

**BST8110-XX**  
**80MHz-500MHz RF-Optical Transceiver**  
 REV 1.0

**1 Feature**

- ◆ High linear analog PD and DFB laser
- ◆ With low noise and high linear gain power amplifier
- ◆ With APC and protect circuit for laser
- ◆ With AGC function
- ◆ Build-in Bi-Di component
- ◆ +9V~+12V Single power supply
- ◆ RS232 /RS485 control interface
- ◆ -20°C~+70°C Operating Temperatur



**2 Application**

- ◆ Optical transmission system

**3 General**

The BST8110-XX is a low nosie RF fiber optical transceiver designed for network and broadband RF wireless up link/down link applications, respectively. Each pair consists of a master and a slave modules,the link from master to slave is called down link,from slave to master as up link.In down link a 1550nm DFB-LD is selected as transmitter and a high linear analog PD as optical signal receiver, In up link a 1310nm FP-LD is selected to transmit the optical signal and a high linear analog PD as optical signal receiver.These modules can be used for 20km applications and they are fully compliant with the latest issue of Bellcore GR-253-CORE.

**4 Performance Specifications**

**4.1 Absolute Maximum Ratings**

Parameter	Symbol	Min.	Max.	Unit	Comments
Input Voltage	-	9	15	V	
input RF power			10	dBm	
Fiber Bending Radius	R	30		mm	

**4.2 Recommended Operation conditions**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Comments
Operating Temperature	T <sub>op</sub>	-20		+70	°C	
Storage Temperature	T <sub>stg</sub>	-40		+85	°C	

## E-O and O-E Characteristics

### 4.3.1 Optical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Optical Wavelength	$\lambda$	1290	1310	1330	nm	slave
Average Optical Output Power	Po	2	3	5	dBm	
Optical Return Loss	RL	40			dB	
Optical Isolator	Iso	25			dB	

### 4.3.2 Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Power Supply	V <sub>cc</sub>		12		V	
Current Consumption	I <sub>cc</sub>			300	mA	
Bandwidth		80		500	MHz	
Max Gain	G	-2	0	+2	dB	
Link Gain	G	+13	15	+17	dB	
Response Flatness@ any 20MHz		0.5			dB	
Output Noise Floor				-135	dBm/Hz	optical no loss
Transmit No Optical Alarm		-3			dBm	Software Settings
Receive No Optical Alarm		-16			dBm	Software Settings
IM3				-62	dBc	2ch/ch/-3dBm
RF Isolation		65			dB	optical no loss
VSWR				1.4		
RF Impedance			50		$\Omega$	
FSK Frequency			868		MHz	

### 4.3.3 The connector

Optical connector	FC/APC
RF connector	SMA-50KFD

## 5 Pin Definitions ( DB9-FM connector)



