

F-MININODE-2RP-HP Indoor Bidirectional Optical Receiver

1. Product Overview

F-MININODE-2RP-HP is our latest FTTB bidirectional optical receiver.

High output level can effectively cover the whole community or building. RFOG mode is selectable for the return path to reduce its convergence noise.

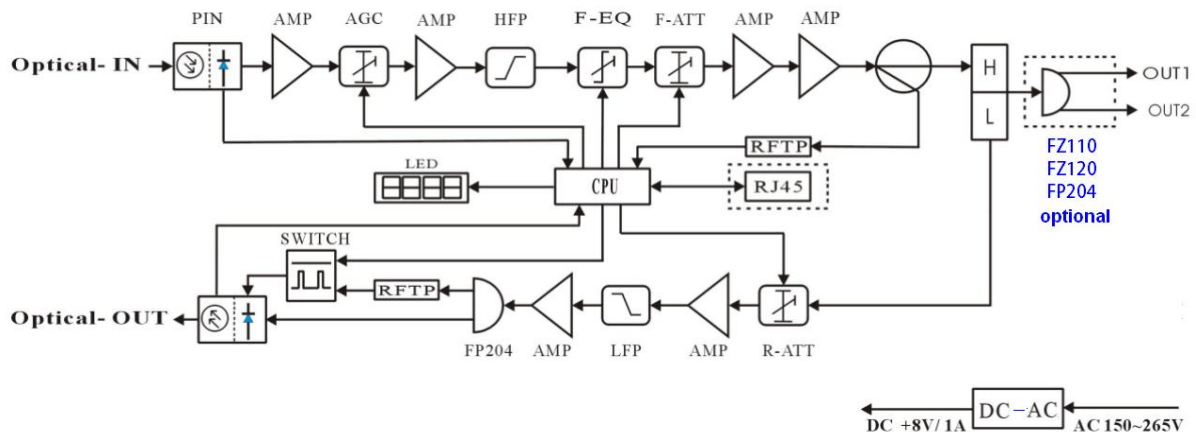
It can be equipped with a transponder with corresponding network management software that conforms to the SNMP Protocol to achieve remote management and automatic monitoring. F-MININODE-2RP-HP is the ideal model to construct a high-performance NGB network.



2. Performance Characteristics

- Suitable for FTTB network.
- Compliant with RFOG technology of SCTE standard.
- High output and wide coverage to minimize the deployment costs.
- Full MMIC amplifying circuit, low power consumption.
- All electronic control, no accessories.
- Adjustable optical AGC range.
- Digital display for different working status and detection by pressing buttons, simple and clear.
- Multiple output distribution options.

