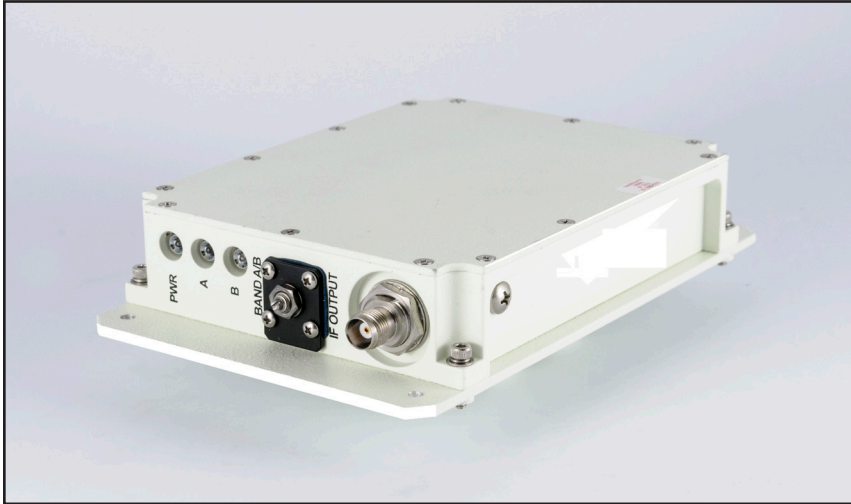


microwave photonic systems

MP-6250 Series Ku-Band RF Fiber Optic Link

Ku-Band Fiber Optic Link



Applications:

- SATCOM IFL Ground Terminal
- Shipboard SATCOM Installations
- Antenna Remoting
- General Purpose RF Distribution
- Microwave Delay Lines

Features:

- RF Instantaneous Bandwidth: 6 GHz
- SFDR : $> 105 \text{ dB} \cdot \text{Hz}^{(2/3)}$
- AGC or MGC Mode
- Input & Output Power Monitoring
- LNA Powering (option)
- AC or DC Input Power (option)
- $> 100 \text{ km}$ Extended Range (option)

Ku-Band Fiber Optic Subsystem Hardware Supports Multiple Deployment Concepts

The MP-6250 Ku-Band RF fiber optic interfacility link (IFL) subsystem provides exceptional gain flatness and phase linearity performance over a 6 GHz instantaneous bandwidth covering the Ku Uplink and Downlink frequencies from 10 to 16 GHz.

The MP-6250 subsystem is part of an integrated earth terminal design intended to receive and distribute wideband SATCOM traffic using single mode fiber optic cabling over distances of up to 100 km.

The MP-6250 utilizes field proven RF optical conversion techniques that are transparent to the various earth terminal modulation techniques and their corresponding data rates. The RF performance of the subsystem is optimized to provide a Spur Free Dynamic Range (SFDR) in excess of $105 \text{ dB} \cdot \text{Hz}^{(2/3)}$ over a broad range of optical loss budgets.

The MP-6250 embedded monitoring capability supports remote control of system parameters such as AGC enable/disable, Manual Gain Control (MGC) set point, and the monitoring of health parameters such as optical power, bias currents, and internal temperature.

The MP-6250 series can be packaged in various form factors including a 1RU x 19" rack chassis, 4RU x 19" high-density plug-in card chassis, rugged outdoor enclosures, and a compact flange mount unit.

Information: Call us toll-free at 888-868-8967 or email info@b2bphotonics.com.



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MP-6250 Series Ku-Band RF Fiber Optic Link

Ku-Band Fiber Optic Interfacility Link

Specifications

RF Link Performance Specifications; Ku-Band

| | |
|----------------------------------|--|
| Frequency Response | 10.0 to 16.0 GHz |
| Downlink | 10.70 to 12.75 GHz |
| Uplink | 13.75 to 14.50 GHz |
| RF Link Gain (typ) | 10 dB |
| Gain Flatness (max) | ± 1 dB peak to peak |
| Noise Figure | 20 dB typical, 23 dB maximum (with 2 dBo optic loss) |
| Group Delay Variation | ± 0.1 ns peak to peak |
| Input 1dB Compression (IP1 dB) | 0 dBm (min) |
| Third Order Intercept (IIP3) | 7 dBm (typ) |
| Carrier to Intermodulation Ratio | -64 dBm (typ) with two -25dBm input tones, -62.5 dBm (min) |
| Gain Stability | ±0.25 dB per 24 hours at constant temperature |
| VSWR (max) | 1.3:1 maximum |
| RF Impedance | 50 ohms |
| Phase Noise | -100 dBc/Hz typical at 100 Hz offset |
| Spur Free Dynamic Range | 105 dB minimum at 1 Hz bandwidth |
| Maximum RF Input Non-Damage | +13 dBm |

