CREATOR®

CREATOR CORPORATION(CHINA)

The Second Generation Digital CAT5 Transmitter User 's Manual

V1.1 Version

CREATOR CORPORATION CHINA

The meaning of symbols

■Safety instructions

For your safe and correct use of equipments, we use a lot of symbols on the equipments and in the manuals, demonstrating the risk of body hurt or possible damage to property for the user or others. Indications and their meanings are as follow. Please make sure to correctly understand these instructions before reading the manual.

	This is A level product, which may cause radio interference in the living environment. In this case, users may need to take the feasible measures to get around the interference.
	Remind users that the dangerous voltage without insulation occurring within the equipment may cause people suffer from shock
	CE certification means that the product has reached the directive safety requirements defined by the European Union. Users can be assured about the use of it
	SGS certification means that the product has reached the quality inspection standards proposed by the world's largest SGS.
	This product passed the ISO9001 international quality certification (certification body: TUV Rheinland, Germany).
	Warning: in order to avoid electrical shock, do not open the machine cover, nor is the useless part allowed to be placed in the box. Please contact the qualified service personnel.

■General information instructions

	It lists the factors leading to the unsuccessful operation or set and the relevant information to pay attention to.

Important note

Warning

In order to ensure the reliable performance of the equipment and the safety of the user, please observe the following matters during the process of installation, use and maintenance:

The matters needing attention of installation

◆Please do not use this product in the following places: the place of dust, soot and electric conductivity dust, corrosive gas, combustible gas; the place exposed to high temperature, condensation, wind and rain; the occasion of vibration and impact . Electric shock, fire, wrong operation can lead to damage and deterioration to the product, either;

◆In processing the screw holes and wiring, make sure that metal scraps and wire head will not fall into the shaft of controller, as it could cause a fire, fault, or incorrect operation;

◆When the installation work is over, it should be assured there is nothing on the ventilated face, including packaging items like dust paper. Otherwise this may cause a fire, fault, incorrect operation for the cooling is not free;

◆Should avoid wiring and inserting cable plug in charged state, otherwise it is easy to cause the shock, or electrical damage;

◆The installation and wiring should be strong and reliable, contact undesirable may lead to false action;

◆For a serious interference in applications, should choose shield cable as the high frequency signal input or output cable, so as to improve the anti-jamming ability of the system.

Attention in the wiring

◆Only after cutting down all external power source, can install, wiring operation begin, or it may cause electric shock or equipment damage;

◆This product grounds by the grounding wires .To avoid electric shocks, grounding wires and the earth must be linked together. Before the connection of input or output terminal, please make sure this product is correctly grounded;

◆Immediately remove all other things after the wiring installation. Please cover the terminals of the products cover before electrification so as to avoid cause electric shock.

Matters needing attention during operation and maintenance

◆Please do not touch terminals in a current state, or it may cause a shock, incorrect operation;

◆Please do cleaning and terminal tighten work after turning off the power supply. These operations can lead to electric shock in a current state;

◆Please do the connection or dismantle work of the communication signal cable , the expansion module cable or control unit cable after turning off the power supply, or it may cause damage to the equipment, incorrect operation;

◆Please do not dismantle the equipment, avoid damaging the internal electrical component;

◆Should be sure to read the manual, fully confirm the safety, only after that can do program changes, commissioning, start and stop operation.

Matters needing attention in discarding product

◆Electrolytic explosion: the burning of electrolytic capacitor on circuit boards may lead to explosion;

◆Please collect and process according to the classification, do not put into life garbage;

◆Please process it as industrial waste, or according to the local environmental protection regulations.

Preface

The second generation Digital CAT5 transmitter User 's Manual mainly introduces the operation methods of CR-uCAT5 AV 200T transmitter,CR-uCAT5 DVI 200T transmitter,CR-uCAT5 DVI 200R receiver,CR-uCAT5 HDMI 200T transmitter,CR-uCAT5 HDMI 200R receiver,CR-uCAT5 VGA 200R receiver,their main performance parameters and common fault solutions.

This manual is only used as user instruction, not for a repair service usage. The functions or related parameters may be changed since the date of issue, please inquire the supplemental information from CREATOR Electronics or local distributors.

Catalog

Chapter 1 Summary

The second generation uCAT5 series digital transmitter is a new generation twisted-pair transmitter upgrading the first generation product. It transmits integrated CAT5 audio, video, control signals. By increasing the transmission end monitoring output interface, it can monitor the video input state and backup output. Adopting the advanced HDBaseT technology, based on single CAT5e/6 shielding cable, its maximum transmission distance is up to 100M.

Focus on the market application and current video interfaces, CR-uCAT5 AV 200T transmitter integrates Video, S-video, YPbPr (YCbCr), VGA (RGBHV) into a unified DB15 (VGA Female socket) interface input and HDMI, DVI input. Together with one analog audio input (except HDMI input mode), it can directly select corresponding input signal source through the channel selecting button the serial command. Any video input of Video, S-video, YPbPr, VGA, DVI can simultaneously transmit analog audio input and directly output HDMI signal by HDMI monitoring interface. Support color space conversion, eliminate flicker, support noise reduction and scaling, resolution can be upscale to 1080P.

The second generation uCAT5 series transmitter is increased with the sending end video surveillance function. It can monitor the output state of receiving end in real-time, so as to meet the different application needs of users. It can be widely used in fields like network flat panel display and large screen splicing wall display, advertising project, industrial automation control, medical equipment, security monitoring, multimedia teaching etc.

1.1 Classification of Digital CAT5 Transmitter

1.1.1 Digital uCAT5 transmitter

AV digital video twisted pair transmitter
CR-uCAT5 AV 200T

DVI digital video twisted pair transmitter
CR-uCAT5 DVI 200T CR-uCAT5 DVI 200R

HDMI digital video twisted pair transmitter
CR-uCAT5 HDMI 200T CR-uCAT5 HDMI 200R

