

**Description**



The PSI-2800-20UT provides game-changing low loss and low noise figure wideband RF over fiber link performance. This high-performance microwave photonic transmitter enables wideband electrical to optical (E/O) conversion for RF input signals to >20 GHz. Along with a PSI-2800-20UR receiver module, the PSI-2800-20UT provides a complete fiber optic link solution designed to replace coaxial cable or waveguide for applications in military systems, satellite communications, radio astronomy, optical delay lines, cellular/wireless base stations or other RF/Microwave related systems.

The PSI-2800-20UT does not include any RF amplifiers but can be provided with RF pre-amplifiers if lower link loss and lower noise figure are required. Rack mount packaging, custom packaging, different I/O connectors are also available. [Please contact PSI with your application needs.](#)

**Features**

- Low Noise Figure
- Low Link Loss
- Wide Operational and Instantaneous Bandwidth
- RF<sub>in</sub> to RF<sub>out</sub> Solution
- Complete TX and RX Modules
- High Dynamic Range
- Customization Available

**Applications**

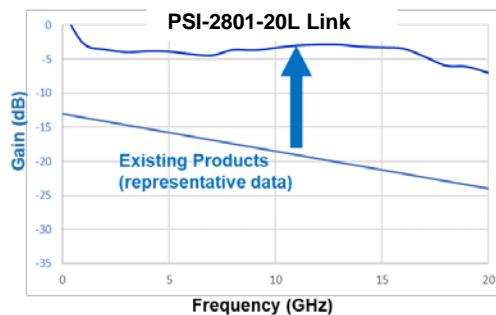
- Replace High Loss Coax Cable
- Replace Bulky Waveguide
- Remote Antenna Sites
- Radio Over Fiber
- Radio Astronomy
- Phased Array Radar
- EW/ECM
- SATCOM
- Delay Lines

**RF Link Performance Summary**

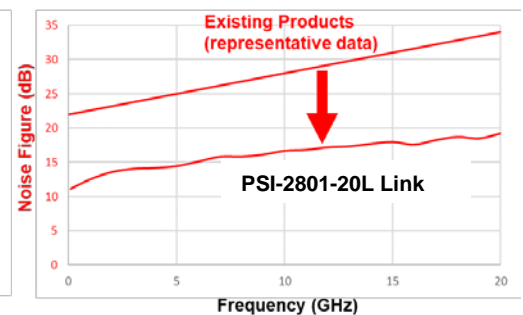
Parameter	Condition	Min	Typ	Max	Units
Operating Bandwidth		0.1		20	GHz
Link Gain	@ 10 GHz	-7	-4		dB
Noise Figure	@ 10GHz		17	20	dB
Input IP3	@ 10 GHz	7	10		dBm
Spur Free Dynamic Range	1 Hz band @ 10 GHz	106	110		dB/Hz <sup>2/3</sup>
Gain Flatness	1 - 20 GHz			±5	dB
	In any 100 MHz band			±1	dB

Note: RF link performance specifications with PSI-2800-20UR receiver module

**Typical Link Gain**



**Typical Link NF**



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**RF Characteristics**

Parameter	Min	Typ	Max	Units
Maximum RF Input			+10	dBm
Input 1dB Compression	+0.5			dBm
RF Input Impedance		50		Ohm
RF Return Loss	9.5	15		dB
RF Input Connector	SMA Female			

**Optical Characteristics**

Parameter	Min	Typ	Max	Units
Wavelength	1520	1550	1580	nm
Optical Power Out	1	6	10	mW
Optical Connector	FC/APC (see notes)			

Notes:

1. Contact PSI for other connector options
2. User supplied fiber optic interconnect cable should be singlemode Corning SMF-28 or equivalent
3. Optical cable return loss should be >55dB by using angled-polished optical connectors

**DC Power & 9-pin D-Connector Pin Out**

Pin	Description
1	+12 V <sub>DC</sub> at 12mA nominal, 80mA max
2	Ground
3	+5 V <sub>DC</sub> at 130mA nominal, 1.5A Max.
4	-5 V <sub>DC</sub> at 270mA nominal, 1.5A Max.
5	-12 V <sub>DC</sub> at 14mA nominal, 80mA max.
6	Laser Disable
7	Ground
8	Ground
9	NC

**Environmental Characteristics**

Parameter	Min	Typ	Max	Units
Operating Temperature	-10	25	60	°C
Storage Temperature	-20		70	°C

**Ordering Information**

Part Number	Description
PSI-2800-20UT	Transmitter Only
PSI-2801-20L	Link includes PSI-2800-20UT transmitter and PSI-2800-20UR receiver

Note: Nominal values at room temperature

**Mechanical Dimensions**

