



VersiVision

FVTMHH0x / FVRMHH0x

16-CHANNEL DIGITALLY ENCODED VIDEO

WITH

RETURN DATA

MULTIPLEXER

USER'S MANUAL

Revision B

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PROPRIETARY DATA

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WARRANTY

All VERSITRON products purchased after January 2001 carry a limited lifetime warranty against defects in materials and workmanship for the lifetime of the product. Purchases made prior to January 2001 are warranted for a period of one year from date of delivery. VERSITRON reserves the right to repair or, at our option, replace parts which during normal usage prove to be defective during the warranty period provided that:

1. You call VERSITRON at (302) 894-0699 or (800) 537-2296 and obtain a (RMA) Return Authorization Number. Please reference your RMA number on the outside of the box in which the item is returned.
2. Shipping charges are pre-paid.

No other warranty is expressed or implied and we are not liable for consequential damages. For repairs outside of the warranty period, the same procedure must be followed.

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NOTE: *VERSITRON uses the same front panel for multiple products. Not all features are available on all models; therefore you should verify the features of your specific model.*

GENERAL INFORMATION

Introduction:

The VERSITRON *VersiVision* FVTMHH0x and FVRMHH0x Series video and data transmitter and receiver support simultaneous transmission of 16-channels of 8-bit digitally encoded video and return data over one multi-mode or single-mode optical fiber. The units are universally compatible with major camera systems and support the RS-485 data protocol. Plug and Play design ensures ease of installation and electronic and optical adjustments are never required.

Model Number

Unit Type	Model Number
16-channel Digitally Encoded Video with Return Data Transmitter	FVTMHH0x
16-channel Digitally Encoded Video with Return Data Receiver	FVRMHH0x

Technical Specifications:

VIDEO

Video Input:	1 volt pk-pk (75 ohms)
Input/Output Channels:	16
Bandwidth:	5 Hz - 8 MHz
Bit Resolution:	8-bit
Differential Gain:	< 2%
Differential Phase:	< 0.6°
Tilt:	< 1%
S/N Ratio:	67dB (Weighed)

DATA

Data Interface:	RS-485
Data Rate:	100Kbps
Bit Error Rate:	10 ⁻⁹

WAVELENGTH: 1310/1490/1550nm Singlemode

OPTICAL EMITTER: Laser Diode

NUMBER OF FIBERS: 1

CONNECTORS

Optical:	SC, ST (FC Optional)
Video:	BNC
Data:	DB9F

GENERAL

Power Supply:	110/220VAC
Size:	18.97 x 9.76 x 2.68 Inches
Construction:	Aluminum
MTBF:	> 100,000 hours
Operating Temp:	-30° C to + 50° C
Storage Temp:	-40° C to + 85° C
Relative Humidity:	0% to 95% (non-condensing)

INDICATOR

Blue:	Video Sync Present
Yellow:	Power On
Blue:	Data Transmit/Receive

OPTICAL POWER BUDGET

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

CAUTION!

The transmitter unit contains a laser-emitting diode located in the optical connector. This device emits invisible infrared electromagnetic radiation that can be harmful to human eyes. The radiation from this optical connector, if viewed closely without any protection, may cause instantaneous damage to the retina of the eye. Direct viewing of this LED should be avoided at all times.

Fiber	Wavelength	Transmitter	Receiver	Optical Power Budget	Max Distance
		Model	Model		
Multimode	850/1310 nm	FVTMHH0x	FVRMHH0x	16 dB	3 Km
Singlemode	1310 nm 1490 nm 1550 nm	FVTMHH0x	FVRMHH0x	21 dB	30 Km

INSTALLATION INSTRUCTIONS

Installation Procedure

The VERSITRON *VersiVision* FVTMHH0x and FVRMHH0x video transmission systems series are preset for immediate use. There are indicator LEDs on the units for monitoring the real-time status of video, data and power. The following instructions describe the typical installation procedure and the function of the LED indicators located on each unit.

1. Connect the video source (camera) to the video input BNC connector on the transmitter unit (FVTMHH0x) using coaxial cable.
2. Connect the video output BNC connector on the receiver unit (FVRMHH0x) to the video monitor using coaxial cable.
3. Connect the fiber optic cable between the transmitter and receiver units.
4. Apply the power supply to both the transmitter and receiver units.
5. When the power is applied, the yellow POWER LED will light, indicating the presence of operating power. The blue VIDEO LEDs and the blue DATA LEDs will give an indication as stated on the following pages.
6. The system should now be operational.

