

INSTRUCTION MANUAL



PoE Power/Video/Data UTP Transceiver User Manual

Summary

The unit is a device that allows the transmission of real-time video and power over Unshielded Twisted Pair cable. PoE PVD transmitter convert unbalanced video signal to balanced (same range but opposite polarized) difference signal transmitting via the UTP cable, have good common interferences rejection, under strong interference environment can transmit color video in high quality.

Power over Ethernet (PoE) technology describes a system to transmit electrical power, along with data, to remote devices over standard unshielded twisted-pair (UTP) cable. In applications such as security surveillance, video conferencing, elevator surveillance the PoE PVD transceiver use one UTP cable to replace power, video coaxial and data cables. Working hours much lessened and 70% cable cost saved.

Features

☐ Longer transmission distance, high video signal quality

Use advanced video signal technology, better equalize video signal differs attenuation in UTP cable, Keep original video signal real-time, brightness, sharpness and colorful, and enable longer and better signal transmission.

☐ Standard and easy routing UTP, low cable and installation cost

PoE PVD transceiver use cat5 or higher cat UTP, according TIA/EIA 568A or 568B standards, can use of already installed UTP cable in building. Transmit Power/Video/Data or Audio in a UTP cable (4 pair) for camera. Avoid the need for separate data and power cable infrastructure and costly AC outlets, no electrician is needed, and much working hours saved.

☐ Perfect power manager for centralized power supply

Multiple power protection and working status indication, in control room diagnose remote PVD transmitter or camera fault, use together with UPS device can continue operate even when power failure.

☐ Better surge suppression; Exceptional interference rejection

Built-in multiple surge suppression device, and have ground lifting. When surge voltage put on signal wire, the most will be induced and released to earth ground track power ground line, left can be work out pass multiple surge suppression device.

PoE Power/Video/Data UTP Transceiver User Manual

Applications

There are two kinds of transceivers, active and passive type, PoE work type have standard and highpower two kinds. According to different transferring distance and camera load power, please refer to the system selection chart and PoE power chart:

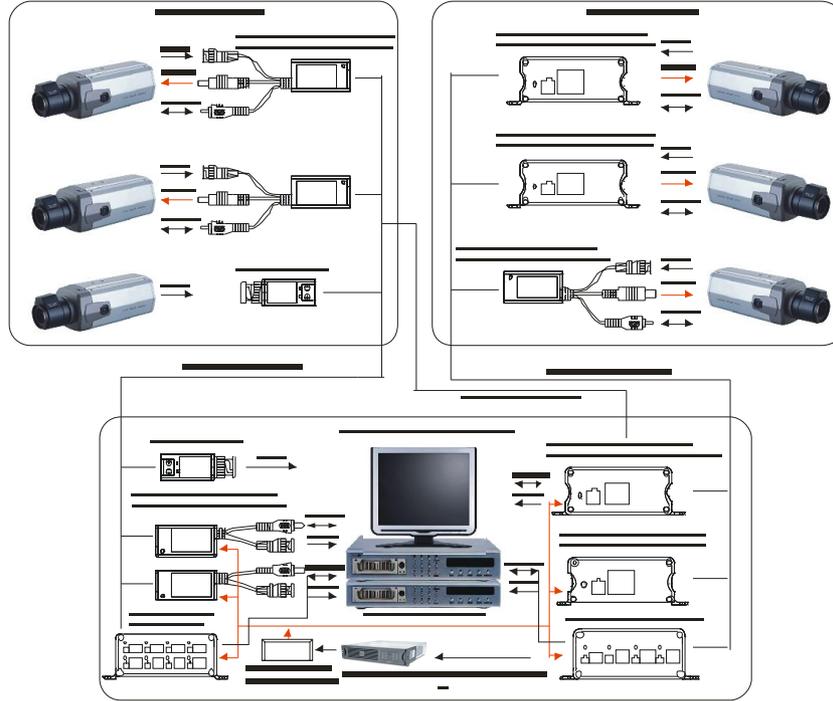
No. of Cam	Trans Distance		Max output* PoE power	Transmitter	Receiver	Remarks
	B/W	Color				
1	1640ft	1000ft	12V 0.75A	HXVB200T/TA	HXVB200R/RA	PoE Passive
1	8000ft	5000ft	12V 0.17A	HXVB300T HXVB301T	HXVB300R HXVB301R	PoE active
4	8000ft	5000ft	12V 0.17A	HXVB300T HXVB301T	HXVB604R	4ch PoE active
1	4590ft	2623ft	12V 0.32A	HXVB200T HXVB200TA	HXVB300R HXVB301R	PoE passive + active
4	4590ft	2623ft	12V 0.32A	HXVB200T/TA	HXVB604R	4 PoE passive + active
1	8000ft	5000ft	12V 0.8A	HXVB305T	HXVB305R	Highpower PoE active

