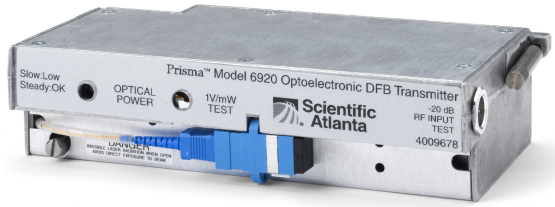
Optoelectronics

Prisma® 1310 nm DFB Reverse Optical Transmitter for Model 6920 Node

Description

The reverse transmitter of the Model 6920 Node facilitates the reverse connection from node to headend or hub site. The Prisma® 1310 nm distributed feedback (DFB) reverse transmitter is best suited for high-capacity reverse traffic and can accommodate analog video carrier transmission. These transmitters include a Power On LED and an Optical Power Alert LED, enabling quick visual confirmation of operation status. A DC test point that is scaled to the optical power (1V = 1mW) is also included. Also, the upstream can be monitored by using the Status Monitor connection.

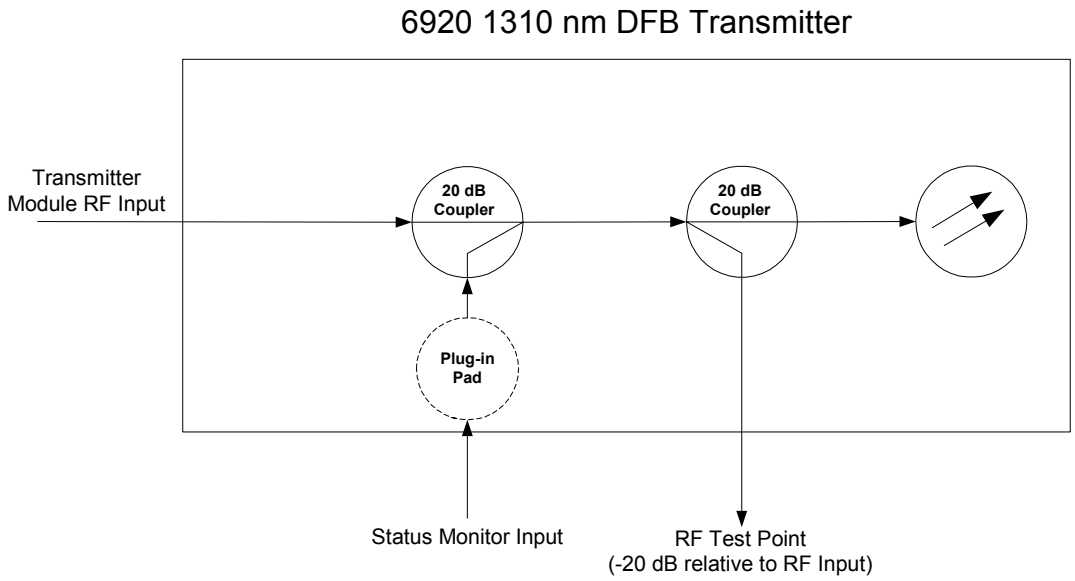


Features

- Compact modular design for simple installation and removal
- Power On and Optical Power Alert LED indicators
- DC test point scaled to optical output (1V = 1mW)
- Status monitoring

Prisma 1310 nm DFB Reverse Tx for Model 6920 Node

Block Diagram



Specifications

Parameter	Unit	Specification	Notes
Wavelength	nm	1310 +/- 20	
Pass Band	MHz	5 – 200	
Frequency Response	dB	+/- 0.5	1
Input Return Loss	dB	16	
Optical Test Point	V DC	1V/mW (+/- 10%)	
Optical Output Power	mW dBm	2.0 3.0	
Test Point Level	dB	-20	3
Test Point Return Loss	dB	16	
Single CW RF Carrier Input Level for 100% OMI	dBmV	60	2
Noise Power Ratio Performance		See plot	See plot

