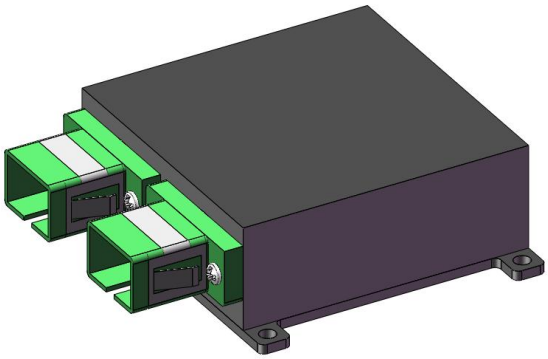
RFoF-RT (30MHz & 5KHz~12GHz)

Microwave-over-Fiber Extension Module with Wavelength Conversion

PRODUCT DESCRIPTION

The RFoF series delivers high-performance, cost-effective solutions for Wideband RF signal transmission over fiber. Designed to meet the demands of diverse application scenarios, these modules enable low-loss, high-linearity analog transport across extended distances.Leveraging expertise in microwave photonics, the company is committed to close collaboration with telecom operators, system integrators, and solution partners to jointly develop advanced RFoF products and customized solutions for evolving industry needs.



The RFoF-RT is a Wideband RF-over-fiber transceiver module supporting frequencies up to 12 GHz. It enables high-fidelity analog RF signal extension over fiber without requiring an optical amplifier (EDFA), and offers integrated wavelength conversion to standard channels such as 1550 nm for compatibility with WDM systems.By overcoming the distance and bandwidth limitations of coaxial cables, the RFoF-RT significantly enhances signal integrity, linearity, and system reliability. It is ideally suited for satellite communications, Beidou/GPS signal distribution, remote and distributed antenna systems, and long-haul analog RF transmission applications.

PRODUCT FEATURES

- Compact form factor and ultra-low power consumption
- High-linearity PIN photodiode with low noise figure
- DFB laser supporting direct modulation with high spurious-free dynamic range (SFDR)
- Supports analog signal bandwidths from 30 MHz up to 12 GHz (optional 20 GHz upon request)
- No need for EDFA (Erbium-Doped Fiber Amplifier) for optical power gain
- Seamless wavelength conversion without RF performance degradation
- Outstanding price-to-performance ratio

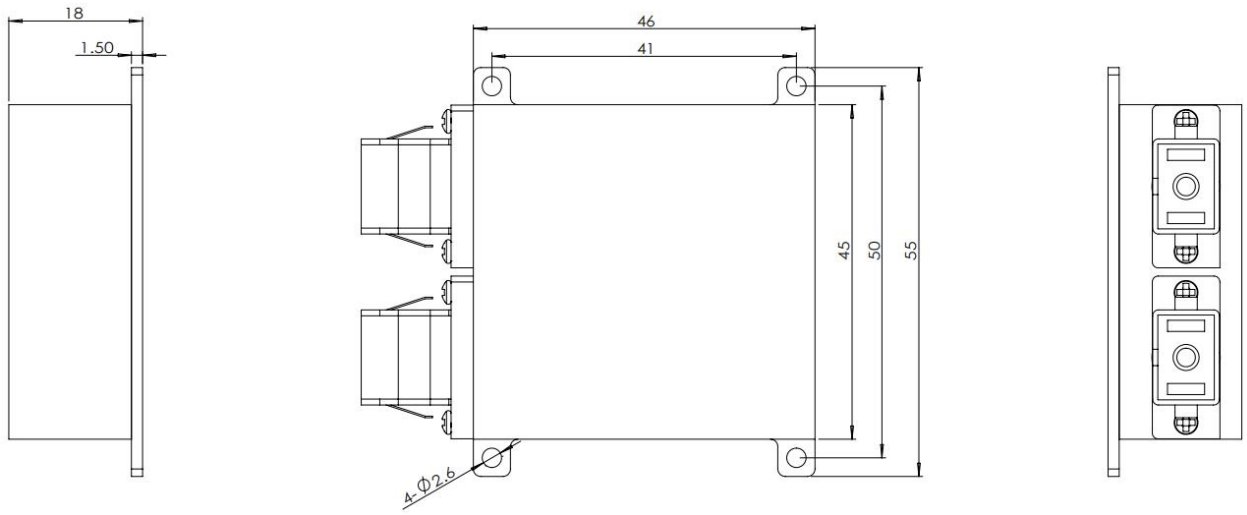
MAIN APPLICATION

- Secure and encrypted RF communication
- OFDM and SDR (Software Defined Radio) optical transport
- Satellite ground station uplink/downlink
- Military radar and telemetry systems
- 4G/5G/WiMAX optical repeaters in tunnels and remote areas
- Long-haul analog RF links and GNSS repeater systems

TECHNICAL INDEX

Performance			Index			Supplement
			Min.	Typ.	Max.	
Optical Feature	RX Operating Wavelength Range	(nm)	1270		1610	
	TX Working Wavelength	(nm)		1550		Can Connect to EDFA
				xxxx		CWDM wavelength
	RX Input Optical Power Range	(dBm)	-12		+3	Analog Signal
	TX Output Optical Power	(dBm)		6		Optional 10 dBm
	Output Optical Isolation	(dB)	30			
	Input and Output Fiber Optic		LC/APC			Optional SC/APC
	Input and Output Reflection Losses	(dB)		55		APC
RF Feature	-3dB Minimum Cutoff Frequency	(MHz)	30			General
		(KHz)		5		Customized
	-3dB Maximum Cut-Off Frequency	(GHz)		1.0		RT01
				3.0		RT03
				6.0		RT06
				10.0		RT10
				12.0		RT12
	In-band Flatness(FL)	(dB)		±0.5	±0.75	RT01
				±1.0	±1.5	RT03
				±1.5	±2.2	RT06
				±2.2	±2.8	RT10~12
	SFDR			110@6GHz		
General Feature	Supply Voltage（DC）	(V)		+12		
	Working Current	(mA)		700		
	Operation Temperature	(℃)	-20		+65	
	Storage Temperature	(℃)	-40		+85	
	Relative Humidity	(%)	5		95	
	Dimensions（WxDxH）	(mm)	46x55x18			

DIMENSION



MODEL EXPLANATION

RFoF - RT □□ / □ - R□□□□ - T□□□□ - □□ - □□

Product Series	Product Type		Maximum Frequency		Minimum Frequency		RX Wavelength		TX Wavelength		Output Optical Power		Fiber Connector	
RF Fiber Optic Link Products	RT	Optical amplifier and wavelength conversion	01	1GH	G	30MHz	1216	1270~1610nm	1550	1550nm	06	6dBm	LA	LC/APC
			03	3GH	M	1MHz			1310	1310nm	10	10dBm	SA	SC/APC
	TX	Optical transmitter	06	6GH	L	5KHz			XXXX	CWDM			FA	FC/APC
	RX	Optical receiver	10	10GH										
	TR	Integrated receiver and transmitter	12	12GH										