

SUN5111TC Optical Transmitter User Guide

Notice

1. The core device of optical transmitter is the laser which is a kind of electrostatic sensitive devices (ESD) and even can be coupled from the RF input. So you should obey the operation rule strictly and carefully when disassemble and assemble, the wrist belt and the working clothes should be grounded also.
2. All electric power and optical transmitter should be grounded well.
3. The electric power of the optical transmitter should be 220VAC \pm 10%, and a regulated AC power is suggested.
4. The RF signal should not be connected until the optical transmitter arrives at its normal working point. And the amplitude of RF signal should follow the instructions in the test report of the optical transmitter. An abnormal RF signal power will make the laser overloaded and damaged.
5. The optical transmitter should be stored in a ESD protection circumstance (such as ESD protection container) and can not be stored with corrosive cargo. The store temperature should within -20 $^{\circ}$ C \sim +50 $^{\circ}$ C.
6. Forced cooling should be added when multiple optical transmitters mounted on the same rack.
7. Please don't open or repair any part of the transmitter, otherwise the producer doesn't pay the fiddler.
8. Eyes may be hurt if you confront the optical output.
9. The heat elimination hole should not be blocked.
10. The transmitter needs enough airing to work properly.
11. The optical output should be covered with our dust-proof if the transmitter doesn't work for a long period.



When failure occurs , the transmitter should be sent to the producer in time. And please don't open or repair any part of the transmitter, otherwise the producer doesn't pay the fiddler

Description

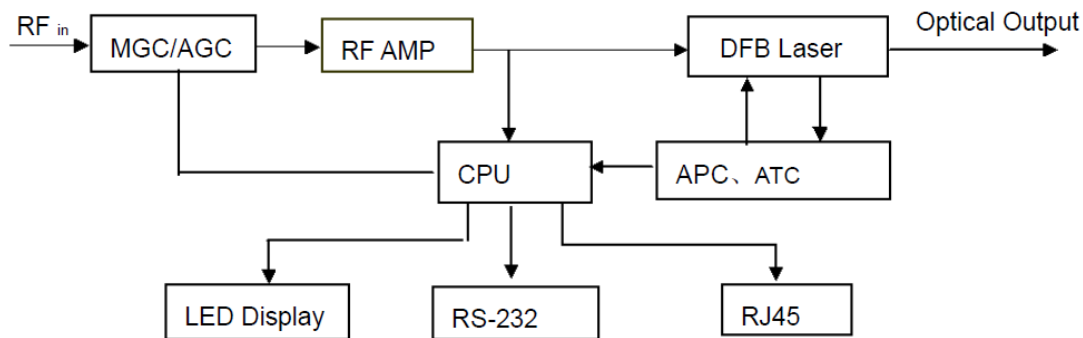
SUN5111TC series optical transmitter adopts 1310nm DFB laser with High linearity and low noise that famous companies such as LUCENT, MITSUBISHI, FUJITSU, ORTEL, AOI and so on. It is provide with AGC/MGC switch and OMI adjustment function, equipped with SNMP network management interface which is up to the national standard "GB/T 20030-2005 HFC specification of equipment management system". It adopts the intelligent temperature control system regulates the temperature in the machine and uses the hot-swap hot backup switch power supply.

Operating Principle

Working Principle

This machine contains Auto output laser power stability control circuit (APC) and auto laser temperature control circuit (ATC), with a complete state detection circuit. There is a LED also in it to display index such as the output laser power, the laser bias current, cooling current, temperature, the MGC/AGC state and the OMI value and can be switched and the adjustment of the machine and various power detection value. It is also equipped with RS-232, RJ45 communication interface, through the network management system software to monitor the working status.

Block Diagram:



Specifications (Test report on the attachment)

