

Fiber Optical  
Transmitter and Receiver  
User Manual



**Video, Audio, Data, Ethernet  
Digital Optical  
Transmitter and Receiver**



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## Solemn Tips :

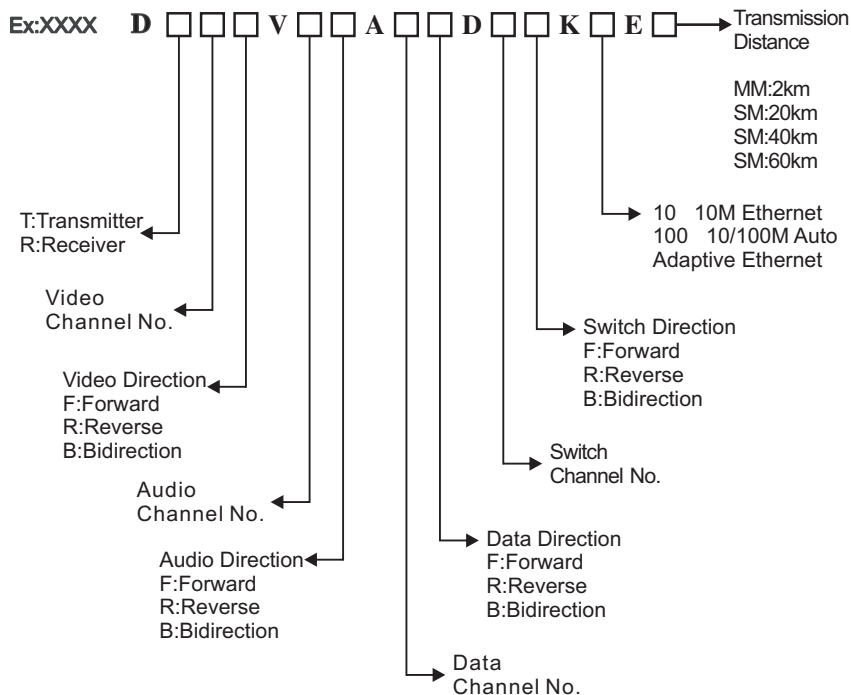
To maintain credibility of the company, our company products are stucked with anti-demolition label. The user shall not open the device without our permission. Once the anti-demolition Label is damaged, We will not bear any responsibility for after-sales service and to reserve the right complaints for intellectual property rights infringement .

- ◆When using the Video fiber optical transmitter and receiver, please pay special attention to anti-static measures in order to avoid damage the equipment
- ◆The Company reserves the right to change products, we will not notify customer if some changes for products.
- ◆The following cases do not belong to warranty conditions :  
Improper access power supply such as High voltage, anti-polarity; Not meet the environmental conditions of application; operate not follow User Manual ;

Due to the wrong use or damage caused by negligence; Because of other accidents(such as lightning, water, fire, etc.) as well as all damage caused by man-made factors etc!

## Products classification and order information

### Video optical Transmitter & Receiver name rule:



**Remark :** D= DATA; S=SWITCH  
V=VIDEO; A=AUDIO; E=ETHERNET  
SM= SINGLE MODE; MM= MULTI MODE  
T= TRANSMITTER; R= RECEIVER

**Note:** ① FIBER TRANSMISSION  
MM: 50/125 62.5/125 100/140μm  
SM: 8.3/125 8.7/125 9/125 10/125μm  
② TRANSMISSION DISTANCE  
MM:>: 2km  
SM: > 20km 40km 60km 100km, Can excess 120km as customers' request

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# 1: Overview

## 1.1 Overview

All series of digital fiber optic transmitter and receiver adopted the special ASIC design and the high-speed DSP technology full digital without compression, without damaged broadcast transmission, can transmitter long distance analog or digital DVR Recorder, VCR, DVD/VCD, Digital Camera, High-definition Television, High-resolution baseband 8 MHz bandwidth video signal through fiber with high-quality, no damaged to remote monitoring center. It is the use of digital technology that avoid insuring cross-modulation distortion interference, image and control data crosstalk each other, poor stability, the impact of environmental factor caused by analog FM, phase modulation, amplitude modulation. The independent modules or rack, Gigabit optical transmission technology have high-capacity, easy to upgrade, single, multimode fiber transmission, distance 0-100 KM; Support any high-resolution video signals, video relay nondestructive renewable, automatically compatible with PAL, NTSC, SECAM video formats, APC circuit, stable optical power output, large dynamic range. Its main applications as below :

- ◆ Intelligent Traffic Monitoring System (ITS)
- ◆ The large-capacity Security System
- ◆ TV medical
- ◆ Long-distance broadcast television transmission system
- ◆ Long-distance multimedia teaching/campus monitoring
- ◆ Television/telephone conference
- ◆ Building control system
- ◆ Occasions requirements for high-definition video, audio transmission. Such as : Big public square, Big stadium, Airport.

