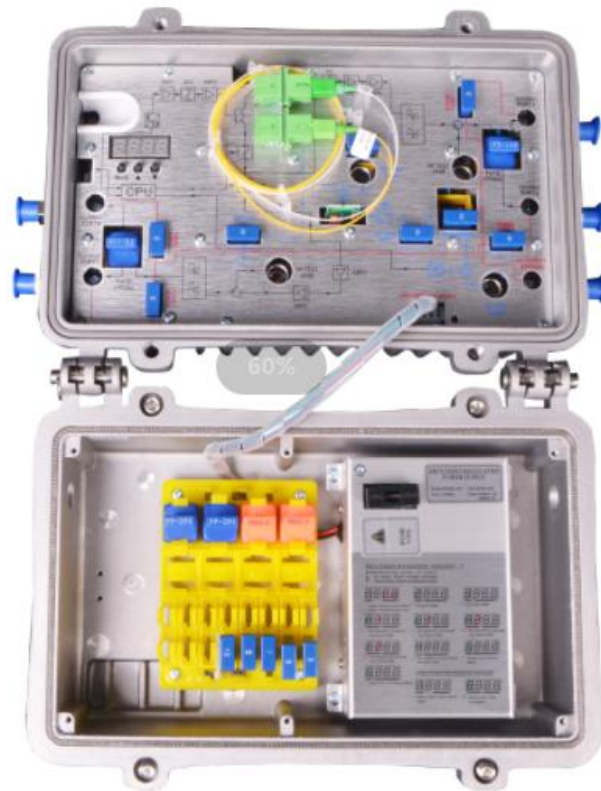


SR814ST

Optical Receiver Manual



1. Product Summary

SR814ST is our latest high-grade four-output CATV network optical receiver. The pre-amplifier adopts full-GaAs MMIC, post-amplifier adopts GaAs module. Optimized circuit design coupled with our 10 years professional design experience, make the equipment achieve good performance indexes. Microprocessor control, digital display the parameters, the engineering debug is especially easy. It is the main equipment to build the CATV network.

2. Performance Characteristics

- High response PIN photoelectric conversion tube.
- Optimized circuit design, SMT process production, optimized signal path, make the photoelectric signal transmission more smooth.
- Specialized RF attenuation chip, with good RF attenuation and equilibrium linear, high accuracy.
- GaAs amplifier device, power doubly output, with high gain and low distortion.

- Single Chip Microcomputer (SCM) control equipment working, LCD display the parameters, convenience and intuitive operation, and stable performance.
- Excellent AGC performance, when the input optical power range is $-9 \sim +2$ dBm, the output level keep unchanged, CTB and CSO basically unchanged.
- Reserved data communication interface, can connect with class II network management responder, access to network management system.
- Return path can select burst mode to sharply decrease the noise convergence and greatly increase the quality and reliability of network operation.

3. Technique Parameter

3.1 Link testing conditions

The technique parameters of this manual according to the measuring method of GY/T 194-2003 <Specifications and methods of measurement on optical node used in CATV systems>, and tested in the following conditions.

Testing conditions:

1. Forward optical receive part: with 10km standard optical fiber, passive optical attenuator and standard optical transmitter composed the testing link. Set **59 PAL-D** analog TV channel signal at range of **45/87MHz ~ 550MHz** under the specified link loss. Transmit digital modulation signal at range of **550MHz ~ 862/1003MHz**, the digital modulation signal level (in **8 MHz** bandwidth) is **10dB** lower than analog signal carrier level. When the input optical power of optical receiver is **-2dBm**, the RF output level is **108dBμV**, with **9dB** output tilt, measure the **C/CTB**, **C/CSO** and **C/N**.
2. Backward optical transmit part: Link flatness and **NPR** dynamic range are the link indexes which is composed of backward optical transmitter and backward optical receiver.

Note: When the rated output level is the system full configuration and the receiving optical power is **-2dBm**, equipment meets the maximum output level of link index. When the system configuration reduce (that is, actual transmission channels reduce), the output level of equipment will be increased.

Friendly Notice: Suggest you setting the RF signal to **6~9dB** tilt output in the practical engineering application to improve the nonlinear index (under the node) of the cable system.

