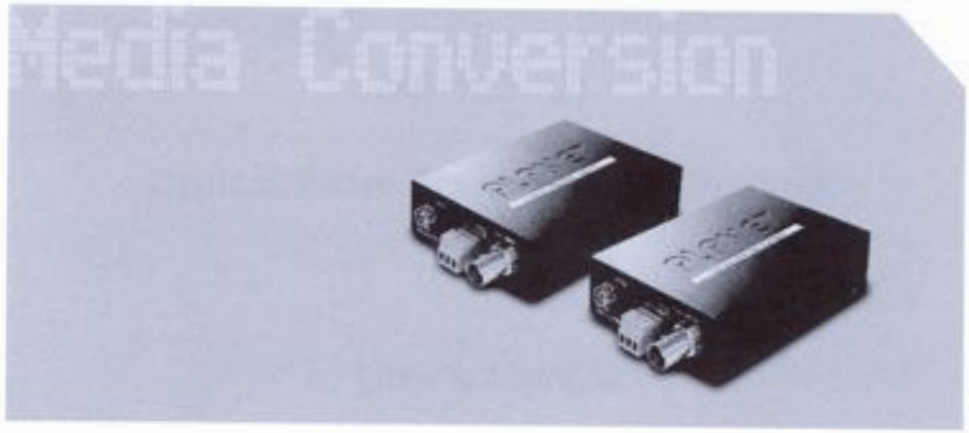
VIDEO+DATA

Video over Fiber Converter

Easy Distance Extension for Camera Deployment



User's Manual

Table Of Contents

1. INTRODUCTION

1.1 CHECK LIST

Check the contents of your package for following parts:

- VF-102-T – Video over Fiber Media Converter / Transmitter x 1
- VF-102-R – Video over Fiber Media Converter / Receiver x 1
- 5V / 2A Power Adapter x 2
- User's Manual x 1

If any of these pieces are missing or damaged, please contact your dealer immediately, if possible, retain the carton including the original packing material, and use them against to repack the product in case there is a need to return it to us for repair.

1.2 INTRODUCTION TO VIDEO OVER FIBER CONVERTER

This Video over Fiber Converter kit consists of a Video Transmitter, VF-102-T, and a Video Receiver, VF-102-R. It is a digital fiber-optic transmission system which provides customer a cost-effective solution for transmission of 1 channel uncompressed digital video and 1 reverse RS-422/485 async-data over one single fiber cable. It is adjustment free device while providing high quality and real-time video. The plug-and-play design makes the installation more convenient and easier. The system can be widely used in Intelligent Transportation Systems (ITS), Traffic Surveillance, security monitoring, automation control, intelligent residential districts and so on.

Typical Applications

- Intelligent Transportation Systems (ITS)
- Toll Collection
- Traffic Surveillance
- Air Traffic Management (ATM)
- Rail Signaling
- Perimeter Alarms and Area Monitors
- Telemedicine and Teleconference
- Industrial Surveillance
- Intelligent Building

1.3 KEY FEATURES

- Video + Data over fiber transmission
- 8 bit Video Signal digital sampling
- PAL, NTSC, SECAM compatible
- 20km max. distance
- Data Type: RS-422 / RS-485
- Standalone or work with PLANET MC-700/1500/1500R media converter chassis
- Compact in size, wall-mount design, easy installation

1.4 PRODUCT SPECIFICATION

Model	VF-102-T	VF-102-R
Video Characteristic		
Video Channel	1 channel Bi-direction	
Signal Mode	NTSC / PAL	
Video Connector	BNC	
Video Input/Output Impedance	75ohm / unbalanced interface	
Video Input/Output Voltage	1.0 Vpp / Typical peak-peak value	
Video Bandwidth	6.5MHz	
Video Digital Bit Width	8/10 bit	
Differential Gain (DG)	<1.3% (Typical Value)	
Differential Phase (DP)	<1.3° (Typical Value)	
SNR Weighted	63dB (Typical Value)	
Data Interface		
Data Channel	1 channel	
Physical Protocol	RS-422 / RS-485	
Operation Mode	Simplex	
Data Connector	3 Pin terminal block with screw clamps	
Data Rate	DC-115.2Kbps	
Data Distance	RS-485: 0-1200m	
Bit Error Rate (BER)	$< 10^{-9}$	
Optical Interface		
Optical Connector	FC	
Fiber Type	Single-mode, single fiber	
Distance (Max.)	20km for single mode	
Optical Wavelength	TX: 1310nm RX: 1550nm	TX: 1550nm RX: 1310nm
Launch Power (dBm)	Max. : -7 Min. -14	
Receive Sensitivity (dBm)	-32dBm	
Max Loss Budget	18dB	
Max. Input Power (dBm)	0	
Cable	9/125μm single-mode cable	
Hardware Specification		
LED Indicators	• One Power • One for Video - Green, Link • One for Fiber Optic - Green, Link	
Dimension (W x D x H)	94 x 70 x 26 mm	
Weight	215g	
Power Requirement	5V DC / 2A	
Power Consumption	4.8Watts (maximum)	
Mechanical	Metal	
Compatible Converter Chassis	MC-700 / MC-1500 / MC-1500R	
Standards Conformance		
Regulation Compliance	FCC Part 15 Class A, CE	
Environment		
Operating	Temperature: -10 ~ 60 Degree C Relative Humidity: 0 ~ 95% (non-condensing)	
Storage	Temperature: -40 ~ 85 Degree C Relative Humidity: 5 ~ 95% (non-condensing)	

