FIM-2450 User Manual

July 2019

Version 1.0

Document Revisions

Date	Version Number	Document Changes
July 2019	1.0	Initial Version

Table of Contents

1 Introduction

FIM-2450 is the model name of middle-to-long range (20~30km) point-to-point video transmission devices.
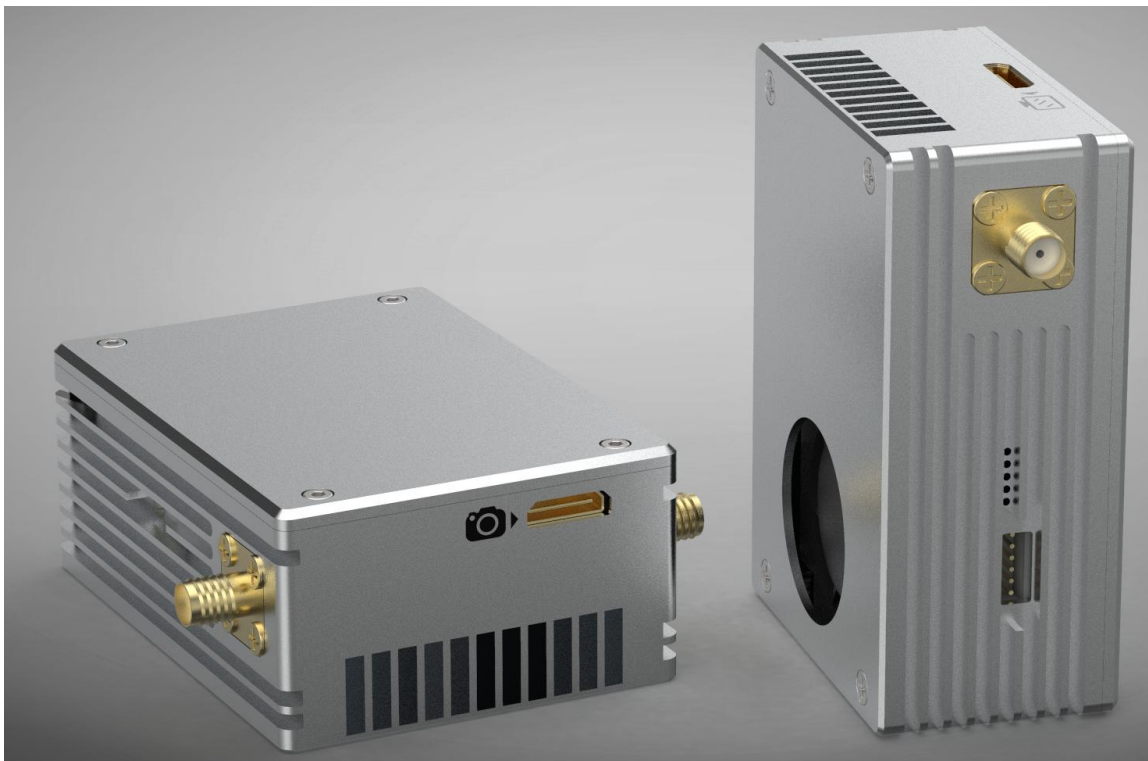
Each set of FIM-2450 contains the following it FIM-2450s