Indicator LEDs

The units have integral LEDs that are used to monitor the state of the unit. Each unit has one power LED and one DATA LED, along with a VIDEO LED for each of the sixteen video connections. The indicator LEDs function as follows:

TRANSMITTER and RECEIVER:

Power: ON: (Yellow) Indicates that correct power has been applied

Transmitter (See diagram on Page 8):

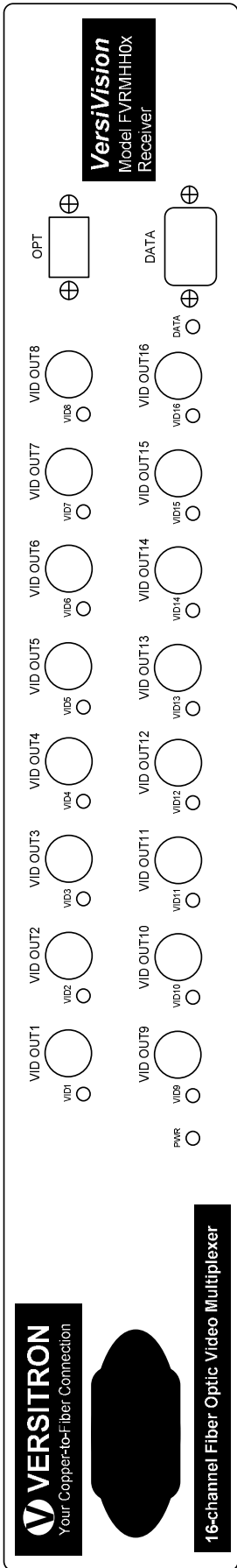
VIDEO: OFF: Indicates no video detected on input BNC connector
(No Video present on input BNC)
ON: (Blue) Indicates video detected on input BNC connector
(Video present on input BNC)

DATA1: OFF: Indicates no data detected on the transmit data cable
Blinking: (Blue) Indicates data transmitted at the rate of the operation data.

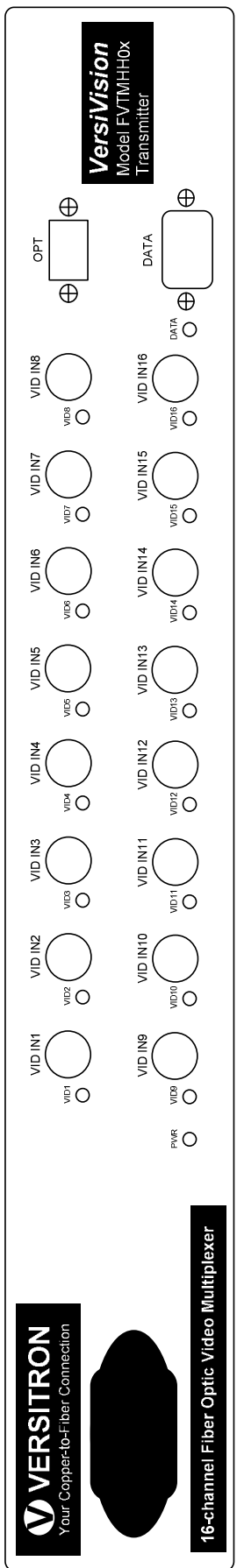
Receiver (See diagram on Page 8):

VIDEO: OFF: Indicates no video present on output BNC connector
(No Video present on output BNC)
ON: (Blue) Indicates video detected on output BNC connector
(Video present on output BNC)

DATA1: OFF: Indicates no data detected on the receive data cable
Blinking: (Blue) Indicates data received at the rate of the operation data.



FVRMHH0x Receiver Rear Panel



FVTMHH0x Transmitter Rear Panel

Data Cable Connections

The various input and output connections for the VERSITRON *VersiVision* FVTMHH0x and FVRMHH0x video transmission systems series are as follows:

Video Input or Output: BNC Connectors

Data RS-485 Connection:

Red Wire = (+) Signal being transmitted or received over fiber.

Blue Wire = (-) Signal being transmitted or received over fiber.

