

- *Broadband Transmission – 70/140 MHz*
- *Flat frequency response from 10 to 200 MHz*
- *Protocol Transparent – transmits all video, audio and data modulation formats*
- *Transmission distances ranging from 100m to 50km*
- *Gain Control, Indicators, Alarms and Monitors*
- *Single or Multi Channel up or downlink transmission*
- *Interface with M & C Systems for remote signal monitoring*



## ***IF Fiberoptic Interfacility Links***

**Foxcom's** Sat-Light IF interfacility links (IFLs) offer a high performance, cost effective alternative to conventional coaxial-cabled systems. Sat-Light's IFLs cover the range of 10 to 200 MHz. They are used for the transmission over single mode fiber optic cable of modulated outputs received from modems or up/downconverters. Inputs of 70 or 140 MHz require no modifications or adjustments.

The Sat-Light IFLs function as a transparent link between the satellite antenna and the Network Operations Center (NOC) or control room. System limitations in using coaxial cable are overcome by the simplicity and performance of fiberoptic connections to provide the highest levels in signal quality.

Sat-Light IFLs consist of an optical transmitter, which receives the RF signal from a modem, transceiver, or down converter, and an optical receiver that connects to an upconverter, modem, or transceiver. All satellite modulation schemes are accommodated digital or analog. Format independence is achieved by inherently low phase noise. The RF signal is converted at the transmitter to an optical signal by direct modulation of a semiconductor laser diode. At the receive end, the optical signal is converted back to an RF signal by a photodiode.

All units are available as outdoor units (ODUs), capable of operating in extreme conditions. For more information regarding the IF ODUs, contact Foxcom.

## IF Fiberoptic Interfacility Links

Foxcom offers a wide range of products to meet all your specific satcom needs. Short distance downlink applications can be achieved using our cost effective isolated Fabry Perot products while professional and more demanding long distance or multi-carrier applications can be met using our high dynamic range DFB Lasers delivering excellent signal quality even under varying conditions.

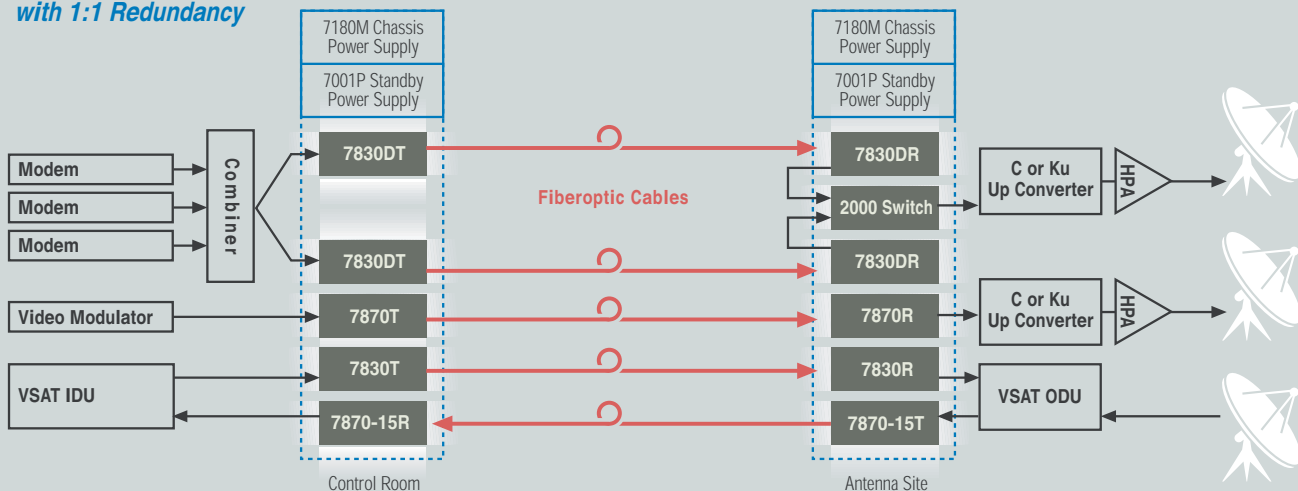
Product options include Automatic and Manual Gain Control. Automatic Gain Control (AGC) at the transmitter site sets and maintains optimum operation over a wide range of input signal levels. At the receiver site AGC maintains the RF level regardless of optical power or distance from transmission site. Alternatively, Manual Gain Control (MGC) at the transmitter site allows the system operator to maintain optimum operation over a wide range of input signal levels on the transmitter site and RF output level on the receiver site.

Front panel RF test ports, LEDs, back panel monitors and alarms allow for complete status system monitoring and for interfacing with M&C systems.

The Sat-Light system consists of compact modules that plug into a 19" wide 3U chassis/power supply. The chassis allows accommodation of up to 8 Sat-Light modules in addition to main and standby power supplies. Standalone versions are also available.

Accessories are available for the Sat-Light IFLs to accommodate the wide variety of system design preferences in use.

