

# **NCM-OT-87-XX**

## **1310nm Optical Transmitter**



## **Installation Guide**



### ***Shipping***

NCM OPTICS inspects and carefully packs all equipment before shipment. NCM-OT-87-XX series are completely made and tested by NCM OPTICS.

NCM-OT-87-XX includes:

- 1- NCM-OT-87-XX (1)
- 2- AC Power Cord (1)
- 3- Keys (2)
- 4- Software CD (1)
- 5- Datasheet (1)
- 6- Installation Guide (1)



**MADE IN USA**

**NCM Supplies Inc.**  
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# NCM-OT-87-XX

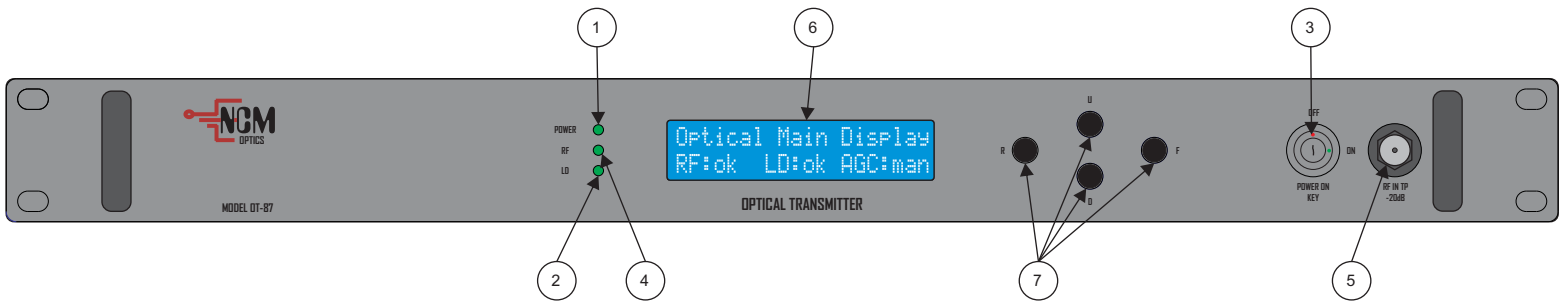
## 1310nm Optical Transmitter



### Front Panel:

The front panel is shown in Figure.

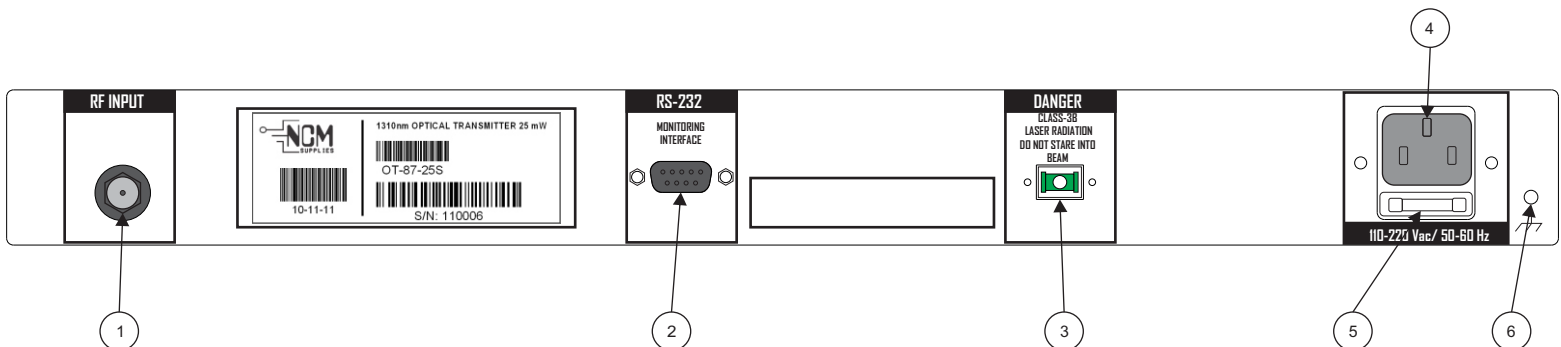
- 1- **Power LED**- Lights up when the key is turned on.
- 2- **LD LED**-Lights up green when the power of LASER Diode is ok or red when error occurs.
- 3- **Power On Key**- Turns on/off the power
- 4- **RF LED**- Lights up green when the RF power is ok or red when not.
- 5- **RF In TP -20dB**- 75Ω F-type connector test point for measuring input signal level at 20dB±1dB lower than the actual RF signal
- 6- **LCD**- Information Display
- 7- **U, D, R and F key**- Four key from key-board



### Rear Panel:

The Rear Panel is shown in Figure.

- 1- **RF Input**- 75Ω F-type connector input RF signal
- 2- **RS-232**- DB9 Serial Monitoring Interface (Bit per second: 9600, Data bits: 8, Parity: None, Stop bits: 1)
- 3- **Optical Out**-Class 3B, SC/APC or FC/APC connector
- 4- **Power Jack**- For supplying power to the equipment.
- 5- **Fuse**- A 220V 1.5A fuse to protect the equipment against short circuits and power surges
- 6- **GND**-Case ground



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### Connections:

**RF Connection:** The RF-input is located at the rear of the unit. The nominal input level is 20dBmV (Recommended).

The test point in the unit's front panel is for monitoring the RF input signal. This test point is attenuated -20dB below RF input signal.

