Quality composite video and two channels of stereo audio delivered over one single mode or multimode fiber optic core. Fiberlink 3620A is feature rich with10Mhz video bandwidth, balanced or unbalanced audio controls and user selectable audio gain from 0 to +6 dB. All digital processing with no equalization, deskewing or other configuration required!

Fiberlink®
3620A Series

Composite Video and Two Channels of Audio over one single mode or multimode fiber.

CSI Communications Specialties, Inc.

World Headquarters
55 Cabot Court
Hauppauge, New York 11788 USA
Tel: (631) 273-0404
Fax: (631) 273-1638
info@commspecial.com

commspecial.com

Contents

Welcome

Thank you for purchasing Communications Specialties, Inc.'s Fiberlink® 3620A Series. The 3620A Series is used to transmit Composite Video over a single fiber optic core as well as 2 channels of audio. The Fiberlink 3620A series is compatible with single mode or multimode fiber. The system utilizes all digital processing to deliver noise-free transmission. The 3620A series is a cinche to install with no equalization, deskewing or special tools required.

Features

- 10 MHz video bandwidth per channel
- Video channel is compatible with NTSC, PAL or SECAM video standards
- Two audio channels that may be user-configured for balanced or unbalanced inputs and outputs
- Switch selectable audio output gain boost of +0 dB or +6 dB
- Indicator LEDs monitor power, video and audio signals
- Transmits over one multimode or single mode fiber
- No adjustments; pure digital processing and transmission
- Wide range power supply allows operation from both AC and DC sources
- System consists of transmitter and receiver unit; card or box version.
- Card version fills one slot in 6000A card cage

Package Contents

- One Fiberlink® 3620A or 3621A
- This User's Manual

Technical Specifications

Model Part Number Specification	
Unit Type	**Part Number**
Transmitter Box	3620A-B7S
Transmitter Rack Card	3620A-C7S
Receiver Box	3621A-B7S
Receiver Rack Card	3621A-C7S

General Specifications	
Indicators	Power, Video, Audio, Alarm (Card version)
Box Version Dimensions	5 W x 1.15 H x 5.25 L (inches) 127 W x 29 H x 203 L (mm)
Weight	approx. 10 oz.; 0.284 kg
Number of slots in 6000A card cage	1
Power	9-24 volts AC or DC, 3.5 watts 11.94 BTU/Hr (Transmitter or Receiver)
Operating Temperature	-10º to +60º C
Operating Wavelength	1310nm
Optical Connector	ST

Video Specifications	
Frequency Response	10 MHz (-3 dB), ±0.2 dB to 5 MHz
Input/Output Impedance	75 Ohms, nominal
Signal-to-Noise Ratio	60 dB (CCIR weighted)
Differential Gain	0.5%
Differential Phase	0.5º
Y/C Delay	< 10 ns
2T K-Factor	0.5%
System Gain	Unity Gain, ± 3%
Video Connector	BNC

Technical Specifications

Audio Specifications	
Number of Audio Channels	2, balanced or unbalanced
Bits per sample/ Sampling Rate	24 bits, 52 kHz
Audio Connector	Screw terminal block
Switches	• Select input termination • Balanced or unbalanced input/output, selectable on a per-channel basis • Output gain boost +0 dB or +6 dB
Frequency Response	+0/-0.5 dB, 20 Hz - 20 kHz
Maximum Audio Level	+10 dBu
Signal-to-Noise Ratio (A-weighted)	95 dB referenced full scale (balanced)
THD	0.002%, 20Hz - 20 kHz, full scale
Channel Phase Differential	±0.1°
Crosstalk	-100 dB (1kHz)
Audio Noise Level	-85 dBm
System Gain	Unity Gain, ±3%, input: balanced 600 ohms, 50 ohms source impedance ; output: balanced into 600 ohms, gain boost 0 dB.
Receiver Output Gain	+0 dB or +6 dB; switch selectable
Input Impedance	600 Ohms terminated, >24K ohms unterminated
Output Impedance	50 Ohms nominal
Audio to Video Diff. Delay (skew)	<300 usec

Optical Loss Budget & Maximum Useable Distance		
Fiber Type	**Loss Budget**	**Distance**
Single Mode Fiber	0-17 dB	40km
Multimode Fiber (62.5u)	0-20 dB	7.5km
Multimode Fiber (50u)	0-20 dB	5km

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

Alarm Switch Settings & Options

The Rack Card version of this product has an additional red indicator LED that illuminates when an alarm condition exists.

