

Installation/Operation Instructions

Fiber Optic Video Transmission System

Part Number: AFS1001
1-CH Video



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1.0 Safety Instructions

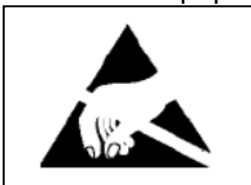
The safety information contained in this section, and on other pages of this manual, must be observed whenever this unit is operated, serviced, or repaired. Failure to comply with any precaution, warning, or instruction noted in the manual is in violation of the standards of manufacture, warranty and intended use of the unit. ALBA assumes no liability for the customer's failure to comply with any of these safety requirements.

**LASER RADIATION CAUTION:
DISCONNECTED OPTICAL CONNECTORS MAY EMIT OPTICAL ENERGY.
DO NOT VIEW BEAM WITH OPTICAL INSTRUMENTS (MAGNIFIERS).**

This product contains Class 1M lasers

- Class 1M laser product according to IEC60825-1:1993+A1+A2
- **CAUTION: Use of controls or adjustments or procedures other than those specified herein may result in hazardous radiation exposure.**
- Precautions should be taken to prevent exposure to optical radiation if the internal PCB removed from its enclosure or when the fiber is disconnected from the unit.
- Laser radiation may be present on a fiber connection to this unit even when the power has been removed from the unit.
- This unit is intended for installation in locations where only trained service personnel have access to the fiber connections.
- The optical connectors are listed in the Connection Diagrams and Function section of this manual.
- Optical outputs and wavelengths are listed in the Specifications section of this manual.

The optical devices used in this equipment are Hazard Level 1M. As required by IEC60825-1, the installer is responsible for insuring that the label depicted below is present in the restricted locations where this equipment is installed.



This assembly contains parts sensitive to damage by electrostatic discharge (ESD). Use ESD precaution procedures when touching, removing or inserting parts or assemblies.



Units are not waterproof; please install in an appropriate NEMA Enclosure.

When units are installed in extremely hot environments, the metal enclosures may become hot to the touch. Please install in restricted areas where properly trained personnel have access.

2.0 Fiber Installation Hints

Fiber Information

Alba Fiber Transmission Systems are manufactured with optical connector covers to keep them from accumulating dirt. In addition to safety precautions, our manual also provide the following guidelines when working with optical fibers.

Please maintain optical fiber connectors as clean as possible to reduce loss of optical transmission output. Cleanliness is extremely important to proper operations.

1. Protect optical connectors by leaving the connector covers in place on unused fiber connections and on the fiber tips themselves.
 - a. Personnel who remove and replace fiber connectors or fiber pigtails should be equipped with a fiber cleaning kit. These are available as off-the-shelf items from a supplier of fiber optic accessories.
 - b. Propyl Alcohol and lint-free tissue or cloth may be used to clean fiber connector tips.
 - c. Do not use rubbing alcohol mixed with water. This can cause additional spots.
 - d. Clean the fiber by pulling the connector tip across the tissue, then turn the connector 90 degrees and repeat it in a different spot on the tissue.
 - e. Don't pull the fiber across and then push it back. This will put the dirt that was cleaned off back on again.
 - f. Repeat the process on a dry, folded tissue.
2. When removing fiber cables from fiber system ports, it is good practice to clean them again.
3. Installer must pay attention to the bend radius of the fibers. A general rule is to have a 3-inch (8cm) bend radius. A bend radius less than 3 inches may cause attenuation also known as optical signal loss.
4. Installers of fiber equipment should be equipped with an Optical Light Source an Optical Power Meter to measure the optical inputs and outputs in a system. These instruments are available from Alba at great savings, especially to our customers. The use of these tools will save much time and effort in getting optical communications links up and running. Properly equipped and trained installers can quickly determine the source of any problems that occur.

3.0 Product Description

The ALBA FIBER SYSTEMS Series AFS1001 support the transmission of broadcast quality 8-bit digital video on a single fiber. Multimode or singlemode version units are universally compatible with NTSC, PAL and SECAM formats. Plug-and-play design ensures ease of installation and no user electrical or optical adjustments are required. Features include low power consumption, LED indicators for monitoring equipment link and performance operating status and auto resettable voltage transient fuses. Standalone units are configured to be interchangeable with rackmount cards. With 12VDC/24VAC input voltage on standalone, industry highest density 19 card slots and one (1) power supply or 17 card slots and dual (2) redundant supplies per 19"L x 4U Rackmount Chassis, the Series AFS1001 are outstanding products for transmission of Video signals.