The input and test point connector is 75Ω F-female connector.

**Optical Connection:** The fiber output is equipped with SC/APC or FC/APC connector. When installing the fiber, do not exceed minimum bending radius. For the best operation maintain all optical connector as clean as possible, use NCM-Isopropyl Alcohol or other high purity isopropyl alcohol. Dry the surfaces using dry compressed air.

### Installation Instructions

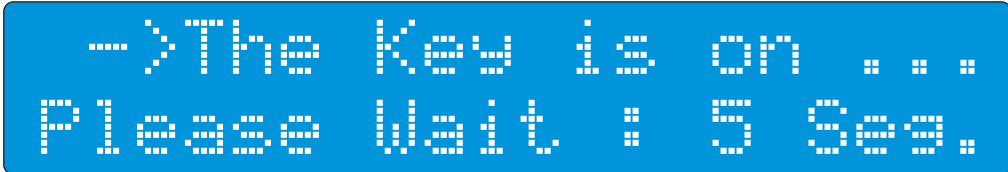
- 1- Use 4 screws to attach the transmitter NCM-OT-87-XX to 19" rack mounting.
- 2- Connect the RF coax into RF Input(F-type) on the rear panel.(Recommended 20dBmV)
- 3- Clean and dry all optical connectors.
- 4- Plug the optical connector into Optical Output on the rear panel.

**(Do not look into this port when laser is operating. The laser can cause serious eye damage.)**

- 5- Connect the AC power cord into the power jack and ground GND both on the rear panel of NCM-OT-87-XX. With the Power Key off, wait until RF LED and LD LED (on front panel) blinks. Display shows:



- 6- Turn power key on. Permit the system to load. Please wait and do not turn the power key off until monitor system starts. The NCM-OT-87-XX will show the following displays:



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7- When start process finishes, the main display is shown. The main display has the status information of the NCM-OT-87-XX. If “RF” input signal is “ok” then the RF LED lights up green. If RF LED lights up red then “RF” status on the display shows “hi” when input rf signal is high or it will show “lo” when the input rf signal is low. When LD is “ok” and the LD LED lights up green the LASER is working properly. When a malfunction occur the LD LED lights up red and the LD status in the display show “er”.  
When an alarm condition is detected the main display blink .

```
Optical Main Display
RF:ok   LD:ok   AGC:man
```

8- Main display permits switch between automatic(AGC) or manual(MGC) control. To do this you must push the “U” or “D” button in the front panel. Main display is monitoring the principal parameters of the transmitter and sends serial data via RS-232 to monitor on personal computer.

```
Optical Main Display
RF:ok   LD:ok   AGC:aut
```

```
Optical Main Display
RF:ok   LD:ok   AGC:man
```

9- If manual (man) is selected, select the attenuator. Press “R” button and navigate to “AGC Status/Control display and change the attenuator with “U” or “D” button and then click “F” button to update the attenuator value.

```
AGC Status/Control
0dB Manual
```

```
AGC Status/Control
5dB Manual
```



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10- To navigate the monitor status of the NCM-OT-87-XX push "R" or "F"  
(Warning: While the monitor is navigating the serial RS-232 is stopped.)

NCM-OT-87-25 1310nm  
SN: 123456

Optical Power LASER  
25.0 mW

+5 V Power Supply  
5.0 V

-5 V Power Supply  
-5.0 V

+24 V Power Supply  
24.0 V

Temperature LASER  
26.00°C

Bias Current LASER  
67.00 mA

Current Control TEC  
67.00 mA



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AGC Status/Control  
AUTOMATIC

### 11- Visual alarm:

LCD backlight off and RF LED/LD LED fast blinking: NCM-OT-87-XX is turned off.  
LCD backlight on, Power LED lights up green and RF LED/LD LED slow blinking: NCM-OT-87-XX is starting up.  
LCD backlight on and Power LED/RF LED/LD LED light up solid green: NCM-OT-87-XX is turned on and works correctly.  
LCD backlight blinking and RF LED or LD LED light up solid red: NCM-OT-87-XX is turned on and has alarm condition.

### 12- Audible alarm:

All alarm condition launch an audible alarm tone about 2000Hz, with intervals of 500mS.

### 13- Critical Condition:

When the alarm conditions occurs and the system detects malfunction that may cause damage to the LASER DIODE, turn it off to protect the life of the LASER DIODE.  
**(Warning: Contact NCM Optics for help).**

### 14- Monitoring via RS-232 serial port:

Connect male DB9 from serial RS-232 cable into RS-232 connector on the rear panel. Install and open the monitoring software included with the NCM-OT-87-XX. Click button (?) or on the Help menu click Help and follow step by step. Enter USER and PASSWORD (admin/admin at first time)

**DANGER: CLASS- 3B LASER RADIATION DO NOT STARE INTO LASER BEAM**



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