

PRODUCT DESCRIPTION

The PSI-2600 series is a family of high-performance microwave photonic links intended for antenna remoting or RF/IF signal distribution in military systems, satellite communications, radio astronomy, optical delay lines, cellular/wireless base stations or other applications. The PSI-2601 is an amplifierless link with wide spur-free dynamic range and high input intercept point for difficult RF environments. Also available are amplified versions; the PSI-2602 includes amplification at the TX side to optimize noise figure the PSI-2603 employs



PSI-2600 Features	Benefit
High performance fiber optic link	Enables replacement of lossy, heavy copper transmission lines
Lithium niobate modulator with precision bias control	Long service life
High input power tolerance	Will not overload when close to high RF sources
Compact, low power consumption and high reliability	Low total cost to install and operate

amplification only at the RX module and the PSI-2604 includes amplification at both link ends, yielding 27 dB of insertion gain. All links feature very wide bandwidth of up to 20 GHz and low power consumption. This performance is achieved through a transmitter employing a precisely controlled lithium niobate modulator and a

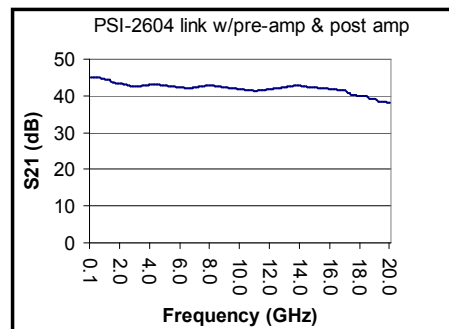
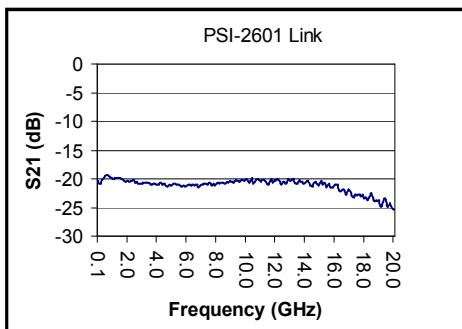
low noise DFB laser. The separate receiver module (identical to the module used in PSI-1600 series links) contains a sensitive, microwave bandwidth InGaAs photodiode. All modules are constructed in laboratory-grade housings and shipped with AC power supplies. Custom packaging and gain configurations are also available. For more information, please contact us at info@photonicsinc.com.

Applications

- Radio over fiber
- Radio astronomy
- Remote antenna distribution
- Phased array radar
- Cellular antenna farms
- Optical delay lines
- SATCOM
- ELINT/EW

Typical Performance, 25°C @ mid-band

Parameter	PSI-2601 Link	PSI-2602 Link w/ pre-amp	PSI-2603 Link w/ post-amp	PSI-2604 Link w/ pre & post-amp
Operating bandwidth	.045-20 GHz	.1-20 GHz	.1-20GHz	.1-20 GHz
Noise figure	32 dB	5 dB	32 dB	5 dB
Gain	-21 dB	11 dB	11 dB	43 dB
1-dB compression output power	-9 dBm	-10 dBm	20 dBm	20 dBm
IP3 output power	0 dBm	-2 dBm	26 dBm	26 dBm
Spur-free dynamic range (in 1 Hz)	108 dB	104 dB	104 dB	101 dB
VSWR	<2:1	<2.2:1	<2.2:1	<2.2:1
Bias power, TX module	<20 W	<23 W	<20 W	<23 W
Bias power, RX module	35 mW	35 mW	4 W	4 W



PSI-2600 SERIES MICROWAVE PHOTONIC LINKS

RF AND ELECTRICAL CHARACTERISTICS

Parameter	Min	Max	Units
Bandwidth	0.10	20	GHz
RF port impedance	50, all ports		Ohms
Receiver input equivalent noise		20	pA/Hz
Amplitude flatness, any 100 MHz		± 0.5	dB
AC power (60 Hz)	100	240	VAC