The rack card unit also provides an output to drive a model 6020A Alarm Sensing Module which provides an audible tone and activates a set of contacts for external signaling purposes.

Alarm Switch Settings for the Transmitter Card			
Switch Position	**Alarm Indication**	**On**	**Off**
1	Loss of Input Video	Enabled	Disabled
2	N/A	N/A	N/A

Alarm Switch Settings for the Receiver Card			
Switch Position	**Alarm Indication**	**On**	**Off**
1	Loss of Optical Signal	Enabled	Disabled
2	Loss of Input Video	Enabled	Disabled

Installation Instructions

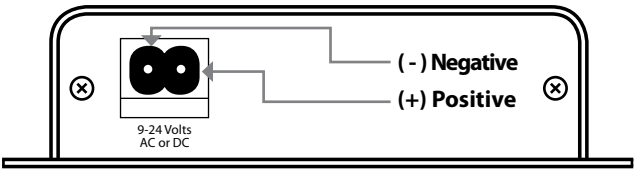
The Fiberlink® 3620A Series of fiber optic transmission systems are ready for immediate use and do not require any special tools or equipment. However, an Optical Power Meter, such as the Fiberlink® 6615, can be useful in determining optical loss budgets during your systems design and maintenance.

The following instructions describe the typical installation procedure:

1) Connect the video source to the video input BNC connector on the transmitter unit.
2) (Optional) Connect your audio source to the audio input on the transmitter unit.
3) Connect the video output cable to the video output BNC connector on the receiver unit.
4) (Optional) Connect audio ouput cable to the audio ouput on the receiver unit.
6) Connect the fiber optic cable to the transmitter and receiver units.
7) Connect the Universal Power Supply to the transmitter and receiver units. For box versions using DC power, please refer to figure 1.
8) Configure your audio preferences as described in the Audio Configuration section of this manual.
9) When power is applied, the green POWER LED should illuminate, indicating the presence of operating power. The Video and the Audio LEDs will give an indication as described in the Indicator LED's and Alarm Circuitry section of this manual.
10) 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



The transmitting element in the Fiberlink® 3620A 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!

Audio Configuration (Transmitter):

The Fiberlink 3620A Transmitter units have a four position DIP switch that is accessible from the front panel. Operation is as follows:

Audio Configuration Switch Settings (Transmitter Box)

Channel (Switch Position)	Balanced (600 Ohms)	Balanced (24k)	Unbalanced (24k)
Channel 1 Controlled by Switches 3 & 4	 Switch 3 Up Switch 4 Down	 Switch 3 Up Switch 4 Up	 Switch 3 Down Switch 4 Up
Channel 2 Controlled by Switches 1 & 2	 Switch 1 Up Switch 2 Down	 Switch 1 Up Switch 2 Up	 Switch 1 Down Switch 2 Up

Audio Configuration Switch Settings (Transmitter Card)

Channel (Switch Position)	Balanced (600 Ohms)	Balanced (24k)	Unbalanced (24k)
Channel 1 Controlled by Switches 3 & 4	 Switch 3 On Switch 4 Off	 Switch 3 On Switch 4 On	 Switch 3 Off Switch 4 On
Channel 2 Controlled by Switches 1 & 2	 Switch 1 On Switch 2 Off	 Switch 1 On Switch 2 On	 Switch 1 Off Switch 2 On

Audio Configuration (Receiver):

The Fiberlink 3621A Receiver units have a four position DIP switch that is accessible from the front panel. Operation is as follows:

Audio Configuration Switch Settings (Receiver Box)

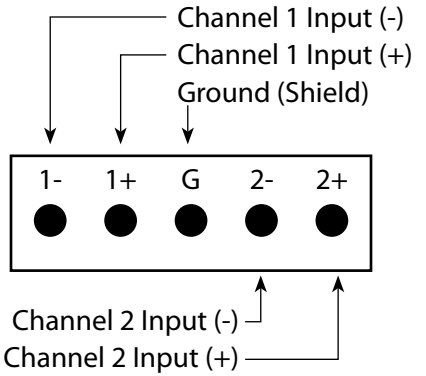
Channel (Switch Position)	Balanced	Unbalanced	Boost	No Boost
Channel 1	 Switch 4 Up	 Switch 4 Down	 Switch 2 Down	 Switch 2 Up
Channel 2	 Switch 3 Up	 Switch 3 Down	 Switch 1 Down	 Switch 1 Up