Camera Site

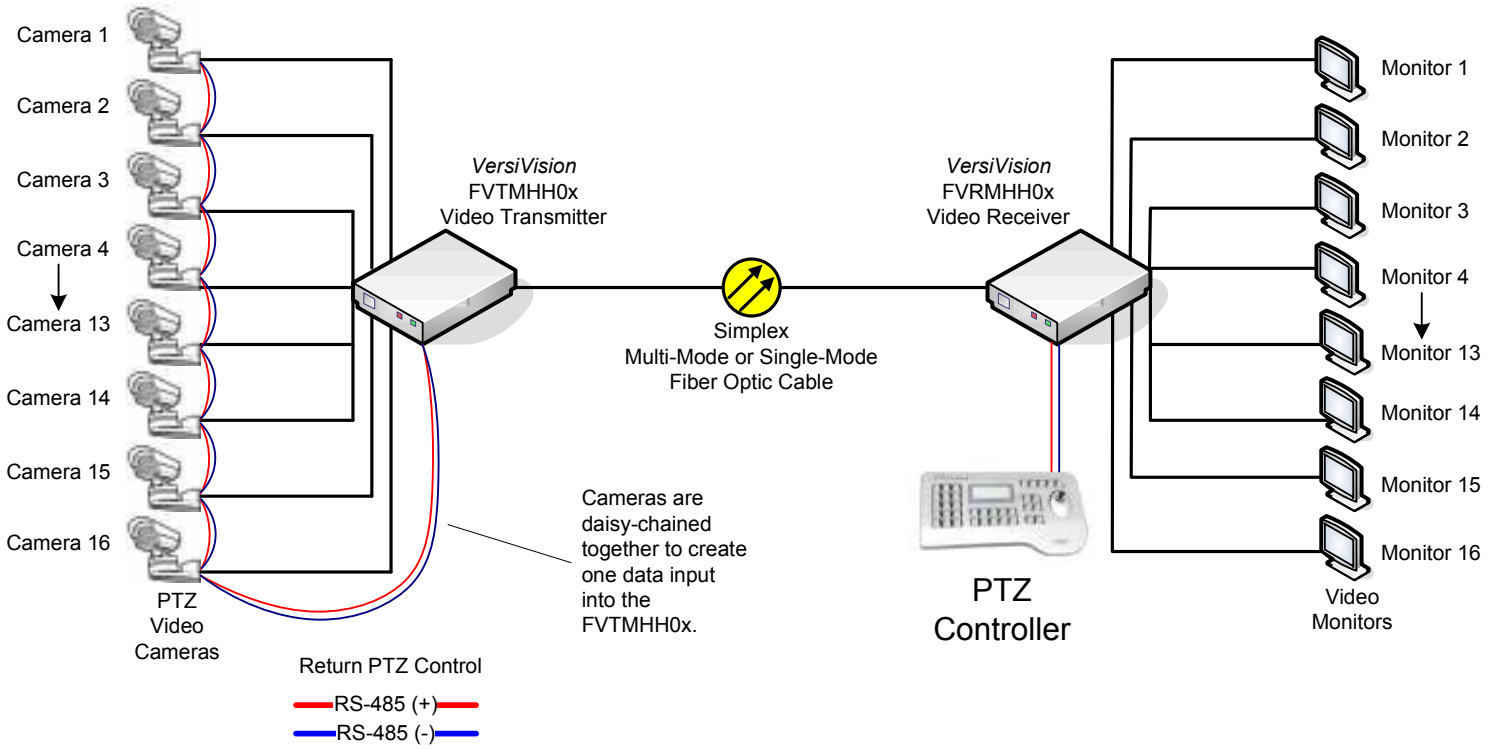
Connect the Red wire (+) in the data cable from the transmitter unit to the RS-485 (+) of the controlled unit (pan/tilt, dome), and connect the Blue wire (-) in the data cable to the RS-485 (-) of the controlled unit (pan/tilt, dome).

Control Site

Similarly, connect the Red wire (+) in the data cable from the receiver unit to the RS-485 (+) of the controlling unit (Keyboard Controller, Matrix, DVR), and connect the Blue wire (-) in the data cable to the RS-485 (-) of controlling unit (Keyboard Controller, Matrix, DVR).

Wiring Diagrams

Typical wiring of RS-485 data control lines for PTZ cameras.



TROUBLESHOOTING

Optical Fiber

The VERSITRON *VersiVision* FVTMHH0x and FVRMHH0x video transmission systems series is available for most applications using multi-mode or single-mode optical fibers. Please be certain that the correct size and type of the fiber is being used for the particular transmitter/receiver combination.

Also be certain that the attenuation and bandwidth of the fiber optic cable being used is within the range of the system's loss budget specifications.

General

Any dirt or dust may easily pollute or block the fiber from accepting or radiating light. Therefore, please try to keep the optical connector clear and always use the dust caps whenever the connector is exposed to air. It is suggested that the tip of the optical connector should be carefully cleaned with a lint-free cloth moistened with alcohol from time to time.

The status of any of the VIDEO LED should provide the first clue as to the origin of any operational failure. If the VIDEO LED on the receiver unit is off, it usually means that the fiber is broken or has too much attenuation.

Please also make sure that the transmitter and the receiver are not used in opposite positions.

If the system is still not working after examining the above possibilities, please contact our Customer Service Department for further assistance

Data Link

Even when installed exactly as directed, it is possible that the data/audio function may fail to operate properly. If this problem occurs, first please check the data cable connection to the camera(s), and then check whether the data cable connector is firmly connected to the unit.

If the system is still not working after examining the above possibilities, please contact our Customer Service Department for further assistance