

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

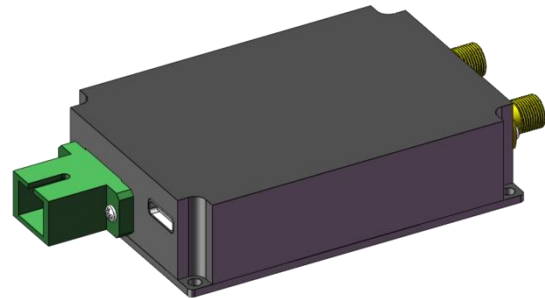
Bidirectional RF over Fiber Transceiver Module

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-TR is a compact bidirectional transceiver module supporting up to 12 GHz bandwidth. It integrates a high-linearity DFB laser and PIN photodiode for direct modulation and detection of analog RF signals. The module supports

CWDM-based single-fiber bidirectional transmission, as well as dual-fiber configurations for flexibility. By replacing lossy coaxial cables, the system ensures high signal integrity, low noise, and extended transmission distance, making it ideal for applications such as satellite communications, GNSS signal relay, distributed antenna systems, and microwave photonics.



PRODUCT FEATURES

- ▶ CWDM-based single-fiber full-duplex transmission for reduced cabling and enhanced system efficiency
- ▶ Integrated high-linearity DFB laser for low-distortion analog signal modulation
- ▶ Compact, ruggedized form factor with low power consumption
- ▶ Supports wideband operation up to 12 GHz (20 GHz optional)
- ▶ High cost-performance ratio for scalable system deployment

MAIN APPLICATION

- ▶ Secure and encrypted RF communication
- ▶ GNSS signal distribution (Beidou/GPS)
- ▶ Satellite uplink/downlink via analog optical link
- ▶ Distributed Antenna Systems (DAS) for telecom networks
- ▶ Wideband RF transport in microwave photonics systems
- ▶ Optical repeaters for tunnels and remote environments

TECHNICAL INDEX

Performance				Index			Supplement	
				Min.	Typ.	Max.		
Optical Feature	TX	Working Wavelength	(nm)	1270	1310/1550	1610	CWDM Optional	
		Output Optical Power	(dBm)		6		Optional 10.0 dBm	
		Side Mode Suppression Ratio (SMSR)	(dB)		45			
		Output Optical Isolation (ISO)	(dB)	30				
	RX	Receiving wavelength range	(nm)	1270		1610		
		Receive specific wavelengths	(nm)		xxxx		Built-in CWDM	
		Input optical power range	(dBm)	-12		+3	Simulate	
		Responsiveness	(A/W)	0.85				
	Light Reflection Loss	(dB)	50	55			APC	
	Fiber Connector				LC/APC		FC/APC,SC/APC Optional	
RF Feature	-3dB Minimum Cutoff Frequency	(MHz)	30				General	
		(KHz)		5			Customized	
	-3dB Maximum Cut-Off Frequency	(GHz)			1.0			TR01
					3.0			TR03
					6.0			TR06
					10.0			TR10
					12.0			TR12
	In-Band Flatness(FL)	(dB)			±0.5	±0.75		TR01
					±1.0	±1.5		TR03
					±1.5	±2.0		TR06
					±2.0	±2.5		TR10~12
	RF Return Loss	(dB)			-16	-12		TR01
					-12	-10		TR03
					-10	-7		TR06
					-10	-5		TR10~12
	SFDR				110@6GHz			
RF Input Power (TX)	(dBm)	-5		+5				
RF Output Power (RX)	(dBm)		+5					
RF Working Impedance	(Ω)		50					
RF Connector				SMA-F				
General Feature	Supply Voltage (DC)	(V)		+12				
	Working Current	(mA)		500				
	Operation Temperature	(°C)	-20		+75			
	Storage Temperature	(°C)	-40		+85			
	Relative Humidity	(%)	5		95			

