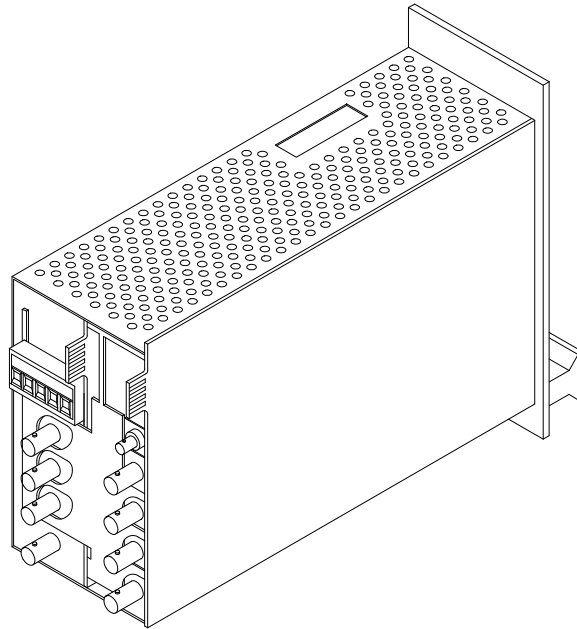


# afi

120 Belmont Drive  
Somerset, NJ 08873-1204

---



american fibertek Phone: 732.302.0660 Fax: 732.302.0667



## Instruction Manual

RR-984C-SL

Eight Channel Digital Receiver  
With RS485, RS-422, RS232 or  
Manchester Data

 <div style="display: inline-block; text-align: center; border: 1px solid black; padding: 5px; margin: 0 10px;"><b>CAUTION</b></div> 
<b>RISK OF ELECTRIC SHOCK, DO NOT OPEN WITH POWER APPLIED</b>
<b>WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE</b>  <b>NO USER SERVICEABLE PARTS INSIDE REFER SERVICE TO QUALIFIED SERVICE PERSONNEL</b>

## Table of Contents

Functional Description .....	3
Installation .....	3
Power Source .....	3
Power Connection .....	3
Fiber Connection .....	3
Video Input Connections .....	4
Data Input / Output Connections .....	4
Typical System Data Connections.....	5
Data Configuration.....	5
RR-984C-SL Status LED Indicators .....	5
Warranty and Service Information .....	6

# INSTALLATION AND OPERATION INSTRUCTIONS

## INTRODUCTION

Thank you for purchasing your American Fibertek RR-984C-SL singlemode eight channel digital video receiver with RS485, RS422, RS232, or Manchester data. Please take a few minutes to read these installation instructions in order to obtain the maximum performance from this product.

## FUNCTIONAL DESCRIPTION

The RR-984C-SL receiver operates as half of a transmitter / receiver pair for the transmission of eight channels of high performance 10 bit digital NTSC, PAL, RS170, or RS343 video signals. The RR-984C-SL also supports one bi-directional RS485, RS422, RS232 or Manchester data channel. The RS485 channel may be configured for 2-wire (half duplex) or 4-wire (full duplex) operation. This unit is designed for rack mounting into the American Fibertek SR-20/2 subrack. LED indicators provide for easy monitoring of video, data, and optical power.

The RR-984C-SL is designed to operate with the MT or RT-984C-SL video transmitter with bi-directional data over one singlemode fiber optic cable. The RR-984C-SL encodes a data signal into a serial data stream that is transmitted on a 1550 nm optical wavelength. The RR-984C-SL also detects and demultiplexes a return optical serial data stream containing eight video signals along with one data signal at 1310 nm wavelength. Refer to the data sheets for detailed performance specifications

## INSTALLATION

**THIS INSTALLATION SHOULD BE MADE BY A QUALIFIED SERVICE PERSON AND SHOULD CONFORM TO THE NATIONAL ELECTRICAL CODE, ANSI/NFPA 70 AND LOCAL CODES.**

The unit slides into any two adjacent open slots in the SR-20 subrack. Use a small screwdriver to push and lock the four ¼ turn fasteners into place.

## POWER SOURCE

Power to the unit is supplied by the subrack. Please refer to the SR-20/SR20D and PSR-2 instructions for further details.

