



**Receiver Models 7223, 7225 and 7227**

## **USER'S MANUAL**



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## GENERAL INFORMATION

### Introduction

The Pure Digital Fiberlink® 7223, 7225 and 7227 receiver units for RGBHV video with stereo audio provide a combination of multiple baseband outputs and optical loop-through capabilities for drop-and-repeat system configurations. All three models are compatible with any transmitter unit within the 7220 Series. They operate at 1310 nm wavelength and work with either single mode or multimode fiber. Following are general descriptions of each unit:

7223 Receiver: 4 baseband outputs of high-res RGB with stereo audio

7225 Receiver: 1 baseband output of high-res RGB with stereo audio, plus one optical loop-through output

7227 Receiver: 4 baseband outputs of high-res RGB with stereo audio, plus one optical loop-through output

The units' all digital encoding delivers noise-free transmissions that retain all of their initial parameters, regardless of fiber optic cable attenuation. System operation may be easily monitored using integral LEDs on each unit that continuously signify the presence of baseband video and audio signals.

### Technical Specifications

#### Model Part Number Configurations:

Receiver Type	Part Number
4 baseband outputs	7223-B7S
1 baseband output; drop & repeat	7225-B7S
4 baseband outputs; drop & repeat	7227-B7S

*All units operate at 1310 nm wavelength with single mode or multimode fiber. ST connectors are provided.*

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**Video:**

Input Impedance .....	RGB: 75 Ohms; H&V: Hi-Z
Input Level .....	RGB: 714 mV p-p; H&V: 3 to 5 V p-p
H Sync Frequency Range .....	15 to 60 kHz
V Sync Frequency Range .....	30 to 85 Hz
Number of Video	
Channels Supported .....	1 RGBHV
Number of Baseband	
RGBHV Video Outputs .....	Model 7225: 1; Models 7223 & 7227: 4
RGB Format Supported .....	RGB with separate H and V
Signal Connectors .....	HD-15F
RGB Processing .....	24 bits, no compression or scaling

**Audio:**

Number of Audio	
Channels Supported .....	2, unbalanced
Number of Baseband	
Stereo Audio Outputs .....	Model 7225: 1; Models 7223 & 7227: 4
Frequency Response .....	+0/-0.5 dB, 20 Hz to 20 kHz
Input Impedance .....	>24 k Ohms
Output Impedance .....	<1 Ohm
Maximum Audio Level .....	+10 dBu
THD+N .....	0.005%; 20 Hz - 20 kHz
SNR (A-Weighted) .....	95 dB
Channel Phase Differential .....	+/-0.1°
Crosstalk .....	Min. 95 dB (1 kHz)
Signal Connectors .....	3.5mm Stereo jack

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Audio to Video Differential  
Delay (skew) ..... <300 uS

**Optical:**

Operating Wavelength ..... 1310 nm; MM or SM  
Optical Fiber ..... 62.5/125 microns MM,  
50/125 microns MM or  
8-10/125 microns SM  
Optical Connector ..... ST

*Class I Laser Product complies with FDA performance standard for laser products, Title 21, Code of Federal Regulations, Sub-Chapter J*

**Miscellaneous:**

Operating Temp. Range ..... -20 to +50 degrees C  
Operating Power ..... 9-24 volts AC or DC, 8 watts

**Loss Budget and Maximum Transmission Distance:**

Wavelength	Loss Budget (in dB)	Distance* (in km)
1310 MM	0-15	0-0.75
1310 SM	0-15	0-30

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

**DANGER!** The transmitting element in the Pure Digital Fiberlink 7225 and 7227 receiver units contain solid state Laser Diodes located within the optical connectors. These lasers emit invisible infrared electromagnetic radiation which can be harmful to human eyes. The radiation from these optical connectors, 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.

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## INSTALLATION INSTRUCTIONS

### Installation Procedure:

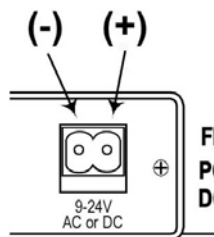
The Pure Digital Fiberlink® 7223, 7225 and 7227 units are ready for immediate use. Each model features indicator LEDs for monitoring purposes. The following instructions describe the typical installation procedure and the function of the LED indicators.

