,18
General Parameters	Net interface	RJ45，R232	
	Power （V）	90～265	Or -48VDC
	Power loss （W）	≤50	
	Working Temp（℃）	0～50	Automatically shell temp control
	Storage Temp（℃）	-20～85	
	Working relative Temp	20%～85%	

3.3 Front Panel Instruction



3.4 Front panel operation guide

3.4.1 Front panel operation guide

3.4.1.1、Laser switch OFF means turn off，ON means turn on.

3.4.1.2、LED Condition display.

⑴ Laser the working condition of the laser.

⑵ RF the condition of RF input.

⑶ Temp Working temp.

⑷ Power The condition of the power supplier.

3.4.1.3、VFD Displaying the parameters and warning.

3.4.1.4、SELECT select the working condition and parameter .

3.4.1.5、Button the button for up and down..

3.4.1.6、AGC the Turn-on light mean the machine is controlled by the AGC.

3.4.1.7、MGC the Turn-on light mean the machine is controlled by the MGC.

3.4.1.8 、 OMI When the machine is controlled by MGC, the OMI is adjustable, .but when it is controlled by the AGC, the OIM can only be micro adjustable.

3.4.2 Start up the transmitter

3.4.2.1、Connect the power and turn on the power switch in the back panel, the you can see as follows,

⑴ In the screen: VFDKEY OFF

⑵ Laser light : red

⑶ RF light: red

⑷ Temp light: green

⑸ Power light: green （or blue）

3.4.2.2 Turn on the laser key, the laser light will turn to green and the transmitter began to test itself. After about 40 seconds, the self test finishes and the transmitter began to work, the VFD screen shows Transmitter.

3.4.2.3、Press SELECT will shows the main menu as follows one by one,

⑴ type of the machine

⑵ Optic Menu

⑶ OMI level Menu

⑷ Laser Menu

⑸ SBS Menu

⑹ Modulator Menu

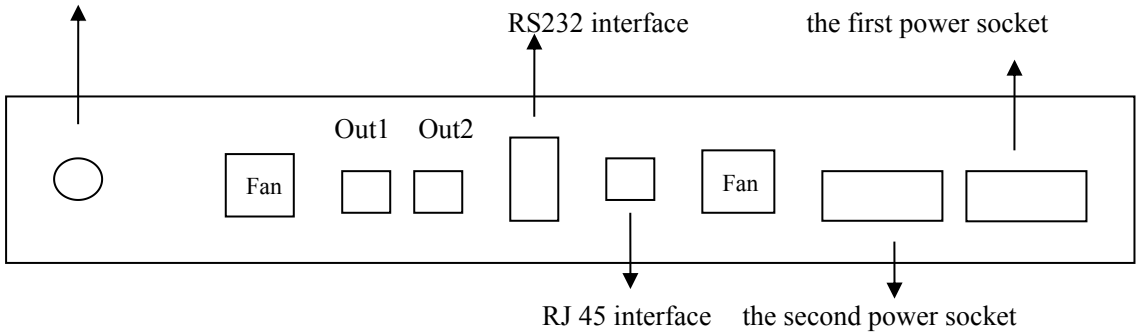
⑺ Stem Menu

3.4.2.4、Start up the stem menu

After entering the main menu, press up or down button to enter the stem menu. After entering the stem menu,, the SELECT button becomes unavailable.

3.5 Rear Panel

RF input



3.6 OMI adjust

3.6.1 The request on RF input level

controlled by AGC, the input level : 78dBμV～88dBμV

controlled by MGC，the input level: 75dBμV～85dBμV

3.6.2 AGC condition

3.6.2.1 The default condition is AGC (the best condition).

3.6.2.2 If the RF level is in the fixed range, the RF light will turn from red to green.

3.6.2.3 The user could adjust the OMI through the OMI aperture. The OMI value becomes higher in the clockwise, lower in counterclockwise.

3.6.2.4 After increasing the value of OMI, then CNR will be higher, but CTB and CSO will be lower. If reduce the value of OMI, the CNR will be lower, CTB and CSO higher.

3.6.3 MGC condition

3.6.2.1 Press SELECT button, you can see the OMI level Menu.

3.6.2.2 Press up or down button, you can see RF Mode=AGC.

3.6.2.3 Press SELECT，you can see RF MODEL=

3.6.2.4 Press UP or Down，RF Mode=Manual

3.6.2.5 The user can adjust the OMI with screwdriver.

3.7 SBS adjust steps

The default value of the SBS is 16.5dBm，the user can adjust it according to the request of the net.