- One transmitter unit, with a camera logo on it
- One receiver unit, with a monitor logo on it
- Two transmitter-antennas
- Two receiver-antennas, which are longer than transmitter-antennas
- One antenna-cable for each antenna
- Power cables
- Four ethernet cables, each cable has two headers, one is RJ45 header, one is 4P header to connect FIM-2450.
- Four RS232-Serial cables, each has two headers, one is 6p header to connect FIM-2450, one consists of 6 Dupont plugs.
- One TX side HDMI cable with a MiniHDMI header and a MicroHDMI header
- On RX side HDMI cable with a MiniHDMI header and an HDMI header
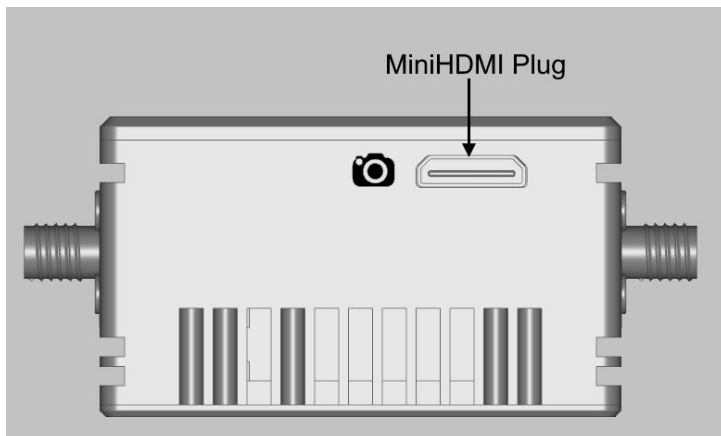- One TPlayer software Key, it's an USB dongle

Each kind of cable/componet is packed in its own transparent bag labeled with model name.

The itFIM-2450s may subject to change due to different customer specific configurations
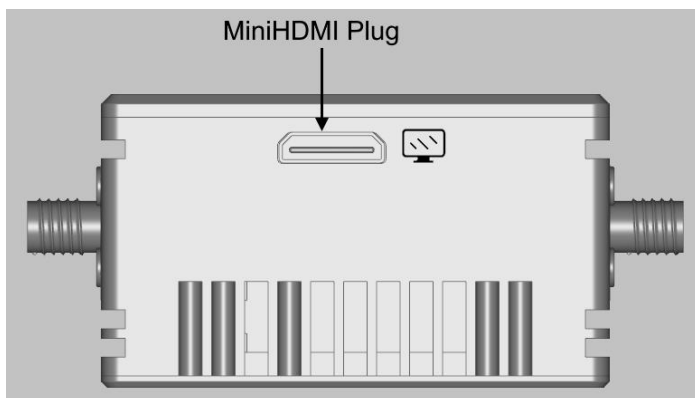
Please refer "FIM-2450 technical specification" for specifications and parameters

## 2   Connectors and LEDs

Front Side of Transmitter

Front Side of Receiver

- One Mini HDMI plug on this side, with different logo. If the logo is a camera, then this unit is a transmitter. If the logo is a monitor, then this unit is a receiver

- Air outlet of the internal cooling fan, you can feel strong wind near the outlet if the unit is power on

- Don't block the air outlet when the unit is power-on, keep at least 30mm space.

Right Side
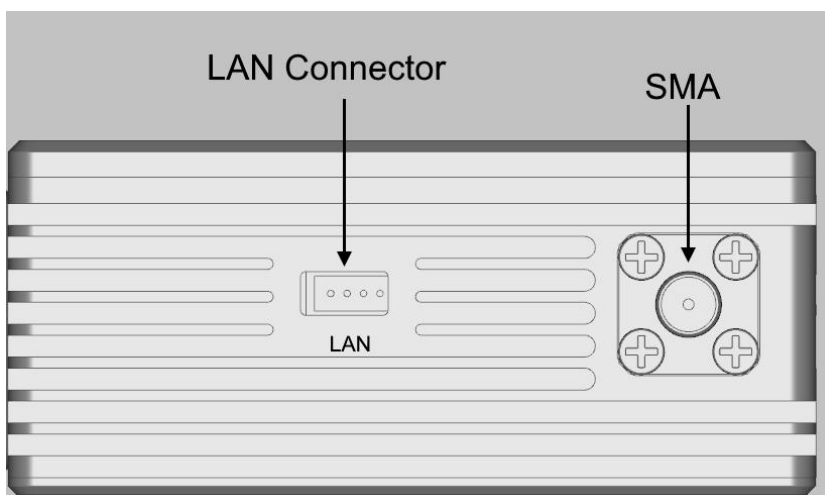
- One 4P LAN connector to connect the 4P header of the Ethernet cable. The LAN port is for configuring FIM-2450 with TDD_COFDM software, also can be used to transmit data *(the total throughput of video/LAN/serial data should be less than the max throughput of the wireless connection of FIM-2450)*

