



The ComNet™ FVT/FVR10D1A2C1 video transmitter/data transceiver and video receiver/data transceiver series utilize 10-bit digital encoding and decoding for high-quality video transmission that meets the requirements of EIA RS-250C for short-haul video transmission. These environmentally hardened units provide transmission of one independent video channel and one bi-directional data channel over one optical fiber and are ideal for use in unconditioned roadside or out-of-plant installations. They also provide transmission of two bi-directional audio signals and one bi-directional contact closure over the same fiber. The modules use 24-bit 96kHz sample rate digital encoding for superior transmission of balanced line-level audio. It also supports “up-the-coax” data transmission from all major manufacturers. Plug-and-play design ensures ease of installation and no electrical or optical adjustments are ever required.

## FEATURES

- › 10-bit digital video transmission: transmits one real-time color video signal and one bi-directional data signal on one optical fiber
- › Supports RS232, RS422, and 2 or 4-wire RS485 with tri-state data interfaces
- › Two bi-directional Audio Channels
- › One bi-directional Contact Closure
- › 24-Bit 96kHz Digitally Encoded Transmission
- › 20Hz - 18 kHz Audio Bandwidth
- › 600 Ohms Audio Input Impedence
- › Transmits Balanced Line-Level Audio up to +6dBm
- › Exceeds all requirements for EIA RS-250C short-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
- › Compatible with all NTSC, PAL, or SECAM CCTV camera systems
- › Designed to meet 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.
- › Voltage transient protection on all power and signal input/output lines provides protection from power surges and other voltage transient events.
- › Robust design ensures extremely high reliability in unconditioned out-of-plant environments
- › Bi-color (Red/Green) LED status indicators provide rapid indication of critical operating parameters
- › Hot-swappable rack modules
- › Interchangeable between stand-alone or rack mount use - ComFit
- › Lifetime Warranty

**SPECIFICATIONS****Video**

Video Input	1 volt pk-pk (75 ohms)
Overload	>1.5V pk-pk
# Input/Output Channels	1
Bandwidth (minimum)	10 Hz - 6.5 MHz per channel
Differential Gain	<2%
Differential Phase	<0.7°
Tilt	<1%
Signal-to-Noise Ratio (SNR)	67 dB Typical
Max. RG-59 COAX Distance	100m (300ft) Camera to Fiber Optic Module to maintain 6MHz Bandwidth

**Data**

Data Channels	1
Data Interface	RS232, RS422 and RS485 (2W/4W), UTC (Up-the-Coax)
Data Format	NRZ, NRZI Manchester, Bi-phase and Sensornet
Data Rate	DC-250 Kbps (NRZ)
Bit Error Rate	<1 in 10 <sup>9</sup> @ Maximum Optical Loss Budget
Operating Mode	Simplex or Full-Duplex

**Audio**

# Input/Output Channels	2 (balanced)
Audio Input/Output Signal	Max 4.4 volt pk-pk (+6dBm)
Bandwidth	20Hz - 18kHz
Total Harmonic Distortion	0.02%
Signal-to-Noise Ratio (SNR)	85dB (Typical)

**Contact**

Contact Interface	
Response Time	0.5 msec
Input	Dry Contact Closure
Output	SPST Relay, 0.15 A Contact Rating - normally open

**Wavelength**

Receiver: 1550/1310 nm  
 Transmitter: 1310/1550 nm  
 (Multimode and Single Mode)

**Number of Fibers**

1

**LED Indicators:**

- > Video Sync Presence
- > Received Data
- > Transmitted Data
- > Link
- > Audio Channels 1-2
- > Contact Closure
- > Power

**Connectors**

Optical	ST
Power	Terminal Block
Video	BNC
Data	Terminal Block
Audio	Terminal Block
Alarm	Terminal Block
Contact	Terminal Block

**Power**

Operating Voltage Range	8 to 15 VDC
Power Consumption	4W
Rack Mount	From Rack

**Electrical & Mechanical**

Number of Rack Slots	2
Current Protection	Automatic Resettable Solid-State Current Limiters
Circuit Board	Meets IPC Standard
Size (in./cm) (L×W×H)	6.1 × 5.3 × 2.2 in (15.5 × 13.5 × 5.6 cm)
Shipping Weight	<2 lb./0.9 kg

**Environmental**

MTBF	>100,000 hours
Operating Temp	-40° C to +75° C
Storage Temp	-40° C to +85° C
Relative Humidity	0% to 95% (non-condensing) <sup>1</sup>

AGENCY COMPLIANCE



**MADE IN THE  
USA**

ORDERING INFORMATION

Part Number	Description	FIBERS REQUIRED	FIBER	OPTICAL PWR BUDGET	Maximum Distance <sup>2</sup>	# Rack Slots
FVT10D1A2C1M1	Video Transmitter/Data Transceiver, Audio Transmitter	1	Multimode 62.5/125µm	16 dB	3 km (2 mi)	2
FVR10D1A2C1M1	Video Receiver/Data Transceiver/, Audio Receiver	1	Multimode 62.5/125µm	16 dB	3 km (2 mi)	2
FVT10D1A2C1S1	Video Transmitter/Data Transceiver, Audio Transmitter	1	Single Mode 9/125µm	23 dB	69 km (43 mi)	2
FVR10D1A2C1S1	Video Receiver/Data Transceiver, Audio Receiver	1	Single Mode 9/125µm	23 dB	69 km (43 mi)	2
Accessories	DC Plug-in Power Supply, 90-264 VAC, 50/60 Hz (Included)					
Options	[1] Add 'C' for Conformally Coated Circuit Boards (Extra charge, consult factory)					
	DIN-Rail Mounting Adaptor Plate Kit – With mounting hardware (Optional, order model DINBKT1 or DINBKT4)					

NOTE: This product requires a fiber installation with a minimum 30 dB connector return loss. The use of Super Polish Connectors is recommended.  
 [2] Distance may be limited by optical dispersion.  
 Complies with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations, Subchapter J. In a continuing effort to improve and advance technology, product specifications are subject to change without notice.

TYPICAL APPLICATION