Optical Specifications:

| | |
|-------------------------------------|---|
| Operating Wavelength | 1310 nm ± 2 nm, 1550 nm ± 2 nm or DWDM Bands |
| Single Side-Mode Suppression Ration | > 30 dB |
| Optical Fiber Type | Single Mode Fiber |
| Optical Interface | FC/APC or Mil-Circular depending on form factor |
| Output Power (typ) | +8 dBm |

General Specifications:

| | |
|-----------------------|---|
| Power Supply | AC or DC Power Options |
| Power | 4 pin circular or DB-15 (harsh environment) |
| RF Ports | SMA(F) |
| Alarm Monitoring | Local LEDs and Remote RS-232/485 Interface |
| Operating Temperature | -20°C to +65°C |
| Storage Temperature | -40°C to +85°C |

Available Form Factors

| |
|---|
| Outdoor Harsh Environment NEMA Enclosure |
| Outdoor Harsh Environment Flange Mount |
| - Case Type 1: 5.00" x 2.50" x 1.125" |
| - Case Type 2: 7.75" x 5.00" x 1.48" |
| Indoor 19" x 1RU Rack Mount Chassis, 4 x Plug-In Capacity |
| Indoor 19" x 4RU Rack Mount Chassis, 9 x Plug-In Capacity |

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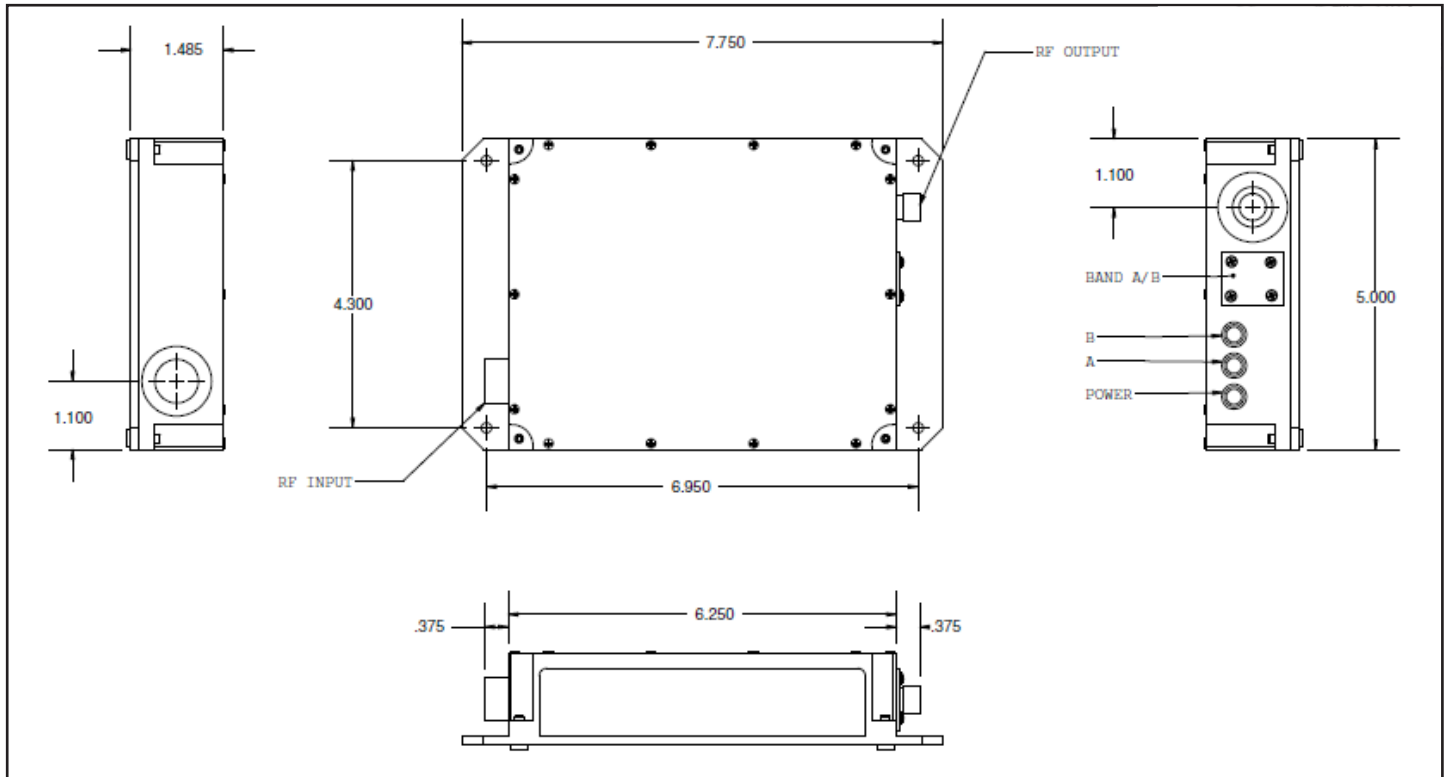
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MP-6250 Series Ku-Band RF Fiber Optic Link

Outdoor Rated Flange Mount - Case Type 2 Dimensions



Example Link Functional Block Diagram

