



Description

The PSI-2600-20UT is a high performance microwave photonic transmitter providing wideband electrical to optical (E/O) conversion for RF input signals beyond 20 GHz. Along with a PSI-2600-xR receiver module, the PSI-2600-20UT provides a complete fiber optic link solution designed to replace low loss 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-2600 series of microwave links, the PSI-2600-20UT 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.**

Features

- » Extremely Wideband >20 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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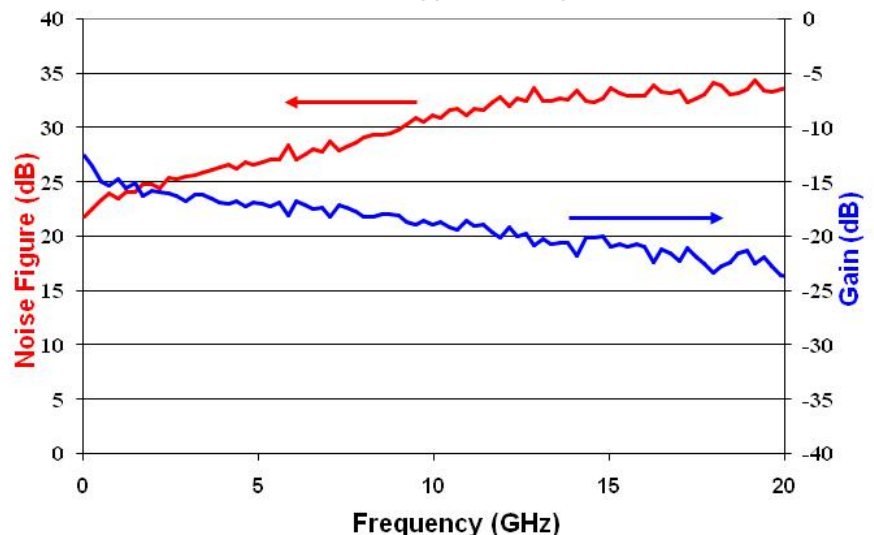
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RF Link Performance

| Parameter | Condition | Min | Typ | Max | Units |
|-------------------------|-------------------|------|-----|------|----------------------|
| Operating Bandwidth | | 0.10 | | 20 | GHz |
| Link Gain | @ 10 GHz | -22 | -20 | | dB |
| Noise Figure | @ 10 GHz | | 32 | 35 | dB |
| Input IP3 | @ 10 GHz | 20 | 22 | | dBm |
| Spur Free Dynamic Range | 1 Hz band @ 10GHz | 106 | 110 | | dB/Hz ^{2/3} |
| Gain Flatness | 1-20 GHz | | | ±5 | dB |
| | Any 100 MHz band | | | ±0.5 | dB |

Note: RF link specifications with PSI-2600-20UR and a 3m optical jumper (PSI-2601-20L Link)

PSI-2601-20L Typical Response



RF Characteristics

| Parameter | Condition | Min | Typ | Max | Units |
|------------------------|------------|-----|-----|-----|----------|
| Maximum RF Input | | | | 20 | dBm |
| 1 dB Compression Point | | 11 | | | dBm |
| RF Input Impedance | | | 50 | | Ω |
| RF Return Loss | | 9.5 | 15 | | dB |
| RF Input Connector | SMA Female | | | | |

Optical Characteristics

| Parameter | Condition | Min | Typ | Max | Units |
|--------------------------|-----------|------|------|------|-------|
| Wavelength | | 1520 | 1550 | 1556 | nm |
| Optical Output Power | | 0.5 | | 10 | mW |
| Connector Return Loss | | 55 | | | dB |
| Optical Output Connector | FC/APC | | | | |