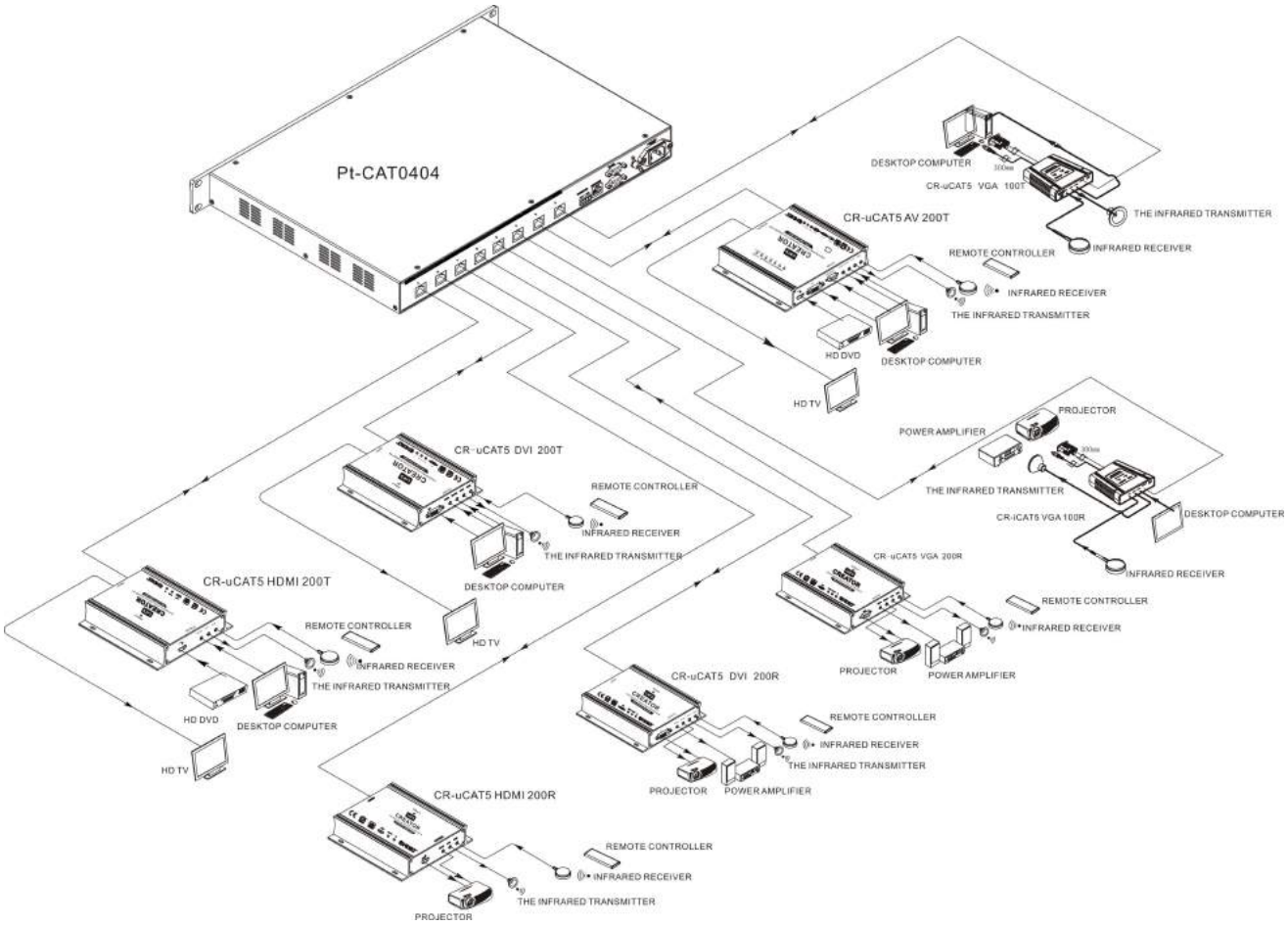
VGA video twisted-pair receiver
CR-uCAT5 VGA 200R

3 types of transmitters and 3 types of receivers can be in any arbitrary combinations.

1.1.2 Accessories

- Infrared transmitter CR-IR/T.
- Infrared receiver CR-IR/R.
- 3.5mm headphones socket to DB9 male socket.
- 3.5mm headphones socket to DB9 female socket.
- DB15 male socket transfer line (S terminal, RCA head.

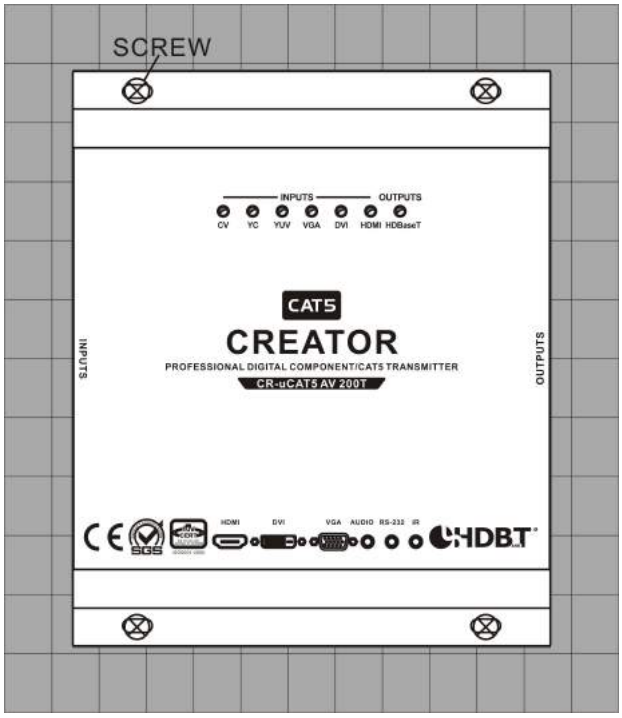
1.2 System Connection Diagram



Chapter 2 Digital uCAT5 Transmitter

2.1 Controller Installation

Digital video twisted pair transmitter controller has small size, light weight, and can be easily installed in any place, for example, as the following figure shows, the transmitter is mounted on the wall, can be fixed with 4PCS screws.



2.2 CR-uCAT5 AV 200T Digital Mixed Twisted-Pair Transmitter

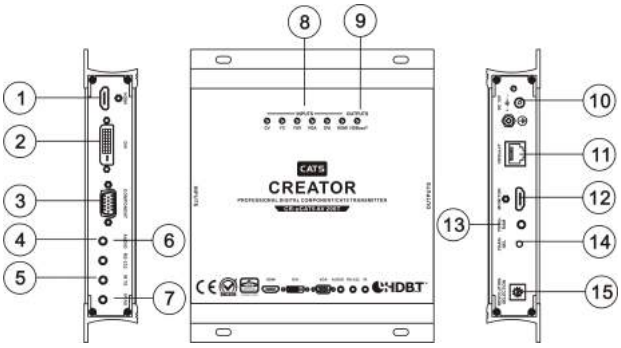
AV mixed twisted-pair transmitter through a single CAT5e/6 shielding cable transmits video signals up to 100m, and can transfer two-way digital signals like IR, serial, so as to meet the needs of different types of video interfaces and control equipments

2.2.1 Function Characteristics

- Supports HDM11.3a, compatible with HDCPI.3;
- Support DVI-D input, compatible with DVI1.0;
- Supports Video, S-video, YPbPr (YCbCr), VGA (RGBHV) input;
- Support analog stereo input, output, HDMI digital audio input, output;
- Support two-way infrared, RS-232 transmission;
- Through serial command or panel code to change the output resolution;
- Through serial command or panel button to select a video source;
- Support video scaling, noise reduction, de-interlacing, adjustment of brightness and contrast, resolution can be up-scaled to 1920x1080P@60;
- Support simultaneous transmission of video, audio, IR, and RS-232. The maximum transmission distance of CAT5e/6 shielding cable is up to 100M.

2.2.2 Panel Features

CR-uCAT5 AV 200T:



① **HDMI——HDMI audio and video input**

HDMI interface is used to connect the input from HDMI interface, HD video source such as PC, Blu-ray DVD, HD Player, etc.

② **DVI——DVI video signal input**

DVI-D interface is used to connect the DVI HD video signal source.

③ **COMPONENT——**Hybrid video input port is used for VGA video input. Through the conversion

line, it can input RGBHV, Video, S-video, YPbPr (YCbCr)

④ **AUDIO——Audio signal input**

Provides 1 channel of non-equilibrium, stereo audio input, and input for any video (except HDMI)

⑤ **IR TX——Infrared transmitter port**

Using 3.5MM earphone socket infrared transmitter

⑥ **RS-232——RS-232 control port**

3.5MM earphone socket and DB9 male (female) socket are used for long distance serial control. The sending end with 3.5MM connected to DB9 socket, receiver with 3.5MM connected to DB9 socket, both ends are set to a consistent baud rate, and baud rate ranges from 110bps to 115200bps

⑦ **IR-RX——Infrared receiver port**

Using 3.5MM earphone socket connected to infrared receiver.

