High-Speed Fiber-Coupled InGaAs Amplified Detectors 18GHz

(1 to 18GHz, SM28 Fiber)

DATASHEET

BUY NOW

This series of RF Over Fiber Link transmits and receives both analog and digital RF signals with a wide bandwidth of 1 to 18 GHz over an optical fiber link. It converts an input electrical RF signal into an optical signal via a high linearity DFB laser (transmitter) and re-converts the optical signal back into the RF signal at the other end of the fiber link via a high linearity photodiode and low noise amplifier (receiver). The transmitter and receiver pair form a transceiver that provides a transparent data transmission channel. They are available in wavelengths of 1310nm, 1490nm, and 1550nm, providing a versatile wavelength division multiplexing (WDM) capability. For example, bidirectional RF communication can be established with a single fiber link using two different wavelength transceivers and matching WDM cable adaptors. Another example is that three communication channels can be transmitted through a single fiber link by combining three transceivers of different wavelengths with our WDM cable adaptors. The module is packaged in a ruggedized aluminum case.

Features

- 1 to 18GHz
- SM28 Fiber
- Low Loss
- Low Cost
- Stable

Applications

- GSM Repeater
- CDMA Repeater
- WCDMA Repeater
- PHS Repeater
- Digital TV Repeater
- Broadcast Repeater

Specifications

Parameter	Min	Typical	Max	Unit
Optical Wavelength	1310 ± 20	1490 ± 20	1550 ± 20	nm
Optical Input Power	-16		-6	dBm
RF Frequency Range	1		18	GHz
Gain Flatness (p-p)		3	4	dB
RF Output Power	-30		-10	dBm
Input RF Return Loss		18		dB
RF Input Power	-45	-40	-30	dBm
Spurious Free Dynamic Range	100			$dBm/H^{2/3}$
Noise Figure			12	dB
Link Gain		0		dB
CNR	35			dB
Fiber Type		SM28		
Fiber Connector Type		SC/APC		
RF Impedance		50		Ω
RF Connector		BNC		
Power Consumption	3			W
Weight	0.5			kg
Operating Temperature	-20		50	°C
Storage Temperature	-45		85	°C

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]:

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Dimensions (Unit: mm)

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

Electrical/Computer Connection

Ordering Information

	☐☐☐	☐	☐	☐	☐	☐
Prefix	**RF Frequency**	**Wavelength**	**TX/RX**	**Package**	**Bidirectional ***	**Fiber Connector**
RFOF-	18GHz = 18G Special = 000	1550 nm = 1 1310 nm = 3 1490 nm = 4 Special = 0	Receiver = 1 Pair = 3	Module = 1 Rack = 2 Special = 0	None = 1 Yes = 2 Special = 0	FC/APC = 2 FC/UPC = 3 SC/APC = 4 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

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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.

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