4.0 Product Features

- NTSC, PAL, SECAM Fiber Optic Video System
- 8-bit uncompressed Digital Video Encoding
complies with RS-250C Specifications
- Meets EIA RS-170 and RS-343 Standards
- Supports 1 Composite Video Signal
- No Electrical or Optical User Adjustments
- Performance and Link Status Indicator LEDs
- Integrated Optics / WDM - greater reliability
- Voltage Transient Protection on Power/Signals
- Distances up to 30mi. (48Km) - no repeaters
- ST (MM), FC (SM) Optical Connectors
- Auto Resettable Fuses on Power Lines
- Hot-Swappable Rackmount Cards
- Interchangeable Standalone w/Rackmount
- Designed with Lowest Power Consumption
- Highest Density - 19 Slots and Power Supply
- 12VDC/24VAC Input Voltage (Standalone)
- 90-130VAC or 180-264VAC (19" Chassis)
- Compliance with CE, FCC, ROHS

5.0 Installation

The ALBA FIBER SYSTEMS Series AFS1001 products are interchangeable between Standalone and Rackmount. Cards units occupy one slot in Alba's standard 19" x 4U chassis series AFS940-1 with one power supply (total 19 cards) or ASF940-2 with 2 power supplies (total 17 cards). To install card and power supply, keep the orientation of Alba logo on top and slide onto the top and bottom card guides in the chassis. Press securely on the top and bottom of the card to ensure that it is fully seated so that the electrical connector mates with the chassis-mounted motherboard. Once installed, manually tighten the two thumbscrews located at the top and bottom of the card. Do not use tools to secure these and do not over tighten.

6.0 Product Signal Format & Specifications

The tables below identify the specifications for the various signals that these fiber units transmit / receive.

CONNECTORS	
Optical	ST (MM), FC (SM)
Power	Terminal Block
Video	BNC (Gold Plated Center-Pin)
Data	Terminal Block

OPTICAL PARAMETERS	
Fiber	Single-mode or Multi-mode
Wavelengths (SM)	1310/1550nm
Wavelengths (MM)	1310/1550nm

1-Ch. 8 BIT DIGITAL VIDEO ON 1 FIBER

VIDEO	
Format	NTSC, PAL, or SECAM
Video Input/Output	1V p-p (75 ohms); max. 1.5V p-p
Bandwidth	5 Hz - 10 MHz
Video Resolution	700 TV lines
Signal-to-Noise Ratio	>65dB Weighed
Differential Phase	<2°
Differential Gain	<2%
Tilt	<0.5%
Optical Dynamic Range	16dB

1-Ch. 8 BIT DIGITAL VIDEO ON 1 FIBER

7.0 Panels Layout and Pinout Assignment Diagrams

Figures 7.1, 7.2, 7.3 and 7.4 below show the front and rear panel layout for both the TX/RX; Figures 7.5 below show the connector diagrams of rear panel layout; Figures 8.1 and 8.2 below show the led indicators of rear panels for both the TX/RX.



