

# microwave photonic systems

OFW-7820 Series C/X-Band Fiber Optic Link - Uplink Optimized

## C/X-Band Fiber Optic Link: Uplink



## Uplink Optimized, 6-10 GHz, C/X-Band Fiber Optic Subsystem with RF AGC Option

The OFW-7820 C/X-Band fiber optic interfacility link (IFL) subsystem provides exceptional gain flatness and phase linearity performance over a 4 GHz instantaneous bandwidth, centered within the X-Band frequency range.

The OFW-7820 subsystem is part of an integrated earth terminal design intended to transmit and broadcast C/X-Band signal traffic using single mode fiber optic cabling over distances of up to 100 km. These signals can either be direct X-Band SATCOM or IF frequencies being upconverted into the Ka-Band spectrum.

The OFW-7820 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  $110 \text{ dB*Hz}^{(2/3)}$  over a broad range of optical loss budgets.

The OFW-7820 embedded Ethernet 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 OFW-7820 series can be packaged in various styles of 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](mailto:info@b2bphotonics.com).

### Applications:

- C/X-Band SATCOM IFL Terminals
- Ka-Band Upconverter IF Transport
- Shipboard SATCOM Installations
- Antenna Remoting
- General Purpose RF Distribution
- Microwave Delay Lines

### Features:

- RF Instantaneous Bandwidth: 4 GHz
- SFDR :  $> 110 \text{ dB*Hz}^{(2/3)}$
- Input & Output Power Monitoring
- AGC or MGC Mode (option)
- $> 100 \text{ km}$  Extended Range (option)



19" x 1RU Rack Mount  
Multi-Channel Enclosure

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## Specifications

### RF Specifications

Frequency Response	6.0 GHz to 10.0 GHz
RF Link Gain (nom)	0 dB, $\pm 1.0$ dB
Gain Flatness (max)	$\pm 0.5$ dB over any 4.0 GHz span
Phase Linearity (max)	Parabolic: 7° Cubic: 7° Ripple: 7° peak to peak
VSWR (max)	1.5:1
Noise Figure (min/max)	22 dB w/ 4.0 dBo optical loss budget (min)
P1dB, Input (min)	0.0 dBm
IP3, Input (min/max)	13dBm
Spur Free Dynamic Range (typ)	110 dB*Hz <sup>(2/3)</sup>

### Optical Specifications:

Operating Wavelength	1310 nm $\pm$ 2 nm, 1550 nm $\pm$ 2 nm or DWDM Bands
Optical Fiber Type	Single Mode Fiber
Optical Interface	FC/APC or Customer Specified
Output Power (typ)	+8 dBm

### General Specifications:

Power Supply	Universal AC, Auto Ranging Input
AC Receptacle	IEC 320
RF Input / Output Port	SMA(F) or Customer Specified
Operating Temperature	-20°C to +65°C
Storage Temperature	-40°C to +85°C
Local Alarm Status	Front Panel LEDs and Dual Line VFD with Keypad
Remote Alarm Status	Ethernet Command Line Interface or SNMP V.2

Note: All Specifications Can Be Tailored To Customer Requirements, Contact MPS To Discuss Performance Trade-offs