UTP Length	0-1000ft	1640ft	2623ft	3279ft	4000ft	5000ft	6000ft	7000ft
Standard PoE	12V 0.75A	12V 0.5A	12V 0.32A	12V 0.26A	12V 0.21A	12V 0.17A	/	/
Highpower PoE	12V 3.5A	12V 2.4A	12V 1.5A	12V 1.2A	12V 1A	12V 0.8A	12V 0.65A	12V 0.56A

Note: The chart test result use UTP CAT5 24AWG, and high voltage of input range AC28V/DC28V for PVD receiver.

PoE Power/Video/Data UTP Transceiver User Manual

Applications Instruction



PoE Power/Video/Data UTP Transceiver User Manual

Specifications

Model	HXVB200T/T A HXVB200R/R A	HXVB201T	HXVB300 T HXVB300 R	HXVB301 T HXVB301 R	HXVB305T HXVB305R	HXVB408 R	HXVB604R
Signal Channel	1ch video (passive) 1ch power 1ch dat/audio	1ch video (active) 1ch power 1ch data	1ch video (active) 1ch power 1ch data	1ch video 1ch audio (active) 1ch power	1ch video (active) 1ch HPower 1ch data	8ch video (passive) 8ch power 8ch data	4ch video (active) 4ch power 4ch data
Video	Frequency response range:DC-6MHz ;Common/differential mode rejection:15KHz-6MHz 60dB typ.						
Wire type	24AWG UTP CAT5 or higher; DC loop resistance \leq 18 Ω /100m;Differential capacitance:62pF/m(max)						
Impedance	UTP or RJ45: 100 Ω BNC COAX: 75 Ω						
Power	Receiver input AC24-28V or DC30-38V(HXVB305R input DC56V);Transmitter output constant DC12V						
Suppression	6kV 1.2 \times 50uS;3kV 8 \times 20uS		6KV 1.2uS \times 50uS;4KV 8uS \times 30uS				
W / M	40g / 54*28*22.5mm		90g / 81*58*30mm		120g	500g / 180*80*35mm	
Environment	Temperature: (0~50 $^{\circ}$ C) Humidity: (0%~95%)						

Note: HXVB305 is high-power PoE transceiver use DC56V 1A input power; other transceiver is standard PoE transceiver, use AC28 or

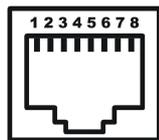
PoE Power/Video/Data UTP Transceiver User Manual

DC36V 0.5A input power, so can use one 100W 36V/3A power adapter for 6 PoE Receiver.

Transceiver setting and indication

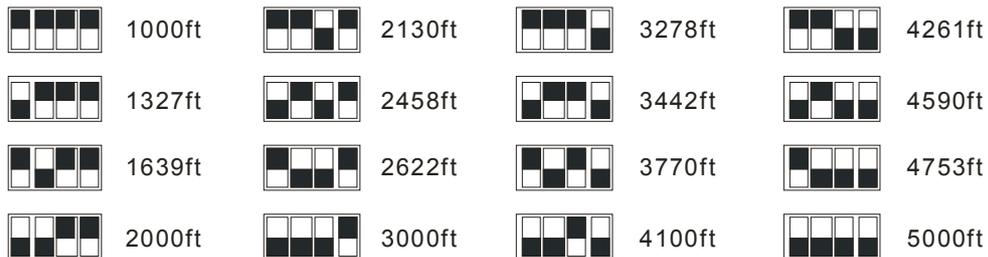
PoE PVD passive transceiver no need set gain, they have indication LED. Transmitter have power good LED, Receiver have load/unload dual color LED.

