



## PRODUCT SPECIFICATION

# FM VIDEO WITH BI-DIRECTIONAL DATA AND TAMPER SWITCH

## VT/VR1900 SERIES



### DESCRIPTION

The IFS VT/VR1900 Series video transmitter/receiver and data transceiver supports the simultaneous transmission of frequency modulation (FM) video, contact closure and bi-directional data over one or two optical fibers. The modules are universally compatible with major CCTV camera manufactures and support RS-232, RS-422, RS-485 (Tri-State 2 or 4-wire). Modules within the series are available for use with multimode or singlemode optical fiber. Plug-and-play design ensures ease of installation requiring no electrical or optical adjustments. The modules incorporate power, and carrier detect status indicating LED's to monitor proper system operation. The modules are available in either stand-alone or rack mount versions.

#### FUNCTION OF TAMPER SWITCH:

The tamper switch terminals on the VR will open upon one of the following conditions; loss of carrier, loss of video, switching of SW3 on the VT to the ON position.

### APPLICATION EXAMPLES

- CCTV with Bi-Directional PTZ Camera Control
- CCTV with Access Control Communication
- CCTV with Remote Signalization
- CCTV with Remote Keyboard Control

### FEATURES

- FM Video Transmission reduces ghosting, jitter and cross-talk between channels, providing superior video transmission
- NTSC, PAL, SECAM Compatible • NTCIP Compatible
- Supports Contact Closures, 24V AC/DC, 170ma - Optically Isolated • Optical Loss Relay Output
- Supports RS-232, RS-422, RS-485 (Tri-State 2 or 4-Wire)
- Transparent to Data Encoding/Compatible with Major CCTV Camera Manufacturers
- Power and Carrier Detect Status Indicating LED's to Monitor System Performance
- Integrated WDM for Greater Product Reliability
- No In-field Electrical or Optical Adjustments Required
- Tested and Certified by an Independent Testing Laboratory for Full Compliance with the Environmental Requirements (Ambient Operating Temperature, Mechanical Shock, Vibration, Humidity with Condensation, High-Line/Low-Line Voltage Conditions and Transient Voltage Protection) of NEMA TS-1/TS-2 and the Caltrans Specification for Traffic Signal Control Equipment.
- Hot-Swappable Rack Modules • Tamper Switch
- Automatic Resettable Fuses
- Full Color Compatibility
- Distances up to 43 Miles (69 km) Without Repeaters
- Comprehensive Lifetime Warranty
- Available in FiberPak™



Available at: **www.ifs.com**

- A & E Specifications, (CSI)
- AutoCAD Drawings
- Operation Manuals
- Technical Bulletins

### ORDERING INFORMATION

	PART NUMBER	DESCRIPTION	FIBERS REQUIRED	OPTICAL PWR BUDGET	MAX. DISTANCE*
MULTIMODE 62.5/125µm**	VT1910	Video Transmitter/Data Transceiver (850 nm)	2	13 dB	2 miles (3.5 km)
	VR1910	Video Receiver/Data Transceiver (850 nm)			
	VT1910WDM	Video Transmitter/Data Transceiver (1310/850 nm)	1	14 dB	2.5 miles (4 km)
	VR1910WDM	Video Receiver/Data Transceiver (850/1310 nm)			
	VT1920WDM	Video Transmitter/Data Transceiver (1310/1550 nm, Laser)	1	15 dB	9 miles (15 km)
	VR1920WDM	Video Receiver/Data Transceiver (1550/1310 nm, Laser)			
SINGLEMODE 9/125µm	VT1930WDM	Video Transmitter/Data Transceiver (1310/1550 nm, Laser)	1	23 dB	43 miles (69 km)
	VR1930WDM	Video Receiver/Data Transceiver (1550/1310 nm, Laser)			
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’ for Conformally Coated Printed Circuit Boards (Extra charge, consult factory)				

\* 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.

