

Overview

The IFS VAT/VRR7400 Video Transmitter/Multiplexer and Video Receiver/Demultiplexer utilizes 8-bit encoding for video transmission that exceeds the requirements of EIA RS-250C Medium-Haul Video. Audio is 20-bit encoded, providing Signal-to-Noise Ratio (SNR) > 85 with less than 0.02% distortion. These environmentally-hardened units provide transmission of four independent video and audio channels over one multimode or single mode optical fiber and are ideal for use in unconditioned roadside or out-of-plant installations. These units are completely transparent to and universally compatible with any NTSC, PAL or SECAM CCTV camera system. Plug-and-play design ensures ease of installation and no electrical or optical adjustments are ever required. LED indicators are provided for rapidly ascertaining equipment operating status, and these units are available in either stand-alone or rack mount configurations.

Application Examples

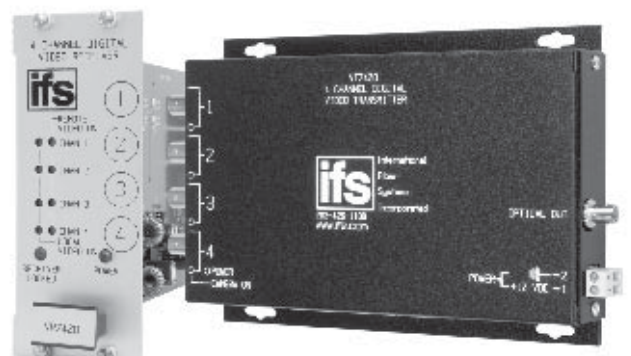
- High-Performance CCTV (Fixed Video)

4-Channel Digitally Encoded Video/Audio Multiplexer

Simultaneously transmits four channels of 8-bit video and four channels of 20-bit audio over one multimode or single mode fiber.

Standard Features

- 8-Bit Digitally Encoded Video Transmission Transmits 4 Real-Time Color Video Signals on One Optical Fiber
- Exceeds All Requirements for RS-250C Medium-Haul Transmission: Extremely High Video Performance
- 4 Channels of 20-Bit Encoded Audio, Providing Broadcast Performance
- 20 Hz - 18 kHz Audio Bandwidth
- 600 Ohms Audio Input Impedance
- Compatible with all NTSC, PAL, or SECAM CCTV Camera Systems
- Wide Optical Dynamic Range: Optical Attenuators are Never Required
- NTCIP Compatible
- Exceeds NEMA TS-1/TS-2 and Caltrans Traffic Signal Control Equipment Environmental Specifications for Operating Temperature, Shock, Vibration, Humidity, and Voltage Transient Protection
- Robust Design Ensures Extremely High Reliability In Unconditioned Out-of-Plant Environments
- LED Status Indicators Provide Rapid Indication of Critical Operating Parameters
- Comprehensive Lifetime Warranty



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Specifications subject to change without notice

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Agency compliance



Made in the USA

Complies with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations, Subchapter J

Specifications

Video	
Video Input:	1 volt pk-pk (75 ohms)
Input/Output Channels:	4
Bandwidth:	10 Hz - 6.5 MHz
Differential Gain:	<2%
Differential Phase:	<0.7°
Tilt:	<1%
Signal-to-Noise Ratio (SNR):	60 dB @ Maximum Optical Power Loss

Audio	
Input/Output Channels:	4 (balanced)
Audio Input/Output Signal:	4.4 volt pk-pk (+6 dBm)
Bandwidth:	20 Hz - 18 KHz
Total Harmonic Distortion:	<0.02%
Signal-to-Noise Ratio (SNR):	85 dB (minimum)

Wavelength	1310 nm Multimode 1310/1550 nm Single Mode
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Optical emitter	Laser Diode (all models)
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Number of fibers	1
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Connectors	
Optical:	ST, SC or FC (see ordering information)
Power:	Terminal Block with Screw Clamps
Video:	BNC (Gold Plated Center-Pin)
Audio:	Terminal Block with Screw Clamps

Electrical & Mechanical	
Power:	+12 VDC @ 500 mA
Surface Mount:	From Rack
Rack:	From Rack
Number of Rack Slots:	3
Current Protection:	Automatic Resettable Solid-State Current Limiters
Circuit Board:	Meets IPC Standard
Size (in./cm.) (LxWxH)	
Surface Mount:	7.0 x 4.9 x 3.0 in., 17.8 x 12.5 x 7.5 cm
Rack Mount:	7.7 x 5.0 x 3.0 in., 19.6 x 12.7 x 7.5 cm
Shipping Weight:	< 2 lbs./0.9 kg

Environmental	
MTBF:	> 100,000 hours
Operating Temp:	-40° C to +74° C
Storage Temp:	-40° C to +85° C
Relative Humidity:	0% to 95% (non-condensing)†

†May be extended to condensation conditions by adding suffix '-C' to model number for conformal coating.

Ordering Information

	Part Number	Description	Fibers Required	Optical Pwr. Budget	Max. Distance*
Multimode 62.5/125µm**	VAT7420	4 Channel Video/Audio Transmitter (1310 nm)	1	7 dB	1.2 miles (2 km)▲
	VAR7420	4 Channel Video/Audio Receiver (1310 nm)			
Single Mode 9/125µm	VAT7430	4 Channel Video/Audio Transmitter (1310 nm)	1	17 dB 23 dB	31 miles (51 km) 43 miles (69 km)
	VAT7430-HP	4 Channel Video/Audio Transmitter (1310 nm)			
	VAR7430	4 Channel Video/Audio Receiver (1310 nm)			
Single Mode 9/125µm	VAT7450	4 Channel Video/Audio Transmitter (1550 nm)	1	17 dB 24 dB	42 miles (68 km) 60 miles (96 km)
	VAT7450-HP	4 Channel Video/Audio Transmitter (1550 nm)			
	VAR7450	4 Channel Video/Audio Receiver (1550 nm)			
Accessories*	PS-12VDC 12 Volt DC Plug-in Power Supply (Included)				
	PS-12VDC-230 12 Volt DC Plug-in Power Supply, 230 VAC Input (Included if specified at time of order)				
Options	Add '-R3' to Model Number for R3 Rack Mount - No Charge (Requires R3 Rack purchased separately)				
	Add '-C' to Model Number for Conformally Coated Printed Circuit Boards (Extra charge, consult factory)				
	Add '-SC' to Model Number for SC Connector (Single Mode equipment only)				
	Add '-FC' to Model Number for FC Optical Connector (Single Mode equipment only)				

* Optical transmission distance is limited to optical loss of the fiber and any additional loss introduced by connectors, splices and patch panels.

Distance can also be limited by fiber bandwidth.

** For 50/125 Fiber, subtract 4 dB from Optical Power Budget.

▲ All accessories are third party manufactured.

▲ This product may be used with 62.5µm graded index multimode fiber having a maximum run length of 3 km and/or a maximum optical loss of 17 dB.

System Design