PoE PVD active transceiver need set gain for different distance, Transmitter have power good (PG)/under voltage (UV) dual color LED, Receiver have load/unload dual color LED, and they all have video in LED, when video input, LED will turn on.



RJ45 jack instruction

PIN	Color	Function	PIN	Color	Function
1	W-O	Video+	5	W-B	Power+
2	O	Video-	6	G	Data-
3	W-G	Data+	7	W-BR	Power-
4	B	Power+	8	BR	Power-



Active receiver sharpness setting chart(suggest for best color video transmit distance)

Frequently Asked Question

1. What kind wire use for PoE series transceiver

We recommend use 4 pair Unshielded Twisted-Pair cable, category 3 or higher, 16-24AWG, multi-pair (6 pair or more)twisted pair is ok. If use STP (shield twisted pair) cable, the modular plugs need to use shielded too, make sure STP shielded and modular plugs shielded connect together. When need prolong UTP, you can use special RJ45 connect box or jointing to make connection, if in out door use, please protection against the tide.

2. Why no interference in PoE PVD transceiver when transmitting power via UTP

PoE PVD transceiver power's working mode are based on IEEE802.3AF/AT. And this standard widely used in IPphone, IPcam, and other Ethernet devices. No interference caused even transmitting power under 1000Mbps Ethernet. PoE PVD transceiver use safe voltage (DC36V); the transmitter, receiver and remote powered device are at same power ground, so no maladjustment to ground voltage position, and the signal quality will be better.

3. How can I do when remote camera power over PoE transmit power

Normal CCD camera power is 12V/0.15-0.08A, 56pcs LED IR camera power is 12V/0.5-0.4A.PoE PVD transceiver can supply most camera. If special camera power over, please use Highpower PoE PVD transceiver, if power over PoE in 50% range, can select 2pair-3pair module, this module converting 1pair data wire into power wire, can increase 50% standard PoE transmit power.

4. Why PoE PVD transceiver use AC24-28V/DC30-38V input voltage, whether increase the costs

For the UTP is 24AWG wire, and loop DCR $19\Omega/100m$,so if want to transmit larger power to remote area, it must increase the voltage to

PoE Power/Video/Data UTP Transceiver User Manual

reduce the current, there by to reduce the power consumption. Otherwise may lead to large power lost (Voltage lost= $I \cdot R$) or current limit exceeded. Single 36V adapter more costs than 12V adapter, but PoE PVD transceiver is centralized power supply, one 36V 3A adapter can supply 6 pairs of PoE PVD transceiver, one transceiver need 0.5A power only. Averagely ,each pair transceiver adapter cost not higher than 12V adapter.

5. Can I use CAT6 for PoE PVD transceiver

Yes,CAT6 UTP cable is better interference rejection than CAT5,and CAT6 is 23AWG large than CAT5 ,can afford more PoE power than CAT5.

Malfunction Disposal

1. Monitor no video signal

Please check the power supply first, and then the device connector and wire joints, whether ok or not?Then check the UTP cable and modular plugs connecting situation according to the RJ45 instruction.

2. Tilted veins interference and high frequency interference appear on the image

Please check if the camera, housing, monitor and DVR creepage, in addition make the surface of transceiver connected terra; and then check the wire joint points connect well.

3. The image become BW form color or the color too light

If adopt active transferring project, please adjust transceiver gain, set signal to high. If use passive transferring project, please change active transferring project.

PoE Power/Video/Data UTP Transceiver User Manual

4. What cause about image twist and wobble

UTP RJ45 connector order mistake, please as RJ45 jack instruction connect.

5. The image to bright and white twist

The video signal too strong, please adjust sharpness DIP switch and birghtness of PVD receiver, and set to lower signal grade.

6. PoE PVD Transmitter can't power Remote camera

Check power of remote camera whether over the power corresponding to the proper distance; Check input voltage of PoE PVD receiver whether in required range; Shut the camera power and reconnect it, to make sure that transceiver not in limited protection status; Ensure the UTP RJ45 connector in right order, than reconnect Rj45 jack and Rj45 modular plugs.