⑧ **INPUTS——The lamp indicating input channel state**

⑨ **OUTPUTS——The lamp indicating output** channel state

⑩ **DC 12V——Power input port**

Support DC 12V input, with a power indicating lamp

⑪ HDBaseT——CAT5e/6 network transmission interface

Use RJ45 interface for long distance transmission of HDBaseT signals.

⑫ **MONITOR——HDMI video output interface**

It is used by HDMI to monitor the signal of current selected video channel and one analog audio input.

When HDMI signal inputs, analog audio can not input simultaneously. Analog audio can output HDMI signal together with any arbitrary video of CV, YC, YUV, VGA, DVI.

⑬ **PROGRAM——Serial port debugging interface**

3.5MM earphone connector to DB9 female socket connection line is used to connect PC so as to realize serial port control.

⑭ **CHANNEL——Video channel selection**

For selecting the video input interface, the corresponding video indicator will be lit. Optional Videos: CV, YC, YUV, VGA, DVI, HDMI.

When switch from VGA input state to YUV channel, user needs re-power the device and then perform the channel selection.

⑮ **RESOLUTION SELECTION**

Provide DIP setting, rotate the arrow on the DIP switch to select the desired output resolution, specific parameters are as follows:

RESOLUTION SELECTION

DIP switch selectable	Resolution
The arrows point to the number 0	800x600@60Hz
The arrows point to the number 1	1024x768@60Hz
The arrows point to the number 2	1280x720@60Hz
The arrows point to the number 3	1280x800@60Hz
The arrows point to the number 4	1280x960@60Hz
The arrows point to the number 5	1280x1024@60Hz
The arrows point to the number 6	1366x768@60Hz
The arrows point to the number 7	1440x900@60Hz
The arrows point to the number 8	1600x900@60Hz
The arrows point to the number 9	1920X1080@60Hz

2.2.3 Operating Instructions

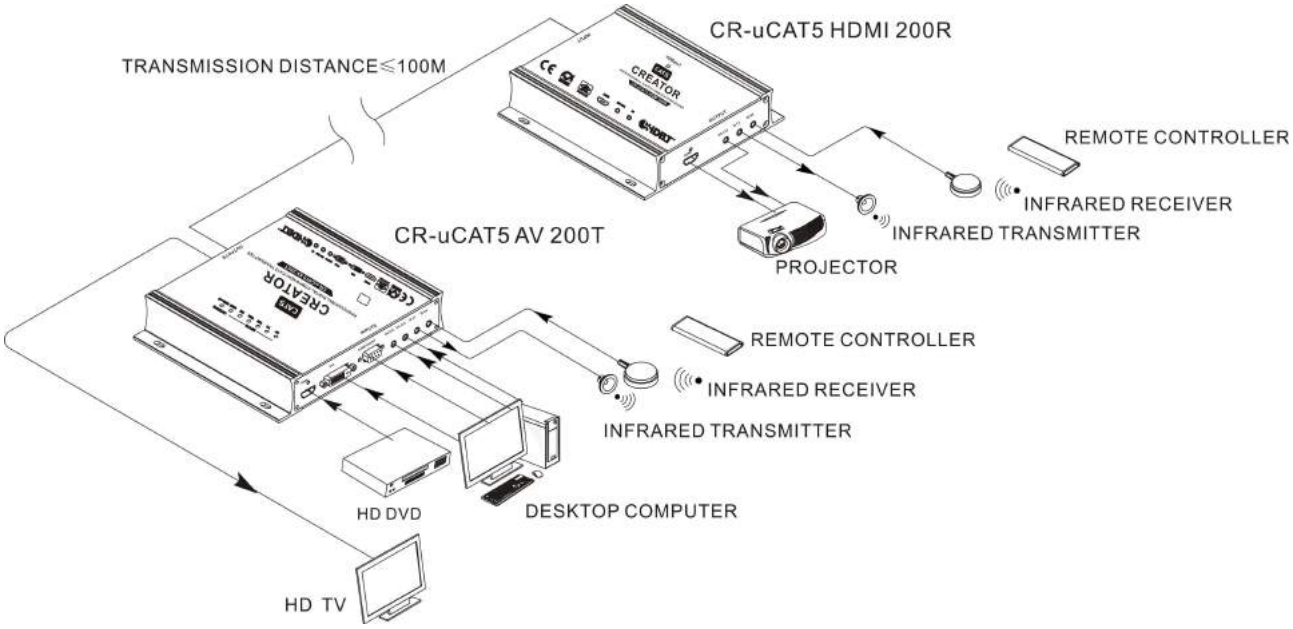
The VGA interface supports CV, YC, YUV, VGA, RGBHV five kinds of video signal input. The RGBHV input needs to match a RGB to VGA connecting line by user. There is a VGA to RCA female, S terminal female connecting line in factory configuration. User should connect the terminals with the same color, namely: RCA red terminal is connected to Pr (Cr), RCA green terminal is connected to Y, RCA blue terminal to Pb (CB).

① In the VGA input state, if user wants to replace the connecting line and switch to any channel among CV, YC, YUV, he should re-power the device after changing the connecting line

② The engineering serial interface of device is only for project debugging, does not support the transmission. It can be connected to control device via 3.5MM earphone socket to DB9 female socket connecting line.

③ The device supports power-off memory function. Either with the engineering serial instruction or operation panel code, key button, the device will preserve the last operation.

2.2.4 Connection Diagram



2.3 CR-uCAT5 DVI 200T&R

Digital Twisted-Pair Transmitter

DVI digital video twisted-pair transmitter through a single CAT5e/6 shielded twisted pair cable transmits HD video 1080P to 100m. It can simultaneously transmit bidirectional RS-232 and two-way infrared signal. High resolution video digital signal channel guarantees the transmission effect of image. The sending end has a DVI monitor output, which can be used for DVI input signal expansion or monitoring.

DVI digital transmitter perfectly transmits DVI signal source. It provides a low cost solution for remote video transmission and two-way control of signal source device and the display device

2.3.1 Function Characteristics

- Support DVI-D input, compatible with DVI1 0;
- Supports two-way infrared, RS-232 transmission;
- The transmitter supports DVI monitor output;
- Support for simultaneous transmission of video, audio, IR and RS-232. The maximum transmission distance of CAT5e/6 shielding cable is up to 100M.

2.3.2 Panel Features

CR-uCAT5 DVI 200T:

CR-uCAT5 DVI 200R:

① DVI——video signal input / output port

Using DVI-D interface, connect to the DVI HD video signal source and display terminal equipment or other peripheral equipments like signal converter. Such as PC, DVI HD video player, DVI display etc.

② AUDIO——audio signal input / output port

Provides one-way non-equilibrium, stereo audio input and output port, and connects to PC and other peripheral equipments.

③ RS-232——RS-232 serial control

Using DB9 to 3.5MM earphone socket, for the remote control, can be connected with PC. The sending end with 3.5MM to DB9 female socket, receiver with 3.5MM to DB9 male socket, both ends are set to a consistent baud rate, ranging from 110bps to 115200bps.

④ IR TX——infrared transmitting port

Using 3.5MM earphone socket to infrared transmitter

⑤ R-RX——infrared receiving port

Using 3.5MM earphone socket to infrared receiver

⑥ DC 12V——power input port

Support DC 12V input and side with the power indicator.

