

HFC Optical Receiver • BON-FTTxR series

User Manual

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1.0 PRODUCT DESCRIPTION

BON-FTTxR is a type of bi-directional optical receiver with high performance, low cost and economical. It is applicable to various application of the HFC network fiber to the home (FTTH), and can provide high reliability analogue, digital video frequency and data bi-directional transmission for the HFC network.

BON-FTTxR: Dual fiber bi-direction, without CWDM.

2.0 PRODUCT FEATURES

- Excellent linearity and flatness
- Extremely good return loss
- Compact construction, lower power consumption
- WDM optional to achieve single fiber bi-directional transmission
- Multi-communications transmitting wavelength and power optional

3.0 MAIN APPLICATION

- FTTH (HFC)

4.0 PRODUCT SERIES

4.1 Optional layout

1. Down-stream maximum operating frequency: 087: 870MHz
100: 1000MHz
110: 1100MHz
2. Up-stream minimum operating frequency: 47: 47MHz, duplexer 30/47
53: 53Mhz, duplexer 42/53
87: 87MHz, duplexer 65/87
3. Type of laser with return path: FPO: without ISO, F-P laser
FPI: with ISO, F-P laser
DFO: without ISO, DFB laser
DFI: with ISO, DFB laser
4. Output power: 1dBm(1.2mW)
3: 3dBm(2mW)
4: 4dBm(2.5mW)
5: 5dBm(3mW)
5. Operating wavelength: 1310: 1310nm
1550: 1550nm
CWDM

5.0 TECHNICAL INDEX

5.1 Down-stream optical receiver

Performance			Index			Supplement
			Min.	Typ.	Max.	
Optical feature	Operating wavelength	(nm)	1260		1620	
	Receiving power	(dBm)	-6		+3	
	Responsibility	(A/W)	0.85			1310nm
			0.9			1550nm
	Return loss	(dB)	50			
	Input power monitor	(V/mW)		1		
Connector		SC/APC				
RF feature	Maximum operating bandwidth	(MHz)			870	087
					1000	100
					1100	110
	Minimum operating bandwidth	(MHz)	47			Duplexer 30/47
			53			Duplexer 42/53
			87			Duplexer 65/87
	Flatness	(dB)	-0.5		+0.5	53~870MHz
			-1		+1	87~1100MHz
	Output return loss	(dB)	16			53~870MHz
			12			87~1100MHz
Output level	(dBmV)		25		Pin=0dBm	
Output level monitor	(dB)		-20			
Impedance	(Ω)		75			
RF connector		F-female				
Link feature	CNR	(dB)	52			60CH, Pin=0dBm
	CTB	(dB)			-65	99CH, Vo \leq 27dBmV
	CSO	(dB)			-60	
	HUM	(dB)			-60	
General feature	Power supply	(V)		+12		
	Power consume	(W)		4		

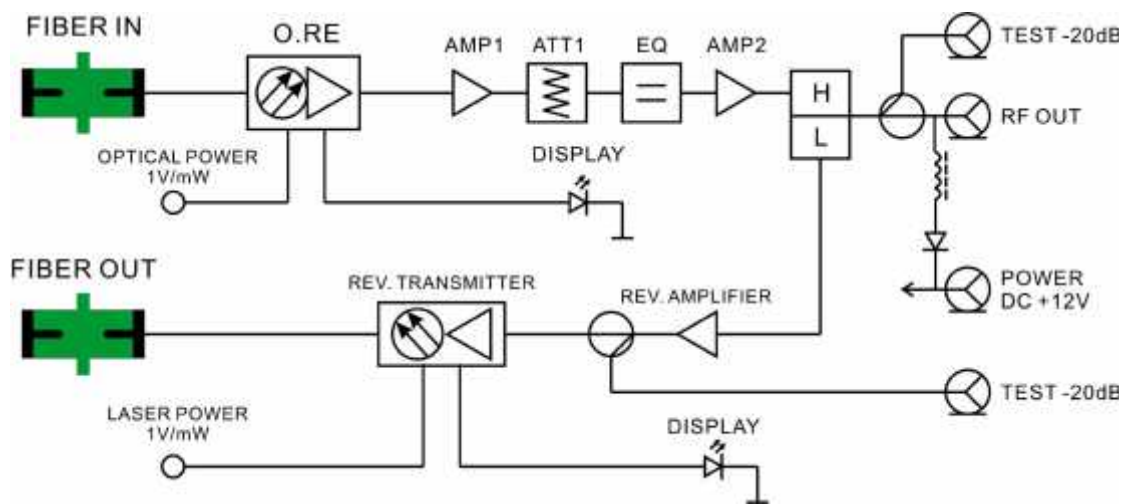
Operating temp.	(°C)	-20		65	
Storage temp.	(°C)	-40		85	
Relative humidity	(%)	5		95	
Size	(mm)	130×106×33			(W)×(D)×(H)