In addition to transmitting video signals, also provide you with multi-channel Bidirectional audio signal and multi-channel RS232/RS485/422 data signals for option. Multi-channel Bidirectional audio signals adopted full-digital uncompressed 24 bits high dynamic audio technology, it can support any hi-fi, stereo audio without distortion for transmission, the digital format complies with DVD format. Multi-channel Bidirectional data used for controlling camera pan-tilt or video matrix switching and professional data interface for RS232/RS485/RS422.

It is complete use of industrial Chips and all surface sticking technology, hence posses high reliability. Support -45 ~ +85°C industrial environment of high and low temperatures; Using advanced switching power supply to ensure that equipment last for long-term operation without breakdown. The card-type or stand alone structure apply to centralized management 2U and 4U rack.

## 1.2 Functions and Features

- ◆ Using high quality optoelectronic components provides good optical properties and electrical properties to ensure reliable data transmission, long working life.
- ◆ plug-and-play design gets simple installation, no need for adjustment at the scene. The design complying with industrialization and modular standards enable equipments to be reliable flexible, Gigabit fiber transmission, large capacity, easy to upgrade.
- ◆ provide a plentiful power status indicator, fiber link state, the video signal input and output, audio input and output, data input and output functions of effective indication, which enables users to easily conveniently install and test equipment.
- ◆ support any high-resolution video signals, automatically compatible with PAL, NTSC, SECAM and other video formats; video interface in a standard 75 Ω BNC, power supply and other parameters status of the LED indicator can show the operation of the surveillance system.
- ◆ It is the use of digital technology that avoid incurring cross-modulation distortion interference, image and control data crosstalk each other, poor stability, the impact of environmental factor caused by analog FM, phase modulation, amplitude modulation.
- ◆ The connection and installation for all Single fiber video optic transmitter and receiver equipment is same as dual-fiber, but single fiber video optic transmitter and receiver equipment be used only in pairs (1310 nm matches with 1550 nm )
- ◆ support single-mode optical interface, transmission distance from 0 to 25 Km, the most long-distance can reach over 100 km , the optical interfaces : FC, SC or ST interface.
- ◆ fully meets operating requirements for professional-level monitoring, the average fault-free working hours is over 100,000 hours.
- ◆ Perfect after-sale service, we can provide one month change new product. if is not artificial, one-year warranty of quality commitment.

## 2: Technical standards and instructions

### 2.1 Fiber optic Technical Parameters

Technology Parameters		Parameters					
Optical features	Wavelength(nm)	850/1310	1310/1300			1550	
	Fiber type	Multi Mode	Single Mode				
	Type of fiber interface	FC,SC,ST	FC,SC,ST				FC/SC
	Transmission distance(km)	0~2	0~20	0~40	0~60	0~80	15~120
	Transmission power(dBm)	-14~18.5	-14~18.5	-14~18.5	-14~18.5	-14~18.5	-14~18.5
	Receiving Sensitivity(dBm)	-31	-29	-32	-32	-34	-35
	Optical Saturation (dB)	-14	-8	-3	-3	-3	-3
	Optical Loss (dBm/Km)	2.5	0.4	0.4	0.4	0.25	0.25
Otherwise	Power	DC +5V/2A or DC +5V/1A					
	Alternating current power supply	AC 90-260V input					
	Operating temperature	-40~85℃					
	Storage temperature	-50~100℃					
	Relative humidity	5% ~ 90% no condensation					

Our company commonly tend to recommend not to use multimode fiber transmission, its expanding capacity is poor; It is better to use of single-mode fiber transmission, which is cheap price, long transmission distance and facilitate expanding capacity.