⑦ HDBaseT—— CAT5e/6 network transmission interface

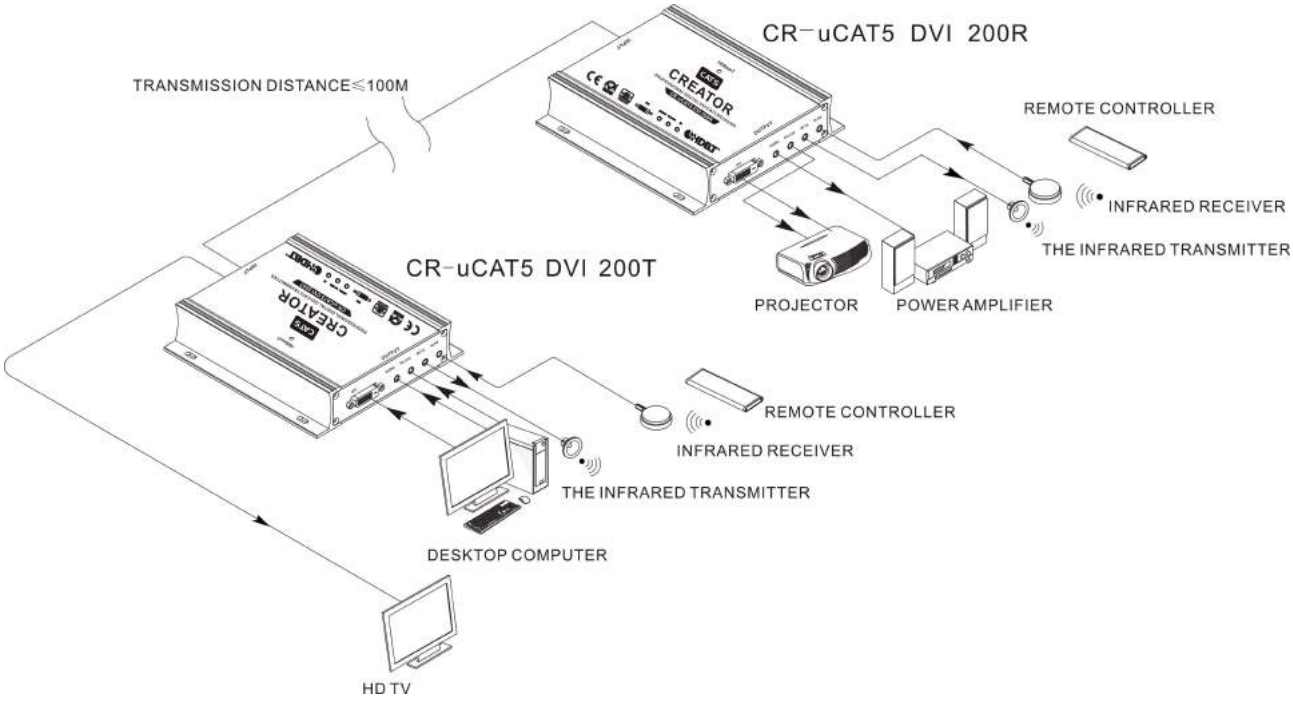
It uses RJ45 interface for long distance transmission of HDBaseT signals.

⑧ MONITOR——video monitoring output interface

Be capable of monitoring DVI signal input.

When DVI input port receives HDMI signals of blue-ray DVD and so on, the monitoring output port does not support the output of HDMI signal.

2.3.3 Connection Diagram



2.4 CR-uCAT5 HDMI 200T&R

Digital Twisted-Pair Transmitter

HDMI digital twisted-pair transmitter through a single CAT5e/6 shielded twisted pair cable transmits HD video 1080P to 100m. And can simultaneously transmit bidirectional RS-232, two-way infrared signal.

HDMI digital twisted-pair transmitter perfectly transmits HDMI I.3a signal source. It provides a low cost solution for remote video transmission and two-way control of signal source device and the display device.

2.4.1 Function Characteristics

◆Support HDMI1.3a, compatible with HDCP DVI1.0

◆ HDMI comes with digital audio input; support analog stereo output;

◆Support two-way infrared, RS-232 transmission;

◆Sender support HDMI monitor output;

◆ Support simultaneous transmission of video, audio, IR and RS-232. The maximum transmission distance of CAT5e/6 shielding cable is up to 100M.

2.4.2 Panel Features

CR-uCAT5 HDMI 200T:

CR-uCAT5 HDMI 200R:

① HDMI——HDMI audio and video input / output interface

HDMI interface for connecting input / output devices with HDMI interface, such as PC computer, Blu-ray DVD, monitor, LCD TV, etc.

② RS-232——RS-232 control port

Using DB9 to 3.5MM earphone socket, for the remote control, can be connected with PC. The sending end with 3.5MM to DB9 female socket, receiver with 3.5MM to DB9 male socket, both ends are set to a consistent baud rate, ranging from 110bps to 115200bps.

③ IR TX——Infrared transmitting port

3.5MM earphone socket infrared transmitter is adopted.

④ IR RX -- Infrared receiving port

3.5MM earphone socket infrared transmitter is adopted.

⑤ DC 12V -- Power input port

Support DC 12V input and side with a power indicator.

⑥ HDBaseT—CAT5e/6 network transmission interface

Uses RJ45 interface for long distance transmission of HDBaseT signals.

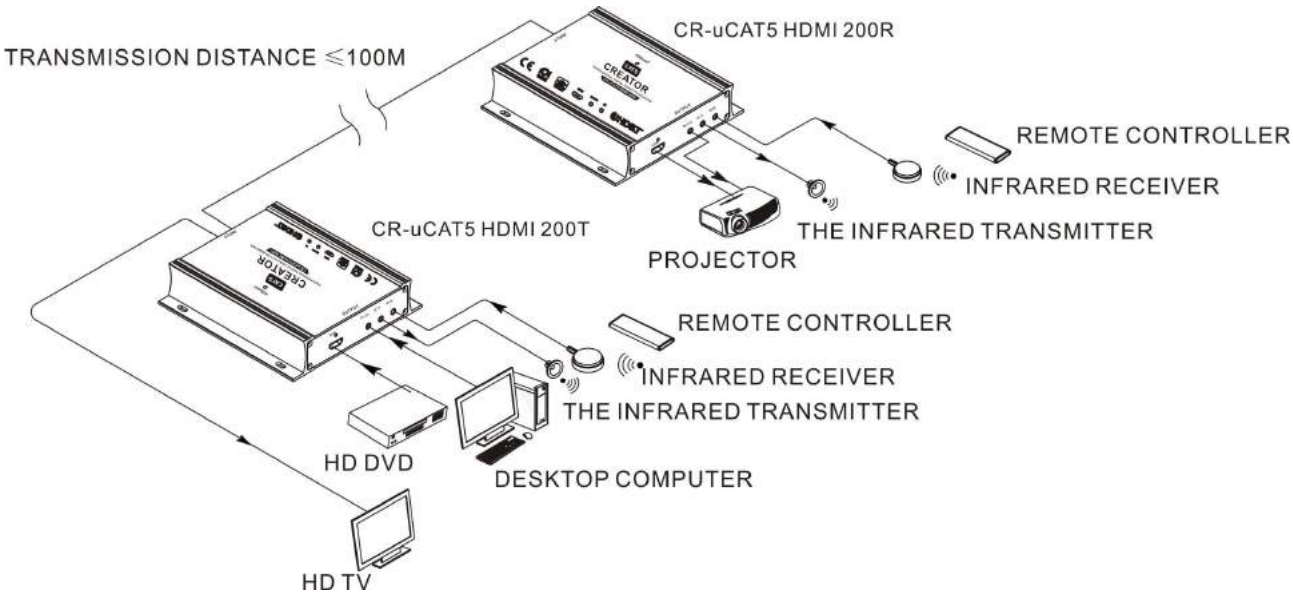
⑦MONITOR—Video monitoring output interface

It can monitor HDMI signals of the input end.