3. Block Diagram

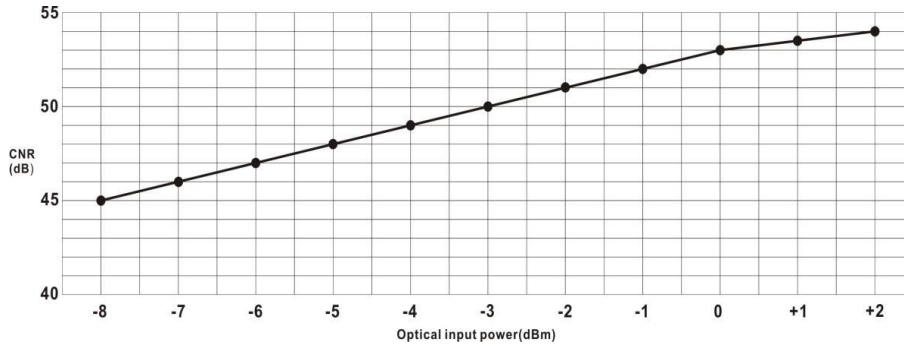


4. Technique Parameter

Item	Unit	Technical Parameters	
Forward Optical Receiving part			
Receiving Optical Power	dBm	-9 ~ +2	
Optical AGC Range	dBm	+2 ~ -9/-8/-7/-6/-5/-4 (adjustable)	
Optical Return Loss	dB	>45	
Optical Receiving Wavelength	nm	1100~1600	
Optical Connector Type		SC/APC or specified by the user	
Frequency Range	MHz	45/54/87/110~862/1003	
Flatness in Band	dB	≤±0.75	
Output Return Loss	dB	≥16	
Electrical control EQ range	dB	0 ~ 15	
Electrical control ATT range	dB	0 ~ 15	
Rated Output Level	dBμV	102	FP204 output
		105	FZ110 output
		106	FZ120 output
Max Output Level	dBμV	105	FP204 output AGC: -9~+2dBm
		108	FZ110 output AGC: -9~+2dBm
		109	FZ120 output AGC: -9~+2dBm
C/N	dB	≥ 51	
C/CTB	dB	≥ 60	
C/CSO	dB	≥ 60	
Return Optical Transmitting Part			
Optical Transmitting Wavelength	nm	1310±10, 1550±10 or specified by the user	
Optical Output Power	mW	1 (or specified by the user)	
Optical Connector Type		SC/APC	
Frequency Range	MHz	5 ~30/42/65 (or specified by the user)	
Flatness in Band	dB	±1	
Input Level	dBμV	70 ~80 (rated input level 75)	
NPR dynamic range	dB	≥15 (DFB laser, NPR≥30 dB)	≥10 (FP laser, NPR≥30 dB)
General Characteristics			
Output Impedance	Ω	75	
Power Voltage	V	A:AC (100~240) V B:AC (150~265) V or DC 12V	
Consumption	VA	≤9	
Operating Temperature	°C	-30~60	
Storage Temperature	°C	-40~65	
Relative Humidity	%	Max 95% no Condensation	
Dimension	mm	190 (L) X 110 (W) X 52 (H)	
RFOG Mode			
Output Optical Power (Close the burst mode)	dBm	-30	
Laser Turn On Threshold	dBμV	≥67	
Laser Turn Off Threshold	dBμV	≤60	
Laser Turn On Time (T1)	us	0.5≤T1≤1	SCTE 174 2010 Figure4:

Laser Turn Off Time (T11)	us	$0.5 \leq T11 \leq 1.5$	$T1 \leq 1.3\mu s$, $T11 \leq 1.6\mu s$
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5. Relation Table of Receiving Optical Power and CNR

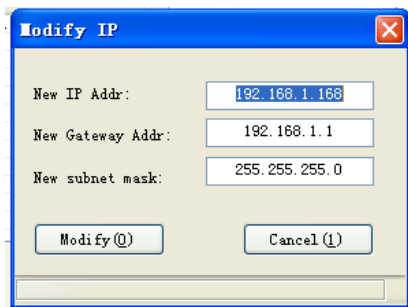


6. NMS Setup Instructions

1. IP establishment. Default IP of the transponder is 192.168.1.168, default gateway is 192.168.1.1, default subnet mask is 255.255.255.0.
2. Connect the computer and transponder (can be direct connected), and change the computer IP to 192.168.1.XXX (XXX is any number from 0 to 255 except 168); start upper computer network management software, then search the device and log in.
3. Right-click device icon and choose “modify the device IP”.



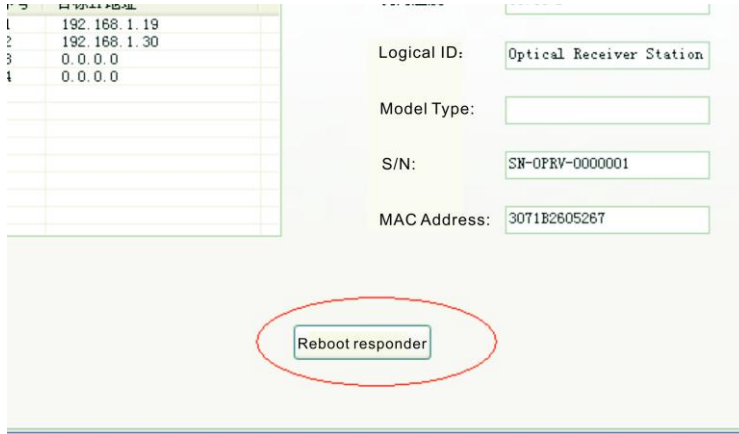
4. Enter new IP address, gateway and subnet mask.



