

RF/Microwave Ultra-Broadband Matrix Switch

(1MHz to 50GHz, lossless, low power consumption, small size/weight)



DATASHEET

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The RFOF is designed to form an RF link between two points using fiber optical cables. It features immunity to interferences, high bandwidth, low signal loss over long distances, low signal distortion, low power consumption, high reliability, and is easy to implement. It converts an input RF electrical signal into an optical signal via an electro-optical modulator coupled with a 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 integrated with low noise amplifier (receiver). The transmitter and receiver pair form a transceiver that provides a transparent data transmission channel. They are available in wavelengths 1550nm C-band, 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 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 rack mount box or ruggedized outdoor aluminum case. Temperature compensation is built into the transmitter.

Features

- Up to 50GHz
- SM28 Fiber
- Low Loss
- Low Cost
- Stable

The RFOF modules are suitable for telecommunications, satellites, radio telescopes, distribution antennas, broadcasting audio and video, and timing synchronization. For example, point-to-point antennas can be connected from several meters to many kilometers away from the control room by fiber cables; Base stations can be connected through fiber to remote sector antennas; Satellite antennas can be connected through fiber cable to remote sites by RF over Fiber solutions.

Applications

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

Specifications

Parameter	Min	Typical	Max	Unit
Operation Frequency	0.001		70G	GHz
Switch Speed	10n		10m	s
Switching Life	10 ¹⁵			cycle
Crosstalk/ Isolation	50		70	dB
RF Input Power			3	Vpp
RF Output Power			1.8	Vpp
RF Output/Input Impedance		50		Ω
Gain Flatness (p-p)			± 3	dB
Input RF Return Loss		18		dB
Spurious Free Dynamic Range	100			dBm/H ^{2/3}
Noise Floor			-120	dBm/Hz
Auton Gain Control (AGC)				
Gain	0	5		dB
CNR	35			dB
RF Connector				
Power Consumption *	150			W
Size	4		6	U
Weight	3			kg
Operating Temperature	-20		50	°C
Storage Temperature	-45		85	°C

Notes:

* Switching speed 10ms



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Rev 05/28/26

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Dimensions (Unit: mm) Rack System. Typical 2U

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

Electrical/Computer Connection

Ordering Information (Part Number)

Prefix	Max Frequency	Number of Input Ports	Number of Output Ports	Switch Speed	Broadcast	Isolation	Bidirectional *	RF Connector
RFSW-	2.5GHz = A 6GHz = B 16GHz = C 20GHz = D 30GHz = E 35GHz = K 40GHz = F 50GHz = G 70GHz = H 100MHz = 1 300MHz = 3 500MHz = 5	2 = 02 4 = 04 6 = 06 8 = 08 99 = 99 MN = MN Special = 00	4 = 04 8 = 08 12 = 12 16 = 16 99 = 99 MN = MN Special = 00	10ms = 1 10μs = C 100ns = 2 50ns = 3 10ns = 4	Non = 1 Yes = 2 Special = 0	50dB = 1 70dB = 2 Special = 0	None = 1 Yes = 2 Special = 0	BNC = 1 SMA = 2 Special = 0

Notes:

* Both way communications via a single fiber link using WDM technology