⑧ AUDIO——Audio signal input / output port

Provides one-way non-equilibrium, stereo audio input and output port and connects to PC and other peripheral equipments.

2.4.3 Connection Diagram



2.5 CR-uCAT5 VGA 200R

Digital Twisted-Pair Transmitter

VGA video twisted-pair transmitter transmits high bandwidth video signal up to 100m via a single CAT5e/6 shielding cable. Resolution ranges from SVGA (800X600) to WUXGA (1920x1200). And it can simultaneously transmit analog stereo audio, bidirectional RS-232, and two-way infrared signals.

2.5.1 Features Characteristics

- Support high bandwidth analog video output;
- Supports analog stereo output;
- Support two-way infrared, RS232 transmission;
- Support simultaneous video, audio, IR, and RS232 transmission;
- The maximum transmission distance of CAT5e/6 shielding cable is up to 100M.

2.5.2 Panel Features

CR-uCAT5 VGA 200R:

① DC 12V—Power input port

Support DC 12V input and side with a power indicator.

② HDBaseT—CAT5e/6 network transmission interface

It uses RJ45 interface for long distance transmission of HDBaseT signals.

③ IR RX—Infrared receiving port

3.5MM earphone socket infrared receiver is adopted.

④ IR TX—Infrared transmitting port

3.5MM earphone socket infrared receiver is adopted.

⑤ RS-232—RS-232 serial control

Using DB9 to 3.5MM earphone socket, for the remote control, can be connected with PC. The sending end with 3.5MM to DB9 socket, receiver with 3.5MM to DB9 socket, both ends are set to a

consistent baud rate, ranging from 110bps to 115200bps.

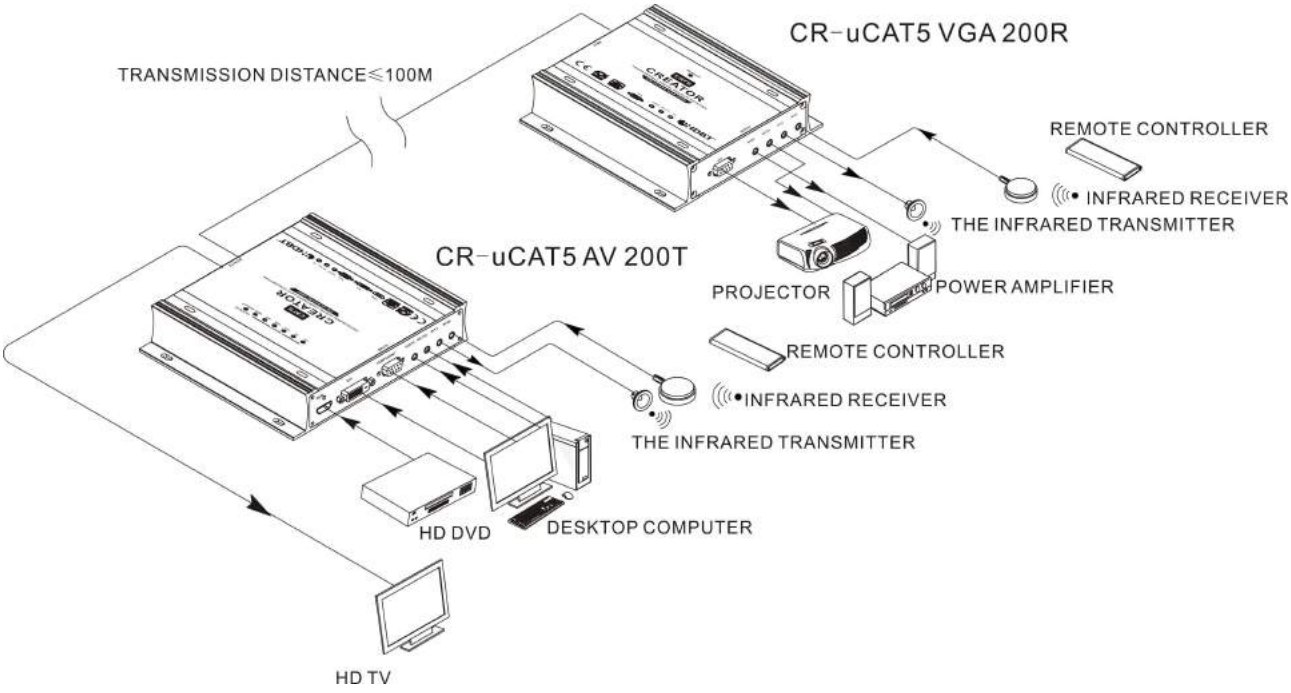
⑥ AUDIO—Audio signals input

It provides one-way non-equilibrium, stereo audio output.

⑦ VGA——VGA video signal input / output port

Via DB15 socket, it connects to VGA video display terminal device or other peripheral equipments like signal converter and so on.

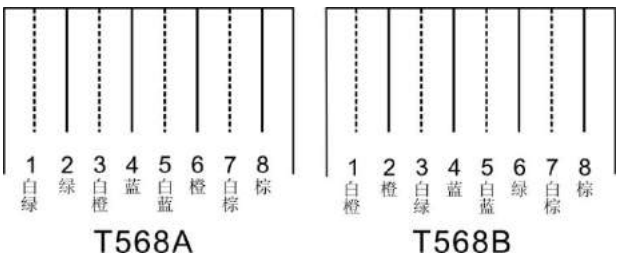
2.5.3 Connection Diagram



2.6 RJ45 Network Port

The system recommends using CAT-6 (cable) as wire, and via the RJ45 connector (commonly known as crystal head) which was installed at both ends of CAT-6 to connect network equipment. Standard connection of twisted-pair cable is not arbitrarily prescribed. The purpose is to ensure that the symmetry of the shielded cable connector layout, so that interference between the connector shielded cable can cancel each other. The general five lines have four pairs of thin wire twisted together, and marked with different colors.

Twisted pair cable has two configurations: EIA / TIA 568B standards and EIA / TIA 568A standard.



T568A线序								T568B线序							
1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
白绿	绿	白橙	蓝	白蓝	橙	白棕	棕	白橙	橙	白绿	蓝	白蓝	绿	白棕	棕

T568A linear order							
1	2	3	4	5	6	7	8
white green	green	White orange	blue	White blue	orange	White brown	brown

T568B linear order							
1	2	3	4	5	6	7	8
White orange	orange	White green	blue	White blue	green	White brown	brown

Direct line: two ends connected according to T568B wire order standard.

Cross line: one end connected according to T568B wire order, the other T568A line order.