Audio Configuration Switch Settings (Receiver Card)

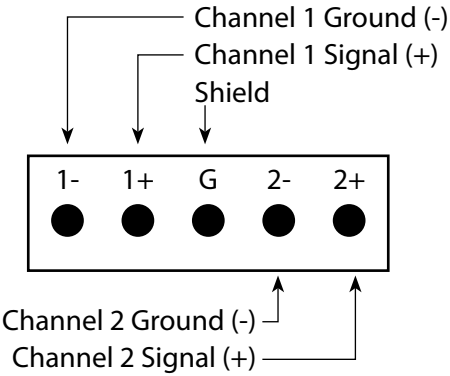
Channel (Switch Position)	Balanced	Unbalanced	Boost	No Boost
Channel 1	 Switch 4 On	 Switch 4 Off	 Switch 2 Off	 Switch 2 On
Channel 2	 Switch 3 On	 Switch 3 Off	 Switch 1 Off	 Switch 1 On

Audio Wiring - Transmitter

Balanced

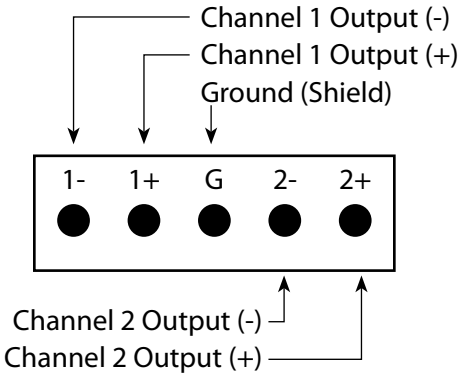


Unbalanced

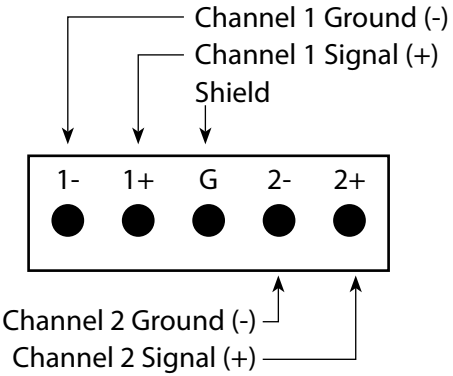


Audio Wiring - Receiver

Balanced



Unbalanced



Indicator LEDs

The Fiberlink® 3620A Series has several indicator LEDs that are used to monitor the state of the unit. Card versions have an additional Alarm LED.

LEDs

LED	Status	Definition
Power	On	Indicates that correct power has been applied.
Video	Off On	Indicates that no video is present Indicates that video is present
Audio	Off Blinking	Indicates that no audio is present Indicates that audio is present
Alarm	On	Loss of input video (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® 6615, a visible light source, such as the Fiberlink® 6610, and a Three Wavelength Light Source, such as the Fiberlink® 6620, 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® 3620A 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, 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. Please see the Troubleshooting section of this manual for additional information.

An optical power meter, such as the Fiberlink® 6615, a visible light source, such as the Fiberlink® 6610, and a Three Wavelength Light Source, such as the Fiberlink® 6620, 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.

Certifications

Communications Specialties, Inc. (CSI) warrants that, for a period of three years after purchase by the Buyer, this product 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 materials 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 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

RMA numbers can also be obtained from our web site: **commspecial.com**

Please have your serial number available.

Fiberlink® 6610 Visible Light Source

The Fiberlink® Visible Light Source provides a visible 650 nm laser output that can be used for identifying fiber breaks and individual fibers within fiber bundles, allowing for convenient, on-site testing of fiber networks during construction and maintenance procedures.

Fiberlink® 6615 Optical Power Meter

The Fiberlink® Optical Power Meter measures the power of optical signals at 850, 980, 1310 and 1550 nm wavelengths, allowing for convenient, on-site testing of fiber networks during construction and maintenance procedures. It can be used to measure the power of an optical signal reaching the receiving end of a fiber optic cable, as generated either by a transmitter unit or by a light source such as the 6620.

Fiberlink® 6620 Three Wavelength Light Source

The Fiberlink® Three Wavelength Light Source offers a laser output at wavelengths of 1310 and 1550 nm and VCSEL output at 850 nm, allowing for convenient, on-site testing of fiber networks during construction and maintenance procedures.

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commspecial.com

P/N 128658 Rev. C