## 2.2 Video Interface

Video input / output impedance : BNC 75  $\Omega$  / non-equilibrium Interface

Video input / output voltage : Typical: 1 V p-p, the largest 1.5 V p-p

Video bandwidth : 5-8MHZ

Video digital Interface: 10bit

Differential gain <1%

Differential phase <0.6

Field tilted <0.5%

Signal to noise ratio  $\geq$  80dB

## 2.3 Audio Interface

Audio input / output impedance: 600  $\Omega$  balanced / unbalanced interface, industry-standard wiring terminal.

Audio input / output voltage: Typical 3V<sub>p-p</sub>/ 3V<sub>p-p</sub>

Frequency response: 10HZ-20KHZ

Audio digital bit width: 24-bit digital audio DVD format

SNR:  $\geq$ 85dB

## 2.4 Data, Switch Interface

Physical interface: Phoenix terminal(DATA)

RS232 rate: 0-115200bps

RS-422/485 rate: 0 ~115200 bps

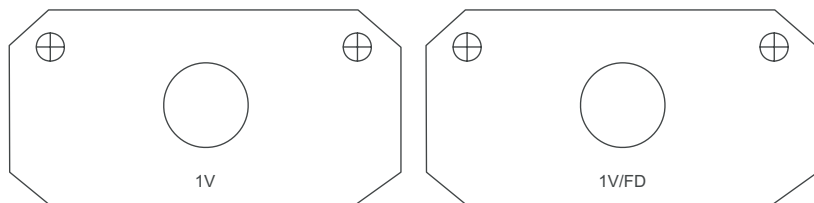
RS-422/485 distance: 0 ~ 1200m

RS-422/485, RS232 protocol: Transparent support arbitrary RS-485/422 protocol.

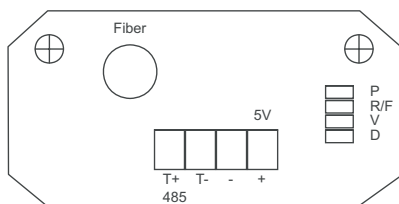
There are other Cayman code / Biphas, switch signal

### 3. Mini 1Ch Video+1Reverse Data Optical Transmitter and Receiver Series

#### 3.1: Schematic diagram of Panel



The front Panel of Mini 1Ch Video+1Reverse Data Optical



The back Panel of Mini 1Ch Video+1Reverse Data Optical

#### 3.2: Description of indicator lights

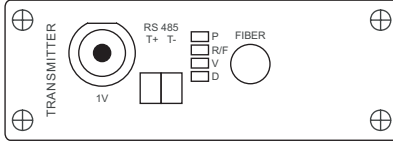
Indicator light	Functions and State
P	Power indicator the bright light means power supply in normal
R/F	System running indicator/Fiber Signal Indicator It flickers once don't receives fiber signal; it lighting once receives fiber signal
V	Video signal indicator: it is lighting when the video signal is input
D	Data Indicator, it flickers once there is emission of Reverse Data

#### 3.3: Description of connection for wire in panel

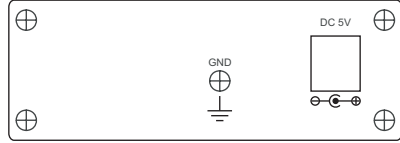
VI(BNC)	Transmitter: Video input terminal (5-8 M video signal), Receiver: video output terminal(5-8 M video signal)
T+, T-	Transmitter: RS485 output, other related devices connection: T-matches with T-, T+matches T+(decoder)
	Receiver: RS485 input, other related devices connection: T-matches with T-, T+ matches T+(Monitoring center serial ports)

## 4. 1Ch Video/1Ch Video+1Reverse Data Optical Transmitter and Receiver Series

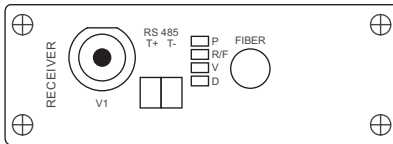
### 4.1: Schematic diagram of Panel



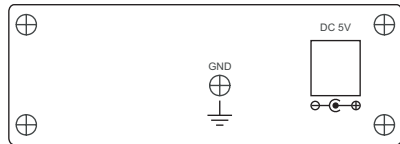
The front Panel of 1Ch Video+1Reverse Data Optical Transmitter



