

# BST8190-XX

## 680MHz-2700MHz 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 Repeater for CDMA/GSM
- ◆ Broadband RF Wireless

### 3 General

The BST8190-XX is a low noise RF fiber optical transceiver designed for CDMA,GSM 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	

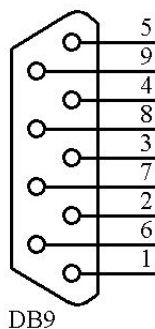
### 4.3.2 Electrical Characteristics

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Power Supply	V <sub>cc</sub>		12		V	
Current Consumption	I <sub>cc</sub>			300	mA	
Bandwidth		680		2700	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				-130	dBm/Hz	optical no loss
Transmit No Optical Alarm		-3			dBm	Software Settings
Receive No Optical Alarm		-16			dBm	Software Settings
OIP3				-60	dBc	2ch/ch/-3dBm
RF Isolation		50			dB	optical no loss
VSWR				1.4		
RF Impedance			50		$\Omega$	
FSK Frequency			433.792		MHz	

### 4.3.3 The connector

Optical connector	FC/APC
RF connector	SMA-50KFD

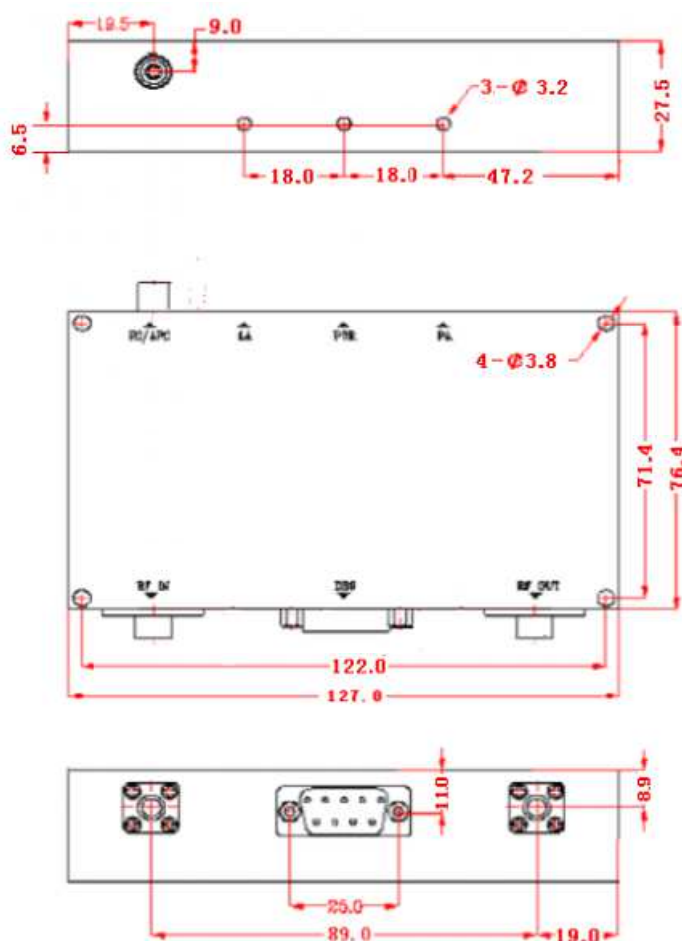
## 5 Pin Definitions ( DB9-FM connector)



## Ordering information

Model	Pin Function Descriptions
BST8190-11	1:NC;2:GND;3:VCC;4:RS232-TX;5:RS232-RX;6:NC;7:LD_ALM;8:NC;9:PD_ALM
BST8190-12	1:NC;2:GND;3:VCC;4:RS485-B;5:RS485-A;6:NC;7:LD_ALM;8:NC;9:PD_ALM
BST8190-14	1:NC;2:GND;3:VCC;4:RS232-TX;5:RS232-RX;6:RS485-B;7:LD_ALM;8:RS485-A;9:PD_ALM
BST8190-15	1:NC;2:GND;3:VCC;4:RS232-TX;5:RS232-RX;6:RS232-RX;7:LD_ALM;8:RS232-TX;9:PD_ALM
BST8190-16	1:NC;2:GND;3:VCC;4:RS485-A;5:RS485-B;6:RS485-B;7:LD_ALM;8:RS485-A;9:PD_ALM

## 6 Package Information ( Unit:mm)



## 7 Specification for Environmental Protection

This product have a quality of "Green product", all raw materials are avirulence and have no environmental impact, apply new technology, strictly control the manufacturing process, the finished products do not contain any hazardous chemical substances regulated by RoHS, 2002/95/EC, or the trace element impurity concentration of banned substances is less than RoHS.