### Typical IF-Band Application with 1:1 Redundancy



### IF Interfacility Links

Model	Application	Frequency	Optical Budget	Gain Control	Laser
7830	Short Distance, Single Channel Video	10-200 MHz	3 dB / 2 Km	Manual (Rx Only)	Isolated FP
7830D	Short Distance, Multi-Channel	10-200 MHz	3 dB / 2 Km	Manual (Rx only)	DFB
7870	High Dynamic Range, Multi Channel	10-200 MHz	16 dB / 40 Km	Manual (Rx only)	DFB
7310/7310D	Short Distance Broadband	10-2200 MHz	3 dB / 2 Km (7310) 8 dB / 15 km (7310D)	Manual	FP/DFB

## 7830

The 7830 Link transmits an IF signal over singlemode fiber from a satellite modem to satellite antenna equipment up to 2 kilometers away. This cost effective link is intended primarily for single video channel uplinking delivering exceptional signal quality independent of distance. The 7830 IFL has a high power input (-25 to -5 dBm).

## 7830D

This high performance IF link is intended primarily for multi-channel uplinking delivering exceptional signal quality. The 7830D IFL has wide dynamic range DFB laser allows for high input and output levels. The 7830D Link transmits an IF signal over singlemode fiber from a satellite modem to satellite antenna equipment up to 2 kilometers away. The 7830 IFL comes in two modes: high gain (HG option) and low gain (LG option)

## 7870

The 7870 Fiberoptic IFL is the first product to be released in the new generation of high performance 7800 series of IF fiberoptic links. The 7870 IFL is designed and optimized for high density/multi-channel short to medium distance applications (up to 15 kms) with high input/output power levels. Alternatively the IFL can transmit at the 1550 nm window, allowing ultra-long distance transmission of IF signals.

## 7310

The 7310 is a broadband transmission link, operating from 10 - 2200 MHz. The 7310 wideband IFL is designed for a wide range of antenna remoting applications, wireless or satellite. The 7310 operates over singlemode fiber covering distances of up to 2 kilometers.

The 7310 can be equipped with a Fabry-Perot laser, for single channel transmission. Alternatively the 7310D uses a DFB laser, allowing multi-channel transmissions.

### RF Characteristics

	7830	7830D	7870	7310
<b>Frequency Range</b>	10-200 MHz	10-200 MHz	10-200 MHz	10-2200 MHz
<b>Flatness</b>	± 0.25 dB @ 36 MHz ± 0.5 dB @ full band	± 0.25 dB @ 36 MHz ± 0.4 dB @ full band	± 0.2 dB @ 36 MHz ± 0.4 dB @ full band	± 1.0 dB @ 100 - 1500 Hz ± 2.0 dB @ full band
<b>VSWR (75 Ohm)</b>	1.3	1.3	1.3	1.6
<b>CNR (min)<sup>1</sup></b>	60 dB @ 1 MHz /3 Km	65 dB @ 1MHz /3 Km	62 dB @ 1 MHz /10 Km	55 dB @ 4 MHz BW (7310) <sup>7</sup>
<b>Input Signal (max)</b>	-5 dBm	-5 dBm / -20 dBm	-5 dBm <sup>4</sup>	0 dBm
<b>Output Signal (max)</b>	-5 dBm	-5 dBm / - 20 dBm	-5 dBm	0 dBm
<b>Gain Stability<sup>3</sup></b>	± 0.25 dB @ 24 hours	± 0.25 dB @ 24 hours	± 0.25 dB @ 24 hours	± 0.25 dB @ 24 hours
<b>Receiver Gain Range<sup>6</sup></b>	± 10 dB	± 10 dB	± 10 dB	± 10 dB (Link gain)
<b>OIP3<sup>1</sup></b>	+18 dBm	+18 dBm	+20 dBm	+20 dBm
<b>Noise Figure (typical)</b>	32 dB <sup>2</sup>	20 dB	38 dB <sup>5</sup>	28 dB <sup>8</sup>
<b>Group Delay</b>	<1 ns (20-200 MHz)	< 1 ns (20-200 MHz)	< 1 ns (20-200 MHz)	< 1 ns (20-200 MHz)
<b>SFDR</b>	107 dB/Hz <sup>2/3</sup> @ -5 dBm Output (typ) <sup>1</sup>	112 dB/Hz <sup>2/3</sup> /108 dB/Hz <sup>2/3</sup> @ -5 dBm / -20 dBm (typ)	103 dB/Hz <sup>2/3</sup> @ -5 dBm Output (typ) <sup>5</sup>	_____

1 @ Maximum Input Power

3 @ Constant Temperature

5 @ -15 dBm input @ 1dB optical loss 7 65 dB @ in a 1 MHz BW @ 0 dBm

2 @ Maximum Input @ 1 dB Optical Loss @ Unity Gain

4 Low power option (-20 dBm max.) available

6 Within the operating range 8 @ -10 dBm input

### Optical Characteristics

	7830	7830D	7870	7310/7310D
<b>Optical Wavelength</b>	1310 nm ± 10 nm	1310 nm ± 10 nm	1310 nm ± 10 nm	1310 nm ± 10 nm
<b>Optical Power Output</b>	-3 dBm (min)	+3 dBm (min)	+3 dBm (min)	-3 dBm/+3 dBm (min)
<b>Optical Connector</b>	FC/APC	FC/APC	FC/APC	FC/APC
<b>Optical Budget</b>	3 dB / 2 Km *	3 dB / 2 Km *	16 dB / 40 Km *	6 dB / 10 Km *

\*1310: 0.4 dB/Km Fiber Only , 1550: 0.27 dB/Km Fiber Only

