

RFoF- 40GHz Transceiver



1U Enclosure for RFoF 40GHz

Outdoor Enclosure for RFoF 40GHz



Applications:	Key features:	Options:
Satcom	Frequency Range: 1-40GHz	Various RF Gains, P1dB, Noise Figure by adding amplifiers
EW	Best Cost Performance	Electrical interface and dimensions can be tailored per customer request
Radio Telescopes	High P1dB ≥ 13 dBm	Unidirectional or Bidirectional enclosure
Distributed Antenna	Communications: RS232	
Telecommunication: <ul style="list-style-type: none"> ▪ Antenna Remoting ▪ Long RF links via fiber 	Excellent Gain Flatness Excellent Phase Noise	

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 wideband 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.

Table below describes the typical specifications of the RFoF-40GHz Transceiver

Parameter	Unit	Specifications
RF Tx-Rx link		
Frequency Range	GHz	1-40
RF Gain ^{1,4}	dB	-44
Gain Flatness ² 1-40 GHz	dB	≤ ±4
Gain Flatness ² for any 10 GHz bandwidth	dB	≤ ±1.5
1dB Input compression point ⁴	dBm	≥ 13
SFDR (calculated) ³	dB/Hz ^{2/3}	≥ 100
Maximum RF input level	dBm	23
VSWR I/O	-	2.2:1
Noise Figure with pre amp. ^{1,4} at 20GHz	dB	≤30
Noise Figure ^{1,4} at 35GHz	dB	≤44
P1dB	dBm	~13
Spurious	dBc	≤ -80
Phase Noise ^{1,4} at 10KHz offset at 20GHz]	dBc/Hz	≤ -100
Input / Output impedance	Ohm	50
Optical and Electrical and Environmental (Tx, Rx)		
Laser diode operating wavelength	µm	1.55
Receiver Photodiode operating wavelength	µm	1.48 – 1.62
Operating temperature range	°C	0 to 75
Storage Temperature range	°C	-40 to +85
Communication	-	RS 232
LED status indicators (Tx/Rx)	-	Green
Mechanical (Tx, Rx)		

Parameter	RFoF-40GHz Mini	RFoF-40GHz 1U	RFoF-40GHz Outdoor
Dimensions (mm)	TBD	350(L)*445(W)*44(H)	330(W)*335(L)*80(H)
RF Input / Output connectors	2.92mm (F)	2.92mm (F)	N Type
Optical Connector	FC/APC	FC/APC	Radiall OPUS.117.200.1420
Power Connector	DB9	HP Socket	Circular male 5 pins
Power	5 VDC	110/220 VAC	5 VDC *
Data Connector	DB9	DB9	Circular male 7 pins

*Other DC or AC voltage is available upon request.

1. Excluding customer's fiber loss
2. Additional ±0.5 dB deviation is considered within specifications.
3. Excluding in-band harmonics.
4. Can be customized per customer request by adding pre amplifier