Figure 7.1: the layout of rear panel of TX in standalone version



Figure 7.2: the layout of rear panel of RX in Card (rackmount) version

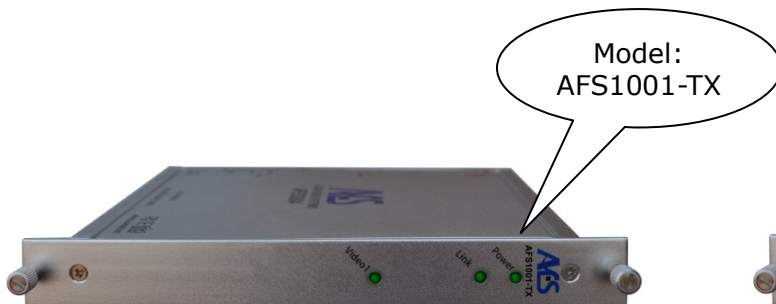


Figure 7.3: the layout of front panel of TX in standalone version



Figure 7.4: the layout of front panel of RX in Card (rackmount) version

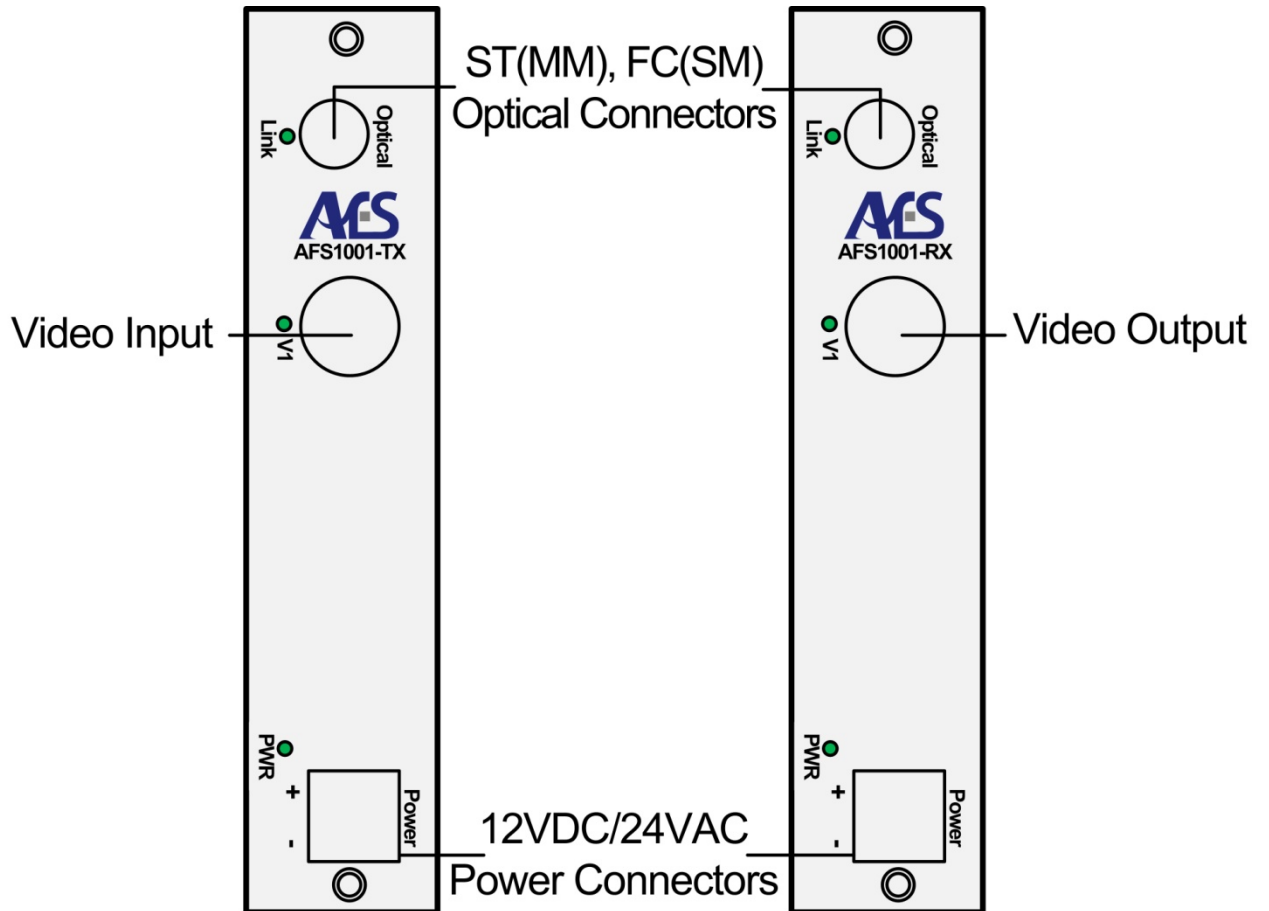
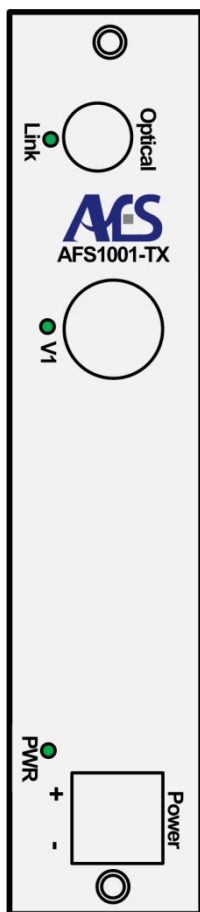


Figure 7.5: the connection diagram of rear panel for both the TX/RX.

8.0 Front Panel LED Indicators

Both the Transmitter (TX) and Receiver (RX) cards have front panel mounted indicators to provide visual operational status of the card and each of the channels. Below are listed and described the functions of the various LED indicators. When an active video source is connected to any one of the input channels, the Video LED will turn ON. When the receiver is connected to the transmitter via fiber, the corresponding channel Video LED will also illuminate.



