



F-M1SDI-3G-ET-TX/RX

3G-SDI + Bi-Directional Gigabit Ethernet Over One Single-Mode Fiber

Quick User Manual



The F-M1SDI-3G-ET-TX/RX is a plug-and-play fiber optic extender kit used to transmit one 3G-SDI video signal from the transmitter to the receiver while also providing bi-directional 10/100/1000 Mbps Ethernet over the same single-mode fiber.

Function	Description
Video	1 channel SD-SDI / HD-SDI / 3G-SDI, TX to RX direction
Ethernet	Bi-directional 10/100/1000 Mbps Ethernet bridge
Fiber	One single-mode fiber, ST/PC optical connector
Distance	Up to 20 km over single-mode fiber
Setup	Plug and play - no software, IP setup, DIP switch, or adjustment required

Product page: <https://thorbroadcast.com/product/3g-sdi-and-ethernet-over-fiber-extender-video-data-8230.html>

1. Package Contents

- 1 x F-M1SDI-3G-ET-TX transmitter
- 1 x F-M1SDI-3G-ET-RX receiver
- 2 x power supplies
- Quick setup/user manual reference

2. Front Panel Connections



Port	TX Unit	RX Unit
FIBER	Connects to the single-mode fiber going to the RX unit.	Connects to the same single-mode fiber coming from the TX unit.
SDI INPUT	Connect camera, switcher, encoder, or other SDI source here.	Not used as input on the RX side.
SDI LOOP OUT	Local copy of SDI input for a monitor, recorder, or switcher.	May be used depending on model labeling; main remote SDI output is on the RX side.
RJ45 Ethernet	Connect to local network device, laptop, router, or controller.	Connect to remote switch, router, laptop, or control device.

3. Basic Installation

Step 1 - Connect Power

Connect the included power supplies to both the TX and RX units. The Power LED should turn on when power is applied.

Step 2 - Connect Fiber

Connect one single-mode ST/PC fiber cable between the TX and RX fiber ports. The unit is rated for up to 20 km.

Step 3 - Connect SDI Video

Connect the SDI source to SDI INPUT on the TX unit. Connect the RX SDI output to a monitor, recorder, switcher, or other SDI receiving equipment.

Step 4 - Connect Ethernet

Connect RJ45 Ethernet devices on both sides. Ethernet communication is bi-directional and supports 10/100/1000 Mbps.

Step 5 - Verify LEDs

Check Power, SDI Detect, Optical Link Detect, and Ethernet LEDs to confirm the system is operating correctly.

4. SDI Loop Out Function

The SDI LOOP OUT on the TX unit provides a local copy of the incoming SDI signal. This is useful when the operator wants to send SDI over fiber while still keeping a local SDI monitor, recorder, or production switcher connected near the camera or source location.

Typical signal flow
Camera / SDI source -> TX SDI INPUT
TX SDI LOOP OUT -> Local SDI monitor or recorder
TX FIBER -> single-mode fiber -> RX FIBER
RX SDI OUTPUT -> Remote SDI monitor, switcher, recorder, or encoder

5. LED Indicators

LED behavior may vary slightly by production revision, but the following indicators are used to verify the main operating status.

LED	TX Unit Function	RX Unit Function
Power	On when the TX unit is powered.	On when the RX unit is powered.
SDI Detect	On when a valid SDI signal is detected at the SDI input.	On when valid SDI signal is received and output on the RX side.
Optical Link Detect	Indicates optical/fiber link status from the TX side.	Indicates optical/fiber link status from the RX side.
Ethernet LEDs	The RJ45 port has two LEDs for Ethernet link/activity/status.	The RJ45 port has two LEDs for Ethernet link/activity/status.

