

VT-413T UTP Video Transmitter& VT-413R UTP Video Receiver

VT-413T transmits video signal to VT-413R , at the same time, VT-413R provides DC 36V power supply for VT-413T , then VT-413T converts the received DC 36V power supply into DC 12V to provide stable DC 12V power supply for camera or other headend equipments with maximum loading capacity of DC 12V (500mA) and also provide a channel of RS485 control interface, so it can complete the transmission of video, power supply and control signals on this line only to lay a Cat-5 unshielded twisted pair wire, which can greatly simplify the wiring project and save wire use quantity (VT-413T only can be used with VT-413R)

Features:

- l Adopt differential signal transmission with excellent anti-jamming ability
- l Save project cable expenses, it can complete the transmission of video, power supply and control signals on this line only with one Cat-5 unshielded twisted pair wire
- l It can provide stable DC 12V power supply for the headend camera or other electro-equipments only to provide a DC 36V power supply at the receiving terminal (master control room) in the whole transmission system without providing another power supply for the camera and other DC 12V electro-equipments and realize remote power supply.
- l Built-in transient suppression protection
- l The farthest transmission distance can reach 1500m when VT-413R is used with VT-413T (this series shall be in matched use and shall not be used with other types of transmitter) **The transmission distance has relation with the total power of the camera and other headend equipments, for the details, please refer to the following table:**

Loading current (12V)	Farthest transmission distance	Remarks
100mA or below	1500m	These data are the measured distances with standard Ca-5 twisted pair wire. The transmission distance will be directly affected if the used wires are in poor quality.
200mA	1200m	
300mA	800m	
400mA	600m	
500mA	500m	

Technical specifications:

- l Frequency response: DC-8MHZ
- l CMRR (Common Mode Rejection Ratio): 60DB
- l Impedance: BNC terminal: 75Ω, Connection terminal: 100Ω

- l Working temperature: -10℃-70℃
- l Storage temperature: -30℃-70℃
- l Applicable to NTSC, PAL, SECAM and CCIR systems
- l External dimension: 105mm*58mm*29mm (excluding BNC)
- l Power supply: DC36V

Type of the required wire:

Unshielded Cat-5 or above twisted pair wire (Please use standard Cat-5 or above twisted pair wire. The wire quality will directly affect the transmitted image effect and transmission distance.)

Characteristic impedance: 100Ω±20Ω


DC loop resistance: 18Ω/100m

Differential capacitance: 62pf/m (Maximum)

Connection method:

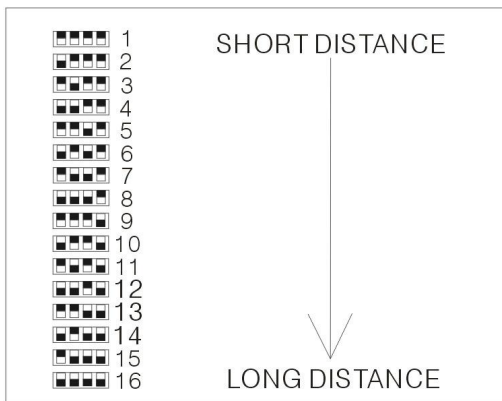
Make modular plugs for Cat-5 unshielded twisted pair wire according to EIA/TIA 568B standards and separately connect them to RJ45 terminals of the transmitter, separately connect the BNC interface to the video terminal, connect the 36V power supply to the power supply input terminal of VT-413R, connect the DC 12V power supply output plug of VT-413T to the power supply input terminal of camera or other electro-equipments and connect the control signal separately to the green connection terminal of the transmitter. If there is any joint in the circuit, please adopt welding method or special junction box to ensure perfect contact at the joint. **Please be sure to connect the interface marked with ‘ㄦ’ symbol to the ground wire of the lighting-proof system with the copper conductor with sectional area≥1.5 mm²!**

The clamping order of the modular plug is shown as follows:

RJ45		1 2 3 4 5 6 7 8	PIN	COLOR
			1	W - O
			2	W
			3	W - G
			4	B L
			5	W - B L
			6	G
			7	W - B R
			8	B R

Adjusting method:

Adjust “BRIGHTNESS” knob to adjust the image brightness, then adjust “SHARPNESS” dial switch to compensate the image sharpness and color. The compensation size in turn is 1 as minimum and 4 as maximum. Pressing dial switch shows the compensation of this position is turned on. Next or multiple switches can be pressed according to the requirements. The four dial switches can compose 16 compensation values (as shown in the following figure) to meet the requirements of different transmission distances.



Frequently Asked Questions

Why does my video look like a scrambled Cable TV signal?

This typically indicates reversed polarity.

Can shielded twisted pair be used?

Some customers have successfully used shielded wire up to a few hundred feet. However VITECH does not recommend it. Its high-frequency roll-off will severely degrade the distance performance.

Can Category 6 wire be used?

Yes. Unshielded Twisted Pair wire, Category 5 or better, can be used with VITECH

Can I transmit more than one video signal in a multi-pair wire bundle?

Yes. One of the benefits of using VITECH transceivers is interference rejection. VITECH video signals can reside in the same wire bundle as multiple video signals, ringing telephones, Ethernet, low voltage power, RS-422, RS-485, etc.

Application Diagram

POWER-VIDEO-DATA Transmission