The back Panel of 1Ch Video+1Reverse Data Optical Transmitter



The front Panel of 1Ch Video+1Reverse Data Optical Receiver



The back Panel of 1Ch Video+1Reverse Data Optical Receiver

### 4.2: Description of indicator lights

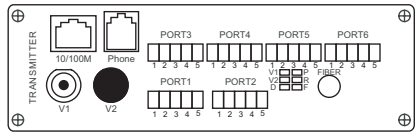
Indicator light	Functions and State
P	Power indicator the bright light means power supply in normal
R/F	System running indicator/Fiber Signal Indicator It flickers once don't receives fiber signal; it lighting once receives fiber signal
V	Video signal indicator: it is lighting when the video signal is input
D	Data Indicator, it flickers once there is emission of Reverse Data

### 4.3: Description of connection for wire in panel

V1(BNC)	Transmitter: Video input terminal (5-8 M video signal), Receiver: video output terminal(5-8 M video signal)
T+, T-	Transmitter: Rs485 output, other related devices connection: T-matches with T-, T+makes T+(decoder)
	Receiver: RS485 input, other related devices connection: T-matches with T-, T+ matches T+(Monitoring center serial ports)

# 5. Multi-Functional 1Ch Video Optical Transmitter and Receiver Series

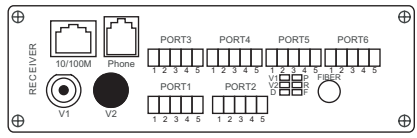
## 5.1: Schematic diagram of Panel



The front Panel of Transmitter



The back Panel of Transmitter



The front Panel Receiver



The back Panel of Receiver

## 5.2: Description of indicator lights

Indicator light	Funtions and State
P	Power indicator the bright light means power supply in normal
R	System running indicator, it flicks when the power is on
F	Fiber Signal Indicator, it flickers once it receives fiber signal
D	Data Indicator, it flickers once there is emission of Reverse Data
V1, V2	Video indicator will be light when receiver connect to fiber signal then has video signal output

## 5.3: Description of connection for wire in panel

V1(BNC)	Transmitter: Video input terminal (5-8 M video signal), Receiver: video output terminal(5-8 M video signal)
T+, T-	Transmitter: Rs485 output, other related devices connection: T-matches with T-, T+matches T+(decoder)
	Receiver: RS485 input, other related devices connection: T-matches with T-, T+ matches T+(Monitoring center serial ports)
10/100M	Ethernet port
Phone	Transmitter: telephone port
	Receiver: telephone port

The following connections for wire in panel are subject to mark , please read attached file if there are special functions.

### Wire Terminal PORT 1

Default: port4 and port5 are reverse direction of RJ45 T+and T-

### Wire Terminal PORT 2

No set up function now

**Wire Terminal PORT 3**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT4**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT 5**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT 6**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

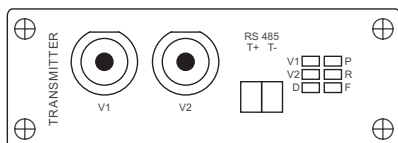
1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

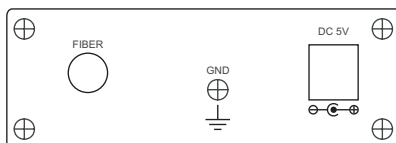
Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

## 6. 2Ch Video/2Ch Video+1Reverse Data Optical Transmitter and Receiver Series

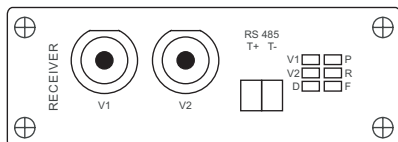
### 6.1: Schematic diagram of Panel



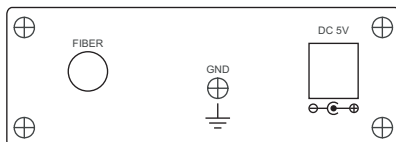
The front Panel of 2Ch Video+2Reverse Data Optical Transmitter



The back Panel of 2Ch Video+2Reverse Data Optical Transmitter



The front Panel of 2Ch Video+2Reverse Data Optical Receiver



The back Panel of 2Ch Video+2Reverse Data Optical Receiver

### 6.2: Description of indicator lights

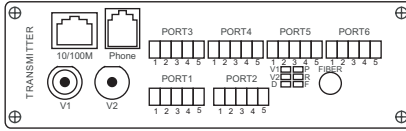
Indicator light	Funtions and State
P	Power indicator the bright light means power supply in normal
R	System running indicator, it flicks when the power is on
F	Fiber Signal Indicator, it flickers once it receives fiber signal
D	Data Indicator, it flickers once there is emission of Reverse Data
V1, V2	Video indicator will be light when receiver connect to fiber signal then has video signal output

