



### Features

- » Wideband up to 12 GHz
- » High Dynamic Range
- » Customization Available
- » Fully Integrated Module
- » Complete Link Option

### Applications

- » Replaces Coax Cable
- » Radio Over Fiber
- » Radio Astronomy
- » Remote Antenna Sites
- » Phased Array Radar
- » EW/ECM
- » Optical Delay Lines
- » SATCOM

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### Description

The PSI-1600-10UT is a high performance microwave photonic transmitter providing wideband electrical to optical (E/O) conversion for RF input signals up to 12 GHz. Along with a PSI-1600-10UR receiver module, the PSI-1600-10UT provides a complete fiber optic link solution designed to replace coaxial cable or microwave repeaters for applications in military systems, satellite communications, radio astronomy, optical delay lines, cellular/wireless base stations or other RF/Microwave related systems. Part of the PSI-1600-10L series of microwave links, the PSI-1600-10UT transmitter does not incorporate any RF pre-amplification.

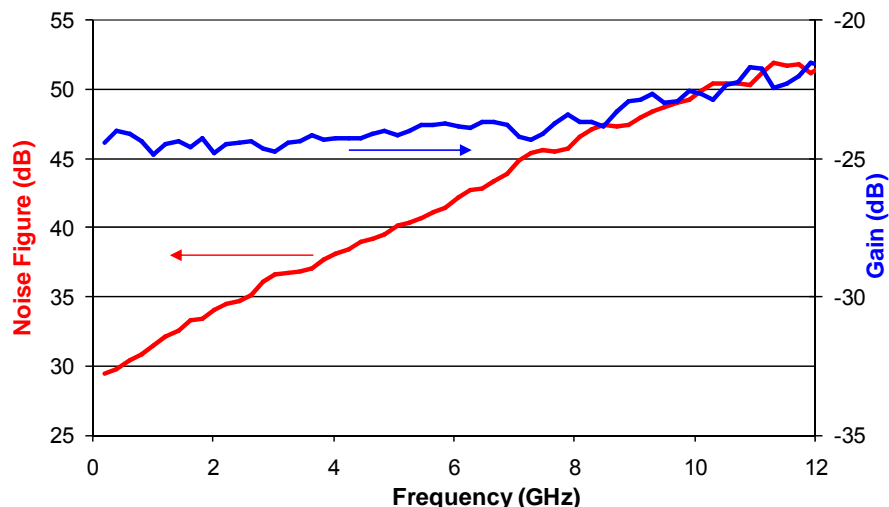
Custom packaging, connectors and link gain configurations are also available. **Please contact PSI with your application needs.**

### RF Link Performance

Parameter	Condition	Min	Typ	Max	Units
Operating Bandwidth		0.045		12	GHz
Link Gain	@ 5 GHz	-32	-30		dB
Noise Figure	@ 5 GHz		38	40	dB
Input IP3	@ 5 GHz	20	25		dBm
Spur Free Dynamic Range	1 Hz band @ 5GHz	103	106		dB/Hz <sup>2/3</sup>
Gain Flatness	1 - 12 GHz			±3	dB
	Any 100 MHz band			±0.5	dB

Note: RF link performance specifications with -15 dBm RF<sub>in</sub> and using the PSI-1600-10UR receiver module

### PSI-1601-10L Typical Response Over Frequency



### RF Characteristics

Parameter	Condition	Min	Typ	Max	Units
Maximum RF Input				+18	dBm
Input 1 dB Compression		+15			dBm
RF Input Impedance			50		$\Omega$
RF Return Loss		9.5	15		dB
RF Input Connector	SMA Female				

### Optical Characteristics

Parameter	Condition	Min	Typ	Max	Units
Wavelength		1520	1550	1575	nm
Optical Output Power		0.5		10	mW
Optical Output Connector	FC/APC Standard, please contact PSI for other options				

Notes:

1. User supplied fiber optic cable should be singlemode Corning SMF-28 or equivalent
2. To minimize distortion caused by optical reflections the optical cable return loss should be >55 dB using angled-polished connectors
3. ITU channel wavelength selection is possible, please contact PSI with requirements

