



VIP-CAM-100-NDI
NDI HX PTZ Camera w/3G-SDI & HDMI
Output
USER MANUAL



Contents

What's in the box	3
Optional Accessories	3
Product Description	4
Specifications	4
SDI / HDMI video output formats:	5
Network	5
Protocols	5
Front	6
Rear Panel	7
Bottom	8
DIP Switch settings (bottom of base)	9
Switch 1 (SW1)	9
Switch 2 (SW2)	9
Remote	10
Setting your computer to communicate with VIP-CAM 100	11
Windows 8.1 and Windows 10 Computer LAN Port Setup	12
Opening Network Page	12
Setting up your Mac computer to communicate on the same subnet	15
Opening Network Page	15
Network switch requirements	16
Network switch recommendations	16
Installation	17
Connections	17
Power	17
Network	17
Audio	17
Video	17
Infrared	17
RS232/RS485	17
NDI Setup and Operation	18
On Screen Display OSD	19

Top Level Menu	19
VIDEO Menu	19
EXPOSURE Menu	20
WHITE BALANCE Menu	21
PAN TILT ZOOM Menu	22
SYSTEM Menu	23
STATUS Menu	23
RESTORE DEFAULTS Menu	24
Preset functions	25
Create Preset	25
Recall Preset	25
Clear Preset	25
Reserved Presets	25
Troubleshooting	26
No image	26
Camera unresponsive to remote	26
Camera unresponsive to control	26
VIP-CAM-100-NDI Control API	26
RS232/485 pinout	26
Audio connector pinout	27
Warranty	28

What's in the box

- 1 VIP-CAM-100-NDI Full HD PTZ IP Camera
- 1 Remote control
- 1 100-240VAC to 12 VDC power adapter
- 1 RS232 cable – 9 pin dsub to DIN

Optional Accessories

- VIP-CAM-NDI WMT
 - Metal bracket mount for wall installation
- VIP-CAM-NDI CMT
 - Metal bracket mount for inverted ceiling installation

Product Description

The VIP-CAM-100-NDI provides up to Full HD 1080P resolution using high quality optics with 20X optical and 12X digital zoom capability for a total of 240X zoom. The smooth PTZ (pan/tilt/zoom) functionality allows for various movement speeds. Along with NDI HX output, the VIP-CAM-100-NDI supports RTSP output as well as 3G-SDI and HDMI. Comprehensive adjustments are accessible by remote and OSD, as well as fully automatic exposure control. The VIP-CAM-100-NDI offers up to 240 programmable PTZ presets.

Specifications

- NDI HX output
- 5.8" CMOS sensor, 2.14-megapixel Full HD
- 20x optical zoom
- 12X digital zoom
- Focal length 4.7 – 94mm
- Iris F1.6 – F3.5
- Horizontal viewing angle 59.5 – 2.9 deg
- Minimum illumination .5 lux color, .1 lux BW
- Shutter speed 1/1 to 1/10,000
- White balancing
- DNR 2D and 3D
- S/N => 50dB
- Pan angle -170~+170
- Tilt angle -30~+90
- Pan speed variable from .1deg/sec to 120deg/sec
- Tilt speed variable from .1deg/sec to 90deg/sec
- 3G-SDI output
- HDMI 1.3 output
- LAN multicast H.264 output
- Stereo analog Line input
- Precision PTZ drive system
- VISCA, PELCO-D, PELCO-P control via RS232/485, http
- Control via NDI
- Infrared remote control
- Smart AE technology (Automatic Exposure)
- Desktop/ceiling/wall mount options
- Create/recall up to 80 PTZ presets with remote control

SDI / HDMI video output formats:

- 720P50
- 720P60
- 1080i50
- 1080i60
- 1080P25
- 1080P30
- 1080P50
- 1080P60

Network

Protocols

- ONVIF
- RTSP
- RTMP
- HTTP
- TCP
- UDP

Front



1. 20x optics
2. Power LED indicator
3. IR receiver

Rear Panel



1. USB: Firmware update port
2. Micro SD (TF): reserved future use
3. Ethernet port (H.264 output, control):
4. HDMI out
5. 3G-SDI out
6. Audio Line input 3.5mm (for RTSP output stream and HDMI only)
7. RS232/485 in:
8. RS232/485 out:
9. 12VDC power inlet:

DIP Switch settings (bottom of base)

Switch 1 (SW1)

Sets device address and mounting orientation. Addressing dip switches 1-6 are binary based with dip 1 as LSB.