- One SMA connector, to connect an antenna

Left Side
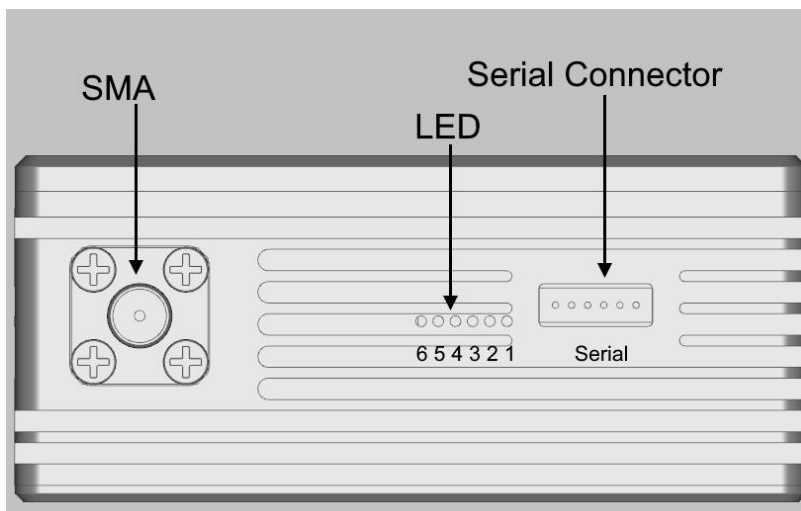
- One 6P Serial connector, to connect RS232-Serial cable. The voltage is +-13V.

   There are two serial ports in this connector. FIM-2450 transmits serial data transparently over the wireless connection.

- Six LEDs

- One SMA connector, to connect an antenna. Both left side and right side SMA connector should connect to antenna before power on
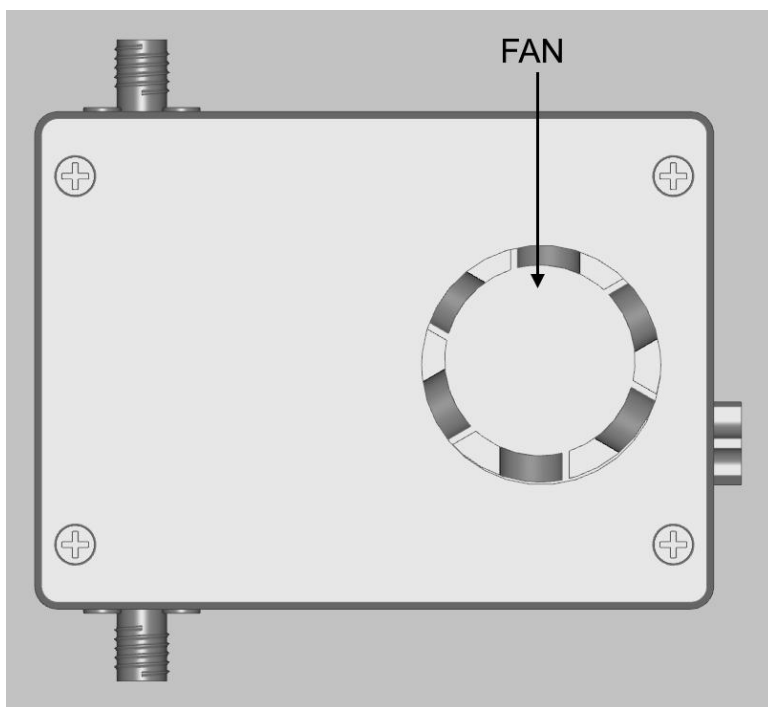
Back Side
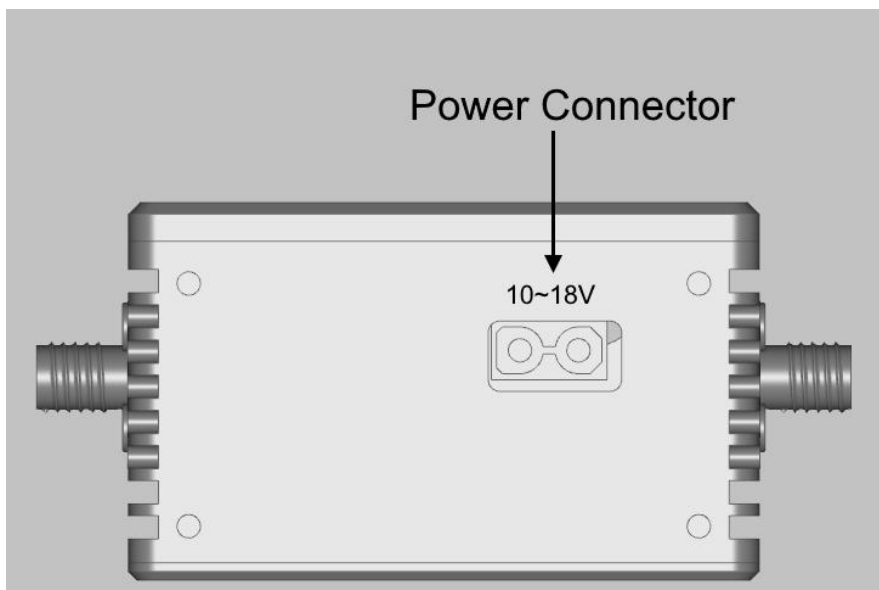
- One power connector, to connector a power cable, the voltage range is 10~18V, **Don't input power higher than 18V, otherwise the unit might be damaged.**