5.2 Up-stream optical transmitter

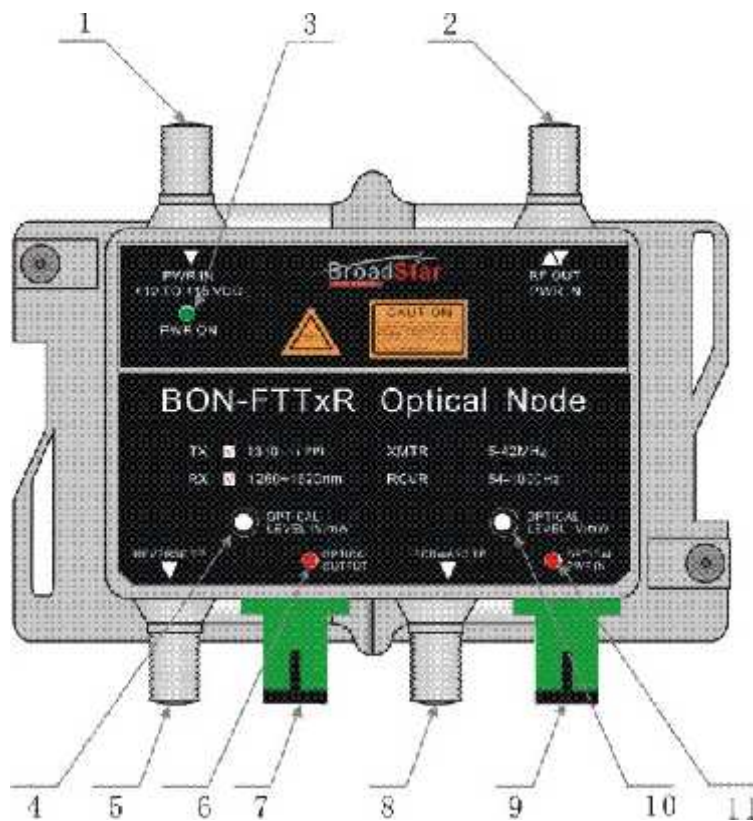
Performance		Index			Supplement
		Min.	Typ.	Max.	
Optical feature	Reverse transmitter operating wavelength (λ) (nm)		1310		
			1550		
			1470		CWDM 1470
			1490		CWDM 1490
			1510		CWDM 1510
			1530		CWDM 1530
			1550		CWDM 1550
			1570		CWDM 1570
			1590		CWDM 1590
		1610		CWDM 1610	
Type of laser with return path		F-P without ISO			FPO
		F-P with ISO			FPI
		DFB without ISO			DFO
		DFB with ISO			DFI
Output power	(mW)	1.2			1dBm
		2			3dBm
		2.5			4dBm
		3			5dBm
Return loss	(dB)	50			
Output power monitor	(V/mW)		1		
Connector		SC/APC			
RF feature	Operating bandwidth (MHz)	5		30	Duplexer 30/47
				42	Duplexer 42/53
				65	Duplexer 65/87

Flatness	(dB)	-0.5		+0.5	5~65MHz
Noise Power Ratio (NPR)	(dB)	37			F-P, Link Loss ≥ 15 dB
		41			DFB, Link Loss ≥ 15 dB
Input level	(dBmV)		20		
Return loss	(dB)	16	18		5~65MHz
Input power monitor	(dB)		20		

6.0 BLOCK DIAGRAM



7.0 EXTERIOR



- (1) Power +12~+15VDC input
- (2) Down-stream RF output / up-stream RF input / power input (DC+12V)
- (3) Power on LED display
- (4) Output power test point (1V/mW)
- (5) Up-stream RF input level monitor port (-20dB)
- (6) Up-stream laser output LED display
- (7) Up-stream fiber output
- (8) Down-stream RF output level monitor port (-20dB)
- (9) Down-stream fiber input
- (10) Input power test point (1V/mW)
- (11) Down-stream input power LED display

8.0 MATTERS NEED ATTENTION

1. Check up the power supply device first

Confirm your power supply is about 12-15VDC and connect it to this set (look at the figure above), then the laser ON LED will switch on (light).

2. Connect the optical input signal

Ensuring the optical input power is below 3dBm. Use the lens paper dipped in absolute alcohol to clean the input connector and the optical connector, then join them together. At this time the LED "Optical Power" will be on. Use a multi-meter and join it to the optical level test point to measure the optical power (unit: 1V/mW). If the voltage measured more than 2V and less than 0.25V, it means the optical input power is more than 2mW (3dBm) or below the 0.25mW (-6dBm).

3. Connect the Laser output signal

When the Laser works use a multi-meter and join it to the laser level test point to measure the laser power (unit: 1V/mW), if it is at 1mW. The upstream signals are usually 1.5dBm (1.3mW) and can be tested at the reverse test point.

4. Invisible laser radiation avoids direct exposure to the beam when you install the fiber input connector.
5. The optical adaptor is SC/APC when the unit leaves the factory. If you have other demands e.g. FC/APC, clarify before ordering.
6. Avoid that the unit will be struck by lightning and extra ordinary high voltage, you should keep the unit grounded all the time.

9.0 BOX CATALOG

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|---------------------------|--------|
| 1. BON-FTTxR optical node | 1 set |
| 2. User manual | 1 copy |