2. HARDWARE DESCRIPTION

2.1 Front Panel

The units' front panel provides a simple interface monitoring the converter. There are FC fiber optical interface and VIDEO socket in the front panel. For the VF-102-T / VF-102-R which reverse data connector, the RS485/422 DATA port may be connected to the user's interface end.

2.1.1 Ports connection

Video Connection:	Connecting the video signal to or from the product through a 75Ω coax cable with BNC plug.
Async-data Connection:	• Connect the output data port (eg. TX+ and TX-) of other control device to the RX+ and RX- of the RX. • Connect the input data port (eg. RX+ and RX-) of other under controlled device to the TX+ and TX- of the TX. • GND in both TX and RX should be connected directly to user's equipment.
Fiber Connection:	Connect the fiber-optic cable pigtail (with FC/PC or ST/PC optical connector) to the product's FIBER port.

2.1.2 LED Indicators

The rich diagnostic LEDs on the front panel can provide the operating status of individual port and whole system. There are "POWER", "VIDEO", "LINK" 3 LEDs in the front panel of TX/RX. Each LED lightens means:

LED	Color	Function
POWER	**Green**	Power supply OK
VIDEO	**Green**	Lighted when video in
LNK	**Green**	Lighted when laser in

2.2 Rear Panel

The rear panel of the converter indicates one DC jack, which accepts input power with 5V DC 2A.

Power Notice

1. The device is a power-required device, it means, it will not work till it is powered. If your networks should active all the time, please consider using UPS (Uninterrupted Power Supply) for your device. It will prevent you from network data loss or network downtime.
2. In some area, installing a surge suppression device may also help to protect your converter from being damaged by unregulated surge or current to the converter or the power adapter.

3 INSTALL THE CONVERTER

This section describes how to install your VF-102 Media Converter and make connections to the converter. Please read the following topics and perform the procedures in the order being presented. The hardware installation of PLANET VF-102 Media Converter do not need software configuration. To install your VF-102 on a desktop or shelf, simply complete the following steps.

3.1 Limitation

The Converter does not require any software configuration. Users can immediately use any feature of this product simply by attached the cables and plug power on. There is some key limitation on the video over fiber converter. Please check the following items:

- The device is used for **Point-to-Point** connection only (transmitter to receiver) and allows video and data work on the same optical fiber patch cord.
- The BNC connector and supports 75 ohm cable. The distance will change by the quality of coaxial cables.

3.2 Stand-alone Installation

To install a VF-102-T / VF-102-R stand-alone, on a desktop or shelf, simply complete the following steps:

Step 1: Turn off the power of the analog camera / monitor to which the VF-102-T / VF-102-R will be attached.

Step 2: **VF-102-T (Transmitter)**: Connect coaxial cable from analog camera to Video BNC port of the VF-102-T.

Step 3: Attach FC single mode fiber cable from the VF-102-T to VF-102-R in the remote side.

Step 4: **VF-102-R (Receiver)**: Connect coaxial cable from monitor / DVR to Video BNC port of the VF-102-R.

Step 5: Connect the 5VDC power adapter to the VF-102-T / VF-102-R and verify that the Power LED lights up.

Step 6: Turn on the power of the analog camera / monitor; the VIDEO LED (Green) should light when all cables are attached.