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

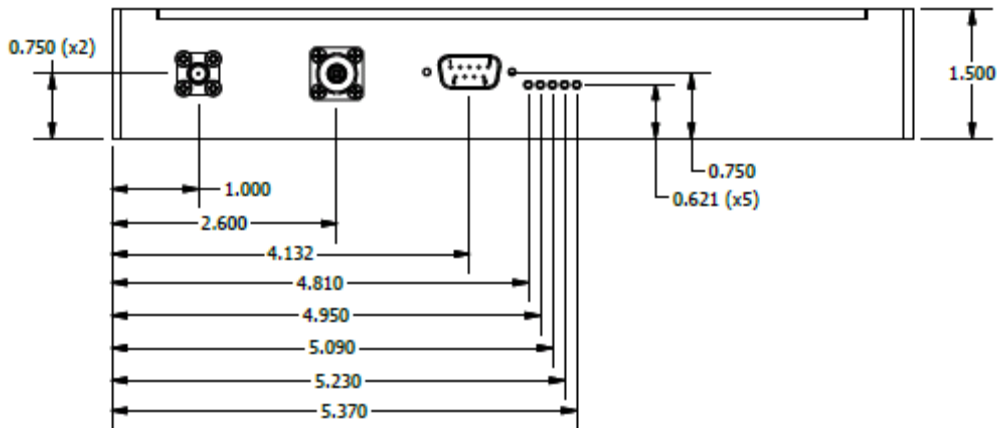
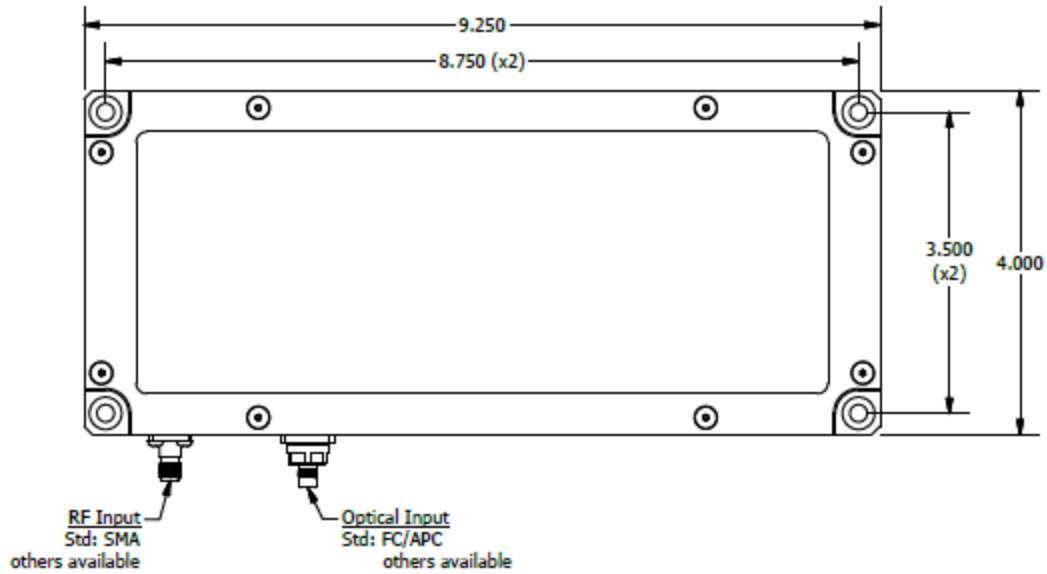
Environmental Characteristics

| Parameter | Condition | Min | Typ | Max | Units |
|-----------------------|-----------------------|-----|-----|-----|--------------------|
| Operating Temperature | Within Specifications | -10 | | 60 | $^{\circ}\text{C}$ |
| Storage Temperature | No damage | -20 | | 70 | $^{\circ}\text{C}$ |
| Humidity | | 0 | | 95 | % |

DC Power and Pin

| Pin | Description |
|-----|-----------------------------------|
| 1 | +12 V _{DC} at 80mA max. |
| 2 | Ground |
| 3 | +5 V _{DC} at 1500mA max. |
| 4 | -5 V _{DC} at 1500mA max. |
| 5 | -12 V _{DC} at 80mA max. |
| 6 | Laser Disable |
| 7 | Ground |
| 8 | NC |
| 9 | NC (modulator reset) |

Mechanical Dimensions



Ordering Information

| PSI Part Number | Description |
|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PSI-2600-20UT | E/O Transmitter Module |
| PSI-2601-20L | Microwave Photonic Link Includes: <ul style="list-style-type: none"> • PSI-2600-20UT Transmitter Module • PSI-2600-20UR Receiver Module |
| PSI-2603-20L | Microwave Photonic Link Includes: <ul style="list-style-type: none"> • PSI-2600-20UT Transmitter Module • PSI-2600-20AR Amplified Receiver Module |