2.7 Technical Parameters

2.7.1 CR-uCAT5 AV 200T Technical Parameters

Model / Parameters	CR-uCAT5 AV 200T Transmitter
HDMI video input	
Supported protocols	HDMI1.3a, HDCP1.3,EDID1.4
Bandwidth	Pixel bandwidth 165MHz, full digital
Interface bandwidth	6.75Gbps
The maximum supported resolution	Normal PC: 1600x1200@60Hz HDPC: 1900x1200@60Hz HDTV: 1920x1080P@60Hz
Signal type	HDMI 1.3a / T.M.D.S. full digital signal
Interface	HDMI-A Interface
Signal strength	T.M.D.S. +/- 0.4Vpp
Minimum / maximum level	T.M.D.S. 2.9V/3.3V
Impedance	Differential 100Ω
Video cable maximum input / output distance	Less than 7 meters, in the 1920x1080P@60 (recommended the use of certified HDMI special wire, as Molex TM wire)
DVI video input	
Supported protocols	DVI1.0,EDID1.4
Bandwidth	Pixel bandwidth 165MHz, full digital
Interface bandwidth	6.75Gbps
The maximum supported resolution	Normal PC: 1600x1200@60Hz HDPC: 1900x1200@60Hz HDTV: 1920x1080P@60Hz
Signal type	DVI-D T.M.D.S. full digital signal
Interface	DVI-D Interface
Maximum input distance of video cable	Less than 7 meters, in the 1920x1080P@60 (recommended the use of certified HDMI special wire, as Molex TM wire)
Signal strength	T.M.D.S. +/- 0.4Vpp
Minimum / maximum level	T.M.D.S. 2.9V/3.3V
Impedance	Differential 100Ω
CV analog video input	
Format	NTSC,PAL,SECAM
Signal type	Composite video(CVBS)
Interface	DB15 male to RCA female (custom line)
Signal strength	1V p-p : composite video(CVBS)
Minimum / maximum level	Analog signal: -2V/+2V
Impedance	75Ω

Model / Parameters	CR-uCAT5 AV 200T Transmitter
Supported video input format	480i/NTSC;480P/NTSC;576i/PAL;576P/PAL
YC analog video input	
Format	NTSC,PAL,SECAM
Signal type	S-VIDEO
Interface	DB15 male to S terminal (custom line)
Signal strength	1VPP(standard),0.7VPP-1.6VPP
Minimum / maximum level	0.7VPP-1.6VPP
Impedance	75Ω
Supported video input format	480i/NTSC;480P/NTSC;576i/PAL;576P/PAL
YUV analog video input	
Format	NTSC,PAL,SECAM
Signal type	Component video(YPbPr/YCbCr)
Interface	Interface DB15 male to RCA female head (custom line)
Supported video input format	480i/NTSC;480P/NTSC;576i/PAL;576P/PAL;720P/NTSC;1080i/PAL
Signal strength	1V p-p :(Y in component video) 0.3Vp-p: (PbPr/CbCr in component video)
Minimum / maximum level	Analog signal: -2V/+2V
Impedance	75Ω
VGA analog video input	
Signal type	RGBHV
Interface	DB15 female Interface
Impedance	75Ω
Supported input resolution	640x480@60Hz;800x600@60Hz;1024x768@60Hz;1280x720@60Hz;1280x768@60Hz;1280x960@60Hz;1280x1024@60Hz;1400x1050@60Hz;1440x900@60Hz;1600x1200@60Hz;1920x1080@60Hz;1920x1200@60Hz;
VGA horizontal and vertical synchronous signal input	
Input level	4.0V-5.0V p-p
Output Impedance	75Ω
Control interface	
Serial port control	RS232 (3.5MM earphone socket)
Baud rate	110-115200bps
Infrared control	IR (3.5MM earphone socket)
IR frequency	38K
Audio input	1 analog stereo input,3.5MM earphone socket
Frequency response	20Hz——20KHz ±0.05db
Audio input level	2Vrms(1 analog stereo input)

Model / Parameters	CR-uCAT5 AV 200T Transmitter
HDMI monitoring output port	
Supported protocol	HDMI1.3a, HDCP1.3,EDID1.4
Bandwidth	Pixel bandwidth165MHz , full digital
Interface bandwidth	6.75Gbps
The maximum supported resolution	Normal PC: 1600x1200@60Hz HDPC: 1900x1200@60Hz HDTV: 1920x1080P@60Hz
Signal type	HDMI 1.3a / T.M.D.S. full digital signal
Interface	HDMI-A Interface
Signal strength	T.M.D.S. +/- 0.4Vpp
Minimum / maximum level	T.M.D.S. 2.9V/3.3V
Impedance	Differential100Ω
Supported resolution	800X600@60Hz;1024X768@60Hz;1280X720@60Hz;1280X800@60Hz;1280X960@60Hz;1280X1024@60Hz;1366X768@60Hz;1440X900@60Hz;1600X900@60Hz;1920X1080@60Hz;
Maximum output distance of video cable	Less than 7m,when the resolution is 1920X1080P@60 (recommended to use certified HDMI cable,such as Molex TM cable)
HDBaseT output port	
Interface	High speed RJ45
Transmission distance	Up to 100m via CAT5e/6 shielding cable
Power supply	DC 12V/1.5A
Maximum power dissipation	11.5W

2.7.2 CR-uCAT5 DVI 200T Technical Parameters

Model / Parameters	CR-uCAT5 DVI 200T transmitter
DVI VIDEO INPUT	
Supported protocol	DVI1.0, EDID1.4
Bandwidth	Pixel Bandwidth165MHz , full digital
Interface bandwidth	6.75Gbps
The maximum Supported resolution	Normal PC: 1600x1200@60Hz HDPC: 1900x1200@60Hz HDTV: 1920x1080P@60Hz
Signal type	DVI1.0 / T.M.D.S. full digital signal
Interface	DVI-D Interface
Signal strength	T.M.D.S. +/- 0.4Vpp
Minimum / maximum level	T.M.D.S. 2.9V/3.3V
Impedance	Differential100Ω

Model / Parameters	CR-uCAT5 DVI 200T transmitter
Audio input	1 analog stereo input,3.5MM earphone socket
Frequency response	20Hz——20KHz ±0.05db
Input level	2Vrms(maximum)
Control interface	
Serial port control	RS232 (3.5MM earphone socket)
Baud rate	110-115200bps
Infrared control	IR (3.5MM earphone socket)
IR frequency	38K
DVI monitoring output	
supported protocol	DVI1.0 EDID1.4
Bandwidth	Pixel Bandwidth165MHz , full digital
Interface bandwidth	6.75Gbps
The maximum supported resolution	Normal PC: 1600x1200@60Hz HDPC: 1900x1200@60Hz HDTV: 1920x1080P@60Hz
Signal type	DVI 1.0 / T.M.D.S. full digital signal
Interface	DVI-D Interface
Signal strength	T.M.D.S. +/- 0.4Vpp
Minimum / maximum level	T.M.D.S. 2.9V/3.3V
Impedance	Differential100Ω
Maximum output distance of video cable	Less than 7m,when the resolution is 1920x1080P@60 (recommended to use certified HDMI cable,such as Molex TM cable)
HDBaseT Output Interface	
Interface	High speed RJ45
Transmission distance	Up to 100m via CAT5e/6 shielding cable
Power supply	DC 12V/1.5A
Maximum power dissipation	7.5W

2.7.3 CR-uCAT5 DVI 200R Technical Parameters

Model / Parameters	CR-uCAT5 DVI 200R Receiver
DVI video output	
Supported protocol	DVI1.0,EDID1.4
Bandwidth	Pixel Bandwidth165MHz , full digital
Interface bandwidth	6.75Gbps
Output resolution	Support any resolution output by sending end