5. Click modify, then exit, it is done. There will be new IP address and gateway on operational logbook.



6. Reboot the transponder, the new IP takes effect (Click the reboot button in the network management software or power on again)



7. Function Display and Operating Instruction

Mode: Mode selection button. Press the Mode button to cycle display the submenu; long press ▼ or ▲ to enter for setting.

- Mode 1:** Input optical power (unit dBm)
Lo: Means that the optical power is low or none
!: Means that the displayed data is the input optical power
- Mode E1:** Forward path RF equilibrium, press “▲” or “▼” button for a few seconds until the data flicker. Then adjust and press “Mode” to confirm. The maximum adjustment range is 15dB.
E1: EQ mode, means that the controlled and displayed data is the forward path RF channel equilibrium.
- Mode A1:** Forward path RF attenuation, press “▲” or “▼” button for a few seconds until the data flicker. Then adjust and press “Mode” to confirm. The maximum adjustment range is 15dB.
A1: ATT mode, means that the controlled and displayed data is the forward path RF channel attenuation.
- Mode 2:** The actual number of channels enters into the current network system. Press “▲” or “▼” button for a few seconds until the data flicker. Then adjust and press “Mode” to confirm. The maximum number is 200.
2: The menu is used to display the actual number of channels enters into the current network system, in order to calculate the RF output level more accurately.
- Mode 3:** RF output level (unit dB μ V)
3: Means that the displayed data is the RF output level under the current system.
- Mode 4:** Working temperature (unit $^{\circ}$ C)
4: Means that the displayed data is the internal actual ambient temperature.
- Mode 5:** The actual value of +8V working voltage
5: Means that the displayed data is the actual voltage of +8V
- Mode AG:** AGC adjustment range (adjustment range -4~-9dBm)
 Press “▲” or “▼” button for a few seconds until the data flicker. Then adjust and press “Mode” to confirm.
AG: Means that the AGC range under the current system is +2~-9dBm
 If the displayed data is -4, means that the AGC range is +2~-4dBm
 If the displayed data is -5, means that the AGC range is +2~-5dBm
 If the displayed data is -6, means that the AGC range is +2~-6dBm
 If the displayed data is -7, means that the AGC range is +2~-7dBm
 If the displayed data is -8, means that the AGC range is +2~-8dBm
- Note: AGC range per reduce 1dBm, the output level is raised by 2 dBuV

ModeA2: **A2:06**

Return path RF attenuation, press “▲” or “▼” button for a few seconds until the data flicker. Then adjust and press “Mode” to confirm. The maximum adjustment range is 20dB.

A2: ATT mode, means that the controlled and displayed data is the return path RF channel attenuation.

Modebc: **bC: b**

Select the return path laser working mode, press “▲” or “▼” button for a few seconds until the data flicker. Then adjust and press “Mode” to confirm.

b: The return path laser is working in the burst mode.
When the return path main input level $\geq (70\text{dBuV} + \text{return path ATT value})$, the laser is working;
When the return path main input level $\leq (60\text{dBuV} + \text{return path ATT value})$, the laser is not working;
When $(60\text{dBuV} + \text{return path ATT value}) \leq \text{return path main input level} \leq (70\text{dBuV} + \text{return path ATT value})$, the laser maintain the original working state.

C: The return path laser is working in the continuous mode, means the laser continuous work.

bC: The return path laser working mode, means that the controlled and displayed item is the laser working mode.

Mode6: **6 0.0**

Return path laser power (unit dBm)

6: Means that the displayed data is the return path laser output power.

Mode7: **7 06 272**

272: Return path laser current in the continuous working mode (unit mA)

06: The return path laser is working in the burst mode

7: Means that the displayed data is the return path laser working current or the return path laser is working in the burst mode.