DIP No.	7	
Reserved	Reserved	Reserved
DIP No.	8	
Mounting Type	ON	Ceiling
	OFF	Stand

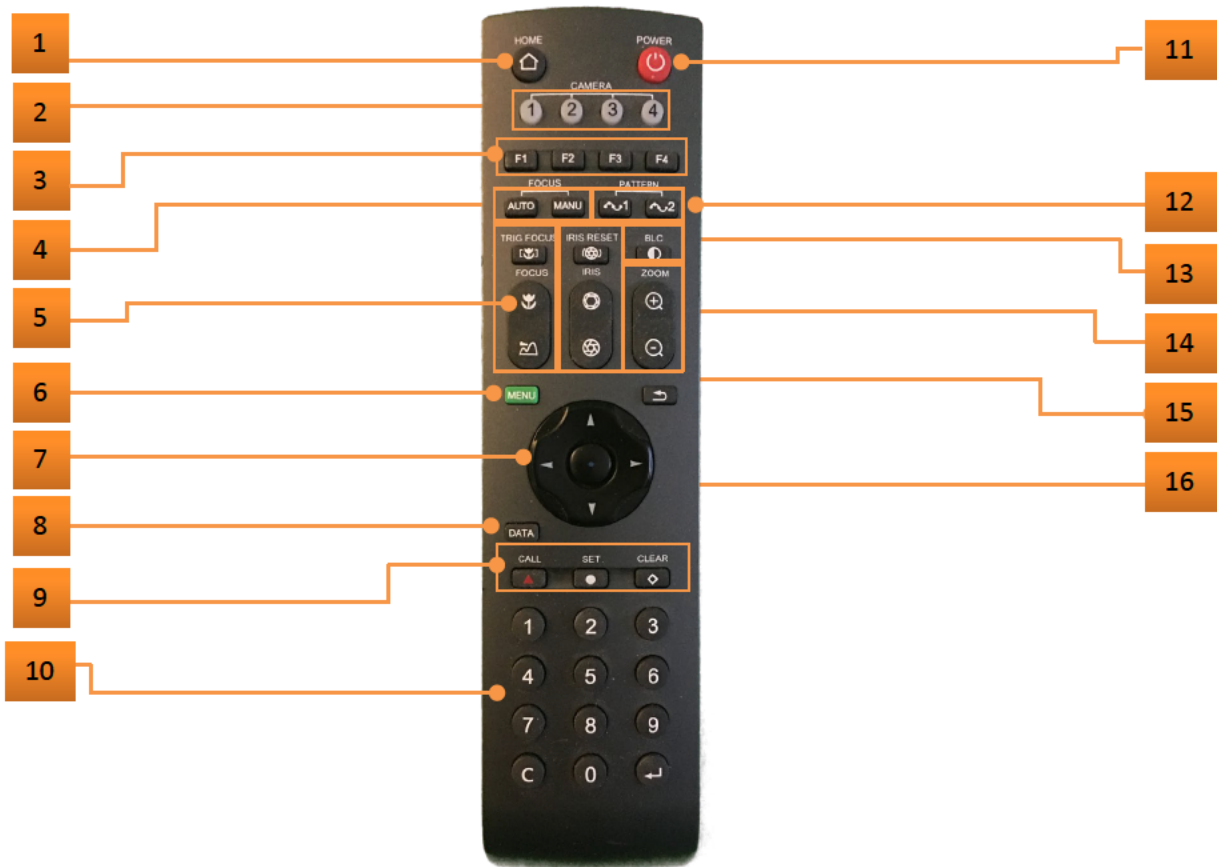
Switch 2 (SW2)






DIP switches 1 and 2 sets protocol type, DIP switches 3 and 4 set baud rate, DIP switches 5 through 8 set video output formats.




Switch setting information is provided on the bottom of the camera.