3.7.1

⑴ Press SELECT，choose SBS Menu.

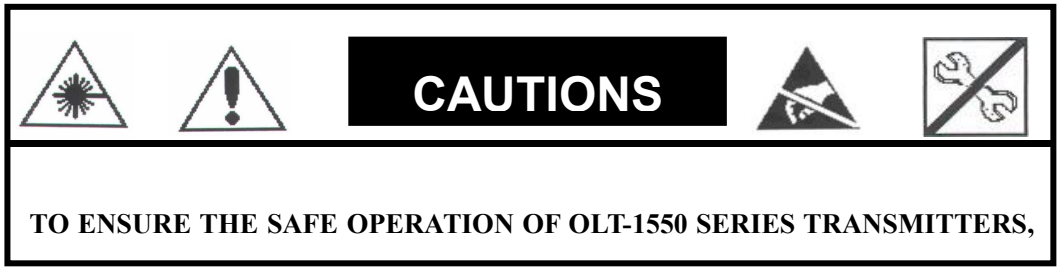
⑵ Press UP or DOWN,，choose the stem menu: SBS=16.5dBm.

(3) Press SELECT to choose SBS.

(4) Press UP or Down to choose the SBS needed.

(5) Press SELECT to confirm the selection.

IV. Safety Precautions



OLT-1550 SERIES EDFA ARE CLASS III LASER PRODUCTS. AVOID DIRECT EXPOSURE TO BEAM. IT IS A SEVERE HAZARD.

MANY FRAGILE AND HIGH PRECISION COMPONENTS ARE PLACED INSIDE HOUSING OF TRANSMITTER. USE PROPER TECHNIQUES WHENEVER YOU HANDLE THE UNIT.

STATIC-SENSITIVE COMPONENTS ARE INTRODUCED TO THE TRANSMITTER. PAY MORE ATTENTION DURING YOUR OPERATION. ENSURE THE UNIT IS WELL EARTHED AND INPUT UTILITY POWER IS STABLE BEFORE PROCEEDING WITH INSTALLATION AND OPERATION.

UNAUTHORIZED ALTERATION MAY CAUSE UNREPAIRABLE TROUBLES.

Precautions:

1. Before installation or operation of unit, please carefully go through this manual.
2. OLT1550 Series Transmitters should be serviced only by qualified personnel.
3. Before proceeding with installation and/or operation of transmitter, please assure that transmitter is well earthed.
4. OLT1550 Series transmitters are Class III laser products. Use of controls, adjustments, and procedures other than those specified herein may result in hazardous laser radiation exposure.

V. Warranty Term

OLT1550 Series optical transmitters are covered by **ONE YEAR LIMITED WARRANTY**, which starts from the initial date of your purchase. We provide its customer whole-life technical supports. If warranty is expired, repair service only charges parts (if required). In the event that a unit must be returned for service, before returning the unit, please be advised that:

1. Warranty mark pasted on the housing of unit must be in good conditions.
2. A clear and readable material describes model number, serial number and troubles should be offered.
3. Please pack the unit in its original container. If the original container is no longer available, please pack the unit in at least 3 inches of shock absorbing material.
4. Returned unit(s) must be prepaid and insured. COD and freight collect can not be acceptable.

NOTE: we **do not** assume responsibility for damage caused by improper packing of returned unit(s).

The following situation is not covered by warranty:

1. The unit fails to perform because of operators' faults.
2. Warranty mark is modified, damaged and/or removed.
3. Damage caused by Force Majeure.
4. The unit has been unauthorized alteration and/or repaired.
5. Other troubles caused by operators' faults.

Conversion of Optical Power

mW	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**
dBm	**0.0**	**3.0**	**4.8**	**6.0**	**7.0**	**7.8**	**8.5**	**9.0**	**9.5**	**10.0**	**10.4**	**10.8**	**11.1**	**11.5**	**11.8**	**12.0**
mW	**17**	**18**	**19**	**20**	**21**	**22**	**25**	**32**	**40**	**50**	**63**	**80**	**100**	**125**	**160**	**200**
dBm	**12.3**	**12.5**	**12.8**	**13.0**	**13.2**	**13.4**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**23**