ABSOLUTE MAXIMUM RATINGS

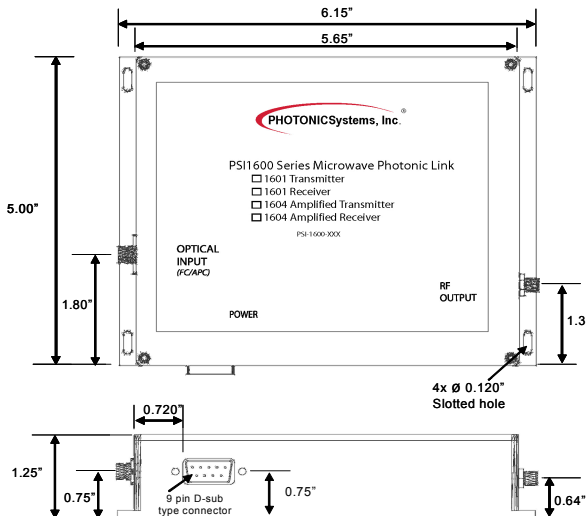
Parameter	Min	Max	Units
Operating Temperature (within specs)	0	50	°C
Operating Temperature (no damage)	-20	60	°C
Storage Temperature	-40	80	°C
Humidity	0	95	%
RF input (Amplified TX at max gain)		-6	dBm
RF input (Unamplified TX)		+25	dBm
Optical power into receiver		+13	dBm

OPTICAL CHARACTERISTICS

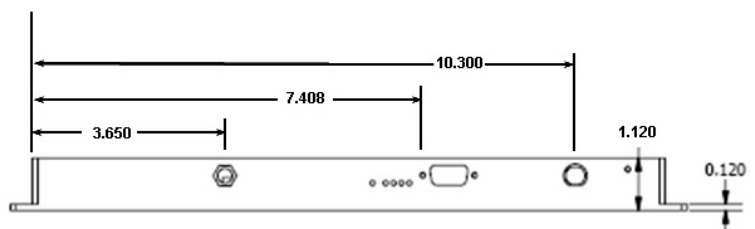
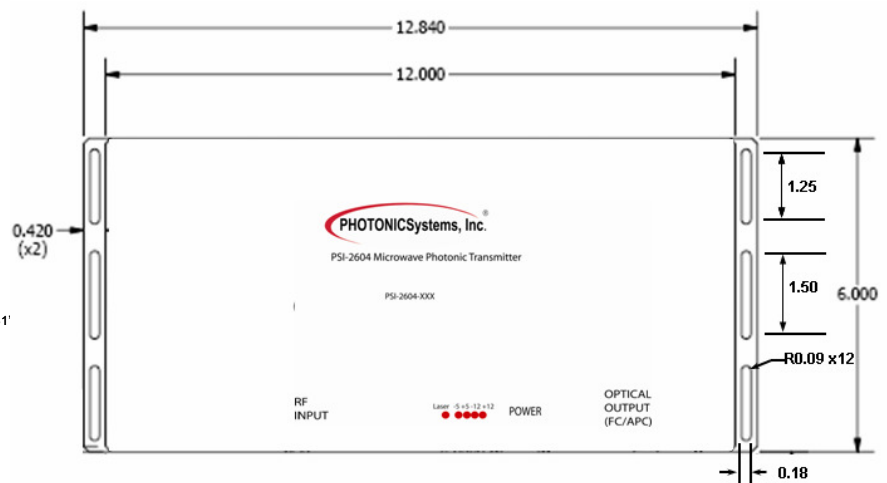
Parameter	Min	Max	Units
Wavelength	1520	1575	nm
TX optical power	0.5	10	mW
RX optical input power	0	20	dBm
Receiver responsivity	0.85		A/W
Connector return loss		-40	dB
Fiber type between TX and RX (user supplied)	Single mode; Corning SMF-28 or equivalent		--
Fiber span @ 1dB degradation in noise figure	6		km

PHYSICAL CHARACTERISTICS

Parameter	Attribute
RF Connectors, all ports	SMA Female
DC connector	9 pin D-sub
Fiber optic connector	FC/APC



PSI-1600 & 2600 Series Receiver Module-
This module is used for both families of photonic links, including amplified and amplifierless versions.



PSI-2600 Series Transmitter Module-
This module is used for all PSI-2600 transmitters.