### 6.3: Description of connection for wire in panel

V1,V2 BNC	Transmitter: Video input terminal (5-8 M video signal), Receiver: video output terminal(5-8 M video signal)
T+, T-	Transmitter: Rs485 output, other related devices connection: T-matches with T-, T+maches T+(decoder)
	Receiver: RS485 input, other related devices connection: T-matches with T-, T+ matches T+(Monitoring center serial ports)

# 7. Multi-Functional 2Ch Video Optical Transmitter and Receiver Series

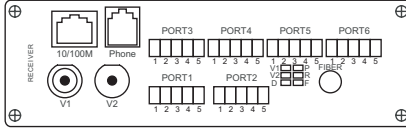
## 7.1: Schematic diagram of Panel



The front Panel of Transmitter



The back Panel of Transmitter



The front Panel Receiver



The back Panel of Receiver

## 7.2: Description of indicator lights

Indicator light	Funtions and State
P	Power indicator the bright light means power supply in normal
R	System running indicator, it flicks when the power is on
F	Fiber Signal Indicator, it flickers once it receives fiber signal
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## 7.3: Description of connection for wire in panel

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10/100M	Ethernet port
Phone	Transmitter: telephone port Receiver: telephone port

The following connections for wire in panel are subject to mark , please read attached file if there are special functions.

### Wire Terminal PORT 1

Default: port4 and port5 are reverse direction of Rj45 T+and T-

### Wire Terminal PORT 2

No set up function now

**Wire Terminal PORT 3**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT4**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT 5**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT 6**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

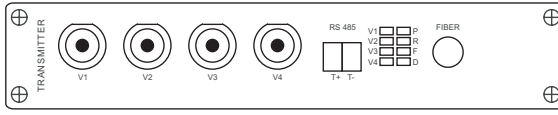
## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input



## 8. 4Ch Video/4Ch Video+1Reverse Data Optical Transmitter and Receiver Series

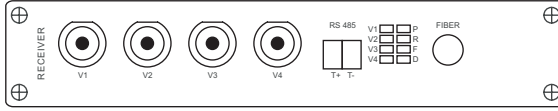
### 8.1: Schematic diagram of Panel



The front Panel of 4Ch Video+4Reverse Data Optical Transmitter



The back Panel of 4Ch Video+4Reverse Data Optical Transmitter



The front Panel of 4Ch Video+4Reverse Data Optical Receiver



The back Panel of 4Ch Video+4Reverse Data Optical Receiver

### 8.2: Description of indicator lights

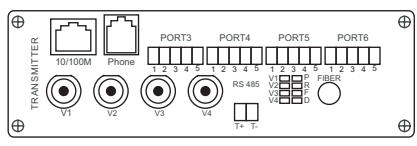
Indicator light	Functions and State
P	Power indicator the bright light means power supply in normal
R	System running indicator, it flicks when the power is on
F	Fiber Signal Indicator, it flickers once it receives fiber signal
D	Data Indicator, it flickers once there is emission of Reverse Data
V1-V4	Video indicator will be light when receiver connect to fiber signal then has video signal output

### 8.3: Description of connection for wire in panel

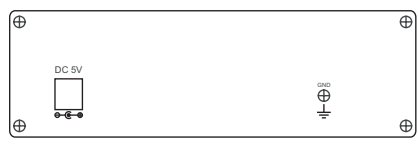
V1,V2 BNC	Transmitter: Video input terminal (5-8 M video signal), Receiver: video output terminal(5-8 M video signal)
T+, T-	Transmitter: Rs485 output, other related devices connection: T-matches with T-, T+matches T+(decoder)
	Receiver: RS485 input, other related devices connection: T-matches with T-, T+ matches T+(Monitoring center serial ports)

# 9. Multi-Functional 4Ch Video Optical Transmitter and Receiver Series

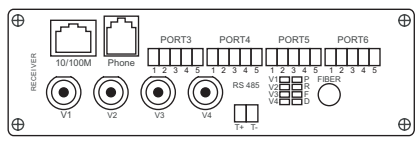
## 9.1: Schematic diagram of Panel



The front Panel of Transmitter



The back Panel of Transmitter



The front Panel Receiver



The back Panel of Receiver

## 9.2: Description of indicator lights

Indicator light	Functions and State
P	Power indicator the bright light means power supply in normal
R	System running indicator, it flicks when the power is on
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V1-V4	Video indicator will be light when receiver connect to fiber signal then has video signal output

## 9.3: Description of connection for wire in panel

V1-V4 BNC	Transmitter: Video input terminal (5-8 M video signal), Receiver: video output terminal(5-8 M video signal)
T+, T-	Transmitter: Rs485 output, other related devices connection: T-matches with T-, T+matches T+(decoder)  Receiver: RS485 input, other related devices connection: T-matches with T-, T+ matches T+(Monitoring center serial ports)
10/100M	Ethernet port
Phone	Transmitter: telephone port
	Receiver: telephone port

The following connections for wire in panel are subject to mark $\square$ , please read attached file if there are special functions.

#### Wire Terminal PORT 1

##### Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

##### Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

##### Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

#### Wire Terminal PORT2

##### Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

##### Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

##### Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

#### Wire Terminal PORT 3

##### Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

##### Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

##### Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

#### Wire Terminal PORT4

##### Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

##### Switch

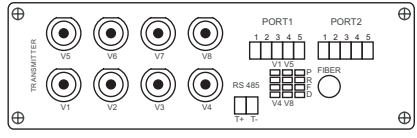
1&2 Input  1&2Output  4&5 Input  4&5 Output

##### Audio Functions

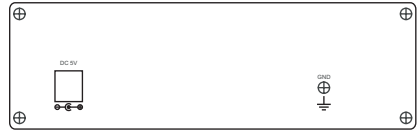
Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

# 10. 8Ch Video/8Ch Video+1Reverse Data Optical Transmitter and Receiver Series

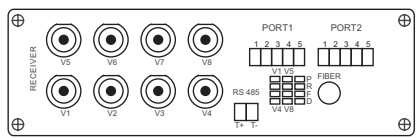
## 10.1: Schematic diagram of Panel



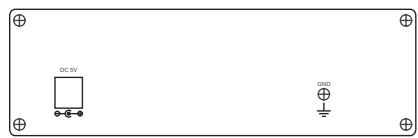
The front Panel of 8Ch Video+1Reverse Data Optical Transmitter



The back Panel of 8Ch Video+1Reverse Data Optical Transmitter



The front Panel of 8Ch Video+1Reverse Data Optical Receiver



The back Panel of 8Ch Video+1Reverse Data Optical Receiver

## 10.2: Description of indicator lights

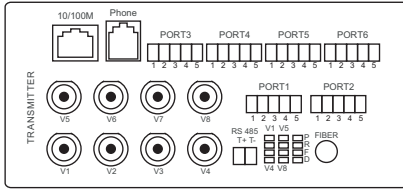
Indicator light	Functions and State
P	Power indicator the bright light means power supply in normal
R	System running indicator, it flicks when the power is on
F	Fiber Signal Indicator, it flickers once it receives fiber signal
D	Data Indicator, it flickers once there is emission of Reverse Data
V1-V8	Video indicator will be light when receiver connect to fiber signal then has video signal output

## 10.3: Description of connection for wire in panel

V1,V2 BNC	Transmitter: Video input terminal (5-8 M video signal), Receiver: video output terminal(5-8 M video signal)
T+, T-	Transmitter: Rs485 output, other related devices connection: T-matches with T-, T+matches T+(decoder)
	Receiver: RS485 input, other related devices connection: T-matches with T-, T+ matches T+(Monitoring center serial ports)

# 11. Multi-Functional 8Ch Video Optical Transmitter and Receiver Series

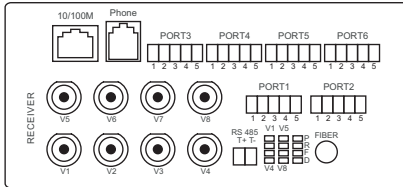
## 11.1: Schematic diagram of Panel



The front Panel of Transmitter



The back Panel of Transmitter



The front Panel Receiver



The back Panel of Receiver

## 11.2: Description of indicator lights

Indicator light	Functions and State
P	Power indicator the bright light means power supply in normal
R	System running indicator, it flicks when the power is on
F	Fiber Signal Indicator, it flickers once it receives fiber signal
D	Data Indicator, it flickers once there is emission of Reverse Data
V1-V8	Video indicator will be light when receiver connect to fiber signal then has video signal output

## 11.3: Description of connection for wire in panel

V1-V4 BNC	Transmitter: Video input terminal (5-8 M video signal), Receiver: video output terminal(5-8 M video signal)
T+, T-	Transmitter: Rs485 output, other related devices connection: T-matches with T-, T+matches T+(decoder)
	Receiver: RS485 input, other related devices connection: T-matches with T-, T+ matches T+(Monitoring center serial ports)
10/100M	Ethernet port
Phone	Transmitter: telephone port
	Receiver: telephone port

The following connections for wire in panel are subject to mark , please read attached file if there are special functions.

#### Wire Terminal PORT1

##### Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

##### Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

##### Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

#### Wire Terminal PORT2

##### Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

##### Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

##### Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

#### Wire Terminal PORT5

##### Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

##### Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

##### Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

#### Wire Terminal PORT6

##### Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

##### Switch

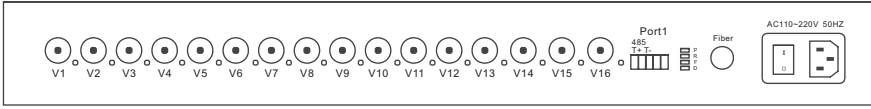
1&2 Input  1&2Output  4&5 Input  4&5 Output

##### Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

## 12. 16Ch Video/Audio/Data Optical Transmitter and Receiver Series(16Ch Video 1U Standard Rack Mounted Optical Transmitter and Receiver )The Panels of Transmitter and Receiver are the same.

### 12.1 Schematic diagram of Panel



### 12.2 Description of indicator Lights

Indicator light	Functions and State
P	Power indicator the bright light means power supply in normal
R	System running indicator, it flicks when the power is on
F	Fiber Signal Indicator,it flickers once it receives fiber signal
D	Data Indicator, it flickers once there is emission of Reverse Data
V1-V16	Transmitter: It is bright when the transmitter gets video input signal.
	Receiver: It is bright when the receiver gets the signal from transmitter.

### 12.3 Description of connection for wire in panel.

V1-V16 BNC	Transmitter: Video input terminal (5-8 M video signal); Receiver: video output terminal (5-8 M video signal)
T+, T-	Transmitter : RS485 for the output and connecting with other related devices , T- to T-, T+ to T+(decoder side)
	Receiver: RS485 for the input and connecting with other related devices, T- to T-, T+ to T+ , (series terminal side in Monitoring Center)

**Wire Terminal PORT1 (connection for wire terminal in panel on Transmitter is same as Receiver)**



Data Function

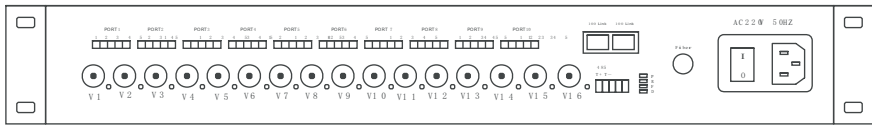
- Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

Switch

- 1&2 Input  1&2Output  4&5 Input  4&5 Output

# 13. Multi-Functional 16Ch Video Optical Transmitter and Receiver Series

## 13.1 Schematic diagram of Panel



## 13.2 Description of indicator Lights

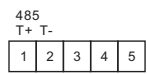
Indicator light	Functions and State
P	Power indicator the bright light means power supply in normal
R	System running indicator, it flicks when the power is on
F	Fiber Signal Indicator, it flickers once it receives fiber signal
D	Data Indicator, it flickers once there is emission of Reverse Data
V1-V16	Video signal indicator, it is bright when the video signal is in normal.

## 13.3 Description of connection for wire in panel.

V1-V16 BNC	Transmitter: Video input terminal (5-8 M video signal); Receiver: video output terminal (5-8 M video signal)
T+, T-	Transmitter : RS485 for the output and connecting with other related devices , T- to T-, T+ to T+(decoder side)
	Receiver: RS485 for the input and connecting with other related devices, T- to T-, T+ to T+ , (series terminal side in Monitoring Center)
10/100M	Ethernet port

The following connections for wire in panel are subject to mark , please read attached file if there are special functions.