1. Connect the RGBHV output(s) to computer monitor(s) or other destination(s).
2. Connect the AUDIO output(s) to speakers or other destination(s).
3. Connect fiber optic cable from optical output of the 7220 Series transmitter to the optical input of the 7223, 7225 or 7227 receiver unit.
4. If using the drop-and-repeat function available on the 7225 and 7227 units, then connect fiber optic cable from the optical output on these units to the optical input on any 7220 Series receiver. If connecting to additional 7225 or 7227 units for daisy-chain style signal distribution, repeat this step as many times as necessary. If the optical output on a 7225 or 7227 receiver will not be used, be sure to leave the protective cap on.
5. Apply power to all Pure Digital Fiberlink 7220 Series units. For the 7223, 7225 and 7227 units, refer to the DC power connection shown in Figure 1.

6. When power is applied the green POWER LED will light, indicating the presence of operating power.

7. The VIDEO and AUDIO LEDs will give an indication as described on Page 8.

8. The system should now be operational.



**FIGURE 1:  
POWER CONNECTOR  
DC INPUT POLARITY**

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### **System Connections:**

The input and output connections for the Pure Digital Fiberlink<sup>®</sup> 7223, 7225 and 7227 models are as follows:

Audio Connector OUTPUT(S): 3.5mm stereo jack

Video Connector OUTPUT(S): HD-15F connector

Video Pin Out: RGBHV; RGBHV 1-4

1	Red Out
2	Green Out
3	Blue Out
4	N/C
5	Ground
6	Ground
7	Ground
8	Ground
9	N/C
10	Ground
11	N/C
12	N/C
13	Hor. Sync. Out
14	Vert. Sync Out
15	N/C

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## **Indicator LEDs:**

The Pure Digital Fiberlink® 7223, 7225 and 7227 receivers each have three integral indicator LEDs that are used to monitor the state of the unit.

The status of the LEDs are as follows:

**Power:** ON: (GREEN) Indicates that correct power has been applied.

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

BLINKING GREEN: Indicates either H or V sync detected over the fiber but not both

STEADY GREEN: Indicates both H and V sync detected over the fiber and, as a result, active video detected by the receiver unit.

**Audio:** OFF: Indicates no audio detected over fiber and, as a result, no active audio detected by the receiver unit.

BLINKING: Indicates audio detected over fiber and, as a result, active audio detected by the receiver unit.

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## OPERATING POINTERS AND TROUBLESHOOTING

### **Optical Fiber:**

The 7223, 7225 and 7227 receivers operate with most multimode (MM) and single mode (SM) optical fibers. All models within the 7220 Series use the same 1310 nm wavelength and optics for transmitting over multimode or single mode fiber, but be aware that the type of fiber you use will affect the system's loss budget and the maximum transmission distance that it can support.

### **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, any minute particles of dirt or dust can easily block the fiber from accepting or radiating light. To prevent this from happening, always use the provided dust caps whenever optical connectors are exposed to air. It is also 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 and AUDIO indicator LEDs should provide the first clue as to the origin of an operational failure. If these are 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 correct.

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

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## MAINTENANCE AND REPAIRS

The Pure Digital Fiberlink® 7223, 7225 and 7227 receivers 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 the optical connectors are free of dust or dirt that could interfere with light transmission and that electrical connections are secure and accurate. **DANGER!** *Always turn off the transmitter's power before removing the optical fiber from the unit!*

All other questions or comments should be directed to our Customer Service Department. It should be noted that many “problems” can easily be solved by a simple phone call.

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## LIMITED WARRANTY

Communications Specialties, Inc. (CSI) warrants that for a period of three years after purchase by the Buyer, the Pure Digital Fiberlink® 7223, 7225 and 7227 receivers 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. 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 damaged by fire, war, acts of God, or similar causes, or equipment that has been serviced by unauthorized personnel, altered, improperly installed or abused.

RMA numbers and repairs can be obtained from:

**Communications Specialties, Inc.**

**55 Cabot Court**

**Hauppauge, NY 11788 USA**

**Tel: (631) 273-0404 Fax: (631) 273-1638**

**www.commspecial.com Email: info@commspecial.com**

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**Email: csiasia@commspecial.com**

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