

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

## Wideband RF over Fiber Transmitter 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.

RFoF TX is a Wideband RF fiber optic transmission module with a maximum cutoff frequency of 12GHz. The product uses a high linearity DFB laser for direct modulation. Due to avoiding the limitations of coaxial cables, the transmission quality and reliability of signals have been greatly improved. It can be widely used in satellite communication, Beidou/GPS signal transmission, remote antennas, and long-distance analog fiber optic communication.



### PRODUCT FEATURES

- ▶ Multiple CWDM wavelengths to choose from
- ▶ Analog signal, direct modulation
- ▶ Ultra small and low-power consumption
- ▶ The transmitting module adopts a high linearity DFB laser
- ▶ The highest frequency can be selected as 12GHz or higher at 20GHz
- ▶ Excellent cost price advantage

### MAIN APPLICATION

- ▶ Remote antenna, distributed antenna system
- ▶ Long distance analog fiber optic communication
- ▶ 4G/5G/WiMAX fiber optic repeater (tunnel, tunnel)
- ▶ Secure and encrypted RF communication
- ▶ GNSS (Global Navigation Satellite System)
- ▶ OFDM fiber optic transmission system
- ▶ Microwave optoelectronics
- ▶ Analog RF-over-Fiber links in satellite uplink/downlink chains
- ▶ Wideband optical repeater systems for tunnels, remote sites
- ▶ Telecom-grade DAS (Distributed Antenna System) front haul

## TECHNICAL INDEX

| Performance        |                                |           | Index    |          |       | Supplement              |
|--------------------|--------------------------------|-----------|----------|----------|-------|-------------------------|
|                    |                                |           | Min.     | Typ.     | Max.  |                         |
| Optical<br>Feature | Working Wavelength             | (nm)      |          | 1310     |       | O-Band                  |
|                    |                                |           |          | 1550     |       | C-Band                  |
|                    |                                |           | 1270     | xxxx     | 1610  | CWDM                    |
|                    | Output Optical Power           | (dBm)     |          | 6        |       | Optional 10 dBm         |
|                    | Edge touch inhibition ratio    | SMSR (dB) |          | 45       |       |                         |
|                    | Output optical isolation       | ISO (dB)  | 30       |          |       |                         |
|                    | Light reflection loss          | (dB)      |          | 55       |       | APC                     |
|                    | Fiber Connector                |           | SC/APC   |          |       | LC/APC, FC/APC Optional |
| RF Feature         | High wavelength stability      | (pm)      |          |          | 1     | T-Type                  |
|                    | -3dB Minimum Cutoff Frequency  | (MHz)     | 30       |          |       | General                 |
|                    |                                | (KHz)     |          | 5        |       | Customized              |
|                    | -3dB Maximum Cut-Off Frequency | (GHz)     |          | 1.0      |       | TX01                    |
|                    |                                |           |          | 3.0      |       | TX03                    |
|                    |                                |           |          | 6.0      |       | TX06                    |
|                    |                                |           |          | 10.0     |       | TX10                    |
|                    |                                |           |          | 12.0     |       | TX12                    |
|                    | In-Band Flatness (FL)          | (dB)      |          | ±0.5     | ±0.75 | TX01                    |
|                    |                                |           |          | ±1.0     | ±1.5  | TX03                    |
|                    |                                |           |          | ±1.5     | ±2.2  | TX06                    |
|                    |                                |           |          | ±2.2     | ±2.8  | TX10~12                 |
|                    | RF Return Loss                 | (dB)      |          | -16      | -12   | TX01                    |
|                    |                                |           |          | -12      | -10   | TX03                    |
|                    |                                |           |          | -10      | -7    | TX06                    |
|                    |                                |           |          | -10      | -5    | TX10~12                 |
|                    | SFDR                           |           |          | 110@6GHz |       |                         |
|                    | RF Output Power ( )            | (dBm)     | -5       |          | +3    |                         |
|                    | RF Working Impedance           | (Ω)       |          | 50       |       |                         |
|                    | RF Connector                   |           | SMA-F    |          |       |                         |
| General<br>Feature | Supply Voltage (DC)            | (V)       |          | +12      |       |                         |
|                    | Working Current                | (mA)      |          | 500      |       |                         |
|                    | Operation Temperature          | (℃)       | -20      |          | +65   |                         |
|                    | Storage Temperature            | (℃)       | -40      |          | +85   |                         |
|                    | Relative Humidity              | (%)       | 5        |          | 95    |                         |
|                    | Dimensions (WxDxH)             | (mm)      | 37x54x17 |          |       | Type-A                  |
|                    |                                |           | 22x56x12 |          |       | Type-B                  |

| Product Series               | Product Type |                                             | Maximum Frequency |       | Minimum Frequency |            | Transmitting Wavelength |        | Output Optical Power |       | Application Scenarios |                                                     | Fiber Connector |           | Module Appearance |   |        |
|------------------------------|--------------|---------------------------------------------|-------------------|-------|-------------------|------------|-------------------------|--------|----------------------|-------|-----------------------|-----------------------------------------------------|-----------------|-----------|-------------------|---|--------|
| RF Fiber Optic Link Products | TX           | Optical Transmitter                         | 01                | 1GHz  | G                 | 30MHz      | 1550                    | 1550nm | 06                   | 6dBm  | O                     | General                                             |                 | LA        | LC/APC            | A | Type-A |
|                              | RX           | Optical Receiver                            | 03                | 3GHz  | M                 | 1MHz       | 1310                    | 1310nm | 10                   | 10dBm | T                     | Special applications with high wavelength stability |                 | SA        | SC/APC            | B | Type-B |
|                              | TR           | Integrated Receiver and Transmitter         | 06                | 6GHz  | L6                | 6GHz 30KHz | XXXX                    | CWDM   |                      |       |                       |                                                     |                 | FA        | FC/APC            |   |        |
|                              | RT           | Optical Amplifier and Wavelength Conversion | 10                | 10GHz |                   | L1         |                         |        |                      |       |                       |                                                     |                 | 1GHz 5KHz |                   |   |        |
| 12                           |              |                                             | 12GHz             |       |                   |            |                         |        |                      |       |                       |                                                     |                 |           |                   |   |        |