AFS1001-TX

LED STATUS INDICATORS

LINK – OPTICAL CONNECTION PRESENT (ON)
OPTICAL CONNECTION ABSENT (OFF)

VIDEO INPUT STATUS INDICATORS

V1- VIDEO PRESENT (ON)
VIDEO ABSENT (OFF)

POWER INPUT/OUTPUT STATUS INDICATORS

PWR –POWER UP (ON) / POWER DOWN (OFF)

Figure 8.1: Led indicators of TX rear panel

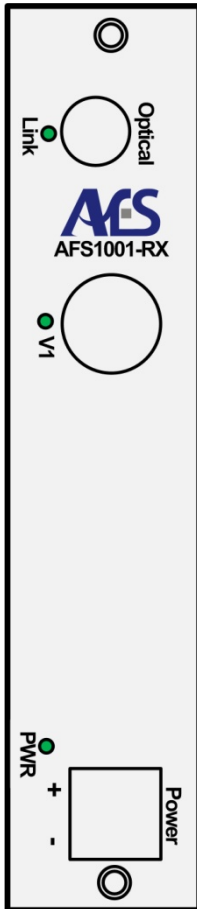


Figure 8.2: LED indicators of RX rear panel

AFS1001-RX

LED STATUS INDICATORS

LINK – OPTICAL CONNECTION PRESENT (ON)
OPTICAL CONNECTION ABSENT (OFF)

**VIDEO OUTPUT
STATUS INDICATORS**

V1- VIDEO PRESENT (ON)
VIDEO ABSENT (OFF)

**POWER INPUT/OUTPUT
STATUS INDICATORS**

PWR –POWER UP (ON) / POWER DOWN (OFF)

9.0 Product Part Number Variations

The table below lists the various part numbers associated with different signals the products transmit and receive.

Signal Type	# Channels
NTSC / PAL Video	1
Transmitter	AFS1001- 1 STX / AFS1001- 2 STX AFS1001- 1 CTX / AFS1001- 2 CTX
Receiver	AFS1001- 1 SRX / AFS1001- 2 SRX AFS1001- 1 CRX / AFS1001- 2 CRX
1=MM, 2=SM; S=Standalone, C=Card (rackmount)	

10.0 Troubleshooting

Below is a listing of several problems that may arise during the installation & operation of the fiber units. If user encounters issues in the installation or operation, please refer to list below.

Problem: *Card does not fit in chassis slots*

Action: Check card orientation. Alba logo must be located on the top side of the card. Please ensure the card guides in the chassis are aligned with the extrusion on the card.

Problem: *Card power LED does not light when power to the card/subrack is applied or power indicator turns on and off*

Action: Check power supply to ensure that it is plugged in and turned on. If flashing continues, move card, if another slot is available in the same chassis.

Problem: *No video at output of card*

Action: Check to ensure that the input video of the specific channel is operating - the LED must be ON. Also, check to ensure that the optical LED on receiver is ON. If video is still absent, check to ensure that the monitor is ON and that the coaxial cable is connected to the correct video port on the Rx card.

Problem: *Video image is dark*

Action: In camera OSD - check the iris control on the camera to ensure that it is open as per the environmental conditions.

Problem: *Fiber system does not work*

Action: 1 - there is a simple rule to try. Replace TX side with an TX that is known to be fully operational. If Link works, original TX is faulty. If no results, re-install original TX. Now replace RX with unit that is known to be fully operational. If link works, original RX is faulty. If no results, please use Light source on one end and power meter on other end to measure light in cable. It is possible that optical connectors on cable (one or both) are faulty.

If the problem still persists after reviewing the above items, please contact Alba technical support (888-888-8888) or write to techsupport@albafiber.net.

11.0 Warranty

- 3 years warranty for product - please refer to Alba Fiber Systems warranty document.
 - Repair
 - If product is found to be defective, user must contact a local distributors or re-seller.
- In order to return any items for repair or credit, buyer must receive a dated Return Materials Authorization form (RMA #), assigned by Alba Fiber Systems Customer Service department. Please contact RMA@albfiber.net. Returns must be shipped prepaid, fully insured, door to door service and clearly identified with RMA on package exterior or it will not be accepted. Alba reserves the right to apply repair charges to any products that have been dismantled or modified by anyone other than an Authorized Alba Security engineer.
- Please attach a statement clearly describing the problem.
 - Alba will repair defective product under warranty free of charge to our customers.
 - Any unauthorized modification of hardware and software voids the warranty.
 - Warranty does not cover mishandling and/or abuse of the product.

Products comply with the following Safety Label for International Fiber Communication Equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful Interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

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