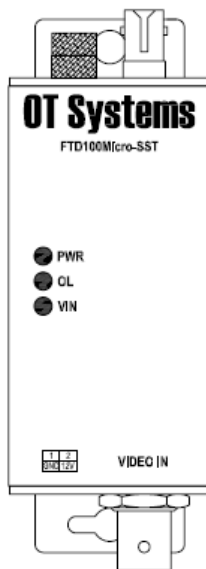




TRANSMISSION SOLUTIONS SPECIALISTS

# Installation and Operation Manual

## FTD100Micro Series



## 8-bit Digital Series

1-ch Video

Fiber Optic Converter

OT Systems Ltd., 2014  
Rev 1.2

## **Models covered in this manual**

### Single-Mode Transmitters

FTD100Micro-SST

FTD100Micro-SSTL

### Single-Mode Receivers

FTD100Micro-SSR

FTD100Micro-SSRL

### Multi-Mode Transmitters

FTD100Micro-SMT

### Multi-Mode Receivers

FTD100Micro-SMR

## **Compatible with the following Series:**

FTD100

FTD100M

FTD100-XXR3

### **Remark:**

If the optical connector is FC type, the suffix in the model number will be “-*FXX*”. Eg.

FTD100Micro-FST

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## (1) Safety Instructions

**Please be familiar with all information in this manual prior to installation and operation.**

**Note 1:** The products described contain a Class 1 laser or LED fiber optic emitter. The following safety precautions apply.

**Warning:** Do not disconnect the fiber optic connector while the unit is powered up. Exposure to Class I invisible optical radiation is possible when the internal fiber optic connector is disconnected while the unit is powered up.

**Caution:** Any access to the controls, adjustments, or performing operations, which are other than those specified may result in hazardous radiation exposure. Permanent eye damage or other bodily injuries may be resulted from such exposure even for only seconds.

**Note 2:** This assembly contains parts sensitive to damage by electrostatic discharge (ESD). ESD precautionary procedures should be applied in the course of touching, removing or inserting parts or assemblies.

## (2) Product Overview

### 2.1 Introduction

The FTD100Micro Series products comprise of either single-mode or multi-mode fiber optic transmitters and receivers for the optical transmission of ONE forward (Tx → Rx) video on one fiber. The products work at wavelengths of 1310nm or 1550nm with either a 9/125um or 62.5/125um fiber for single-mode or multi-mode transmission respectively.

A non-compressed 8-bit digital video transmission scheme is implemented which supports video in NTSC, PAL and SECAM formats.

For single-mode transmission, we also offer specifically designed products for long-haul transmissions up to 60km. These models include the letter “L” in the suffix, e.g. FTD100Micro-SST~~L~~ for Tx, FTD100Micro-SSR~~L~~ for Rx, etc.

The FTD100Micro Series units are available as standalone Micro sized cubicle, which can be mounted horizontally or vertically wall-mounted on any fixture. The Micro unit comes with an external power supply FT-PA/12V, which can be powered by local 110/220V power.

### 2.2 Models selection table

Mode	Model <sup>1</sup>	Description	Installation requirements	Remarks
Single-Mode	FTD100Micro-SST	Single-mode 1-Ch Video Transmitter Micro Unit	Horizontally or vertically wall-mounted Micro sized cubicle	FT-PA/12V external power adaptor is included for the Micro unit <sup>2</sup>
	FTD100Micro-SSTL	Single-mode Long-haul 1-Ch Video Transmitter Micro Unit		
	FTD100Micro-SSR	Single-mode 1-Ch Video Receiver Micro Unit		
	FTD100Micro-SSRL	Single-mode Long-haul 1-Ch Video Receiver Micro Unit		
Multi-Mode	FTD100Micro-SMT	Multi-mode 1-Ch Video Transmitter Micro Unit		
	FTD100Micro-SMR	Multi-mode 1-Ch Video Receiver Micro Unit		

<sup>1</sup> If the optical connector is FC type, the suffix in the model number will be “-FXX”. Eg. FTD100Micro-FST

<sup>2</sup> FT-PA/12V works under 100 -240VAC, 50/60Hz power supply

### (3) Installation

#### 3.1 General

All OT Systems products are thoroughly inspected, tested and securely packaged before delivery to ensure a stable, intact and trouble-free service. Please check the equipment upon receipt for any visible damage which may have been caused during shipping.