Model / Parameters	CR-uCAT5 DVI 200R Receiver
Signal type	DVI1.0 / T.M.D.S. full digital signal
Interface	DVI-D Interface
Signal strength	T.M.D.S. +/- 0.4Vpp
Minimum / maximum level	T.M.D.S. 2.9V/3.3V
Impedance	Differential100Ω
Control interface	
Serial port control	RS232 (3.5MM earphone socket)
Baud rate:	110-115200bps
Infrared control	IR (3.5MM earphone socket)
IR frequency	38K
Audio output	1 analog stereo input,3.5MM earphone socket
Frequency response	20Hz——20KHz ±0.05db
Input level	2Vrms(maximum)
Maximum output distance of video cable	Less than 7m,when the resolution is 1920x1080P@60(recommended to use certified HDMI cable,such as Molex TM cable)
HDBaseT Input Interface	
Interface	High speed RJ45
Transmission distance	Up to 100m via CAT5e/6 shielding cable
Power supply	12V/1.5A DC adapter
Maximum power dissipation	8.5W

2.7.4 CR-uCAT5 HDMI 200T Technical Parameters

Model / Parameters	CR-uCAT5 HDMI 200Ttransmitter
HDMI video input	
Supported protocol	HDMI1.3a, HDCP1.3,EDID1.4
Bandwidth	Pixel Bandwidth165MHz , full digital
Interface bandwidth	6.75Gbps
The maximum supported resolution	Normal PC: 1600x1200@60Hz HDPC: 1900x1200@60Hz HDTV: 1920x1080P@60Hz
Maximum output distance of video cable	Less than 7m,when the resolution is 1920x1080P@60(recommended to use certified HDMI cable,such as Molex TM cable)
Signal type	HDMI 1.3a / T.M.D.S. full digital signal
Interface	HDMI-A Interface

Model / Parameters	CR-uCAT5 HDMI 200Ttransmitter
Signal strength	T.M.D.S. +/- 0.4Vpp
Minimum / maximum level	T.M.D.S. 2.9V/3.3V
Impedance	Differential100Ω
Audio input	HDMI embedded digital audio
Control interface	
Serial port control	RS232(3.5MM earphone socket)
Baud rate	110-115200bps
Infrared control	IR (3.5MM earphone socket)
IR frequency	38K
HDMI monitoring output interface	
Supported protocol	HDMI1.3a, HDCP1.3,EDID1.4
Bandwidth	Pixel Bandwidth165MHz , full digital
Interface bandwidth	6.75Gbps
The maximum supported resolution	Normal PC: 1600x1200@60Hz HDPC: 1900x1200@60Hz HDTV: 1920x1080P@60Hz
Signal type	HDMI 1.3a / T.M.D.S. full digital signal
Interface	HDMI-A Interface
Signal strength	T.M.D.S. +/- 0.4Vpp
Minimum / maximum level	T.M.D.S. 2.9V/3.3V
Impedance	Differential100Ω
Maximum output distance of video cable	Less than 7 m, when the resolution is 1920x1080P@60 (recommended the use of certified HDMI cable, as Molex TM cable)
HDBaseT output interface	
Interface	High speed RJ45
Transmission distance	Up to 100m via CAT5e/6 shielding cable
Power supply	DC 12V/1.5A
Maximum power dissipation	7.5W

2.7.5 CR-uCAT5 HDMI 200R Technical Parameters

Model / Parameters	CR-uCAT5 HDMI 200R Receiver
HDMI video output	
Supported protocol	HDMI1.3a, HDCP1.3,EDID1.4
Bandwidth	Pixel Bandwidth165MHz , full digital
Interface bandwidth	6.75Gbps

Output resolution	Support any resolution output by sending end
Signal type	HDMI 1.3a / T.M.D.S. full digital signal
Interface	HDMI-A Interface
Signal strength	T.M.D.S. +/- 0.4Vpp
Minimum / maximum level	T.M.D.S. 2.9V/3.3V
Impedance	Differential100Ω
Serial port control	RS232 (3.5MM earphone socket)
Baud rate	110-115200bps
Infrared control	IR (3.5MM earphone socket)
IR frequency:	38K
Audio input	HDMI embedded digital audio
Maximum output distance of video cable	Less than 7 m, when the resolution is 1920x1080P@60 (recommended the use of certified HDMI cable, as Molex TMcable)
HDBaseT input interface	
Interface	High speed RJ45
Transmission distance	Up to 100m via CAT5e/6 shielding cable
Power supply	12V/1.5A DC adapter
Maximum power dissipation	8.5W

2.7.6 CR-uCAT5 VGA 200R Technical Parameters

Model / Parameters	CR-uCAT5 VGA 200R Transmitter
VGA video output	
Interface	15-pin DB female Interface
Bandwidth	330 MHz
Signal type	RGBHV
Gain	0 dB
Signal strength	0.7V pp
Impedance	75 Ω
Output resolution	Support any resolution output by sending end
VGA Synchronous output signal	
Output signal type	RGBHV, RGBS, RGsB, RsGsBs,
The maximum transmission delay	Horizontal:90ns vertical:160ns
The maximum rise/ fall time	4ns
Audio output	
Output interface	3.5mm unbalanced stereo audio output

Model / Parameters	CR-uCAT5 VGA 200R Transmitter
Gain	0dB
Frequency response	20Hz~20KHz
Total harmonic distortion + noise	0.01%@1kHz(under constant voltage)
S/N ratio(S/N)	>80dB at Vin=0V
CMRR	>75dB @:20 Hz~20 kHz
Signal type	Stereo (unbalanced connection)
Impedance	Input:>10kΩ(balanced or unbalanced connection) Output:50Ω(unbalanced connection)
Maximum input level	+19.5dBu, (balanced or unbalanced connection)
Gain error	±0.1dB @20 Hz~20 kHz
Port control	
Serial port control	RS-232(3.5MM earphone socket)
Baud rate	110-115200bps
Infrared control	
Infrared control	IR(3.5MM earphone socket)
IR frequency	38KHz
HDBaseT input interface	
Interface	High speed RJ45
Transmission distance	Up to 100m via CAT5e/6 shielding cable
Specification	
Power supply	12V/1.5A DC adapter
Maximum power dissipation	11.5W

CR-uCAT5 VGA 200R receiver supports any resolution of the transmitter output. In order to achieve the best display effect, we suggest set its resolution the same as the recommended resolution of the terminal display device. If it is used together with CR-uCAT5 AV 200T transmitter, user can adjust the output resolution of transmitter. With HDMI,DVI transmitter, user can directly regulate the output resolution of the source.

2.7.7 CR-uCAT5 AV 200T Transmitter Engineering Serial Instruction Sets

Model / Parameters	CR-uCAT5 AV 200T Transmitter
Serial protocol:Baud rate:9600 Data bits:8 Stop bit:1 Parity:no	
Instructions	Function description
Video Switch Command:	
01$01!	CV video switch out
02$01!	YC video switch out
03$01!	YUV video switch out

04$01!	VGA video switch out
05$01!	DVI video switch out
06$01!	HDMI video switch out
Audio Volume Command:	
XX$52!	Volume(00<=xx<=70)
01$53!	MUTE ON
02$53!	MUTE OFF
Video Output Command:	
01$03!	800x600@60Hz
02$03!	1024x768@60Hz
03$03!	1280x720@60Hz
04$03!	1280x800@60Hz
05$03!	1280x960@60Hz
06$03!	1280x1024@60Hz
07$03!	1366x768@60Hz
08$03!	1440x900@60Hz
09$03!	1600x900@60Hz
10$03!	1920x1080@60Hz
11$03!	1360x768@60Hz Reserved for future use
12$03!	1600x1200@60Hz Reserved for future use
13$03!	1920x1200@60Hz Reserved for future use
OSD Command:	
01$04!	Enter menu
02$04!	Exit menu
03$04!	Select menu options to the left
04$04!	Select menu options to the right
05$04!	Select menu options upwards
06$04!	Select menu options downwards
07$04!	Confirm menu option
01$05!	Restore factory settings


1. The function of reserving resolution for future use only supports serial instruction selection, cannot be selected by DIP

2. The function of reserving resolution for future use needs monitor’s support. If it does not support, may lead to abnormal screen display.