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With Offices in Asia Pacific ■ Australia ■ Europe ■ Latin America



# TECHNICAL SPECIFICATION

## FM VIDEO WITH BI-DIRECTIONAL DATA AND TAMPER SWITCH

# VT/VR1900 SERIES

### SPECIFICATIONS

#### VIDEO

Video Input: 1 volt pk-pk (75 ohms)  
 Bandwidth: 5 Hz - 6.0 MHz  
 Differential Gain: <5%  
 Differential Phase: <5°  
 Tilt: <1%  
 Signal-to-Noise Ratio (SNR): > 55 dB @ 10 dB ATTN.

#### CONTACT CLOSURE

Contacts: 24V AC/DC, 170ma, Optically Isolated  
 Tamper / Optical Loss Relay Output

#### DATA

Data Interface: RS- 232, RS-422, RS-485  
 (Tri-State 2 or 4-wire)  
 Data Format: Manchester, Bi-phase  
 Data Rate: DC-50 Kbps (NRZ)  
 Operating Mode: Simplex or Full Duplex

#### WAVELENGTH

VT/VR1910: 850 nm, Multimode  
 VT/VR1910WDM: 1310/850 nm, Multimode  
 VT/VR1920WDM: 1310/1550 nm, Multimode  
 VT/VR1930WDM: 1310/1550 nm, Singlemode

#### NUMBER OF FIBERS

VT/VR1910: 2  
 VT/VR1910WDM: 1  
 VT/VR1920WDM: 1  
 VT/VR1930WDM: 1

### CONNECTORS

Optical: ST  
 Power and Data: Terminal Block with Screw Clamps  
 Video: BNC (Gold Plated Center-Pin)

### ELECTRICAL & MECHANICAL

Power: 12 VDC @ 300 mA  
 Surface Mount: 1  
 Number of Rack Slots: 1  
 Current Protection: Automatic Resettable Solid-State Current Limiters  
 Max. RG59 Cable Length: 750 ft.  
 Circuit Board: Meets IPC Standard  
 Size (in./cm.) (LxWxH)  
 Surface Mount: 7.0 x 4.9 x 1.0 in., 17.8 x 12.5 x 2.5 cm  
 Rack Mount: 7.7 x 5.0 x 1.0 in., 19.6 x 12.7 x 2.5 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.

### AGENCY COMPLIANCE

FCC PART 15 COMPLIANT



### MADE IN THE USA

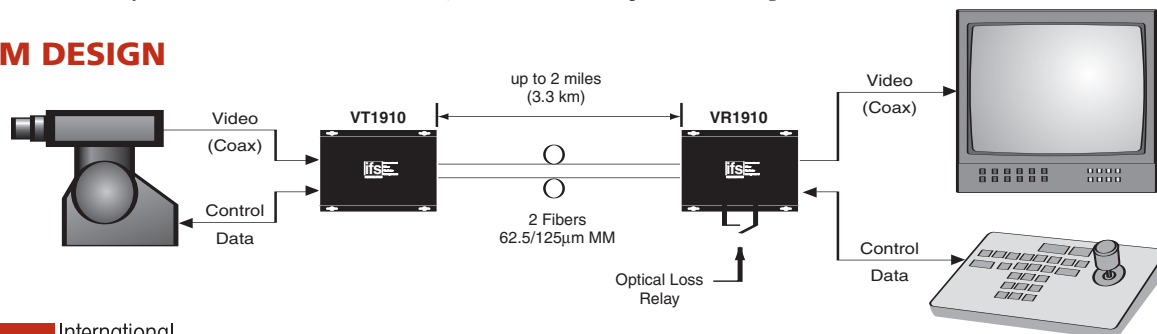
Complies with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations, Subchapter J

### OPTICAL POWER BUDGET

FIBER	WAVELENGTH	TRANSMITTER	RECEIVER	OPTICAL PWR BUDGET	MAX. DISTANCE*
		MODEL	MODEL		
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	1310/850 nm	VT1910WDM	VR1910WDM	14 dB	2.5 miles (4 km)
	1310/1550 nm	VT1920WDM	VR1920WDM	15 dB	9 miles (15 km)
Singlemode 9/125µm	1310/1550 nm	VT1930WDM	VR1930WDM	23 dB	43 miles (69 km)

\* 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.

### SYSTEM DESIGN



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Due to our continued effort to advance technology, product specifications are subject to change without notice.