The FTD100Micro Series (Fig. 3.1) units can be either horizontally or vertically wall-mounted, or mounted on any fixture, etc. The Micro unit works with an external power supply FT-PA/12V powered by local 110/220V power.



Fig. 3.1 Micro unit

#### 3.2 Micro unit installation

- a) Mount the clip (Fig. 3.2) onto a fixture, e.g. a plank, (either on the wall or on a flat surface) with two screws piercing through the holes on the mounting frame to secure it in position.

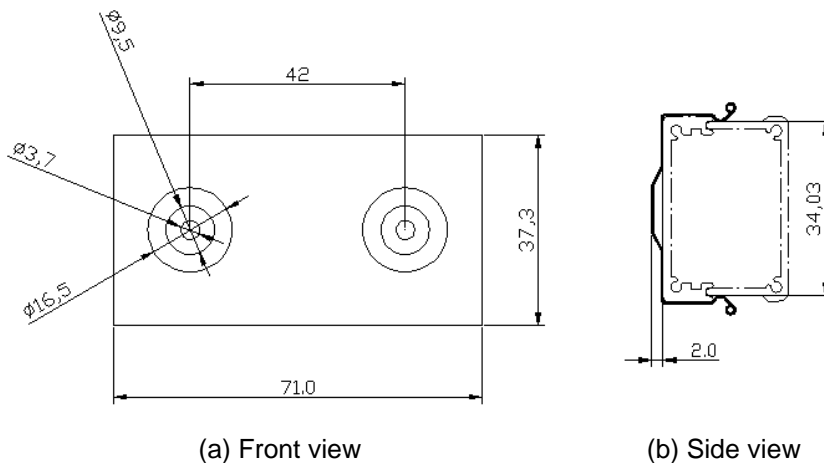


Fig. 3.2 Micro unit's clip

- b) The provided power supply should also be mounted on the same fixture or in the proximity for connection of the supply cables to the unit, provided that an AC power supply socket is near by for powering the adaptor.
- c) Push the Micro unit into the clip to secure it in position. For details, please follow Fig. 3.3.

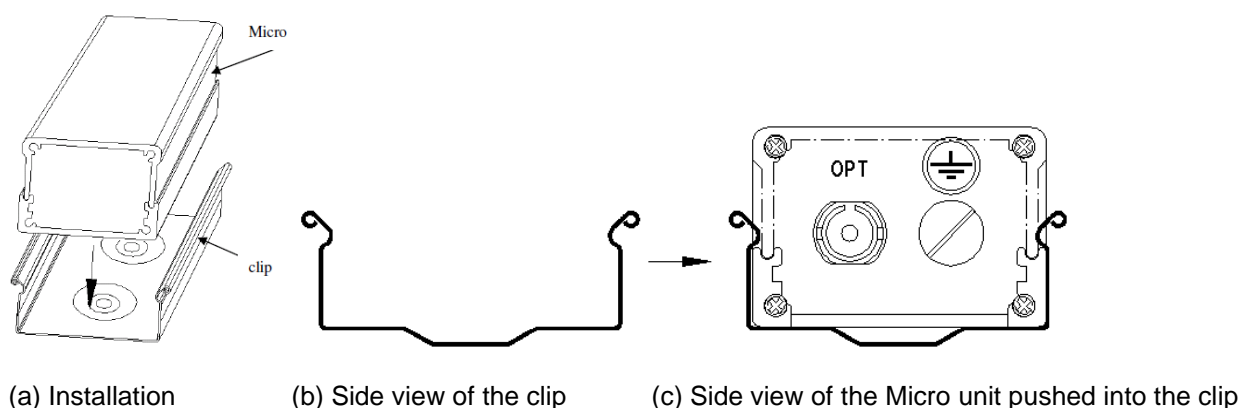


Fig. 3.3 Micro unit installation on the clip

- d) Connect all the signal inputs and outputs at the back of the unit with appropriate cables: fiber optic cable for optical link, BNC cable for video input/output (Tx/Rx).
- e) Once the unit is powered up, check that the red POWER LED on the unit is lit. If not, check the power supply cable connections between the unit and the power supply socket.
- f) With all the signals available at the input and output ports, check the status of LEDs located on the unit. With correct status of each LED, installation is now completed [for LEDs status, see **Operational Guides** on this manual's section (5)].

