FVT/FVR2700 SERIES
9-BIT DIGITALLY ENCODED VIDEO WITH "UP-THE-COAX" CONTROL DATA

Architectural & Engineering Specifications

A & E SPECIFICATIONS

FVT/FVR2712
9-BIT DIGITALLY-ENCODED VIDEO WITH "UP-THE-COAX" DATA

1. ACCEPTABLE MANUFACTURER

1.1. Optellios, Inc., 2260 Cabot Blvd. West, Suite 100, Langhorne, PA 19047 USA
Telephone: 215.741.5850, Fax: 215.741.5851
Email: info@optellios.com, Internet: www.fiberpatrol.com

1.2. Substitutions: Not Permitted

1.3. All fiber optic modules shall be supplied from a single manufacturer

2. DIGITAL FIBER OPTIC VIDEO AND "UP-THE-COAX" DATA TRANSMITTER / RECEIVER

2.1. Provide digital fiber optic video and data transmitters and receivers as required. The system shall transmit a one-way, single channel of high resolution, true broadcast quality, real-time NTSC or PAL color video. The system shall employ 9-bit digital encoding for transmission of these signals. The system shall exceed the RS-250C short-haul standard for video transmission. The system shall provide "Up-the-Coax" control data that is compatible with major "Up-the-Coax" data protocols such as Bosch Bilinx™, Pelco Coaxitron™, and other "Up-the-Coax" protocols. The systems shall exceed the manufacturers distance limitation by having a maximum transmission distance of 2.17 miles (3.5 kilometers). The system requirements shall be two (2) multimode optical fibers. The system shall have a substantially wide dynamic range as to never require optical or electrical adjustments in order to operate within the given specifications. Optical attenuators shall never be required. The system shall provide local diagnostic indicators. All modules shall be available in both card mount and surface mount versions. All modules shall have automatic resettable polymer fuses on all power rails, which shall provide for automatic reset, as well as transient suppression on all video and data input/output (I/O) connections. A short circuit in one module shall not affect the operation of other modules powered from the common power supply. All card mount modules shall have the ability to be inserted into and removed from the communication management chassis without interrupting power with no risk of damage to other modules or the communications management chassis during replacement. The system shall have an operating temperature of -40°C to +74°C, ambient, a storage temperature of -40°C to +85°C, ambient, a relative humidity ability of 0% to 95% (non-condensing), have an option for conformal coating, and a MTBF of > 100,000 hours. The system shall exceed NEMA TS-1/TS-2 and Caltrans Traffic Signal Control Equipment Specifications for operating temperature, humidity, mechanical shock, vibration, and voltage transient protection. The system radiated emissions shall be compliant with FCC Part 15, Class B, and EN55022 specifications.

2.2. SPECIFICATIONS

2.2.1. Video: One (1) channel, one-way

2.2.2. Data: One (1) channel, bi-directional, "Up-the-Coax" data (Bosch Bilinx™, Pelco Coaxitron™, and other "Up-the-Coax" protocols

2.3. VIDEO SPECIFICATIONS

2.3.1. Input / Output: 1 volt pk-pk (75 ohms)

2.3.2. Bandwidth: 5Hz – 6 MHz

2.3.3. Differential Gain: <2%

2.3.4. Differential Phase: <0.7°

2.3.5. Tilt: <1%

2.3.6. Signal-to-Noise Ratio (SNR): 67 dB @ maximum optical loss budget

2.4. DATA SPECIFICATIONS

2.4.1. Data Interface: "Up-the-Coax" data (Bosch Bilinx™, Pelco Coaxitron™, and other "Up-the-Coax" protocols

A & E SPECIFICATIONS

2.5. OPTICAL SPECIFICATIONS

- 2.5.1. Fiber Type: Multimode
- 2.5.2. Wavelength: 850nm
- 2.5.3. Number of Fibers: Two (2)
- 2.5.4. Optical Emitter Type: VCSEL
- 2.5.5. Transmitter Output Power: 500µw (-3 dBm)
- 2.5.6. Receiver Sensitivity: 5µw (-23 dBm)
- 2.5.7. Optical Power Budget: 20 dB

2.6. STATUS INDICATOR SPECIFICATIONS

- 2.6.1. Power
- 2.6.2. Video Sync
- 2.6.3. Data Receive
- 2.6.4. Data Transmit
- 2.6.5. Optical Link Detect

2.7. The video transmitter and data transceiver and video receiver and "Up-the-Coax" data transceiver shall be Optellios Fiber Patrol model FVT/FVR2712. The units shall be either card mount or stand alone. Refer to contract drawings for mounting type.