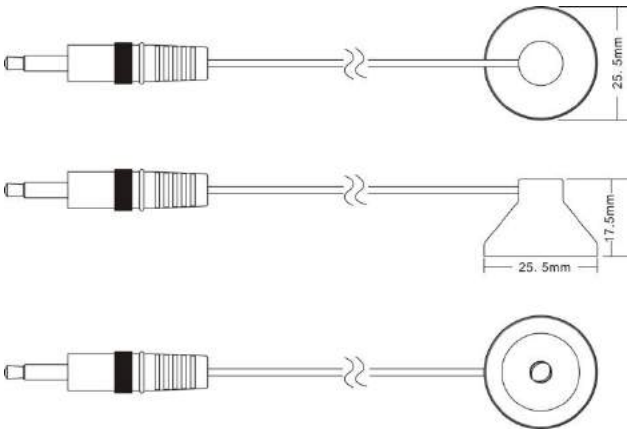
Model / Parameters	CR-uCAT5 AV 200T Transmitter
XX$12!	Adjust brightness(00<=XX<=99)
XX$13!	Adjust contrast(00<=XX<=99)
XX$14!	Adjust saturation(00<=XX<=99) The VGA input is invalid
XX$15!	Adjust sharpness(00<=XX<=24) The VGA input is invalid
XX$16!	Adjust hue(00<=XX<=99) The VGA input is invalid

Chapter 3 Accessories

3.1 Infrared Transmitter CR-IR/T

The infrared transmitter CR-IR / T is used to transmit infrared signals to the infrared receiver, infrared emission frequency ranging from 20 KHz to 100KHz.

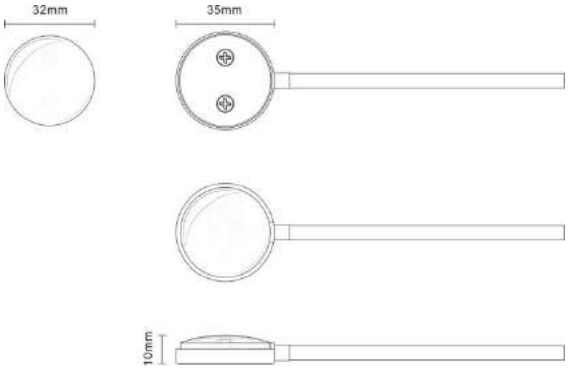
CR-IR/T Dimensions:



3.2 Infrared Receiver CR-IR/R

Infrared receiver CR-IR / R is for receiving the infrared signal to the infrared device, infrared receiver frequency is38KHz.

CR-IR/R Dimensions:

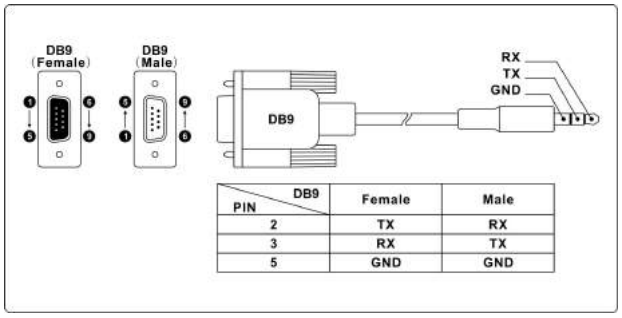


3.3 3.5mm Headset Connector to DB9 Male Socket Connecting Line

3.4 3.5mm Headset Connector to DB9 Female Socket Connecting Line

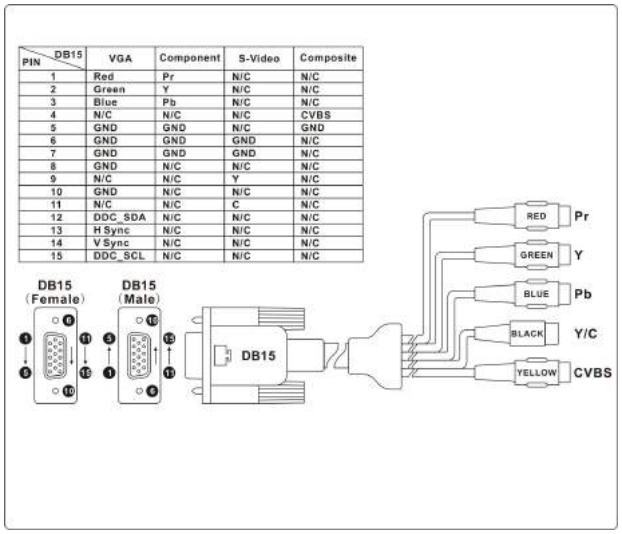
3.5 DB15 Male Socket to RCA Terminal, SV Terminal Connection Line (VGA to CV video, Y/C video, YPbPr video)

3.6 3.5mm Headset Connector to DB9 Male (Female) Socket Definition



PIN \ DB9	Female	Male
2	TX	RX
3	RX	TX
5	GND	GND

3.7 DB15 Male Socket Connection Line Definition



PIN \ DB15	VGA	Component	S-Video	Composite
1	Red	Pr	N/C	N/C
2	Green	Y	N/C	N/C
3	Blue	Pb	N/C	N/C
4	N/C	N/C	N/C	CVBS
5	GND	GND	N/C	GND
6	GND	GND	GND	N/C
7	GND	GND	GND	N/C
8	GND	N/C	N/C	N/C
9	N/C	N/C	Y	N/C
10	GND	N/C	N/C	N/C
11	N/C	N/C	C	N/C
12	DDC_SDA	N/C	N/C	N/C
13	H Sync	N/C	N/C	N/C
14	V Sync	N/C	N/C	N/C
15	DDC_SCL	N/C	N/C	N/C

Chapter 4 Common Fault Solutions

Fault phenomenon	Solutions
After connecting the network cable status indicator flashes	● Check whether the cable length is out the range of 100m
	● Check whether the cable is in straight-through connection
	● Check crystal head of cable is plugged in tight or in poor contact
The video of receiver will flash screen or sometimes be unstable	● Check the cable length and whether it is CAT5e/6 shielded cable
	● Check if video terminal like display supports the output resolution
	● If there is a strong interference in line groove
	● Check if there is a electromagnetic interference in power supply
	● Check the length and quality of video display terminal cable
Controller POWER light does not shine, no reaction for monitor, receiving end and video output operation	● Please make sure power supply input of device is in good contact
	● Internal fault, please send for professional repair
When contact the metal parts of the controller, can clearly feel the electrostatic.	● Please make sure equipment grounding pillars are well grounded, otherwise may cause damage to the equipment or shorten the service life of the equipment
Video display is regular, but infrared and serial ports are out of control	● Check whether the Baud rates of devices are consistent
	● Check if the serial line is used correctly
	● Check if the infrared receiver and transmitter are connected properly
Equipment communication serial ports are out of control	● Check the connection, should pay attention to the use of DB9 male and female sockets
In blue-ray DVD input status, some display devices cannot display	● The equipment is compatible with HDCP1.4 for content encryption. Some display devices do not support HDCP encryption, then change brand display in this case.
	● Check if HDMI cable or HDMI interface is damaged.

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