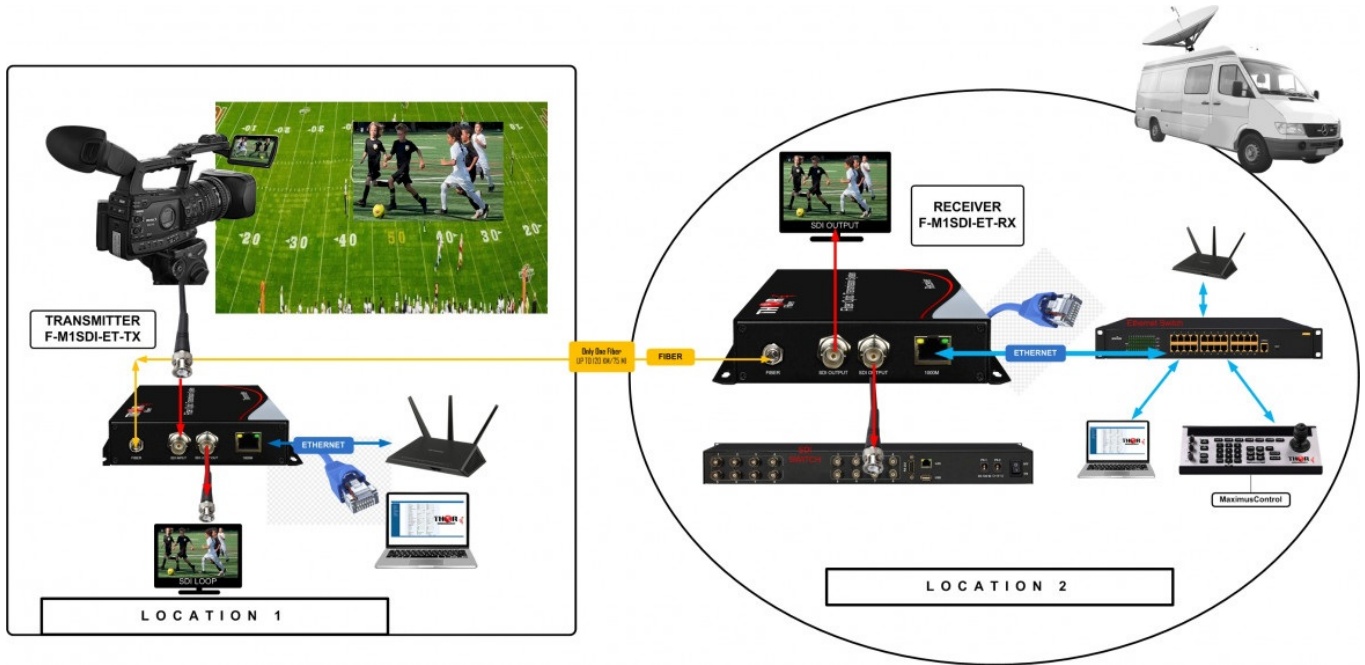
6. Ethernet Function

The Ethernet link works as a transparent bridge between the TX and RX units. No IP address is assigned to the fiber units and no network setup is required inside the units. Any compatible 10/100/1000 Ethernet device can be connected on either side.

- Camera control
- Laptop or service network connection
- Router or Ethernet switch extension
- Remote equipment control
- IP control panels or monitoring devices

7. Application Drawing

Typical field production application: SDI video travels from the camera/source location to the remote receiver location over one single-mode fiber. Ethernet data is available in both directions over the same fiber.



This example shows a camera or SDI source at Location 1 connected to the TX unit. One single-mode fiber carries the optical signal to Location 2, where the RX unit outputs SDI video and provides Ethernet connection for switches, routers, laptops, or control equipment.

8. Troubleshooting

Problem	Check / Solution
No Power LED	Check the power supply, DC plug, and AC outlet. Confirm that the correct included power supply is being used.
No SDI Detect LED	Confirm the SDI source is active and connected to SDI INPUT on the TX unit. Check SDI cable quality and source format.
No video at RX	Check SDI source, fiber connection, RX SDI output cable, and monitor/switcher input selection.
No optical link	Clean fiber connectors, confirm single-mode ST/PC fiber is connected correctly, and check fiber continuity/loss.
Ethernet not working	Check RJ45 cables, link LEDs, connected device settings, and run a ping test between devices on both sides.
Intermittent signal	Check for dirty fiber connectors, damaged fiber, excessive fiber loss, bad SDI cable, or unstable SDI source.

9. Important Notes

- Use single-mode fiber only.
- Use ST/PC fiber connectors.
- Do not sharply bend or crush the fiber cable.
- Clean fiber connectors before installation.
- SDI video travels from TX to RX.
- Ethernet is bi-directional between TX and RX.
- The unit is plug-and-play and does not require configuration.
- Maximum rated fiber distance is up to 20 km.

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