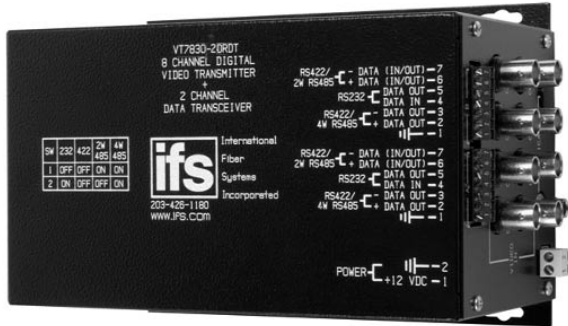




# PRODUCT SPECIFICATION **VT/VR7800-2DRDT SERIES** **8-CHANNEL DIGITALLY ENCODED VIDEO /** **2-CHANNEL DATA MULTIPLEXER**



## DESCRIPTION

The IFS VT/VR7800-2DRDT video transmitter/data transceiver and video receiver/data transceiver series utilizes state-of-the-art 8-bit digital encoding and decoding for high-quality video transmission that exceeds the requirements of EIA RS-250C for Medium-Haul Video Transmission. These environmentally hardened units provide transmission of eight independent video channels and two bi-directional data channels over one optical fiber and are ideal for use in unconditioned roadside or out-of-plant installations. Completely transparent to and universally compatible with any NTSC, PAL, or SECAM CCTV camera system, all standard pan-tilt-zoom control signals including RS-232, RS-422, or 2 or 4-wire RS-485 with Tri-state and Sensornet supported. 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 with PTZ Control
- High-Performance CCTV with Access Control

## FEATURES

- 8-Bit Digitally Encoded Video Transmission Transmits 8 Real-Time Color Video Channels and Two Bi-Directional Data Channels on One Single-mode Optical Fiber
- Exceeds All Requirements for RS-250C Medium Haul Transmission: Extremely High Video Performance
- Exceptionally Low Video Distortion with Zero Performance Variation vs. Optical Path Loss
- Ideally Suited to Networks Requiring Multiple Physical Layers Where Video Degradation May be a Problem
- Directly Compatible with All NTSC, PAL, or SECAM CCTV Camera Systems
- NTCIP Compatible
- 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.
- Robust Design Ensures Extremely High Reliability In Unconditioned Out-of-Plant Environments
- Supports RS-232, RS-422, and 2 or 4-wire RS-485 with Tri-State and Sensornet Data Interfaces
- LED Status Indicators Provide Rapid Indication of Critical Operating Parameters
- Solid-State Current Limiters on All Power Lines Provide Equipment Protection
- Comprehensive Lifetime Warranty



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*
<b>MULTIMODE</b> 62.5/125µm**	VT7820-2DRDT	8 Channel Video Transmitter/Data Transceiver (1310/1550 nm)	1	10 dB	1.2 miles (2 km)
	VR7820-2DRDT	8 Channel Video Receiver/Data Transceiver (1310/1550 nm)			
<b>SINGLEMODE</b> 9/125µm	VT7830-2DRDT	8 Channel Video Transmitter/Data Transceiver (1310/1550 nm)	1	15 dB	28 miles (45 km)
	VR7830-2DRDT	8 Channel Video Receiver/Data Transceiver (1310/1550 nm)			
	VT7830-2DRDT-HP	8 Channel Video Transmitter/Data Transceiver (1310/1550 nm)	1	20 dB	37 miles (60 km)
	VR7830-2DRDT-HP	8 Channel Video Receiver/Data Transceiver (1310/1550 nm)			
<b>ACCESSORIES</b> ♦	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)			
<b>OPTIONS</b>	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) Add '-FC' to model number for FC Optical Connector (Singlemode equipment only) Add '-SC' to model number for SC Optical Connector (Singlemode equipment only) Add '-HP' to model number for 20 dB Optical Power Budget				

\* Optical transmission distance is limited by optical loss of fiber, bandwidth 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.

**NOTE: All optical terminations need to be epoxy polished with a minimum back reflection of -30dB.** ♦ All accessories are third party manufactured.



