



Features

- » Wideband up to 12GHz
- » Incorporates RF Amplifier
- » 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-1600-10AR is a high performance microwave photonic receiver with a post RF amplifier providing wideband optical to electrical (O/E) conversion for RF signals up to 12GHz. Along with a PSI-1600-10xT transmitter module, the PSI-1600-10AR 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.

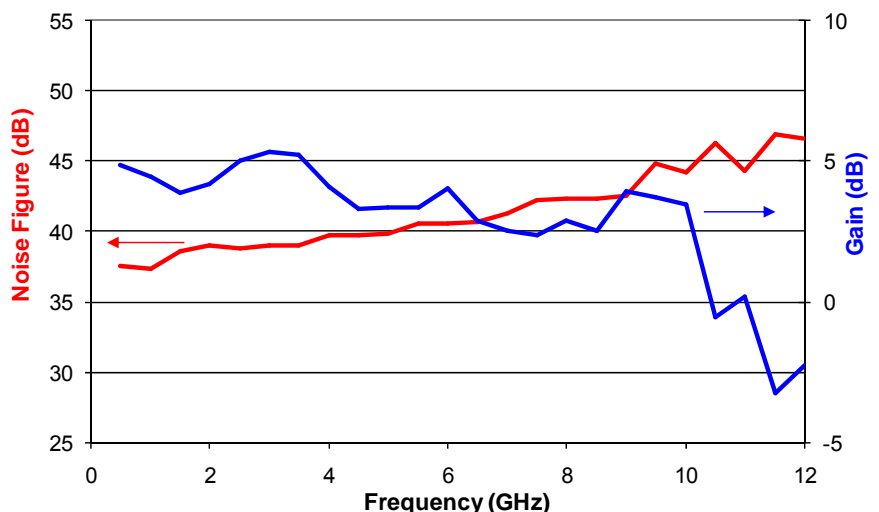
Custom performance, packaging, connectors and link gain configurations are also available. **Please contact PSI with your application needs.**

RF Link Performance

Parameter	Condition	Min	Typ	Max	Units
Operating Bandwidth		0.1		12	GHz
Link Gain	@ 5 GHz		0	2	dB
Noise Figure	@ 5 GHz		38	40	dB
Input IP3	@ 5 GHz	22			dBm
Spur Free Dynamic Range	1 Hz band @ 5GHz	101	103		dB/Hz ^{2/3}
Gain Flatness	1-12 GHz			±4	dB
	Any 100 MHz band			±0.5	dB

Note: RF link performance specifications with -15 dBm RF_{in} applied to the PSI-1600-10UT transmitter module

PSI-1603-10L Typical Response Over Frequency



RF Characteristics

Parameter	Condition	Min	Typ	Max	Units
Frequency Range		0.1		12	GHz
RF Output Impedance			50		Ω
RF Amplifier Gain			30		dB
RF Output Connector	SMA Female				

Optical Characteristics

Parameter	Condition	Min	Typ	Max	Units
Wavelength		1300	1600	1556	nm
Optical Input Power				10	dBm
Responsivity	@ DC	0.7			A/W
Optical Output Connector	FC/APC Standard, please contact PSI for other options				

Note: User supplied fiber optic cable should be singlemode Corning SMF-28 or equivalent. In order to minimize distortion caused by optical reflections the optical cable return loss should be >55 dB using angled-polished connectors.

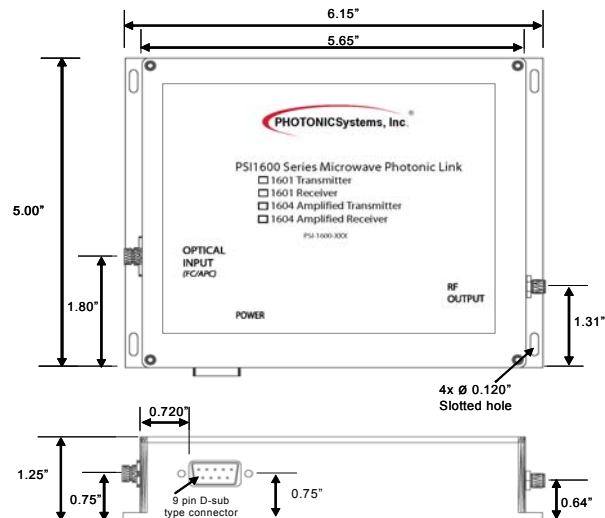
Environmental Characteristics

Parameter	Condition	Min	Typ	Max	Units
Operating Temperature	Within Specifications	-20		70	$^{\circ}\text{C}$
Storage Temperature	No damage	-40		70	$^{\circ}\text{C}$
Humidity	Non-condensing	0		95	%

DC Power and D-Connector

Pin	Description
1	+12 V _{DC} at 400mA max.
2	Ground
3	NC
4	Ground
5	NC
6	NC
7	Ground
8	Ground
9	NC

Mechanical Dimensions



Ordering Information

PSI Part Number	Description
PSI-1600-10AR	Amplified O/E Receiver Module
PSI-1603-10L	RF Photonic Link (PSI-1600-10UT and PSI-1600-10AR)
PSI-1604-10L	RF Photonic Link (PSI-1600-10AT and PSI-1600-10AR)

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