





***Please read this manual thoroughly before use.
Retain this manual for future reference.***

Taikan 1310nm Transmitter Owner's Manual

This manual is intended for use by purchasers of Taikan's 1310 family of transmitters and their qualified technicians. This document is the property of Taikan Company Inc. ("Taikan") and embodies proprietary subject matter.

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SAFETY PRECAUTIONS



1310nm Optical Transmitter units may emit harmful laser radiation when the product is powered on or when the case is opened.



Please be cognizant of all safety guidelines and adhere to the recommendations listed.

- > Read the user manual carefully before proceeding with any part of the installation.
- > Installation and operation of the product must be performed only by qualified personnel and always in accordance with applicable electrical codes.
- > All warnings on the product and in the operating instructions should be adhered to.
- > Unplug the product from the power outlet before cleaning. Do not use liquid or aerosol cleaners. Use a damp cloth. For the optical connector it is recommended that you use RIFOCS CO. , Ltd's 945/946.
- > Do not block or cover openings . These are provided for ventilation and protection from overheating. The maximum operating temperature is 50°C (122 °F).
- > This product should be operated only from the type of power sources indicated on the marking label.
- > This product may be equipped with a polarized AC line plug (a plug having one blade wider than the other or a different shape). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug into the outlet, try reversing the plug. Contact your electrician to replace the obsolete outlet if this still does not work. Do not compromise the safety purpose of the polarized plug.
- > For added protection during a lightning storm or when the equipment is left unattended or unused for long periods, unplug it from the power outlet and disconnect the cables between the equipment and the fiber subsystem. These precautions will prevent damage to the equipment that could be caused by lightning strikes or power line surges.
- > Do not attempt to service this equipment yourself as opening or removing the cover may expose you to dangerous voltages or other hazards. Refer all servicing to Taikan Company. A Taikan representative can be reached at support@taikan.com If any parts need to be replaced notify a Taikan representative at support@taikan.com
- > Unauthorized alteration or inappropriate repair is **NOT** allowed and may cause irreparable damage to product. Taikan does not assume any responsibility for these modifications.

TABLE OF CONTENTS

Preface	01
Safety Precautions	03
Introduction	07
Product Summary	
Standard Features	
Nominal Specifications	
Installation	08
Unpacking	
Static Sensitivity	
Power Supply Condition	
Transmitter Placement	
Electrical Connection	
RF Connection	
Optical Connection	
Operation	10
Operation	
Troubleshooting	
Return & Warranty	11
Product Return Procedure	
Standard Taikan Product Warranty	

SECTION ONE

// INTRODUCTION



PRODUCT SUMMARY

The OT-860-1310-xx-SA-x-x (a 1310 nm optical transmitter) converts RF cable signals to fiber signals, and distributes them throughout a HFC network. This unit is primarily used in upgraded cable television and fiber distribution systems.

The OT-860 unit is available with a variety of options, including automatic gain control, laser overheat protection, automatic power control and advanced prediction distortion circuit.

Each transmitter is designed to fit in a standard 19 inch rack and can support up to 77 NTSC channels.

STANDARD FEATURES

- Transmits NTSC, PAL, digital or compressed digital information for various broadband applications
- 1310 nm operation
- Optically isolated distributed AM feedback laser
- Automatic gain control option
- LCD status and alarm monitor on front panel
- Power consumption of < 24W
- Power supply of 110~250V AC
- 47-860 MHz RF input bandwidth
- Up to 77 NTSC channels
- Front panel RF test point
- Microprocessor-controlled diagnostic testing with front panel and remote readout
- Industry standard status monitoring interface RS-232

NOMINAL SPECIFICATIONS*

OPTICAL FEATURES

Optical Wavelength: 1310 nm
Optical Return Loss: ≥ 60 dB
Optic Connector Type: SC/APC or FC/APC

LINK PREFORMANCE

CNR: ≥ 52 dB
CTB: ≥ 70 dB
CSO: ≥ 63 dB

RF FEATURES

RF Bandwidth: 47-860 MHz
RF Input Level: 20 dBmV
RF Flatness: ≤ ± 0.75 dB
RF Return Loss: > 16 dB
RF Input Impedance: 75 ohm
Connector Type: F type

SECTION TWO

// INSTALLATION

1 UNPACKING

Carefully open the package and adhere to all safety guidelines outlined in the safety section. Check the packaging material for the following components.

- > 1310nm optical transmitter
- > User Manual
- > Test Report
- > Power Cord



It is highly recommended that the cover be left on the optical connector until you are ready to install the transmitter into the headend rack. Not complying could “pollute” the connector thereby compromising the transmission quality. The side effects include:

- > Decrease in analog signal transmission quality
- > Increased incorrect data rate for the digital signal
- > Decrease in optical power
- > Optical receiver’s optical power is compromised
- > Pollution of the other optical components

Please notify your Taikan representative (support@taikan.com) if any of the items appear lost or damaged.

2 STATIC SENSITIVITY

When opening or operating the product, please comply with standard static protection procedure, such as using a grounding metal wrist belt, grounding worktop & grounding conductor.

Adhering to these guidelines will minimize the risk of damaging the product.

