



FT-FRXOD-SCAPC

Outdoor Optical Node



Operation Manual

INSTALLATION AND OPERATION



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions.



This symbol is intended to alert the user to the presence of “dangerous voltage” within the product’s enclosure that may be of sufficient magnitude to constitute a risk of electrical shock.

CAUTION: To reduce the risk of electrical shock do not remove the cover or back of this unit. No user serviceable parts are inside.

CAUTION: To prevent electric shocks and risk of fire hazards, do not use other than specified power source.

CAUTION: To prevent electric shocks and risk of fire hazards, do not expose this equipment to rain or moisture.

CAUTION: Pay attention to NEC articles 810-21, 820-22, and 820-40 that provide guidelines for proper grounding.

CAUTION: This unit may emit harmful invisible laser radiation. Do not view directly any laser optical emissions. Viewing the laser with certain optical instruments such as a microscope or magnifier may pose an eye hazard. The laser is classified as a Class 1M per IEC/EN 60825-1/A2:2001 and complies with FDA/CDRH, 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No.50 dated 26 July, 2001.

1. UNPACKING and HANDLING

Each unit is shipped assembled and factory tested.

Ensure that all accessories are removed from the container before discarding packing material

2. MECHANICAL INSPECTION

Inspect the front and rear of the equipment for shipping damage. Make sure the equipment is clean, and no connectors are broken, damaged, or loose. If equipment appears to be damaged or defective please contact your distributor or Fibertronix at 1-610-429-1511 for assistance.

Description

The FT-FRXOD-SCAPC outdoor optical node can be used in CATV, digital, and telecommunication networks. The multifunction optical node adopts a high-quality GaAs power double amplifier module with high reliability, low power, low noise, and high output level for an excellent performance/price ratio.

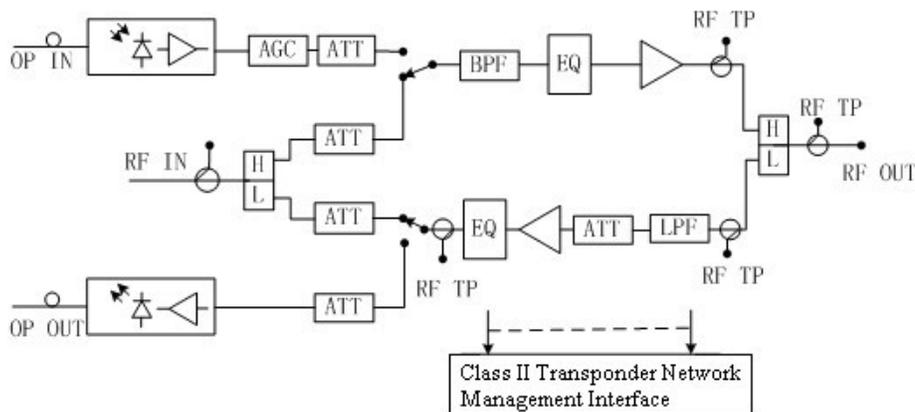
The flexible configuration can be easily field upgraded to a bi-directional amplifier, one-way receiver, or bi-directional optical node. Network transponders can be installed on site.

The FT-FRXOD-SCAPC optical power range is -8dBm~+2dBm with and optical AGC range of -6dBm~+1dBm. It also features a highly efficient and reliable switching power supply that can turn 40~60V or 110VAC into +24,+5 DC to supply devices within the node.

Features

- Flexible combination and wide application: one-way or bi-directional amplifier, one-way optical receiver, bi-directional optical node - All selectable on site
- Downstream bandwidth up to 1000MHz with optical AGC function
- Stable RF output when optical input within the range of -6dBm~+1dBm
- "Burst Mode" can be used (optional)
- Local RF and optical output test ports
- Surge protection