  No warranty for over voltage damage.

Bottom Side

- An air intake is on this side, and the cooling-fan is right below the intake. After power on, the fan should be spinning very fast. And air is flowing out through the air outlet on the front side.

- Don't block the air intake when the unit is power-on, keep at least 20mm space

3   Setting up FIM-2450 units

3.1   Default Network Configurations

FIM-2450 units are working as WiFi bridges, the transmitter and receiver bridge devices connected to thFIM-2450 and forward ethernet frames transparently.

Default IP Address of FIM-2450 units

Transmitter	Receiver
192.168.55.1	192.168.55.2

IP configuration of devices connecting to FIM-2450

	Transmitter side	Receiver Side
IP Address	192.168.55.X	192.168.55.X
gateway	192.168.55.1	192.168.55.2
mask	255.255.255.0	255.255.255.0

*Note: **TDD_COFDM** software is for configuring FIM-2450, refer "TDD_COFDM software manual" for details*

3.2   Setting up steps
- Connect two antennas to transmitter unit by antenna-cables
- connect two antennas to receiver unit by antenna-cables
- Connect power source to both units by power cables
- Connect an HDMI camera/camcorder to the transmitter
- Connect an HDMI monitor to the receiver
- Power on both units and camera/camcorder/monitor connecting to thFIM-2450
- Booting of both units takes 30~40 seconds, during booting, 6 LEDs will be flashing many times
- After approximately 30 seconds, both units will begin to search each other, LED 2,3,4 will be flashing on/off during searching by 2→3→4→2→….. order

- After both units found other side and established wireless connection successfully, LED 2,3,4 will stop flashing by order, and will be showing the wireless signal strength according by following table

| LED2	LED3	LED4	Signal Strength Index
On	On	On	5
On	On	Flashing	4
On	On	Off	3
On	Flashing	Off	2
On	Off	Off	1
Flashing by 2→3→4→2→….. order			No connection

- If the signal strength index is above 1, the video should be transmitting. You can watch the video from the camera/camcorder on the monitor
- And the serial port data should be transmitting transparently too if there are serial devices connecting to both units and are communicating to each other