SW2					
DIP No.	1	2			
Protocol	OFF	OFF	VISCA		
	ON	OFF	PELCO- D		
	OFF	ON	PELCO- P		
	ON	ON	Reserved		
DIP No.	3	4			
Baud Rate(bps)	OFF	OFF	2400		
	ON	OFF	4800		
	OFF	ON	9600		
	ON	ON	38400		
DIP No.	5	6	7	8	
Video Format	OFF	OFF	OFF	OFF	1080P60
	ON	OFF	OFF	OFF	1080P50
	OFF	ON	OFF	OFF	1080I60
	ON	ON	OFF	OFF	1080I50
	OFF	OFF	ON	OFF	720P60
	ON	OFF	ON	OFF	720P50
	OFF	ON	ON	OFF	1080P30
	ON	ON	ON	OFF	1080P25

Remote



1. Home: returns camera to default position
2. Camera select: Sets remote for control of cameras addressed to 1,2,3 or 4.
3. Functions: Reserved for future
4. Auto/Manual Focus: Sets camera to auto or manual focus mode
5. Focus
 - a. Trigger Focus: Performs auto focus when pressed. 
 - b. Focus Near/Far: Performs near focus  or far focus 
6. Menu: Enter/exit OSD settings menu
7. Joystick: Non-menu: controls pan and tilt. Menu: navigation
8. Data: Toggles PTZ data on screen
9. Preset functions: Call, set, or clear presets
10. Numeric: Numeric entry, C = clear, Return = Enter
11. Power: Off/On toggle. On performs PTZ calibration
12. Pattern Loop: Continuous Pan.
13. Back Light: Open/close backlight compensation
14. Zoom: Performs zoom in  or zoom out 

15. Iris:
 - a. Reset iris to default 
 - b. Iris open  or close 
16. Back: go back to previous menu

Remote requires 2x AAA batteries.

Setting your computer to communicate with VIP-CAM 100

The VIP-CAM-NDI default IP address is 192.168.1.180

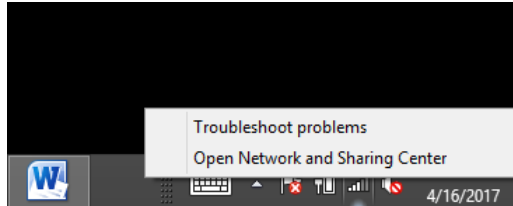
Devices that need to communicate with each other on a network must be in the same IP subnet and not separated by a VLAN configuration.

Assuming for now that you know the IP method and subnet of your VIP-CAM 100, you will need to set your computer to be on the same subnet. While the interface and steps on achieving this will be different for each OS and versions of OS, they all require that you set the ipv4 settings of your LAN adapter.

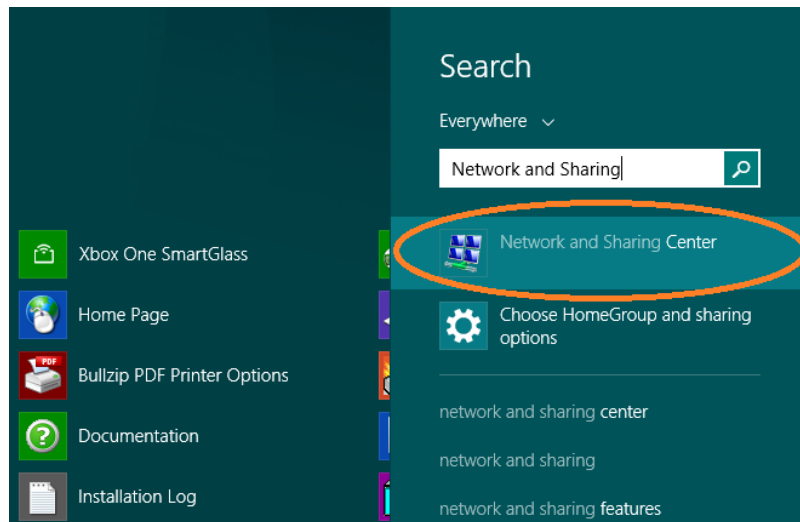
Windows 8.1 and Windows 10 Computer LAN Port Setup