REVISION HISTORY:

File Name:

FVT_FVR2712AE_REV_1310

Date:

3/14/07

Comments:

A & E SPECIFICATIONS

FVT/FVR2731
9-BIT DIGITALLY-ENCODED VIDEO WITH "UP-THE-COAX" DATA

1. ACCEPTABLE MANUFACTURER

1.1. Optellios, Inc., 2260 Cabot Blvd. West, Suite 100, Langhorne, PA 19047 USA
Telephone: 215.741.5850, Fax: 215.741.5851
Email: info@optellios.com, Internet: www.fiberpatrol.com

1.2. Substitutions: Not Permitted

1.3. All fiber optic modules shall be supplied from a single manufacturer

2. DIGITAL FIBER OPTIC VIDEO AND "UP-THE-COAX" DATA TRANSMITTER / RECEIVER

2.1. Provide digital fiber optic video and data transmitters and receivers as required. The system shall transmit a one-way, single channel of high resolution, true broadcast quality, real-time NTSC or PAL color video. The system shall employ 9-bit digital encoding for transmission of these signals. The system shall exceed the RS-250C short-haul standard for video transmission. The system shall provide "Up-the-Coax" control data that is compatible with major "Up-the-Coax" data protocols such as Bosch Bilinx™, Pelco Coaxitron™, and other "Up-the-Coax" protocols. The systems shall exceed the manufacturers distance limitation by having a maximum transmission distance of 2.49 miles (4.0 kilometers). The system requirement shall be one (1) multimode optical fibers. The system shall have a substantially wide dynamic range as to never require optical or electrical adjustments in order to operate within the given specifications. Optical attenuators shall never be required. The system shall provide local diagnostic indicators. All modules shall be available in both card mount and surface mount versions. All modules shall have automatic resettable polymer fuses on all power rails, which shall provide for automatic reset, as well as transient suppression on all video and data input/output (I/O) connections. A short circuit in one module shall not affect the operation of other modules powered from the common power supply. All card mount modules shall have the ability to be inserted into and removed from the communication management chassis without interrupting power with no risk of damage to other modules or the communications management chassis during replacement. The system shall have an operating temperature of -40°C to +74°C, ambient, a storage temperature of -40°C to +85°C, ambient, a relative humidity ability of 0% to 95% (non-condensing), have an option for conformal coating, and a MTBF of > 100,000 hours. The system shall exceed NEMA TS-1/TS-2 and Caltrans Traffic Signal Control Equipment Specifications for operating temperature, humidity, mechanical shock, vibration, and voltage transient protection. The system radiated emissions shall be compliant with FCC Part 15, Class B, and EN55022 specifications. The modules shall use lasers that are compliant with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations Subchapter J.

2.2. SPECIFICATIONS

2.2.1. Video: One (1) channel, one-way

2.2.2. Data: One (1) channel, bi-directional, "Up-the-Coax" data (Bosch Bilinx™, Pelco Coaxitron™, and other "Up-the-Coax" protocols

2.3. VIDEO SPECIFICATIONS

2.3.1. Input / Output: 1 volt pk-pk (75 ohms)

2.3.2. Bandwidth: 5Hz – 6 MHz

2.3.3. Differential Gain: <2%

2.3.4. Differential Phase: <0.7°

2.3.5. Tilt: <1%

2.3.6. Signal-to-Noise Ratio (SNR): 67 dB @ maximum optical loss budget

2.4. DATA SPECIFICATIONS

2.4.1. Data Interface: "Up-the-Coax" data (Bosch Bilinx™, Pelco Coaxitron™, and other "Up-the-Coax" protocols

A & E SPECIFICATIONS

2.5. OPTICAL SPECIFICATIONS

2.5.1. Fiber Type: Multimode

2.5.2. Wavelength: 1310nm

2.5.3. Number of Fibers: One (1)

2.5.4. Optical Emitter Type: Laser

2.5.5. Transmitter Output Power: 500µw (-3 dBm)

2.5.6. Receiver Sensitivity: 5µw (-23 dBm)

2.5.7. Optical Power Budget: 20 dB

2.6. STATUS INDICATOR SPECIFICATIONS

2.6.1. Power

2.6.2. Video Sync

2.6.3. Data Receive

2.6.4. Data Transmit

2.6.5. Optical Link Detect

2.7. The video transmitter and data transceiver and video receiver and "Up-the-Coax" data transceiver shall be Optellios Fiber Patrol model FVT/FVR2731. The units shall be either card mount or stand alone. Refer to contract drawings for mounting type.

