



Features

- » Extremely Wideband >20 GHz
- » High Dynamic Range
- » Customization Available
- » Fully Integrated Module
- » Complete Link Option
- » Includes RF Post-amplifier

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-2600-20AR is a high performance microwave photonic receiver with RF post-amplifier providing wideband optical to electrical (O/E) conversion for RF signals beyond 20 GHz. Along with a PSI-2600-20xT transmitter module, the PSI-2600-20AR 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. Custom packaging, connectors and RF performance configurations are available. **Please contact PSI with your application needs.**

RF Link Performance

| Parameter | Condition | Min | Typ | Max | Units |
|-------------------------|------------------|------|-----|------|----------------------|
| Operating Frequency | | 0.45 | | 20 | GHz |
| Nominal Link Gain | @ 10 GHz | 10 | 12 | | dB |
| Noise Figure | @ 10 GHz | | 32 | 35 | dB |
| Input IP3 | @ 10 GHz | 13 | 15 | | dBm |
| Spur Free Dynamic Range | 1 Hz band @ 5GHz | 104 | 105 | | dB/Hz ^{2/3} |
| Gain Flatness | 1-20 GHz | | | ±5 | dB |
| | Any 100 MHz band | | | ±0.5 | dB |

Note: RF link specifications with PSI-2600-20UT and a 3m jumper (PSI-2603-20L Link).

Ordering Information

| PSI Part Number | Description |
|-----------------|--|
| PSI-2600-20AR | Amplified O/E Receiver Module |
| PSI-2603-20L | RF Photonic Link Includes: <ul style="list-style-type: none"> • PSI-2600-20UT RF Photonic Transmitter • PSI-2600-20AR Amplified RF Photonic Receiver |
| PSI-2604-20L | RF Photonic Link Includes: <ul style="list-style-type: none"> • PSI-2600-20AT Amplified RF Photonic Transmitter • PSI-2600-20AR Amplified RF Photonic Receiver |

RF Characteristics

| Parameter | Condition | Min | Typ | Max | Units |
|---------------------|-----------|------------|-----|-----|-------|
| Frequency Range | | 0.45 | | 20 | GHz |
| RF Output Impedance | | | 50 | | Ω |
| RF Return Loss | | 9.5 | 15 | | dB |
| RF Output Connector | | SMA Female | | | |

Optical Characteristics

| Parameter | Condition | Min | Typ | Max | Units |
|--------------------------|-----------|--|------|------|-------|
| Wavelength | | 1300 | | 1600 | nm |
| Optical Input Power | | | | 10 | dBm |
| Responsivity | @ DC | 0.7 | 0.85 | | A/W |
| Optical Output Connector | | FC/APC (Others Available Upon Request) | | | |

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 | -40 | | 70 | °C |
| Storage Temperature | No damage | -40 | | 85 | °C |
| Humidity | Non-condensing | 0 | | 95 | % |

DC Power and D-Connector

| Pin | Description | Pin | Description | Pin | Description |
|-----|---------------------------------|-----|-------------|-----|-------------|
| 1 | +15 V _{DC} @ 400mA max | 4 | Ground | 7 | Ground |
| 2 | Ground | 5 | NC | 8 | Ground |
| 3 | NC | 6 | NC | 9 | NC |

Mechanical Dimensions