Opening Network Page

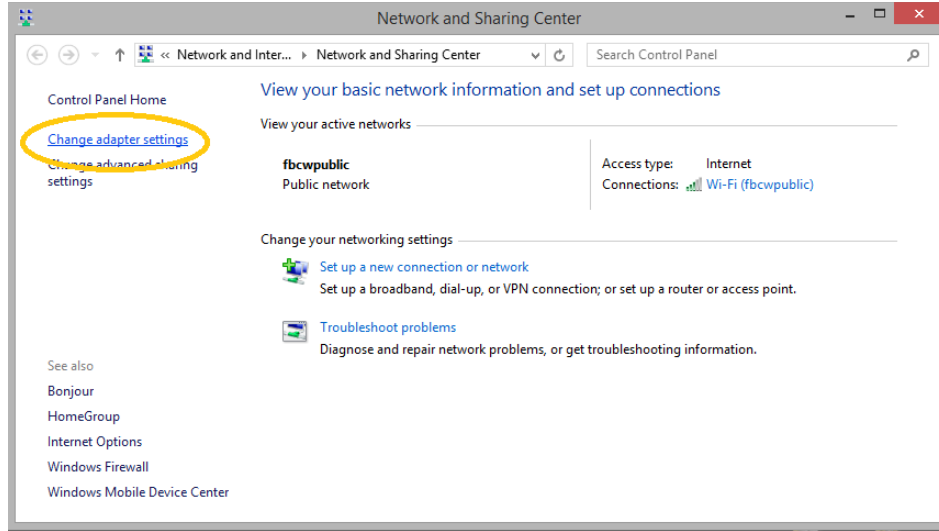
Option 1: Right Click on the taskbar icon that looks like a signal strength indicator. Then click on “Open Network and Sharing Center”.



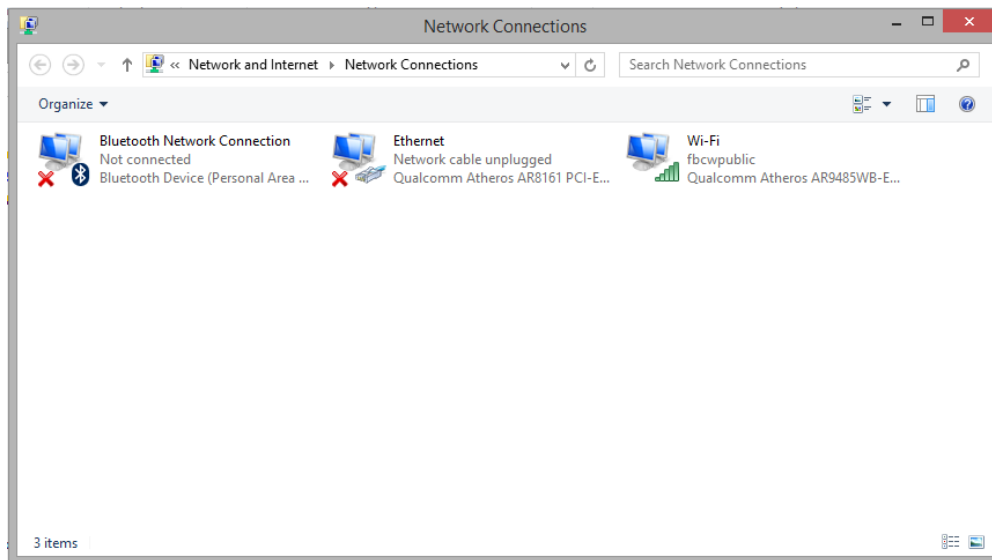
Option 2: Use the search window and type “Network and Sharing Center”. When the search function provides choices below, select Network and Sharing Center.



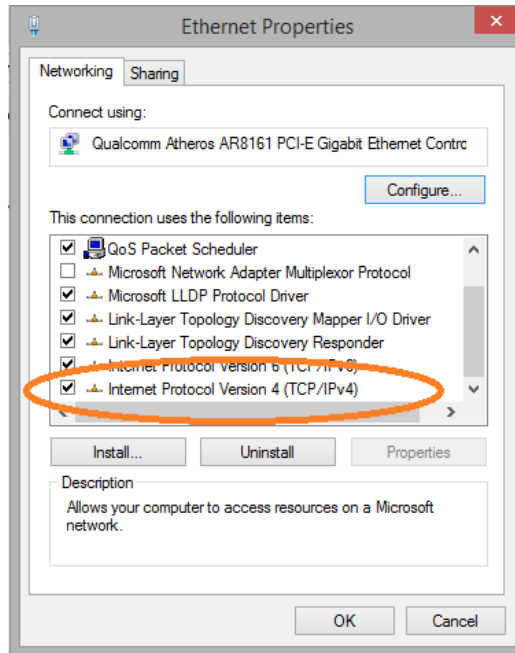
The next page will be as shown below. Select the “Change Adapter Settings”.