REVISION HISTORY:

File Name:

FVT_FVR2731AE_REV_1310

Date:

2/287/07

Comments:

A & E SPECIFICATIONS

FVT/FVR2771
9-BIT DIGITALLY-ENCODED VIDEO WITH "UP-THE-COAX" DATA

1. ACCEPTABLE MANUFACTURER

1.1. Optellios, Inc., 2260 Cabot Blvd. West, Suite 100, Langhorne, PA 19047 USA
Telephone: 215.741.5850, Fax: 215.741.5851
Email: info@optellios.com, Internet: www.fiberpatrol.com

1.2. Substitutions: Not Permitted

1.3. All fiber optic modules shall be supplied from a single manufacturer

2. DIGITAL FIBER OPTIC VIDEO AND "UP-THE-COAX" DATA TRANSMITTER / RECEIVER

2.1. Provide digital fiber optic video and data transmitters and receivers as required. The system shall transmit a one-way, single channel of high resolution, true broadcast quality, real-time NTSC or PAL color video. The system shall employ 9-bit digital encoding for transmission of these signals. The system shall exceed the RS-250C short-haul standard for video transmission. The system shall provide "Up-the-Coax" control data that is compatible with major "Up-the-Coax" data protocols such as Bosch Bilinx™, Pelco Coaxitron™, and other "Up-the-Coax" protocols. The systems shall exceed the manufacturers distance limitation by having a maximum transmission distance of 37 miles (60 kilometers). The system requirement shall be one (1) single mode optical fibers. The system shall have a substantially wide dynamic range as to never require optical or electrical adjustments in order to operate within the given specifications. Optical attenuators shall never be required. The system shall provide local diagnostic indicators. All modules shall be available in both card mount and surface mount versions. All modules shall have automatic resettable polymer fuses on all power rails, which shall provide for automatic reset, as well as transient suppression on all video and data input/output (I/O) connections. A short circuit in one module shall not affect the operation of other modules powered from the common power supply. All card mount modules shall have the ability to be inserted into and removed from the communication management chassis without interrupting power with no risk of damage to other modules or the communications management chassis during replacement. The system shall have an operating temperature of -40°C to +74°C, ambient, a storage temperature of -40°C to +85°C, ambient, a relative humidity ability of 0% to 95% (non-condensing), have an option for conformal coating, and a MTBF of > 100,000 hours. The system shall exceed NEMA TS-1/TS-2 and Caltrans Traffic Signal Control Equipment Specifications for operating temperature, humidity, mechanical shock, vibration, and voltage transient protection. The system radiated emissions shall be compliant with FCC Part 15, Class B, and EN55022 specifications. The modules shall use lasers that are compliant with FDA Performance Standard for Laser Products, Title 21, Code of Federal Regulations Subchapter J.

2.2. SPECIFICATIONS

2.2.1. Video: One (1) channel, one-way

2.2.2. Data: One (1) channel, bi-directional, "Up-the-Coax" data (Bosch Bilinx™, Pelco Coaxitron™, and other "Up-the-Coax" protocols

2.3. VIDEO SPECIFICATIONS

2.3.1. Input / Output: 1 volt pk-pk (75 ohms)

2.3.2. Bandwidth: 5Hz – 6 MHz

2.3.3. Differential Gain: <2%

2.3.4. Differential Phase: <0.7°

2.3.5. Tilt: <1%

2.3.6. Signal-to-Noise Ratio (SNR): 67 dB @ maximum optical loss budget

2.4. DATA SPECIFICATIONS

2.4.1. Data Interface: "Up-the-Coax" data (Bosch Bilinx™, Pelco Coaxitron™, and other "Up-the-Coax" protocols

A & E SPECIFICATIONS

2.5. OPTICAL SPECIFICATIONS

- 2.5.1. Fiber Type: Single mode
- 2.5.2. Wavelength: 1310nm
- 2.5.3. Number of Fibers: One (1)
- 2.5.4. Optical Emitter Type: Laser
- 2.5.5. Transmitter Output Power: 500µw (-3 dBm)
- 2.5.6. Receiver Sensitivity: 7µw (-21 dBm)
- 2.5.7. Optical Power Budget: 18 dB

2.6. STATUS INDICATOR SPECIFICATIONS

- 2.6.1. Power
- 2.6.2. Video Sync
- 2.6.3. Data Receive
- 2.6.4. Data Transmit
- 2.6.5. Optical Link Detect

2.7. The video transmitter and data transceiver and video receiver and "Up-the-Coax" data transceiver shall be Optellios Fiber Patrol model FVT/FVR2771. The units shall be either card mount or stand alone. Refer to contract drawings for mounting type.

REVISION HISTORY:

File Name:

FVT_FVR2771AE_REV_1310

Date:

3/14/07

Comments: