Fiber Optical Receiver

1 - 2500MHz, Analog/Digital, RF-over-Fiber Tx/Rx Pair with RF Fiber Break

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The RFOF Transmitter (Tx) and Receiver (Rx) pair is engineered to transmit analog or digital RF signals over optical fiber, providing a secure and reliable link between two short-distance locations. Designed for high-security applications, this system ensures low-loss, high-fidelity signal transport while maintaining signal integrity. An optional RF Fiber Break configuration is available, enabling unidirectional RF transmission over a single fiber link. This feature prevents signals from being passed in the return direction, ensuring one-way communication for enhanced security and isolation, often required in military and critical infrastructure applications. This series of RFOF links covers a wide frequency range from 5 MHz to 2.5 GHz, featuring an exceptionally flat frequency response for both analog and digital signals. The system is designed for plug-and-play operation, with compact units that include a wall pluggable power supply for easy deployment and minimal setup time.

Features

- Excellent Linearity and Flatness
- 45 -1000MHz Working Bandwidth
- Wide Range of Optical Input Power
- Single-Mode Fiber
- Ultra Low Noise Technology
- Smaller Size and Easy to Install
- Built-In Filter
- Low Power Loss Design

Applications

- FTTH (Fiber To The Home) Networks

Specifications (Receiver)

Parameter		Min	Typical	Max	Unit
Operating wavelength		1100		1600	nm
Optical input power range	Analog	0		10	dBm
	Digital	0		15	
Frequency range		DC		2.5	GHz
Output level		60		80	BæV
Flatness			±1		dB
Slope			5 ± 2		dB
Return loss			16		dB
Noise figure			47.5		dB
CTB			≥ 65		dB
CSO			≥ 65		dB
MER			38		dB
Power Consumption			≥ 0.6		W
Test Conditions		60 CH (PAL-D), Pin -6dBm, 1 EDFA with noise figure 5dB, 25Km, Composite OMI 18.5%			
Output impedance			75		Ω
RF connector			F (female)		
Responsibility (@ 1550nm)			≥ 0.9		A/W
Optical Return Loss			≥ 55		dB

Note: The specifications provided are for general applications with a cost-effective approach. If you need to narrow or expand the tolerance, coverage, limit, or qualifications, please [click this link]:

Rev 03/14/25

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Mechanical Dimensions (mm)

*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

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Ordering Information

	☐☐☐	☐	☐	☐	☐	☐	☐
Prefix	**RF Frequency**	**Wavelength**	**TX/RX**	**Package**	**Directional ***	**RF Fiber Breaker**	**Fiber Connector**
RFOF-	2.5GHz = 025 1GHz = 010 Special = 000	1550 nm = 1 1310 nm = 3 1490 nm = 4 Special = 0	Receiver = 1 Pair = 3	Module = 1 Rack = 2 Special = 0	Monodirectional = 1 Bidirectional = 2	Non = 1 Yes = 2	SC/UPC = 4 FC/APC = 2 FC/UPC = 3 SC/UPC = 5 LC/APC = A LC/UPC = U Special = 0

Note:

* Bidirectional means two-way communications via a single fiber link. The price is double since it comprises two pairs of transceivers and receivers with WDM (different wavelength) or circulator (same wavelength) cable jumpers.

Red marked -- Special order

Application Notes

Fiber Core Alignment

Note that the minimum attenuation for these devices depends on excellent core-to-core alignment when the connectors are mated. This is crucial for shorter wavelengths with smaller fiber core diameters that can increase the loss of many decibels above the specification if they are not perfectly aligned. Different vendors' connectors may not mate well with each other, especially for angled APC.

Fiber Cleanliness

Fibers with smaller core diameters (<5 μm) must be kept extremely clean, contamination at fiber-fiber interfaces, combined with the high optical power density, can lead to significant optical damage. This type of damage usually requires re-polishing or replacement of the connector.

Maximum Optical Input Power

Due to their small fiber core diameters for short wavelength and high photon energies, the damage thresholds for device is substantially reduced than the common 1550nm fiber. To avoid damage to the exposed fiber end faces and internal components, the optical input power should never exceed 20 mW for wavelengths shorter 650nm. We produce a special version to increase the how handling by expanding the core side at the fiber ends.