## (4) Cable Connections & Setup Procedures

### 4.1 System cable connections

Signal Type	Cable Type	Connector
Optical	Single-mode or Multi-mode Fibers	ST (or FC) Connector
Video	Coaxial Video Cable	BNC Connector

#### Typical System Cable Connections Diagram:

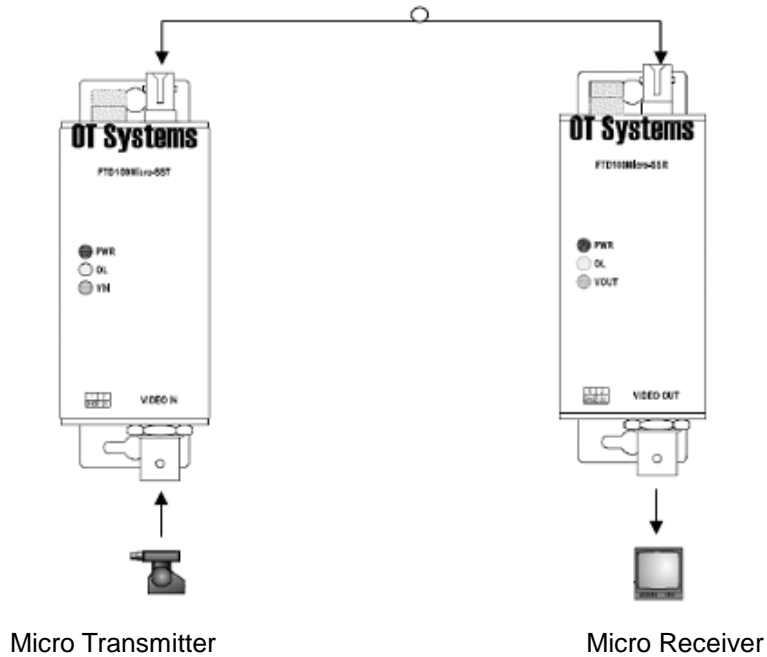


Fig 4.1 Micro to Micro unit connection diagram

## 4.2 Ground connections

For enhanced safety to reduce the risks of electrical shock and physical damage, caused by lightning and other power surges, as well as a connection to the surge suppression devices in the product, a screw terminal is provided on the Micro cabinets (Fig. 4.4). It is highly recommended that the Micro unit have good ground connections to the buildings ground in accordance with the local codes.

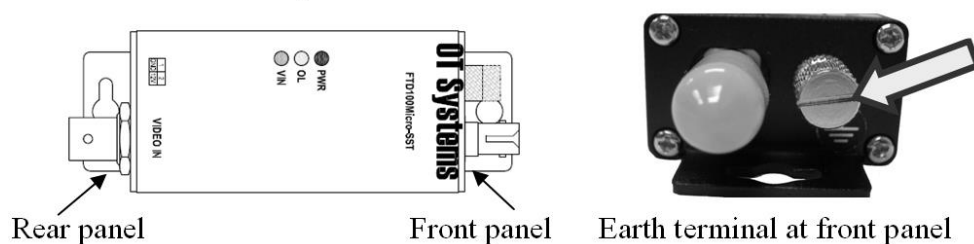


Fig. 4.4 Micro unit earth terminal location



## (5) Operational Guides

### 5.1 FTD100Micro Series Transmitter

#### LED Indicators

Indicator	Colour	Description
PWR	Red	Lit when power is supplied to the Transmitter.
OL	Yellow	Lit when optical signal from receiver to transmitter is active.*
VIDEO IN / VIN	Green	Lit when video signal is fed into the VIDEO IN connector.

\* For products with uni-directional signal transmission, the OL LED on the Tx is **not lit** because optical signal from the Rx to the Tx is always inactive.

#### Signal Ports

OPT -	ST (or FC) Optical Connector for fiber cable connection.
VIDEO IN -	BNC Video Connector for video signal input.

### 5.2 FTD100Micro Series Receiver

#### LED Indicators

Indicator	Colour	Description
PWR	Red	Lit when power is supplied to the Receiver.
OL	Yellow	Lit when optical signal from receiver to transmitter is active.
VIDEO OUT / VOUT	Green	Lit when video signal is received at VIDEO OUT connector.

#### Signal Ports

OPT -	ST (or FC) Optical Connector for fiber cable connection.
VIDEO OUT -	BNC Video Connector for video signal output.

## (6) Specifications

<b>PARAMETERS</b> \ <b>MODELS*</b>	<b>FTD100Micro-SST(R)</b> (Single-Mode)	<b>FTD100Micro-SST(R)L</b> (Single-Mode)	<b>FTD100Micro-SMT(R)</b> (Multi-Mode)
<b>OPTICAL</b>			
No. of Fiber / Connector	1 / ST(or FC)	1 / ST(or FC)	1 / ST(or FC)
Wavelength	1310 nm	1310 nm	1310 nm
Optical Power Budget	17 dB	24 dB	23 dB
Max Distance	40 km	60 km	4 km
<b>ELECTRICAL VIDEO</b>			
Channel / Connector	1 / BNC		
System	PAL, NTSC, SECAM		
Bandwidth	≥ 6.0 MHz		
Input/Output Impedance	75 Ohm		
Input/Output Level	1.0 Vp-p typical		
Differential Gain	< 1% typical		
Differential Phase	< 1° typical		
SNR	>60dB		
<b>POWER</b>			
Power consumption	12VDC @ 1.8W		
Power supply	FT/PA12V DC Adaptor		
Connector (Micro unit)	2-pin Screw Terminal		
<b>PHYSICAL</b>			
Weight	0.1 kg		
Dimensions (W x H x D)	36.2 x 24.5 x 101 mm (MAX)		
<b>ENVIRONMENTAL</b>			
Operating Temperature	-40°C ~ +75°C		
Storage Temperature	-40°C ~ +85°C		
Relative Humidity	0 ~ 95% non-condensing		
<b>MTBF</b>	>100'000 Hours		

\*If the optical connector is FC type, the suffix in the model number will be "-FXX". Eg. FTD100Micro-FST

## (7) Drawings

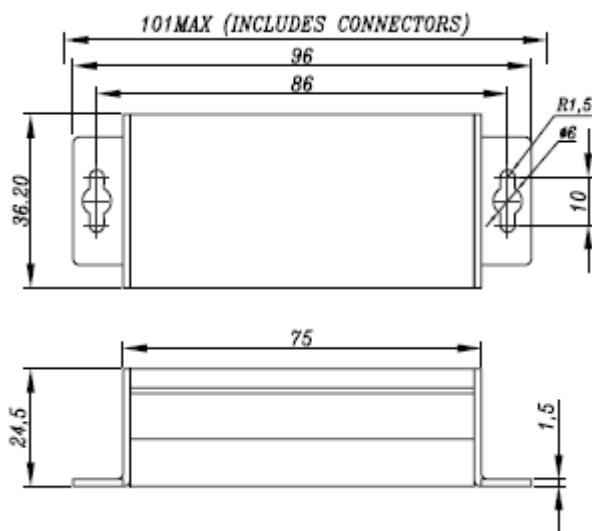


Fig. 7.1 Dimensional drawings of Micro unit (mm)

## (8) Warranty Information

All OT Systems FT Series products are subject to a limited life-time warranty offered by the company in normal circumstances. Please refer to the OT Systems Products Warranty Statement for details. Access to the statement is available in our company website at [www.ot-systems.com](http://www.ot-systems.com).

## (9) Contact Information

### APAC Operation

Address:

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Sheung Shui, N.T., Hong Kong

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Fax: (852) 2679 0756

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Technical Support

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Tel: (370) 60730087

Fax: (370) 52051855

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