Block Diagram



TON6800K Optical Node

Specifications

Class	Item	Unit	Forward Path	Reverse Path(conventional type)	
Parameter	Operating Wavelength	nm	1200~1600	1310±20	
	Optical Input Power Range	dBm	-8.0~+2.0		
	Optical Output Power	dBm		≥0dBm	
	Optical AGC Control Range	dBm	-6~+1		
	Optical Return Loss	dB	≥40		
	Received Optical Power Digital Display	dBm	1:1	OP Test Port:1V/mW	
	Reverse Laser Type			DFB/FP optional	
	Fiber Connector Type		FC/APC or SC/APC		
RF	Frequency Range	MHz	87 (54) ~ 860(1000)	5~65 (42)	
	Nominal Output Level	dBmV	≥48		
	Flatness	dB	±1.5		
	Amplifier Gain	dB	≥28	≥24	
	RF Output Port	piece	1		
	RF Level Test Port	dB	-20±1.0		
	Nominal RF Input/ Output Impedance	Ω	75		
	RF Input/ Output Return Loss	dB	≥16	≥16	
	Link Index	C/N	dB	≥47.0 (remark)	
		CTB	dBc	≥65.0 (remark)	
CSO		dBc	≥65.0 (remark)		
NPR Dynamic Range		dB		15@NPR≥30dB	
General	Dimension	mm	490x280x190		
	Voltage	Vac	110 or 60		
	Power Consumption	VA	<15		
	Operating Temperature	°C	-25~+55		
	Storage Temperature	°C	-25~+65		
	Weight	Kg	2.8		

Reverse Laser Transmitter (Burst Mode)

NO.	Item	Unit	Description	
Optical				
1	Nominal Wavelength	nm	1310/1550/1590/1610	
2	Laser Type		FP	DFB
3	Laser Operating Mode		Burst Mode	
4	Expected Link loss	dB	6	6
5	NPR@ Dynamic Range≥30dB	dB	20	25
RF				
6	Recommended Input Level	dBmV	20	
7	Frequency Range	MHz	5~65	5~65
8	Flatness	dB	±0.75	
9	Return Loss	dB	≥16	

Installation

1. Unpacking

Open box and inspect for damages. Locate optical node, power and users manual

2. Mounting

Mounting brackets are located on the side of the node opposite the hinges

3. Making Connections

All optical connections for the **FT-FRXOD-SCAPC** are SC/APC or FC/APC. To open the node, remove the (4) ½” bolts securing the hinges. Remove the ½” bolt labeled “OP. IN”. Feed fiber optic cables through the “OP. IN” and make SC/APC connections in the middle of the node.

There are (2) RF output ports located next to the “OP. IN” that can be connected to the outside distribution via coaxial cable. The connections should be made with F-style connectors and should be twisted snugly onto the port. The -20dB test port is connected in similar fashion and is located between the (2) RF Outputs.

A power supply (not included) may be connected on the opposite side if the RF outputs and optical inputs with an F-style connector

After making all connections, close fiber optic node and secure unit with the (4) ½” bolts to be sure that unit does not come open.

Installation

4. Unpacking

Open box and inspect for damages. Locate optical node, power supply, and users manual

5. Mounting

The **FT-HHRX-870-1** chassis is designed for installation on a wall or other suitable flat surface. We recommend an installation plan that puts the **FT-HHRX-870-1** chassis near the fiber and coax paths and routing power as required to that location either using the supplied adaptor or using your own DC coax powering solution.

The **FT-HHRX-870-1** node is very low power consumption so thermal dissipation is generally not an issue provided simple requirements are followed. The Mini-node will dissipate small amounts of heat into the surface to which it is attached and into the air. Do not attach to a surface that is heated. Do not restrict the airflow around the chassis. Do not position the unit where heat egress from other nearby equipment will be absorbed by the **FT-HHRX-870-1**.

6. Making Connections

Connect the 12VDC coaxial output power supply to the “PWR IN” port located on the top left of the optical node via coaxial cable. Upon plugging in the power supply to a 110 VAC electrical outlet, the “PWR ON” LED will illuminate.

Depending on which **FT-HHRX-870-1** you purchased, all connections must be SC/APC or FC/APC. For all connections, first be sure to clean the connectors prior to connecting them to the optical node.

The “RF OUT” port located at the top left of the optical node is to be connected to the distribution network by coax.