



USER'S MANUAL

Model 7100 Series



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WORLD HEADQUARTERS

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TABLE OF CONTENTS

General Information	2
Introduction	2
Technical Specifications	2
Installation Instructions	4
Installation Procedure	4
Indicator LEDs and Alarm Circuitry	5
Operating Pointers and Trouble Shooting	6
Optical Fiber	6
Troubleshooting	6
Maintenance	7
Warranty	8

GENERAL INFORMATION

Introduction:

The Pure Digital Fiberlink® 7100 Series is a transmitter/receiver pair that transmits a single channel of wideband video over single mode or multimode fiber. It is available in both a free-standing box version and as a card version for use in the rackmountable 6000A card cage.

The use of digital encoding assures high-quality noise-free transmissions that retain all of their initial parameters, regardless of fiber optic cable attenuation. In addition, an integral indicator LED is provided on each unit to continuously signify the presence of a baseband video signal and thus, the proper operation of each side of the system.

Technical Specifications:

Model Part Numbering Configurations:

Unit Type	Part Number
Transmitter Box	7100-Bxy
Transmitter Rack Card	7100-Cxy
Receiver Box	7101-Bxy
Receiver Rack Card	7101-Cxy

X Values: 1=850 nm MM
3=1310 nm MM
7=1310 nm SM
9=1550 nm SM

Y Values: S=ST connector
F=FCPC connector

Video

Frequency Response 15 MHz (-3dB), +/-0.1 dB to 8 MHz

Input/Output Impedance 75 Ohms

Input/Output Voltage 1 V p-p nom.

Video Gain Adjust +/-4%
Differential Phase 0.5° typical
Differential Gain 0.7% typical
Signal-to-Noise Ratio 67dB per RS-250C
Y/C Delay 4 ns
Signal Connectors BNC

Optical

Operating Wavelength 850nm, 1310nm, 1550nm MM/SM
Optical Fiber 62.5/125 microns MM or
8-10/125 microns SM
Optical Connectors ST or FCPC

Wavelength	Loss Budget (in dB)	Distance* (in km)
850 MM	0-20	0-.75
1310 MM	0-25	0-2
1310 SM	0-25	0-60
1550 SM	0-25	0-80

**Distance specifications are only approximate and are not guaranteed. Operating loss budget must not be exceeded.*

Miscellaneous:

Operating Temp. Range -35 to +70 degrees C
Operating Power 9-24 Volts AC or DC@5 watts (max)

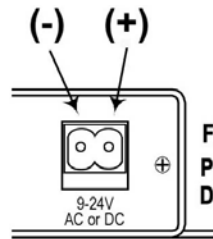
CAUTION! The transmitting element in some versions of the Pure Digital Fiberlink transmitter unit is a solid-state Laser Diode located in the optical connector on the unit. This device emits invisible infrared electromagnetic radiation which can be harmful to human eyes. The radiation from this optical connector, if viewed at close range without a fiber optic cable connected to the optical connector, may be of sufficient intensity to cause instantaneous damage to the retina of the eye. Direct viewing of this radiation should be avoided at all times.

INSTALLATION INSTRUCTIONS

Installation Procedure

The Pure Digital Fiberlink 7100 Series transmission systems are preset for immediate use. The following instructions describe the typical installation procedure and the function of the LED indicators located on each unit.

1. Connect the video source to the video input BNC connector on the transmitter unit.
2. Connect the video output BNC on the receiver unit to the coax cable BNC connector.
3. Connect the fiber optic cable between the two Pure Digital Fiberlink units.
4. Apply power to both Pure Digital Fiberlink units. Refer to the DC power connection shown in Figure 1.



**FIGURE1:
POWER CONNECTOR
DC INPUT POLARITY**

5. When power is applied, the green POWER LED will light, indicating the presence of operating power. The VIDEO LED will give an indication as stated below.

In addition, note that the rack card version will have an additional red LED for indicating the presence of an alarm condition (loss of video).

6. Adjust the “video gain” trim pot located on the receiver rear panel to the desired output video level.

7. The system should now be operational.

Indicator LEDs and Alarm Circuitry

Following is a description of the various conditions indicated by the system’s LEDs:

TRANSMITTER and RECEIVER:

Power: ON: (Green) Indicates that correct power has been applied

TRANSMITTER:

Video: OFF: Indicates no video detected on input BNC.

STEADY GREEN: Indicates video detected on input BNC.

Alarm: ON: Loss of video (rack card only)

RECEIVER:

Video: OFF: Indicates no video detected over fiber and, as a result, no video present on output BNC

STEADY GREEN: Indicates video detected over fiber and, as a result, video present on output BNC.

Alarm: ON: Loss of optical signal (rack card only)

OPERATING POINTERS AND TROUBLESHOOTING

Optical Fiber:

The 7100 Series is available in versions that operate with most multimode (MM) and single mode (SM) optical fibers. Be certain that the correct size fiber is being used for the particular transmitter/receiver combination.

Also be certain that the attenuation and bandwidth of the fiber optic cable being used is within the range of the system's loss budget specifications.

Troubleshooting:

Multimode fiber optic cable contains an optical fiber with a light carrying "core" that is only .0025 inches (62.5 microns) in diameter. Single mode fiber optic cable has an even smaller "core," only .00032 to .0004 inches (8-10 microns). This is smaller than a human hair! Therefore, minute particles of dirt or dust can easily block the fiber from accepting or radiating light. To prevent this from happening, always use the dust caps provided with all optical connectors whenever they are exposed to air. Also, it is a good idea to gently clean the tip of an optical connector with a lint-free cloth moistened with alcohol whenever dust is suspected.

The status of the VIDEO indicator LEDs should provide the first clue as to the origin of any operational failure. If a VIDEO LED is off, it usually means that the fiber is broken or has too much attenuation. Next, be certain that the input and output signal connections are proper.

Finally, although multimode and single mode devices may look the same, they will not operate properly together. Using the wrong device or fiber can easily add more attenuation than specified, resulting in poor overall performance.

If, after reviewing the above possibilities, the system is still not operating, please contact the Customer Service Department for further assistance.

MAINTENANCE

The Pure Digital Fiberlink 7100 Series transmission units have been manufactured using the latest semiconductor devices and techniques that electronic technology has to offer. They have been designed for long, reliable and trouble-free service and are not normally field repairable. Should difficulty be encountered, Communications Specialties maintains a complete service facility to render accurate, timely and reliable service of all products.

The only maintenance that can be provided by the user is to ascertain that optical connectors are free of dust or dirt that could interfere with light transmission and that electrical connections are secure and accurate.

All other questions or comments should be directed to our Customer Service Department. Many problems can easily be solved by a simple telephone call.

LIMITED WARRANTY

Communications Specialties, Inc. (CSI) warrants that for a period of three years after purchase by the Buyer, the Pure Digital Fiberlink 7100 Series Transmission System will be free from defects in material and workmanship under normal use and service. A Return Material Authorization (RMA) number must be obtained from CSI before any equipment is returned by the Buyer. All material must be shipped to CSI at the expense and risk of the Buyer. CSI's obligation under this warranty will be limited, at its option, to either the repair or replacement of defective units, including free materials and labor. In no event shall CSI be responsible for any incidental or consequential damages or loss of profits or goodwill. CSI shall not be obligated to replace or repair equipment that has been serviced by unauthorized personnel, altered, improperly installed or abused.

RMA numbers and repairs can be obtained from:

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Please have your serial number (located on the top label of the unit) available when contacting us.