# TECHNICAL SPECIFICATION VT/VR7800-2DRDT SERIES

## 8-CHANNEL DIGITALLY ENCODED VIDEO / 2-CHANNEL DATA MULTIPLEXER

### SPECIFICATIONS

#### VIDEO

Video Input: 1 volt pk-pk (75 ohms)  
 # Input/Output Channels: 8  
 Bandwidth (minimum): 10 Hz - 6.5 MHz per channel  
 Differential Gain: <2%  
 Differential Phase: <0.7°  
 Tilt: <1%  
 Signal-to-Noise Ratio (SNR): 60 dB @ Maximum Optical Loss Budget

#### DATA

Data Channels: 2  
 Data Format: RS-232, RS-422, 2 wire or 4 wire RS-485 with Tri-State Manchester Bi-Phase and Sensornet  
 Data Rate: DC - 100 kbps (NRZ)  
 Bit Error Rate: < 1 in 10<sup>9</sup> @ Maximum Optical Loss Budget  
 Operating Mode: Simplex or Full-Duplex

#### WAVELENGTH

1310/1550 nm, Multimode or Singlemode

#### OPTICAL EMITTER

Laser Diode

#### NUMBER OF FIBERS

1

#### LED INDICATORS

VT Transmitter/ Data Transceiver Unit:  
 • Video Sync Presence for Each Input Channel  
 • Received Data - Channel 1  
 • Received Data - Channel 2  
 • Transmitted Data - Channel 1  
 • Transmitted Data - Channel 2  
 • Optical Carrier Detect/ Link-Lock  
 • Operating Power

VR Receiver/ Data Transceiver Unit:  
 • Video Sync Presence for Each Output Channel on Receiver  
 • Video Sync Presence for Each Input Channel on Transmitter  
 • Received Data - Channel 1  
 • Received Data - Channel 2  
 • Transmitted Data - Channel 1  
 • Transmitted Data - Channel 2  
 • Optical Carrier Detect/ Link-Lock w/Solid State Relay\*

#### \*REMOTE SENSING

• Closed with Carrier Detect, 24VAC/VDC @ 100 mA

#### CONNECTORS

Optical: ST, SC, or FC (See ordering information)  
 Power and Data: Terminal Block with Screw Clamps  
 Video: BNC (Gold Plated Center-Pin)

#### ELECTRICAL & MECHANICAL

Power: 12 VDC @ 500 mA (stand-alone)  
 Number of Rack Slots: 4  
 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 2.0 in., 17.8 x 12.5 x 5.1 cm  
 Rack Mount: 7.7 x 5.0 x 3.0 in., 19.6 x 12.7 x 7.6 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.

**▲NOTE: All optical terminations need to be epoxy polished with a minimum back reflection of -30dB.**

#### AGENCY COMPLIANCE



#### MADE IN THE USA

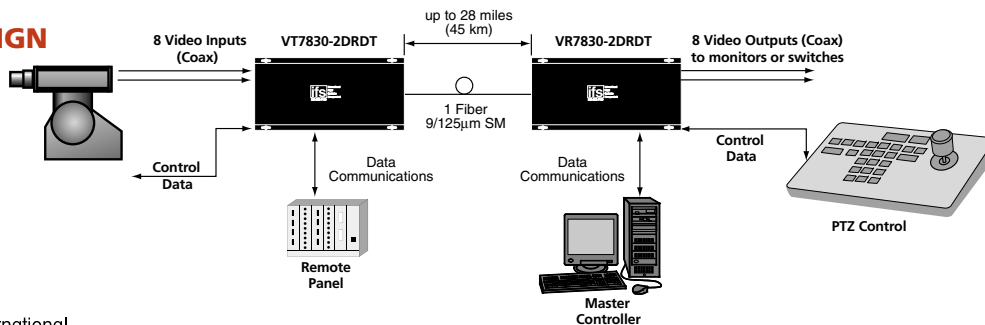
Complies with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations, Subchapter J

### OPTICAL POWER BUDGET

FIBER	WAVELENGTH	TRANSMITTER MODEL	RECEIVER MODEL	OPTICAL PWR BUDGET	MAX. DISTANCE*
Multimode 62.5/125µm**	1310/1550 nm	VT7820-2DRDT	VR7820-2DRDT	10 dB	1.2 mile (2 km)
Singlemode 9/125µm		VT7830-2DRDT	VR7830-2DRDT	15 dB	28 miles (45 km)
		VT7830-2DRDT-HP**	VR7830-2DRDT-HP**	20 dB	37 miles (60 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



TEL (203)426-1180 ■ FAX (203)426-3326 ■ www.ifs.com ■ sales@ifs.com  
 16 Commerce Road ■ Newtown, CT 06470

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

10/06/04