



Wireless Microphone RF Audio Signal over Fiber Optic Extender

DATASHEET



RF Audio over Fiber extender kit for wireless microphone antenna links, IF, and RF distribution

Model Number

F-RF-AUDIO-TxRx

Primary Purpose

The Thor Fiber F-RF-AUDIO-TxRx is a professional RF-over-fiber system that transports wireless microphone, IF, and RF antenna signals over single-mode fiber. It converts RF to optical, carries the signal over fiber, and converts it back to RF at the receiver to reduce long coax losses, noise pickup, and interference in large venues or broadcast environments.



Manufacturer	Thor Fiber
Primary Purpose	Wireless microphone / RF antenna signal transport over fiber
Signal Bands	516 - 698 MHz and 925 - 937.5 MHz
Fiber Interface	FC/APC optical connector, 1310 nm optical wavelength

Remote Antennas Place antennas closer to performers while locating receivers in the control room.	Low Loss Fiber Avoid long-run coax loss and frequency-dependent attenuation.	EMI Immunity Fiber isolates the RF path from electrical noise and ground loops.	Simple Deployment Compact USB-C powered TX/RX units with standard BNC RF connections.
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Key Specifications

Category	Specification
Model Number	F-RF-AUDIO-TxRx
Configuration	Transmitter + Receiver kit
Operating Frequency	516 - 698 MHz / 925 - 937.5 MHz
RF Gain	15 dB
Transmission Distance	1 km+ typical RF over fiber transmission
Optical Wavelength	1310 nm
Optical Output Power	3 dBm
Maximum RF Input	-20 dBm
Impedance	50 Ohm
Power	5V / 250mA, USB-C
RF Connector	BNC Female
Optical Connector	FC/APC
Dimensions	TX: 51 x 123 x 21.5 mm / RX: 51 x 113 x 21.5 mm
Weight	TX: 241 g / RX: 222 g
Warranty	2-year limited warranty

Core Features

- Transports professional wireless microphone RF / IF signals over fiber.
- Optimized for UHF wireless microphone bands and specialty RF / IF bands.
- Enables remote antenna placement while receivers remain in a protected equipment room.
- Reduces RF attenuation from long coaxial cable runs.
- Fiber link provides excellent EMI / RFI immunity and electrical isolation.
- 15 dB RF gain compensation helps maintain link budget through the system.
- Compact transmitter and receiver units simplify installation in venues and racks.
- USB-C powered design makes field deployment straightforward.

How RF over Fiber Works

RF Input Wireless microphone antenna / IF / RF signal enters the transmitter.	Optical Transport The RF signal is converted to light and transported over fiber.	RF Output The receiver converts the optical signal back to RF for the wireless receiver or distribution system.
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Fiber vs. Coax - Application Context

Design Need	Coax Challenge	Fiber Advantage
Long antenna runs	High RF loss increases with distance and frequency.	Low optical loss supports long paths with stable signal quality.
Noise-prone environments	Copper can pick up EMI/RFI and ground-loop issues.	Fiber is electrically isolated and immune to electromagnetic interference.
Large venues	Splitter/amplifier chains become complex and difficult to balance.	Centralized fiber routing simplifies RF distribution across zones.
Temporary events	Heavy coax is slower to deploy and varies by cable quality.	Lightweight fiber enables faster, cleaner deployments.

Target Applications

- Wireless microphone antenna extension for live events
- Broadcast studios and production facilities
- Mobile broadcast and temporary event deployments
- Stadiums, arenas, theaters, and houses of worship
- Remote antenna systems and rooftop antenna links
- Multi-zone RF audio distribution over fiber

Recommended Deployment Scenarios

Stadium / Arena Remote antennas close to the stage or field, fiber back to receiver racks.	Theater / Worship Clean RF distribution across multiple antenna zones with reduced coax complexity.	Broadcast Facility Move antennas outside or to roof locations while keeping RF receivers in the technical core.
Temporary Event Lightweight fiber runs simplify setup and reduce RF variations caused by coax length.	Remote Antenna System Maintain RF quality between tower, rooftop, or venue antennas and the control location.	Multi-Zone RF Centralize receivers and distribute antenna feeds over fiber between zones or buildings.



Kit Contents / Functional Pair

The product is supplied as a transmitter and receiver pair. The transmitter accepts the RF antenna signal and converts it to optical. The receiver converts the optical signal back to RF for the wireless receiver, RF distribution, or IF equipment.

Deployment Notes

- Use single-mode fiber with FC/APC terminations for the optical link.
- Maintain RF input level within the specified maximum input rating.
- For long runs or multi-zone RF systems, verify the RF link budget and antenna distribution plan before installation.
- No price or availability information is included because this datasheet is intended for customer-facing product reference.

Product Link and Support

Use the QR code on page 1 to open the current product page for manuals, support, and updated information. For project assistance, contact Thor Fiber sales or technical support.