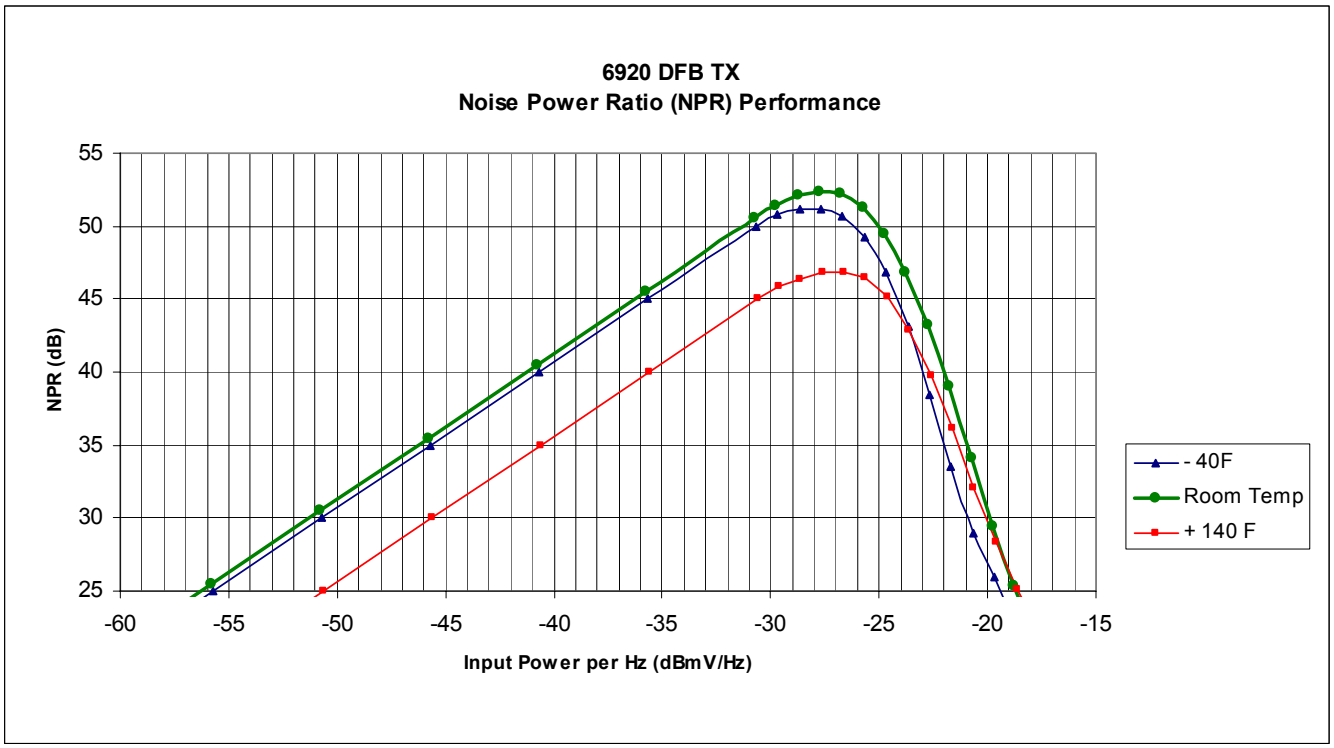
Notes:

1. Frequency response for transmitter module only. Does not include the frequency response contribution of optical receiver.
2. This is the RF level that produces 100% composite Optical Modulation Index (OMI) at room temperature. This is used for reference purposes only and is NOT the recommended RF drive level. Consult with Scientific-Atlanta's Applications Engineering group in order to determine the appropriate RF drive level for a particular application.
3. The RF level measured at the transmitter module's RF input is 20 dB above the level measured at the RF test point; i.e. the test point is 20 dB below the RF input level.

Specifications, continued

NPR Performance

The plot below illustrates the typical Noise Power Ratio (NPR) performance of the 1310 nm DFB transmitter module with a 7 dB optical link (15 km glass plus passive loss).



Note: NPR performance with noise loading from 5 – 42 MHz.

Specifications, continued

Link Loss (dB)	NPR 'Link Loss Correction Factor' (dB)
	Model 6920 **DFB TX**
1	+2
2	+2
3	+2
4	+1.5
5	+1
6	+1
7	**0**
8	-1
9	-2
10	-3
11	-4.5
12	-6
13	-7
14	-9
15	-11
16	-12
17	-14
18	-16
19	-18
20	-20

Using the NPR Link Loss Correction Factor *(applies to Model 6920 analog TXs only)*
The NPR performance plots contained in this document depict the NPR performance on a reference 7 dB fiber optic link.

With other link losses, both the:

- NPR dynamic range for a given minimum NPR (C/N) performance
- NPR value for a given transmitter RF input level

will vary from that shown on the reference 7 dB link plots.

To determine an NPR *dynamic range* for a different link loss, add (or subtract) the correction factor associated with the desired link loss to (or from) the dynamic range shown on the reference 7 dB link NPR plot. Note that the associated increase (or decrease) in dynamic range affects only the left side of the NPR curve (minimum RF input side) since that is the portion of the curve affected by changes to the traditional noise sources associated with the optical link.

To determine an NPR *value* for a different link loss, add (or subtract) the correction factor associated with the desired link loss to (or from) the NPR value shown on the 7 dB link NPR plot for a given RF input level. Again, only the NPR values on the left side of the NPR curve (pre-peak values) are to be adjusted. The NPR values and slope associated with the right side of the NPR curve (post peak values) are primarily due to laser clipping at high RF input levels, and therefore do not vary appreciably with link loss.

Ordering Information

Description	Part Number
1310 nm DFB Optical Transmitter with SC/UPC Connector	4009677

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1-800-722-2009 or 770-236-6900
www.scientificatlanta.com

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