# L-Band Over Fiber Tx + Rx Basic 1 Channel Kit

TECHNICAL DATASHEET

1-channel satellite L-Band RF over fiber transmitter and receiver kit for long-distance RF transport from dish/LNB sites to receiver rooms and headends.

## Model Number

**F-LBAND-Tx/Rx**

**Manufacturer:** Thor Fiber

**Primary Purpose:** The F-LBAND-Tx/Rx transports L-Band satellite RF from an antenna/LNB location to a satellite receiver or headend over optical fiber. It extends RF links beyond coax distance limits while preserving 75-ohm RF connectivity and supporting optional LNB power/control functions.

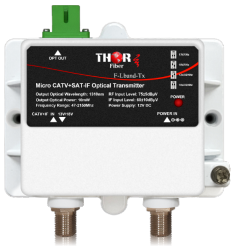
| | | | |
|---|---|---|---|
| **Wide RF Range**<br>45 - 2800 MHz for satellite L-Band and compatible RF transport applications. | **Fiber Extension**<br>Designed to move RF beyond coax distance limitations over optical fiber. | **LNB Control**<br>Optional 13/18 VDC LNB power and 22 kHz tone support. | **SC/APC Optical**<br>Angle-polished SC/APC interface required to minimize optical reflections. |

## Key Specifications

| Category | Extracted Value |
|---|---|
| Model Number | F-LBAND-Tx/Rx |
| Manufacturer | Thor Fiber |
| RF Frequency Range | 45 - 2800 MHz |
| Standard Optical Wavelength | 1310 nm transmitter; 1290 - 1600 nm receiver input |
| Optical Output Power | +2.0 dBm +/- 2 dB |
| Optical Input Power Range | -13 to +1 dBm; receiver sensitivity -13 dBm |
| RF Input Level | 55 - 78 dBuV |
| Receiver RF Output Level | 88 dBuV at 0 dB optical input; 82 / 74 / 68 / 63 dBuV at -3 / -6 / -9 / -12 dB |
| RF Connector / Impedance | F-Connector; 75 Ohm |
| Optical Connector | SC/APC angle-polished connector required |
| Power Supply | 12 VDC, 1.5A AC-to-DC power supply included |
| LNB Power Support | Optional 13 or 18 VDC, 650 mA max, with 22 kHz tone |
| Operating Temperature | -45 to 150 F |
| Warranty | 1-year limited warranty |

## Core Features

- Low-cost transmitter/receiver kit for moving satellite L-Band RF over fiber.
- Extends remote dish, satellite farm, headend, VSAT, DBS, and DTH RF links over single-mode fiber.
- Supports optional 13/18 VDC LNB power and 22 kHz tone for polarity/band control.
- Wideband 45 - 2800 MHz RF support also allows CATV/ATSC RF transport applications where appropriate.
- Compatible with PLC optical splitters for point-to-multipoint optical distribution designs.
- Compact wall-mount style enclosure with F-type RF connection and SC/APC optical interface.



## Transmitter and Receiver Specifications

| Transmitter Parameter | Specification | Receiver Parameter | Specification |
|---|---|---|---|
| Wavelength | 1310 nm standard; 1550 nm optional FP/DFB | Wavelength | 1290 - 1600 nm |
| Output Power | +2.0 dBm +/- 2 dB | Optical Input Power Range | -13 to +1 dBm |
| Frequency Response Range | 45 - 2800 MHz | Sensitivity | -13 dBm |
| RF Input Level | 55 - 78 dBuV | Frequency Range | 45 - 2800 MHz |
| LNB Power (optional) | 13 or 18 VDC / 650 mA max / 22 kHz | RF Output @ 0 dB optical input | 88 dBuV |
| RF Connector | F-Connector or by request | RF Output @ -3 / -6 / -9 / -12 dB optical input | 82 / 74 / 68 / 63 dBuV |
| RF Return Loss | 13 dB | RF Connector | F-Connector |
| RF Input Impedance | 75 Ohm | Optical Connector | SC/APC |
| CNR / IMD | 40 dB / 40 dB | | |

## General Parameters

| General Parameter | Specification |
|---|---|
| Power Supply | 12 VDC, 1.5A AC-to-DC power supply included |
| Temperature Range | -45 to 150 F |
| TX Weight / Size | 0.9 lb; 4 x 4 x 1.25 in / 102 x 102 x 32 mm |
| RX Weight / Size | 1.0 lb; 5.25 x 4.25 x 1.25 in / 134 x 108 x 32 mm |
| Box Size TX | 8 x 4.5 x 2 in / 204 x 115 x 51 mm |
| Box Size RX | 8 x 5.5 x 2 in / 204 x 140 x 51 mm |

## Target Applications

- Satellite dish to receiver/headend extension
- DBS / DTH signal delivery over fiber
- Uplink/downlink and broadcast headend links
- Remote satellite farm transport
- VSAT network RF extension
- CATV/ATSC RF transport within supported frequency range

## Model Options

| Model Option | Description |
|---|---|
| F-LBAND-Tx / F-LBAND-Rx | Single-mode transmitter / receiver for 10 km |
| F-LBAND-Tx-40 / F-LBAND-Rx-40 | Single-mode transmitter / receiver for 40 km |
| F-LBAND-Tx-80 / F-LBAND-Rx-80 | Single-mode transmitter / receiver for 80 km |
| F-LBAND-Tx-120 / F-LBAND-Rx-120 | Single-mode transmitter / receiver for 120 km |
| F-LBAND-Tx-XX-RM / F-LBAND-Rx-XX-RM | Rack-mountable versions; XX distance in km: 10 / 40 / 80 / 120 |

## Important Installation Notes

- Use SC/APC angle-polished optical connectors. PC/UPC flat-polished connectors can create reflections and improper optical performance.
- If existing fiber is terminated with SC, ST, or FC/PC connectors, use the appropriate PC-to-SC/APC optical jumper for conversion.
- Confirm optical budget, fiber type, LNB voltage requirements, and RF levels before final system design.
- No pricing or availability information is included in this datasheet.