Bandwidth: 47-1000MHz

Flatness: $\pm 0.75\text{dB}$

Reflection Loss: 47~550MHz $\geq 16\text{dB}$ 550~1000MHz $\geq 14\text{dB}$

Input Resistance: 75 Ω

Input level: See the attachment

AGC Control Range : Input level $\pm 5\text{dB}$

OMI Adjustable : $\pm 5\text{dB}$

Optical Wavelength : 1310 $\pm 20\text{nm}$

Optical Power : 4mw-20mw

CTB: $\geq 65\text{dB}$

CSO: $\geq 60\text{dB}$

C/N: $\geq 51\text{dB}$

Optical Connection : SC/APC or FC/APC

Optical Type : Single Mode Optical

Voltage : 100VAC~260V

Power Consumption : $\leq 30\text{w}$

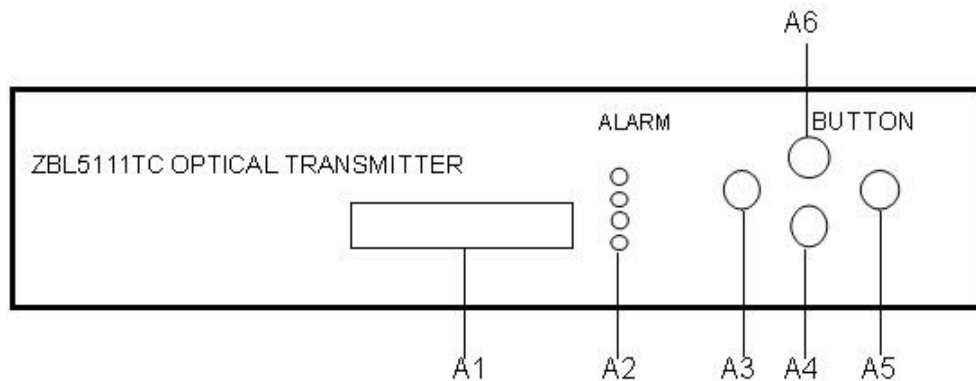
Chassis : 1U

Size : 480mm(W) \times 320mm (D) \times 44mm(H)

Weight : $\leq 5\text{Kg}$

Structure

1) Front Panel



A1 : LED display window , which can display the output laser power P (mw) , the laser bias current BI (mA) , temperature T ($^{\circ}C$) , cooling current RC (A) , and electric power detection of +24.4V,+5.4V,-5.45V and IP address, gateway, OMI value, the temperature in the machine and so on.

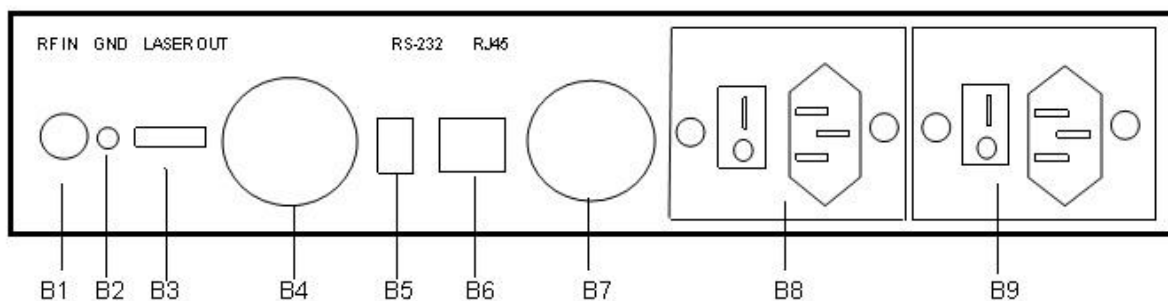
A2 : Alarm: when the lamp is green, it indicates the work item state is normal. When the lamp is green, it indicates the work item state is abnormal. RF-Input level indicator; LASER-Laser working state indicator; PWR1-Power1 working state indicator; PWR2-Power2 working state indicator.

A3 : ESC , menu return key, press the key to exit the previously entered the menu or submenu.

A4 , A6 : Menu button : display ready to enter the menu settings, or switch adjustment.

A5: Confirm key or ENT key, press the key, enter to the menu or select the parameters to be adjusted or confirm the adjusted parameters, if all the buttons for 30 seconds without operation, backlight display will automatically cut off.

2) Rear Panel



B1 : RF IN

B2 : Grounding Pin

B3 : Laser out

B4 : Cooling fan

B5 : RS-232 communication interface, can be tested by the network management software

B6 : The RJ45 interface, network management software through local area network on the machine condition monitoring and adjustment