3 POWER SUPPLY CONDITION

The transmitter is powered by AC or steady voltage DC.

- > AC Input: 94-245 VAC, 50-60 Hz
- > DC Input: 36-60 VDC, floating
- > Power Consumption: Max 50 W

4 TRANSMITTER PLACEMENT

The transmitter is designed to fit in an EIA standard 19-inch (480 mm) equipment rack.

When placing the unit inside the rack, we recommend leaving one open slot (approximately 1 3/4”) between each unit. Doing so allows for cooling. From the front of the rack, cover any open slots with a blank plate to minimize the risk of dust entering the rack.

It is recommended that the transmitter be placed in an environment that maintains a temperature of approximately 25° C (77°F).

5 ELECTRICAL CONNECTION

The transmitter should have good grounding with a resistance <4 ohm. According to the international standard, the 220 V plug in adopts tri-wire rule, while the middle wire is the ground-ing wire.

The transmitter’s power supply has overflow protection. It can work with a 110~254 VAC electric network, while the microprocessor monitors the output DC voltage.



Prior to connecting the circuit, use the electric wire (#20 AWG or >) to connect the grounding screw on the bottom to the grounding frame. When using the DC input power supply, the equipment chassis must be grounded.

NOTE TO CATV SYSTEM INSTALLERS: This reminder is provided to call your attention to NEC Articles 810- 21, 820- 22, and 820-40 that provide guidelines for proper grounding. In particular, these articles specify that the cable ground shall be connected to the building grounding system, as close to the point of cable entry as practical.

6 RF CONNECTION

Connect the RF cable & the connector on the transmitters rear panel. The RF Connector is a F type plug with a resistance of 75 ohm.

7 OPTICAL CONNECTION

Connect the output fiber optic jumper to the proper input connector socket. The connector types are FC/APC, E-2000, pigtail or SC/APC.

SECTION THREE

// OPERATION

OPERATION

The working status indicator (LED on the front panel) displays the following conditions:

- > Green: The laser is working properly.
- > Red: The laser is not turned on. Turn the key switch to the on position to change the light.
- > Flashing Red: There is something wrong with the transmitter and it needs to be serviced. See page 11 for Product Return Procedure.

Follow these steps to operate the transmitter:

1. Plug in the power cord and turn on the laser from the front switch.
2. Wait approximately 10 seconds before the laser turns from Red to Green, indicating that the laser is functioning properly. You will know the transmitter is working when the model number is displayed on the screen.
3. The following items will be displayed on the screen when you toggle through with the ‘Status’ button on the front panel:
- > Model Number
- > Power (mW): Displays the optical output power in dBm
- > Temp (°C): Displays the laser temperature in °C
- > Bias (°C): Displays the laser bias temperature in °C
- > Cooling/Heating (mA): Displays the amount of current that the Thermoelectric Cooler requires to maintain the laser temperature at a nominal 25°C
- > Reads +5V
- > Reads +24V
- > Reads -5V

TROUBLESHOOTING

1. If the product is damaged, the transmitter has a built in micro-processor that will automatically shut down the laser and display the potential error on the front panel.
2. If the display shows “Interlock” and the LED indicator is flashing red, it means that the remote point on the back panel is loose
3. If the RF input level is too high, shut off the power and restart the transmitter.

SECTION FOUR

// RETURN & WARRANTY

PRODUCT RETURN PROCEDURE

If you need to return the product for repair, please follow these steps:

1. Contact a Taikan Representative at support@taikan.com to obtain a Return Authorization Number
2. When returning the product for repair include the following information:
- > Return Authorization Number
- > Model Number
- > Serial Number
- > Reason for Return
3. Prior to repairing the device, Taikan will inform you about the test results and/or any additional repair charges that may apply. Once we have received your confirmation we will proceed with the repair.
4. The repair period will depend on the severity of the problem.
5. After it is returned, the product will still be under its original warranty. The repair component(s) is under warranty for 90 days after you have received the repaired product. (see below)

STANDARD TAIKAN PRODUCT WARRANTY

Taikan provides a limited three year Warranty (“Warranty”) to original purchaser on its product against manufacturing defect and workmanship under normal use and service. During the Warranty period Taikan will repair or replace the product to correct defects in material and workmanship.

This Warranty shall not apply to a product which has been altered in any way so as to affect its stability or durability, nor which has been subject to misuse or negligence. This Warranty does not cover a product which has been damaged by severe weather conditions such as extreme wind, ice, storms, lightning, or other natural weather conditions over which Taikan has no control.

Claimants under this Warranty shall present their claim along with the defective product to Taikan. Non-compliance with any part of this claim procedure may invalidate this Warranty in whole or part.

This Warranty is expressly in lieu of all other agreements and warranties, expressed or implied. Taikan does not authorize any person to assume for it the obligations contained in this warranty and neither assumes nor authorizes any representative or other person to assume for it any other liabilities in connection with the product delivered or provided.

In no event shall Taikan be liable for any loss of profits, loss of use, interruption of business, or indirect, consequential damages of any kind. Taikan will not be liable for damages in any amount greater than the purchase price of the product.