## POWER CONNECTION

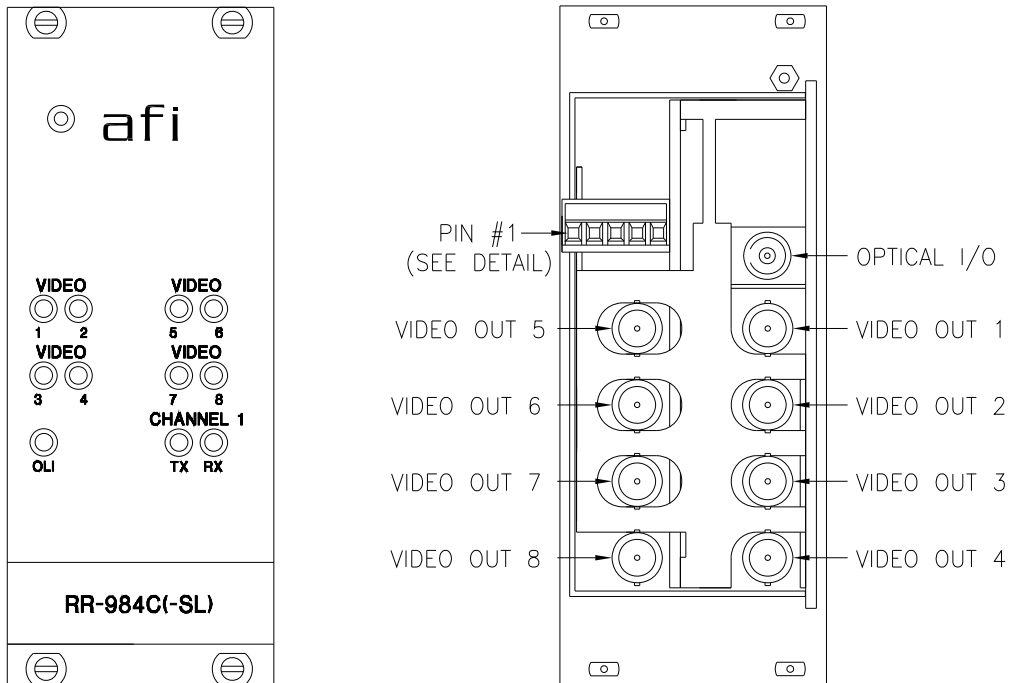
Power is supplied to the unit via a backplane connector. The RR-984C-SL can be inserted into the subrack or removed from the subrack with power applied to the backplane.

## FIBER CONNECTION

The fiber optic connection is made via a FC/PC connector located on the back of the unit. Be sure to allow sufficient room for the required minimum bend radius of the fiber cable used.

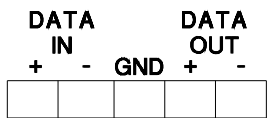
## VIDEO OUTPUT CONNECTIONS

The video output connections are made via BNC connectors on the back of the unit. The 75Ω video outputs can be looped through typical baseband video inputs of switchers, recorders and other equipment as required. For proper operation, the outputs must be terminated with 75Ω. For optimum performance the video cables should be the shortest length of coax practical.

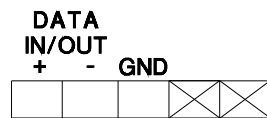


## ATA INPUT / OUTPUT CONNECTIONS

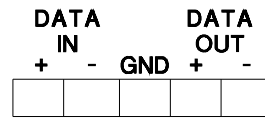
Data input and output connections are made via a terminal block on the back of the unit. Follow the drawings below for proper orientation of input and output connections. Please note that the far left pin on each connection drawing corresponds with the far left pin on the terminal block. For example, RS485 DATA IN + is pin 1 as shown in the drawing above.