B7 : Cooling fan

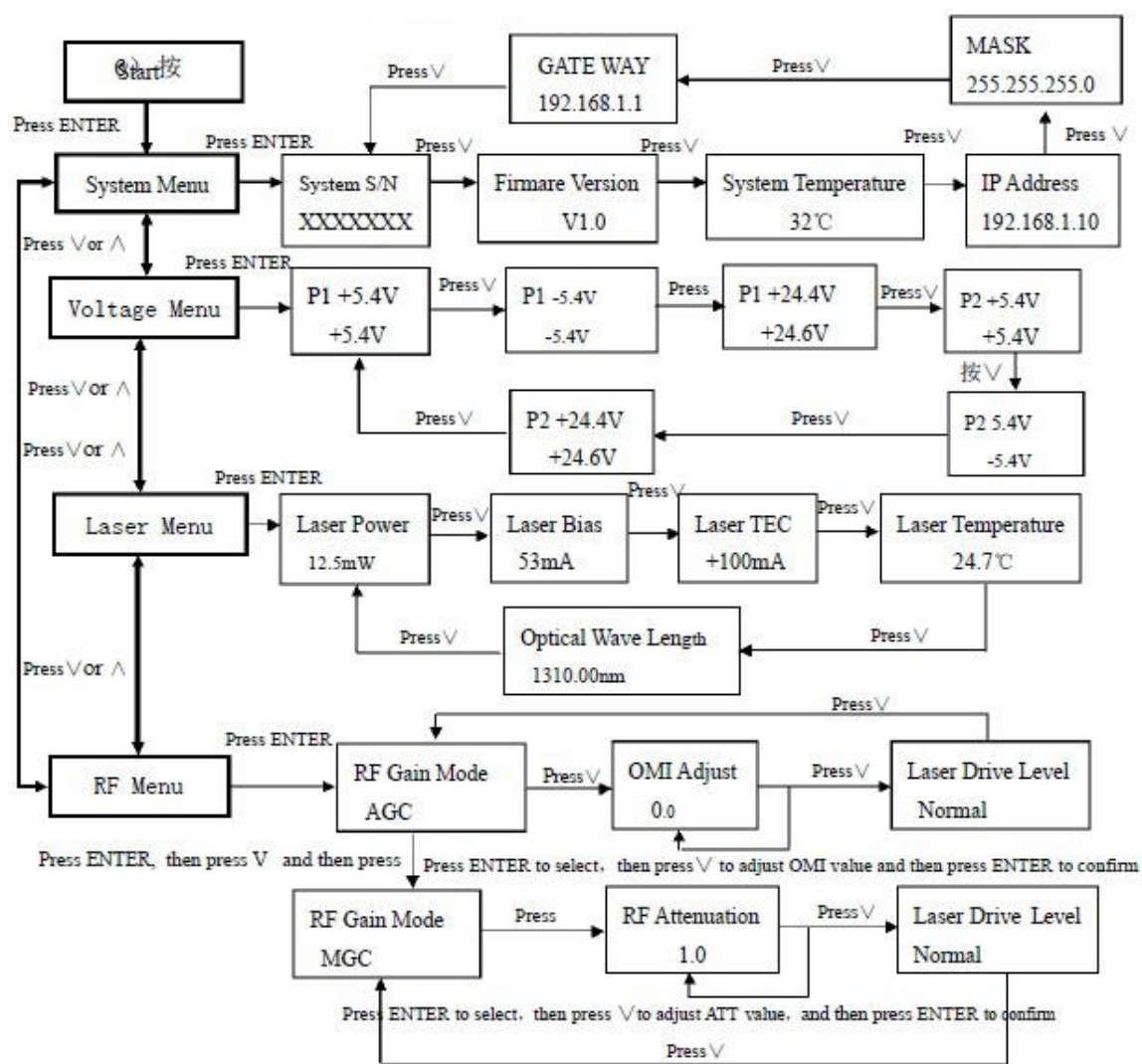
B8 : Plug type power supply 2

B9 : Plug type power supply 1

Application and Maintenance

Operation Steps (According to the following order of operations)

- Check and make sure that the equipment , enclosure and electric power have good grounding connection;
- Check the power supply module is inserted tightly and tighten the screw;
- Connect the Optical. The connection should be cleaned by absolute ethyl alcohol;
- Connect the electric power and turn the power switch , then LED can display the model of this machine;
- The machine software interface operation steps as below:



- If above-mentioned working states are normal and the input level meets the requirements in test report, connect the RF signal input.
- The default network IP address is 192.168.1.120, subnet mask is 255.255.255.0, the default gateway is 192.168.1.1

General Recovery Processing

Failure Phenomenon: LED don't display

Reason: no electric power or fuse burn out

Failure Phenomenon : LED black

Reason: Temperature too high

Settle Method: Force Cooling

Failure Phenomenon: LED displays the state is normal, but there is no laser output or output not match the display

Reason:

Measurement of the output Laser power not correct

Ring flange or test jumper connection dirty

Test jumper connection mismatch

Settle Method:

Change the output Laser power sensor ;

Clean the connection with absolute ethyl alcohol

Change the Test jumper

Failure Phenomenon:

Both the Laser power of the Optical Transmitter and Receiver are normal, but the Receiver hasn't RF output or the output level too low.

Reason:

No input RF signal or RF connection not good.

Settle Method:

Check the RF level and reconnect the RF input.

After checks above-mentioned all be done and the failure phenomenon still exist , the transmitter should be shut down immediately.

Please contact the producer and we will settle the failure at once.

Attachment

One User guide

One Test Report

Two FUSE

Two cables