4 Details and Notice

4.1 Ethernet Cable

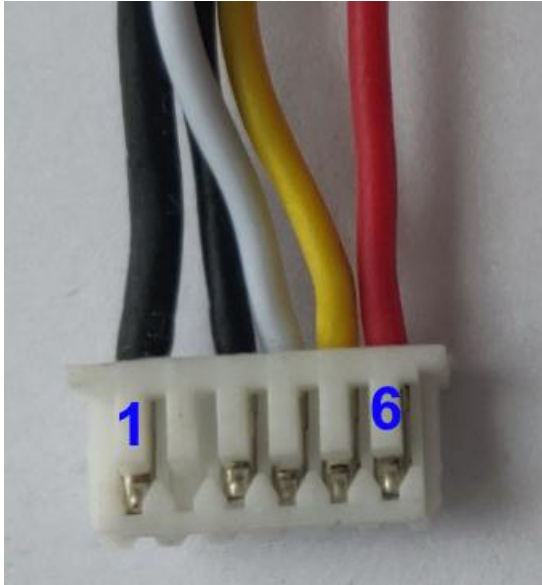One header is standard RJ45

Another header is 4P Molex 53261 header
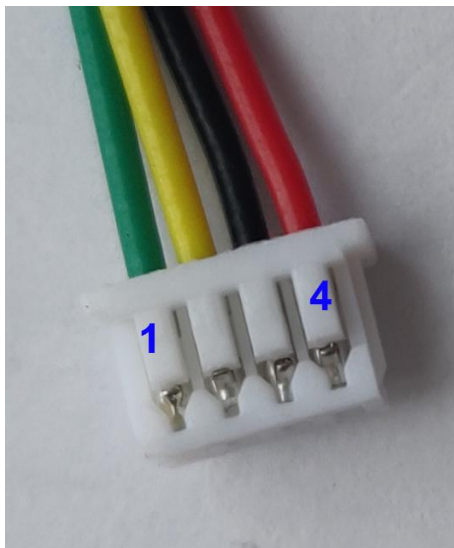
(*note: Wire color is irrelevant*)

| Pin number	Fast Ethernet Signal
1	TX-
2	TX+
3	RX-
4	RX+

4.2 RS232 Serial Cable

TTL Serial cable is for transmitting +-13V RS232 Serial signals

One header is 6P Molex 53261 header, the pin number shown in following picture, it shows the header side with metal exposed

Pin number on 53261 header	Signal
1	GND
2	5V (No connected on this cable)
3	RXD2
4	TXD2
5	RXD1
6	TXD1

Another header consists of 6 Dupont plugs with different color wire:
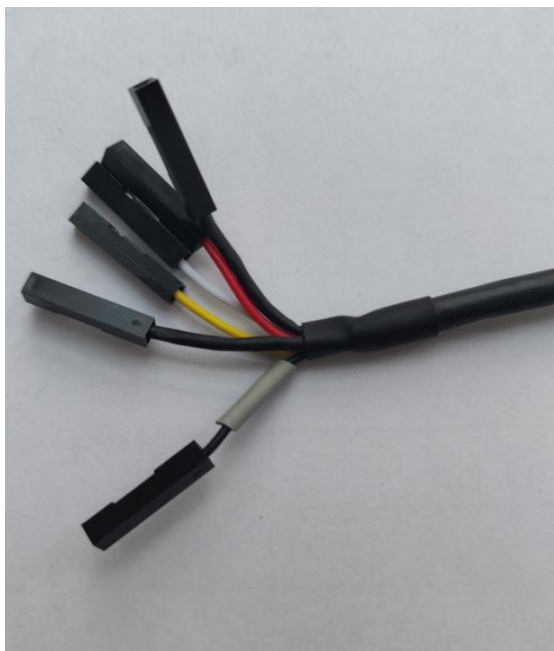
Color of the Dupont plug wire	Signal
Pure Black (there are **2** pure black wires)	GND
Black with a short gray casing	RXD2
White	TXD2
Yellow	RXD1
Red	TXD1

Serial data format Table

Default Baud Rate	115200
Data Bits	8
Parity	No
Stop bit	1
Voltage	3.3V

4.3 Notice

- Before powering on units, make sure both SMA has connected to antennas. Powering on a unit without antenna as load, the PAs inside it may subject to damage

- Two antennas of one unit should keep certain distance. We recommend 1 meter or larger for transmitter side, 2 meters or larger for receiver side. If two antennas don't keep proper distance, the wireless signal may become weaker, max range may become shorter

- Don't input power that voltage is higher than 18V

- Don't block the air intake and outlet when the unit is power-on

- Don't dismantle or modify FIM-2450 units