

18GHz RF over Fiber



Key Features:

- Frequency Range: 0.1-18GHz
- Best Cost Performance
- Communications: RS232

Configurations:

- RFoF Tx-Rx modules
- 1U Generic enclosure (4 units)
- Outdoor enclosure (2 units)

Applications:

- Remote Antenna
- Satcom
- Radio telescopes
- Telecommunication:
 - Antenna Remoting
 - Long RF links via fiber
- Optical Delay Line

Options:

- Various RF Gains, P1dB, Noise Figure by adding amplifier(s)
- Can be housed in indoor 1U 19" or outdoor enclosures

RFOptic's analog RFoF compact modules convert RF signals to optical signals and back. The Tx unit using an optical transmitter converts RF to Optical signal, and the Rx unit converts Optical to RF signal. The two units are connected by the customer's fiber.

RFOptic's RF over Fiber modules (RFoF) are suitable for telecommunications and radar applications. Satellite, Point-to-Point antennas can be connected from several meters to many kilometers away from the control room. Base stations can be connected through fiber to remote sector antennas.

Broadcasters can easily distribute their full RF streams over fiber to remote locations, therefore eliminating the need for complex equipment to be installed in far and hard to reach locations. With our wide-band units, cable operators can centrally locate their broadcasting equipment, and connect the RF through fiber to the remote location, thus reducing significantly the CAPEX and OPEX of their networks.

Ordering Information

RFoF-18G-MINI	Transceiver 18 GHz
RFoF-18G-Mini-P	Transceiver 18 GHz, with 36 dB Post-Amp & -5 dB Gain
RFoF-18G-Mini-Pre	Transceiver 18 GHz, with 17 dB Pre-Amp

RFoF-18GHz Specifications:

RF Parameter RF TX-Rx Link	Unit	Specification typical
Frequency Range	GHz	0.1 - 18
RF Gain ^[1]	dB	-35
Gain Flatness ^[2]	dB	±2.5
1dB Input compression point ^[1]	dBm	≥15
Maximum RF input level	dB	23
VSWR	-	2:1
Noise Figure ^[1]	dB	42
Spurious	dBc	<-80
Phase Noise at 10KHz offset	dBc/Hz	<-100
Input / Output impedance	Ohm	50
Optical and Electrical and Environmental (Tx, Rx)		
Laser diode operating wavelength	µm	1.55
Laser diode operating output power (CW) ^[4]	mW	20
Receiver photodiode operating wavelength	µm	1.20 -1.65
Operating temperature range	°C	-10 to +60
Storage temperature	°C	-40 to +85
LED status indicators (Tx/Rx)	-	Green/Red

[1] Excluding customer's fiber loss. Gain, Noise Figure, P1db can be changed by adding pre/post amplifiers

[2] Additional ±0.5 dB deviation is considered within spec

[3] Excluding in-band harmonics

Mechanical (Tx and Rx)

Parameter	RFoF-18GHz Mini	RFoF-18G-Mini-P	RFoF-18G-Mini-Pre
RF Input / Output connectors	SMA	SMA	SMA
Dimensions (mm) L*W*H	100*150*33	100*150*33	Tx 150*215*33 Rx -100*150*33
Optical Connector	FC/APC	FC/APC	FC/APC
Power Connector	DB9	DB9	DB9
Power	5 VDC	5 VDC	5 VDC
Data Connector	DB9	DB9	DB9

RFoF 18GHz module options:

Parameter	Transceivers (Tx/Rx)		
	RFpF-18G-Mini	RFoF-18G-Mini-P	RFoF-18G-Mini-Pre
P/N			
Description	Transceiver 18 GHz	Transceiver 18 GHz, with 36 dB Post-Amp *	Transceiver 18 GHz, with 17 dB Pre-Amp
Gain	-35	0	-18
P1dB	15	15	2
NF	43	43	27
SFRD	104	104	104

* RFoF-18G-Mini-P & RFoF-18G-Mini-Pre operate between 1-18 GHz