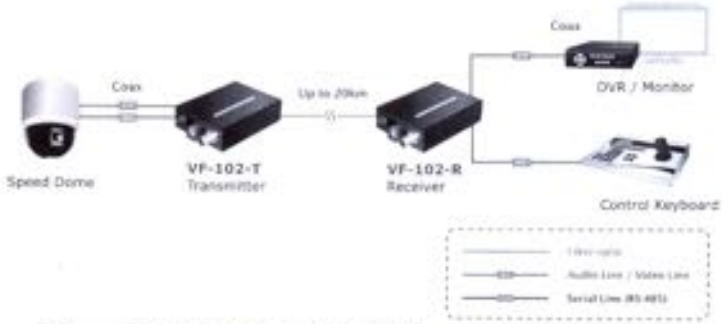


Figure 3-1 VF-102-T / VF-102-R stand alone installation

3.3 Chassis Installation and Rack Mounting

To install the Video over fiber Converter in a **10-inch** or **19-inch** Converter Chassis with standard rack, follow the instructions described below.

Step 1: Place your Converter Chassis on a hard flat surface, with the front panel positioned towards your front side.

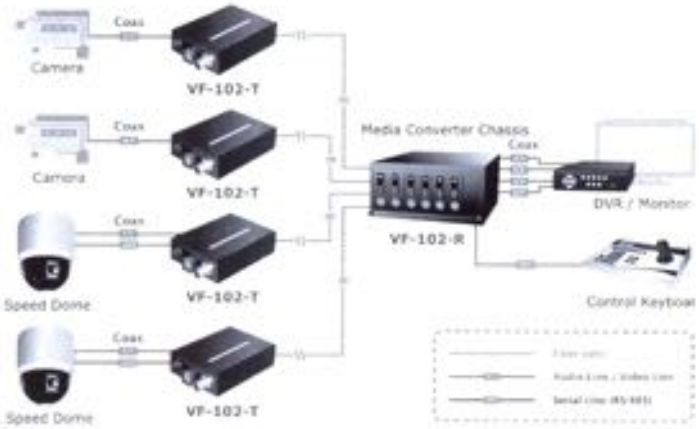
Step 2: Carefully slide in the VF module until it is fully and firmly fitted into the slot of the converter chassis.

Figure 3-2 Insert a video over fiber converter into an available slot

Step 3: Attach a rack-mount bracket to each side of the Converter Chassis with supplied screws attached to the package.

Step 4: After the brackets are attached to the Converter Chassis, use suitable screws to securely attach the brackets to the rack.

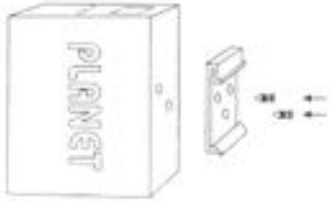
Step 5: Proceed with the steps 4 and steps 5 of session **3.2 Stand-alone Installation** to connect the video and fiber cabling and supply power to your Converter Chassis.



3.4 Optional - DIN-Rail mounting

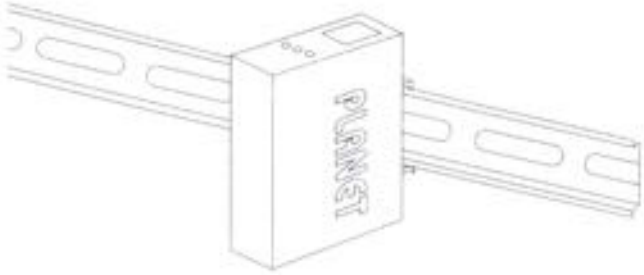
There are two DIN-Rail holes on the left side of the VF-102-T/ VF-102R that allows the converter can be easily installed with DIN-Rail mounting. The PLANET optional DIN-Rail mounting Kit – RKE-DIN can be order separately. When need to replace the wall mount application with DIN-Rail application on the VF-102-T / VF-102-R, please refer to following figures to screw the DIN-Rail on the converter. To hang the VF-102-T / VF-102-R, follow the below steps:

Step 1: screw the DIN-Rail on the VF-102-T / VF-102-R.



Step 2: Lightly press the button of DIN-Rail into the track.

Step 3: Check the DIN-Rail is tightly on the track.



You must use the screws supplied with the mounting brackets. Damage caused to the parts by using incorrect screws would violate your warranty.

4 POWER INFORMATION

The power jack of VF-102-T / VF-102-R is with 2.5mm in the central post and required +5VDC power input. It will conform to the bundled AC-DC adapter and Planet's Media Chassis. Should you have the issue to make the power connection, please contact your local sales representative.

Please keep the AC-DC adapter as spare parts when your VF-102 is installed to a Media Chassis.

2.5mm
DC Receptacle 2.5mm
+5V for each slot

DC receptacle is 2.5mm wide that conforms to and matches the Video over Fiber Converter 2.5mm DC jack's central post. Do not install any improper unit, model of the Video over Fiber Converter.