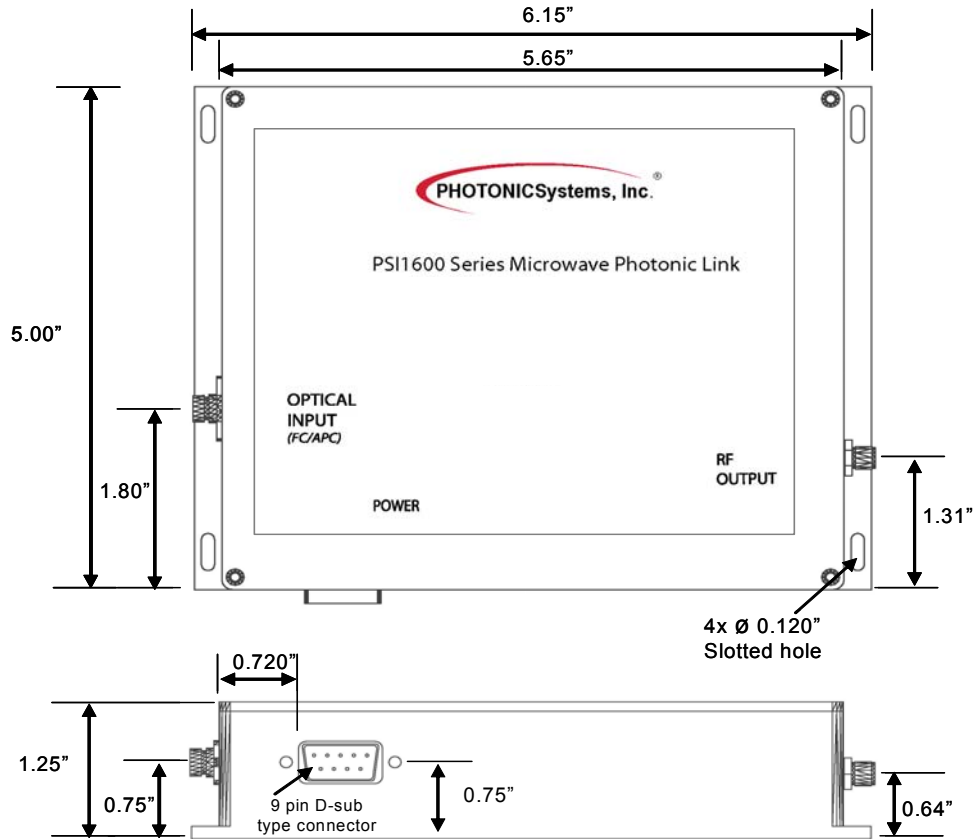
### Environmental Characteristics

Parameter	Condition	Min	Typ	Max	Units
Operating Temperature	Within Specifications	-5		70	$^{\circ}\text{C}$
Storage Temperature	No damage	-40		85	$^{\circ}\text{C}$
Humidity		0		95	%

### DC Power and 9-pin D-Connector Pin Out

Pin	Description
1	NC
2	Ground
3	+5 V <sub>DC</sub> at 1.8 A max.
4	Ground
5	-5 V <sub>DC</sub> at 1.5 A max.
6	NC
7	Ground
8	Ground
9	NC

**Mechanical Dimensions**



**Ordering Information**

PSI Part Number	Description
PSI-1600-10UT	E/O Transmitter Module (Final tested with PSI-1600-10UR)
PSI-1601-10L	Microwave Photonic Link Includes : <ul style="list-style-type: none"> <li>• PSI-1600-10UT Transmitter Module</li> <li>• PSI-1600-10UR Receiver Module</li> </ul>
PSI-1603-10L	Microwave Photonic Link Includes : <ul style="list-style-type: none"> <li>• PSI-1600-10UT Transmitter Module</li> <li>• PSI-1600-10AR Amplified Receiver Module</li> </ul>