3.2 Technique Parameters

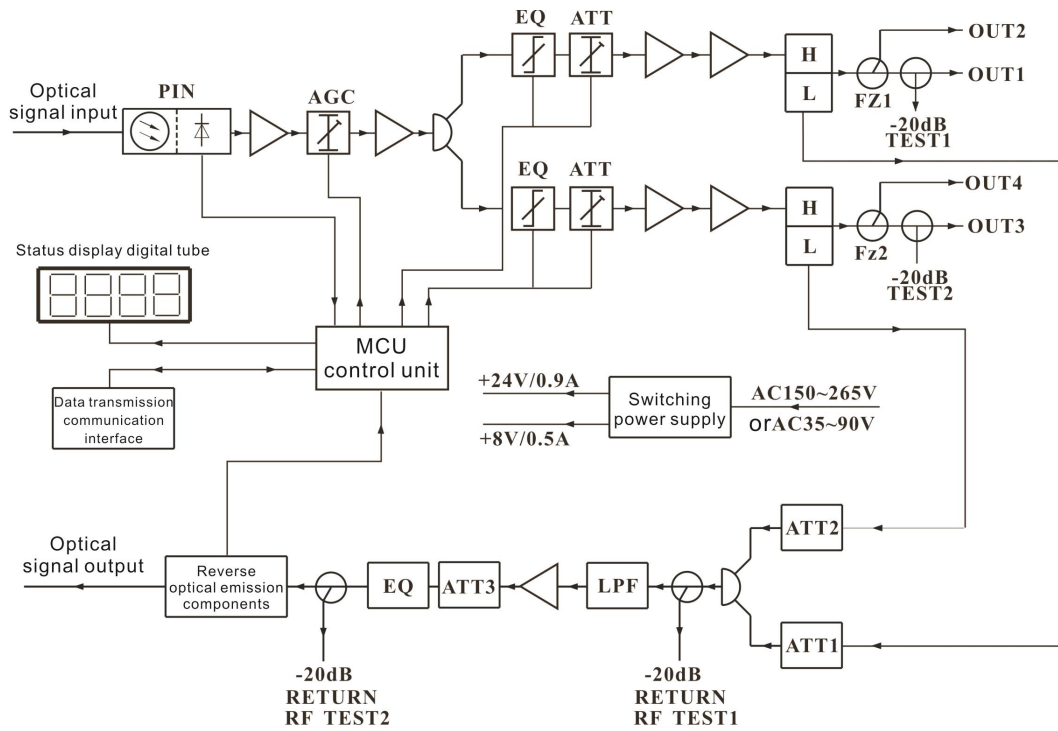
Item	Unit	Technical Parameters
Forward optical receiving part		
Optical Parameters		
Receiving Optical Power	dBm	-9 ~ +2
Optical Return Loss	dB	>45
Optical Receiving Wavelength	nm	1100 ~ 1600
Optical Connector Type		FC/APC, SC/APC or specified by the user
Fiber Type		Single Mode
Link Performance		
C/N	dB	≥ 51 (-2dBm input)
C/CTB	dB	≥ 65 Output Level 108 dBμV

C/CSO	dB	≥ 60	Balanced 6dB
RF Parameters			
Frequency Range	MHz	45 ~862	
Flatness in Band	dB	±0.75	
Rated Output Level	dBμV	≥ 108	
Max Output Level	dBμV	≥ 112	
Output Return Loss	dB	≥16(45-550MHz)	≥14(550-862MHz)
Output Impedance	Ω	75	
Electronic Control EQ Range	dB	0~10	
Electronic Control ATT Range	dBμV	0~20	
Return Optical Transmit part			
Optical Parameters			
Optical Transmit Wavelength	nm	1310±10, 1550±10 or specified by the user	
Output Optical Power	mW	0.5, 1, 2 (optional)	
Optical Connector Type		FC/APC, SC/APC or specified by the user	
RF Parameters			
Frequency Range	MHz	5 ~ 65 (or specified by the user)	
Flatness in Band	dB	±1	
Input Level	dBμV	72 ~ 85	
Output Impedance	Ω	75	
General Performance			
Supply Voltage	V	A: AC(150~265)V; B: DC(35~90)V	
Operating Temperature	°C	-40~60	
Storage Temperature	°C	-40~65	
Relative Humidity	%	Max 95% no condensation	
Consumption	VA	≤ 30	
Dimension	mm	320 (L) × 200 (W) × 140 (H)	

Note: The forward RF parameters are tested under the condition of using GaAs 25dB power doubly module in the last stage. Use other module, the parameters will be slightly different.

Burst Mode (Select this mode, see below)			
Output Optical Power (Close the burst mode)	dBm	-30	
Laser Turn On Threshold	dBμV	≥70	
Laser Turn Off Threshold	dBμV	≤62	
Laser Turn On Time (t1)	us	0.5 ≤ t1 ≤ 1	
Laser Turn Off Time (t2)	us	0.5 ≤ t2 ≤ 1.5	

4. Block Diagram



5. Relation Table of Input Optical Power and CNR

