



## FiberLink 7220 Series



**RGB and Stereo Audio over one  
single mode or multimode fiber.**

**Installation and Operations  
Manual**

**[WWW.ARTEL.COM](http://WWW.ARTEL.COM)**

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## Welcome

The FiberLink 7220 Series is a transmitter/receiver pair that transmits a single channel of RGBHV video and two audio channels over one single mode or multimode fiber. It is available as a freestanding box unit or as a card version for use in the rackmountable 6000A card cage.

The system's 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 indicator LEDs on each unit that continuously signify the presence of baseband video and audio signals.

## Features

- Supports VGA, SVGA, XGA and WXGA (640 x 480 up to 1366 x 768)
- Supports HDTV resolutions of 480p, 720p and 1080i (RGBHV format only)
- Uses all digital processing with no compression for crystal clear signals and no color pixel skewing
- Requires no adjustments, equalization or de-skewing during installation
- Transmits signals over one single mode or multimode fiber optic core at 1310 nm wavelength
- Low audio/video skew, <300 uSec
- Use with FiberLink 8000 and 8100 Series Optical DAs for complex point-to-multipoint distribution
- RoHS Compliant

## Package Contents

- One FiberLink 7220 or 7221
- This User's Manual

## Technical Specifications

### Model Part Number Specification

Unit Type	Part Number
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Transmitter Box	7220-B7S
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Transmitter Rack Card	7220-C7S
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Receiver Box	7221-B7S
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Receiver Rack Card	7221-C7S
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### Video Specifications

Input Impedance	RGB: 75 Ohms; H&V: Hi-Z
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Input Level	RGB: 714 mV p-p; H&V: 3 to 5 V p-p
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H Sync Frequency Range	31.5 to 60 kHz
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V Sync Frequency Range	30 to 85 Hz
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Number of Video Channels	1 RGBHV
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RGB Format Supported	RGB with separate H and V
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Signal Connectors	HD-15F
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RGB Processing	24 bits, no compression or scaling
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### Audio Specifications

Number of Audio Channels	2, unbalanced
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Frequency Response	+0/-0.5 dB, 20 Hz to 20 kHz
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Input Impedance	>24 k Ohms
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Output Impedance	<1 Ohm
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Maximum Audio Level	+10 dBu
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THD+N	0.005%; 20 Hz - 20 kHz
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SNR (A-Weighted)	95 dB
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Channel Phase Differential	+/-0.1o
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Crosstalk	Min. 95 dB (1 kHz)
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Signal Connectors	3.5mm Stereo jack
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Audio to Video Diff. Delay (skew)	<300 uS
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## Technical Specifications

### Optical Specifications

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

### General Specifications

LED Indicators	Power, Video, Audio Alarm LED (Card Version Only)
Power	9-24 volts AC or DC, 5 watts
Operating Temp. Range	-20 to +60° C
Dimensions	5 W x 1.15 H x 5.25 L (inches) 127 W x 29 H x 133 L (mm)

## Installation Instructions

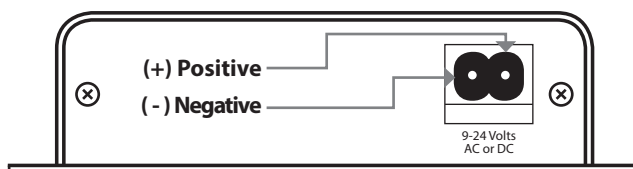
The FiberLink 7220 Series transmission systems ready for immediate use with with no special configuration or installation. The following instructions describe the typical installation procedure and the function of the LED indicators.

**The following instructions describe the typical installation procedure:**

- 1) Connect the video source to the video input HD-15F connector on the transmitter unit.
- 2) Connect the video output on the receiver unit to the HD-15F connector.
- 3) Connect the fiber optic cable between the two Pure Digital FiberLink units.
- 4) Connect the audio input signals to the transmitter stereo jack and the audio output to the receiver stereo jack.
- 5) Apply power to both FiberLink units. For box versions using DC power connections, refer to Figure 1.
- 6) When power is applied, the green POWER LED will light, indicating the presence of operating power. The VIDEO LED will give an indication as described on Page 8.
- 7) The green AUDIO LED will give an indication as stated on Page 8.
- 8) The system should now be operational.

