Gem Electronics
920-A River Street - Windsor CT. 06095
Part Number: H16P-RJ45BNC Toll Free: 888-436-4195 - Fax: 860-683-0396

Description

The H16P-RJ45BNC allows the transmission of video signals, remote power and Data (control) via a single UTP (unshielded twisted pair) cable for more versatile cabling. The H16P-RJ45BNC allows you to eliminate more expensive coaxial cable, including coupling signals from remote video cameras to display systems, video capture, security and surveillance monitoring applications.

The modular construction allows the conjunction with GEM's CCTV video balun, ie.BLN-RJ45, BLN-TL, BLN-MTL, BLN-PVRJ45 & BLN-VPDRJ45. The power converter series can be optional for longer power transmission. This modular provides cost effective solutions and advantages to installation as well.

Feature

1. Switches for convert the power thru mode or data (control) thru mode
2. Low profile design
3. Mounts in standard 19" Rack

Specification

Environment	Close-Circuit TV (CCTV) equipment for security and surveillance.	
Devices	CCTV cameras, monitors, digital video recorders (DVR) and other CCTV equipment.	
Cable-UTP	Cat 5 or better, AWG# 24 Typically Maximum Capacitance: 20pf/foot Attenuation: 6.6dB/1000 ft at 1MHz	
Cable-Coax	Impedance: 75 ohms at 1MHz (RG59/U) Max. 25ft. of coax allowed per end to end link	
Connectors	Video: BNC x 16 Power and control: 4-pole screw terminals x 16 RJ45 Jack(8P8C) x 16	
Switches	Switching pair 4/5 between power thru and data(control) thru mode x16	
RJ45 Pin Configuration	**Switch at power**	**Switch at control**
	Video: 7+/8- Power: 1,3,5+/2,4,6-	**Video: 7+/8-** Power: 1,3+/2,6- Data, PTZ Control: 4+/5-
Environment required	Operating temp. 0 to 55° C Storage temp. -22 to 85°C Humidity up to 95%	
Bandwidth	DC to 8 MHz	
Maximum Input	1.0Vp-p	
Insertion Loss	Max. 2dB per pair over the frequency range from DC to 8MHz	
Return Loss	Greater than 15dB over the frequency range from DC to 8MHz	
Common Mode Rejection	Greater than 40dB at 8MHz	
Max. distance	Color: Cat.5 2230ft (680 Meter) Monochrome: Cat.5 2550ft (780 Meter)	
Data	PTZ controller by RS485 Maximum distance can be up to 1200m.over cat.5 UTP.	

Remote Power: (ie: 24VAC, 28VAC)

Switch position	**Switch at Power**	**Switch at control**
Max. Distance @ 24Vac via an UTP Cat 5 cable (24 AWG): Based on 10% voltage drop at camera. Longer distance may be achieved @ 28Vac	5VA: 558ft (170m) 10VA: 279ft (85m) 20VA: 141ft (43m) 30VA: 91ft (28m)	5VA: 377ft (115m) 10VA: 187ft (57m) 20VA: 95ft (29m) 30VA: 59ft (18m)
Maximum input voltage:	50Vdc/ac	
Maximum current Rating:	4.5A	

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Switches Setting

1. **Turn off the power supply priors to switches setting.**
2. User must make sure the wirings of PTZ control signals had been removed before setting the switch to POWER mode. Oppositely, you must set the switch to DATA mode before wiring the PTZ control signals. It's very dangerous to set the switches while power is ON.
3. Switches are not used when only transmitting video signal, then power/control screw terminals may not be required to regard for. Use BLN-TL at camera side, H16P-RJ45BNC at DVR/monitor side.
4. For transmitting video signal via one twisted pair, remote power via two twisted pairs and Data/ PTZ Control via one twisted pair, set the switches as figure 1 shown. Use BLN-VPDRJ45 at the camera side & H16P-RJ45BNC at DVR/monitor side.
5. For transmitting video signal via one twisted pair, and remote power via three twisted pairs, set the switches as figure 2 shown. Use BL-PVRJ45 at the camera side & H16P-RJ45BNC at DVR/monitor side.

