SPECTRAN® V6

RFoF 1060 Rx/Tx USB

TECHNICAL DATASHEET

General Information | Technical Specifications | Exemplary Test Report

AARONIA AG
WWW.AARONIA.DE

MADE IN GERMANY

AARONIA AG
WWW.AARONIA.DE

RFoF 1060 Rx/Tx USB

The RF-over-Fiber system is designed to provide reliable, low-loss transmission of high-frequency signals by converting them into optical signals at 1290 nm and carrying them over singlemode fiber. Covering a wide frequency range from 0.1 to 6 GHz, it enables the transport of signals with excellent linearity, low noise, and minimal distortion. This makes the system an effective solution for applications where both signal integrity and dynamic range are critical.

Engineered for versatility, the system combines broad frequency coverage with outstanding flatness across the entire band. Its high optical output power further reduces link losses, ensuring stable performance even over longer fiber connections. At the same time, the compact design integrates all key functions, including pre-amplification and biasing, into a single unit that is easy to implement and maintain.

These characteristics make the RF-over-Fiber system particularly suitable for use in satellite ground stations, where clean and reliable intermediate frequency transmission is essential, as well as in mobile network backhaul for 5G and beyond. It also addresses the stringent requirements of radar and defense systems, as well as test and measurement setups that depend on precise, reproducible signal handling. By combining high performance with robust design, the system delivers a dependable and future-ready solution for advanced RF transport applications.

The optical link inherently provides galvanic isolation, preventing any electrical connection between devices. This means no ground potentials or loops are carried through the system — a crucial benefit for measurement accuracy and equipment protection.

Highlights:

- Frequency range: 0.1 – 6 GHz
- Optical wavelength: 1290 nm (SMF-28)
- High linearity: SFDR up to 110–140 dB·Hz
- Low noise figure: < 3 dB typical
- High IP3: +32 dBm
- High output level: P1dB up to +18 dBm
- Optical power: typically 9.5 dBm at the transmitter
- Compact, rugged design
- Power supply: +5 VDC
- Operating temperature: –40 °C to +85 °C

Frequency range	10 MHz to 6 GHz
Optical wavelength	1290 nm
Optical output power Tx	9.5 dBm
Gain*	-28 dB *(without amp)
Ripple	±0,96 dB
RF return loss	-12 dB
Noise figure	<3 dB
SFDR @1GHz	110 dB·Hz
SFDR @6GHz	130-140 dB·Hz
Input IP3	+32 dBm
Input P1dB	+18 dBm
Power consumption Tx	25 mA
Power consumption Rx	20 mA