*Note: The Rack Card version has an additional red LED for indicating the presence of an alarm condition (loss of signal). Refer to Indicator LED's and Alarm Circuitry sections of this manual.*

**Figure 1:**  
**Power Connector**  
**DC Input Polarity**



**DANGER!**

The transmitting element in the FiberLink 7220 transmitter unit contains a solid state Laser Diode located in the optical connector. 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 with no fiber optic cable connected to the optical connector, may be sufficient intensity to cause instantaneous damage to the retina of the eye. Direct viewing of this radiation should be avoided at all times!

Alarm Switch Settings

The rack card version of this product has an additional red indicator LED that lights when an alarm condition exists. The rack card unit also provides an output to drive a model 6020 Alarm Sensing Module which provides an audible tone and activates a set of contacts for external signaling purposes.

Transmitter Card			
Switch Position	Alarm Indication	On	Off
1	Loss of Video	Enabled	Disabled
2	N/A	N/A	N/A
Receiver Card			
Switch Position	Alarm Indication	On	Off
1	Loss of Signal	Enabled	Disabled
2	Loss of Video	Enabled	Disabled

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



## Indicator LEDs

The FiberLink 7220 Series has indicator LEDs that are used to monitor the state of the unit. Card versions have an additional Alarm LED.

### Transmitter LEDs

LED	Status	Definition
Power	On	Indicates that correct power has been applied.
Video	Off On	Indicates no video present on the input Indicates the presence of video
Audio (1-4)	Off Blinking	Indicates no audio input detected Indicates audio input detected
Alarm	On	Loss of audio data (card version only)

### Receiver LEDs

LED	Status	Definition
Power	On	Indicates that correct power has been applied.
Video	Off On	Indicates no video present on the fiber Indicates the presence of video
Audio (1-4)	Off Blinking	Indicates no audio detected on the fiber Indicates audio detected on the fiber
Alarm	On	Loss of audio data (card version only)

## Operating Pointers

Remember to check attenuation of the fiber optic cable. The system will only operate properly if these specifications fall within the range of the system's loss budget.

## 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 when ever 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 LEDs should provide the first clue as to the origin of any 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.

An optical power meter, such as the FiberLink 6650, a visible light source, such as the FiberLink 6656, and a Three Wavelength Light Source, such as the FiberLink 6652, can greatly assist and expedite troubleshooting of fiber optic transmission systems and are recommended tools all installers should have available.

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. It should be noted that some of our fiber optic products support both single mode and multimode fiber in the same unit.

If, after reviewing the above possibilities, the system is still not operating, please contact the Customer Service Department for further assistance. If you suspect your problem is caused by the optics or the fiber optic cable, and you have an optical power meter, please take the appropriate measurements prior to contacting support.

## Maintenance and Repairs

The FiberLink 7220 Series has 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, Artel Video Systems 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. Please see the Troubleshooting section of this manual for additional information.

An optical power meter, such as the FiberLink 6650, a visible light source, such as the FiberLink 6656, and a Three Wavelength Light Source, such as the FiberLink 6652, can greatly assist and expedite troubleshooting of fiber optic transmission systems and are recommended tools all installers should have available.

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 telephone call.

If you suspect your problem is caused by the optics or the fiber optic cable, and you have an optical power meter, please take the appropriate measurements prior to contacting support.

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### Certifications



## Proven Products, Unrivaed Service, and Great Support



- High performance plug and play products
- Stand alone and card cage versions available
- Solutions for most video, audio, and data formats
- Multimode and single mode versions
- Designed and manufactured in the USA
- Training and installation support available
- 24x7x365 technical support available



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