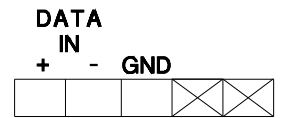
**RS485 4-WIRE  
DATA**



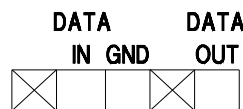
**RS485 2-WIRE  
DATA**



**RS422 4-WIRE  
DATA**



**MANCHESTER  
DATA**



**RS232 DATA**

## TYPICAL SYSTEM DATA CONNECTIONS

The RS422 or RS485 four wire interconnection between the RR-984C-SL and the copper device to which it is attached is based on industry standard EIA terminology for the transmission of electronic data signals. Using this terminology, the driver of an electronic signal is labeled TX or Data Out. Correspondingly, the receiver of an electronic signal is labeled RX or Data In. Following this standard, the TX or Data Out of the copper device is connected to the RX or Data In of the RR-984C-SL. The plus terminal of the copper device is connected to the plus terminal of the RR-984C-SL and the minus is connected to the minus. The reverse flow of data from the RR-984C-SL to the copper device follows the same pattern. Not all manufactures follow standard EIA terminology. Consult the installation instructions for your copper device if you are unsure which two wires are the drive (data out) wires and which two wires are the received (data in) wires.

## DATA CONFIGURATION

**The RR-984C-SL is factory shipped with the data channel configured in the RS485-4 wire mode.**

In order to reconfigure the data channel, the configuration switch bank on the top of the unit needs to be modified.

See the tables below for a summary of the switch settings.

### **Data Switch Off=Up On=Down**

1	2	3	4	5	
Off	Off	Off	Off	Off	RS485-4W / Manchester
On	Off	On	Off	Off	RS485-2W
Off	On	Off	On	Off	RS422
On	On	On	On	Off	RS232

## RR-984C-SL STATUS INDICATORS

The RR-984C-SL transmitter provides the following LED status indicators to aid in installation and troubleshooting:

### DATA TX

A green LED indicator is provided to monitor the input data from the electrical interface and out onto the fiber. The intensity of this indicator will vary with input data patterns. However, in typical applications it will cycle on and off as data is transmitted. Data status associated with this LED is summarized below.

Data TX LED	Data Status
Green	Data Flow Present
Off	Data Flow Not Detected

### DATA RX

A green LED indicator is provided to monitor the data coming in from the fiber and out onto the electrical interface. The intensity of this indicator will vary with input data patterns. However in typical applications it will cycle on and off as data is received. Data status associated with this LED is summarized below.

Data RX LED	Data Status
Green	Data Flow Present
Off	Data Flow Not Detected

### VIDEO 1 THROUGH VIDEO 8

A bi-color LED indicator is provided for each of the eight video outputs from the RR-984C-SL. DC power and video status associated with each of these LED's are summarized below.

Video Presence LED	DC Power Status	Video Status
Green	On	Proper Output Video/DC Power Present
Red	On	Output Video Not Detected/DC Power Present
Off	Off	Check Power Supply

### OLI

A bi-color LED indicator monitors the optical input power of the data signal that is being received at the RR-984C-SL from the RT-984C-SL. DC power and optical input status associated with this LED are summarized below.

Optical Level Indicator	DC Power Status	Optical Status
Green	On	Proper Optical Input Power Present/DC Power Present
Red	On	Optical Input Not Detected/DC Power Present
Off	Off	Check Power Supply

**This unit complies with 21 CFR  
1040.10 and 1040.11**

### LIFETIME WARRANTY INFORMATION

American Fibertek, Inc warrants that at the time of delivery the products delivered will be free of defects in materials and workmanship. Defective products will be repaired or replaced at the exclusive option of American Fibertek. A Return Material Authorization (RMA) number is required to send the products back in case of return. All returns must be shipped prepaid. This warranty is void if the products have been tampered with. This warranty shall be construed in accordance with New Jersey law and the courts of New Jersey shall have exclusive jurisdiction over this contract. **EXCEPT FOR THE FOREGOING WARRANTY, THERE IS NO WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE, EXPRESSED OR IMPLIED, WHICH EXTENDS BEYOND THE WARRANTY SET FORTH IN THIS AGREEMENT.** In any event, American Fibertek will not be responsible or liable for contingent, consequential, or incidental damages. No agreement or understanding, expressed or implied, except as set forth in this warranty, will be binding upon American Fibertek unless in writing, signed by a duly authorized officer of American Fibertek.

### SERVICE INFORMATION

There are no user serviceable parts inside the unit.

In the event that service is required to this unit, please direct all inquiries to:

American Fibertek, Inc.  
120 Belmont Drive  
Somerset, NJ 08873

Phone: (877) 234-7200  
Phone: (732) 302-0660  
FAX (732) 302-0667

E-mail: [techinfo@americanfibertek.com](mailto:techinfo@americanfibertek.com)