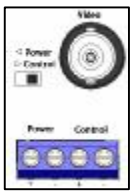


Figure 1 : Data (Control) thru Mode

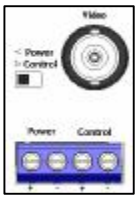
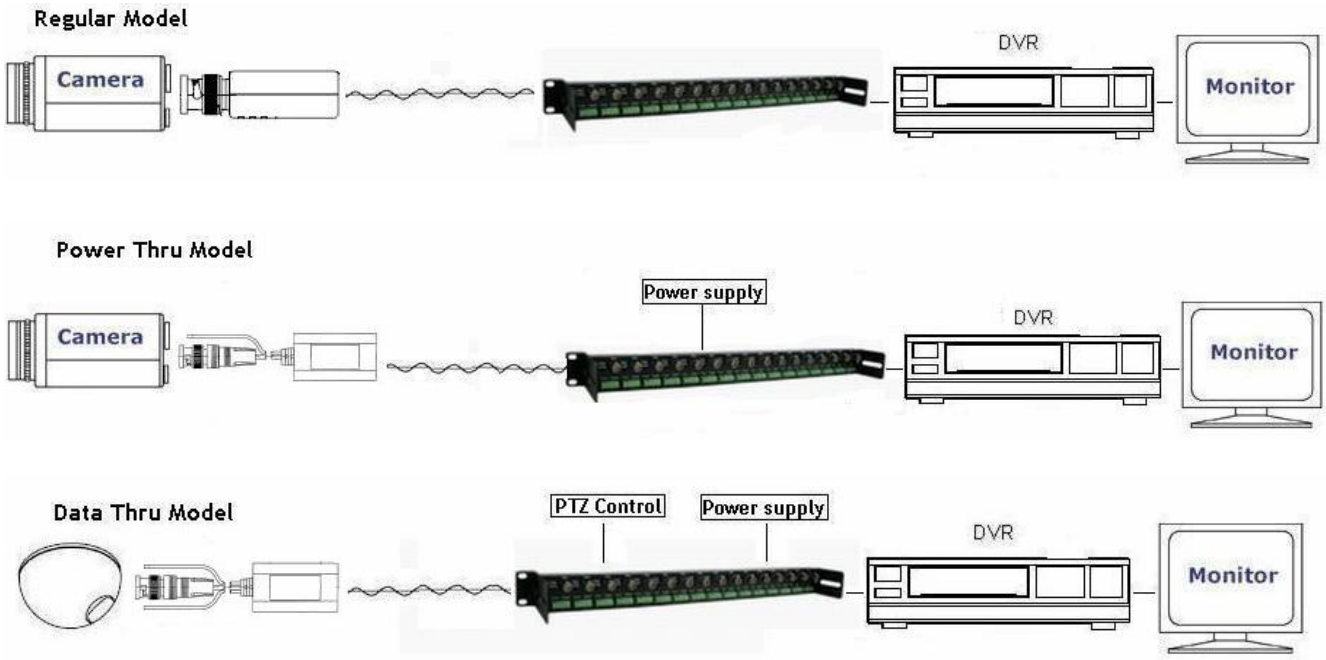


Figure 2 : Power thru Mode

Application



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Installation

1) Turn all power supply OFF prior to installation.
2) Mount the H16P-RJ45BNC in standard 19" rack by screws.
3) Connect a coaxial cable with two BNC male connectors at both ends between each video output on panel and each video input on DVR.
4) Video only:
   a. Connect an UTP cable with two RJ45 plugs at both ends between each jack on panel and on each balun at the camera side.
   b. Connect each balun to each camera.
5) Connect two open wires of the power supply to each power terminals on H16P-RJ45BNC, pay attention to the polarities by following the instruction shown on H16P-RJ45BNC.
6) Power thru mode: (refer to switches setting)
   a. Select a suitable power through balun at each camera side.
      --Baluns with different connectors can be optional, listed as followings:
      Power through/balun with a DC power plug on power cord
      Power through/balun with a DC power jack on power cord
      Power through/balun with power cord only (no DC power plug nor jack)
   b. Connect an UTP cable with two RJ45 plugs at both ends between each jack on H16P-RJ45BNC and on each power thru balun at the camera side.
   c. Connect each power thru balun to each camera.
6) Data thru mode: refer to switches setting.
   a. Run two open wires to connect between each control+/- terminals on panel and PTZ controller at DVR/Monitor side. Pay attention to the polarities by following the instruction shown on panel.
   b. Select a suitable data thru balun at each camera side.
      --Baluns with different connectors can be optional, listed as followings:
      Power & data through/balun with a DC plug on power cord and one fly lead for Data
      Power & data through/balun with a DC jack on power cord and one fly lead for Data
      Power & data through/balun with one power cord (no DC power plug nor jack) and one fly lead for Data
   c. Connect an UTP cable with two RJ45 plugs at both ends between each jack on H16P-RJ45BNC and on each data thru balun at the camera side.
   d. Connect each data thru balun to each camera.
7) Turn ON all the power.

Troubleshooting

1. No function:
   a) Check all the connections.
   b) Check if LED power indicators are turned ON.
2. No image or poor image:
   a) Check all the connections.
   b) Check if the distance is too long for power and/or video transmission.
   c) Check the polarities of wirings.
   d) Check UTP cable (be sure you use Cat5 or better cable), poor quality of UTP cable may decrease distance.