RS485/RS422 Terminal: Following is Terminal Panel



- Rs485 Data:  Pin 1 and Pin 2 be acquiesced 485 data wire terminal by system
- Rs485 Data:  Pin 4 and Pin 5 is Bi-directional 485Data wire terminal, also other way reverse 485data :T+ T-
- Rs422 Data:  1:TX+ 2:TX- 4:RX+ 5:RX-



**Wire Terminal PORT 1**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT2**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT3**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT4**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT5**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT6**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT7**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT8**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
 Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
 Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
 Pin2:Audio2  Output  Input  
 Pin3:Audio Public Ground  
 Pin4:Audio4  Output  Input  
 Pin5:Audio5  Output  Input

**Wire Terminal PORT9**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
Pin2:Audio2  Output  Input  
Pin3:Audio Public Ground  
Pin4:Audio4  Output  Input  
Pin5:Audio5  Output  Input

**Wire Terminal PORT10**

## Data Function

Rs485 Data:  1:T+ 2:T-  4:T+ 5:T-  
Rs422 Data:  1:TX+ 2:TX- 3:RX+ 4:RX-  
Rs232 Data:  1:TX 2:RX 3:GND  1:TX 2:RX 3:GND

## Switch

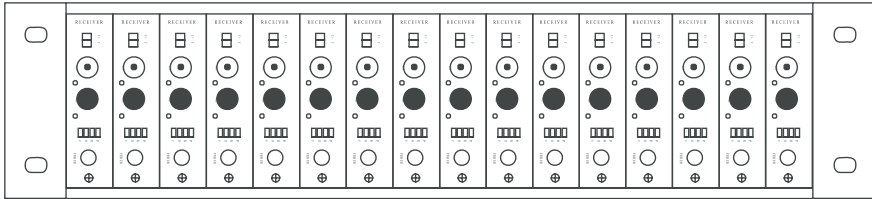
1&2 Input  1&2Output  4&5 Input  4&5 Output

## Audio Functions

Pin1:Audio1  Output  Input  
Pin2:Audio2  Output  Input  
Pin3:Audio Public Ground  
Pin4:Audio4  Output  Input  
Pin5:Audio5  Output  Input

# 14. 2U Standard Rack Mounted Video Optical Transmitter and Receiver Series

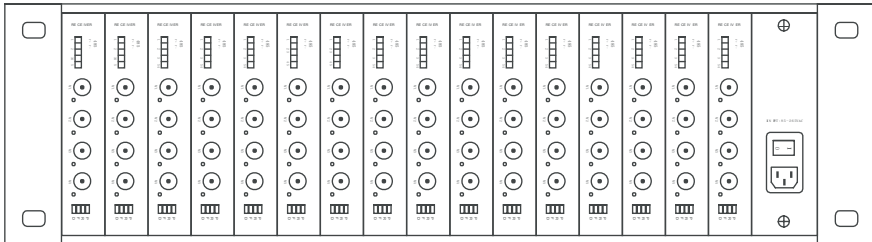
## 14.1 2U Standard Rack mounted schematic



**Notes:**

The Centralized Management 2U Rack Mounted Video Optical Transmitter and Receiver is composed of 1Ch Video or 2 Ch Video Digital Optical Receiver Card. There are two efficient built-in power supplies with high capacity. The quantity for inserting Receiver Cards depend on customer's requirements and choices. The maximum quantity: 16pcs for 1Ch Video+1Data Optical Receiver Cards or 16pcs for 2Ch Video+1Data Optical Receiver Cards .For the details, Please refer to relevant panel description.

## 14.2 4U Standard Rack Mounted Video Optical Transmitter and Receiver Series Schematic diagram of Panel



**Notes:**

The Centralized Management 4U Rack Mounted Video Optical Transmitter and Receiver is composed of 4Ch Video or 8 Ch Video Digital Optical Receiver Card. There is one efficient built-in power supply with high capacity. The quantity for inserting Receiver Cards depend on customer's requirements and choices. The maximum quantity: 16pcs for 4ChVideo Optical Receiver Cards or 8Video Optical Receiver Cards . For the details, Please refer to relevant panel description.

# 15. Device Installation

## 15.1 Inspection for opening Box

When open packing box, please inspect all related accessories, please timely contact with the local sales person if it lacks some accessories.

- ◆ Video Optical Transmitter and Receiver or Rack : 1 set
- ◆ Power cable or outside power supply: 1pcs
- ◆ User Manul :1 pcs
- ◆ Warranty Card/Quality Certificate: 1 pcs

## 15.2 Application Scheme

The installation and connection for related devices, please refer to the following Application Diagram.

### Installation Notes:

Please turn off the power when the user installs devices, The connection for all wire terminals should be exact, ensuring that check without any error, then turn the power on.