When you are in the Change Adapter Settings page as shown below, select the LAN adapter that you will use to communicate with the VIP-CAM-100-NDI system.



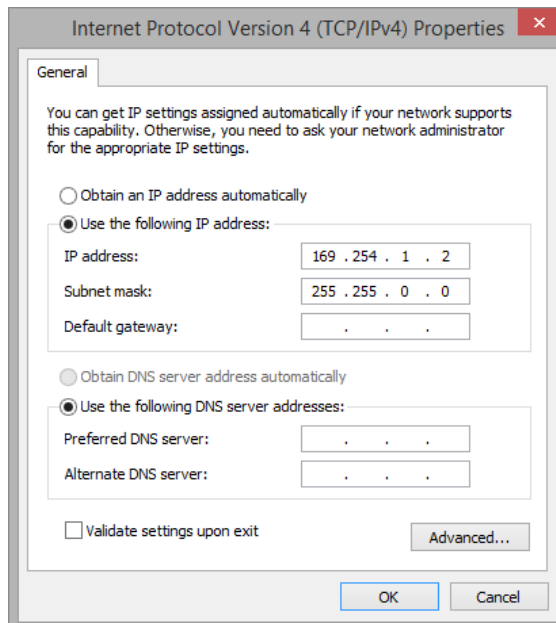
For this example, we will select the middle listing, Qualcomm Atheros LAN Adapter. Double click on the listing. The properties page will open as shown below.



Select "Internet Protocol Version 4 (TCP/IPv4)" by double click on the text.

Note: Do not deselect the checkbox or change the selections of any other properties in the menu.

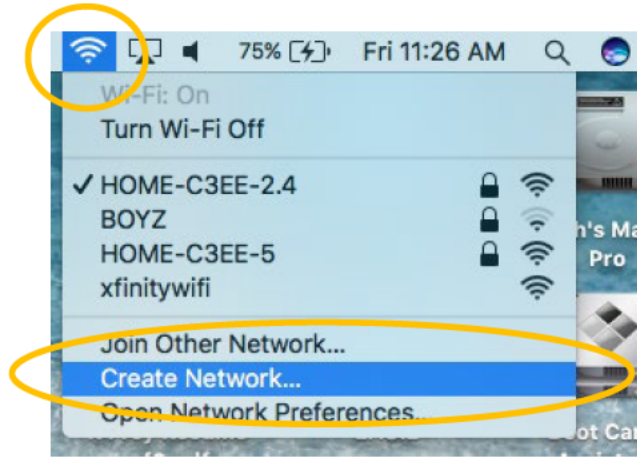
When the window changes to the Properties page for the Internet Protocol Version 4, enter the same IP subnet as the VIP-CAM-100-NDI system. (*VIP-CAM-100-NDI default address is 192.168.1.180*)



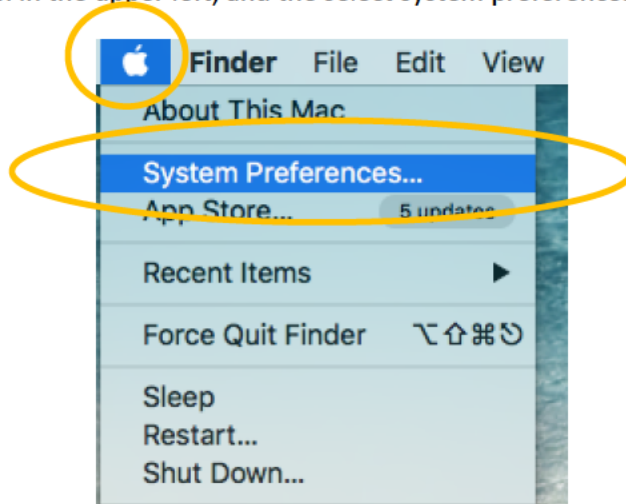
Setting up your Mac computer to communicate on the same subnet

Opening Network Page

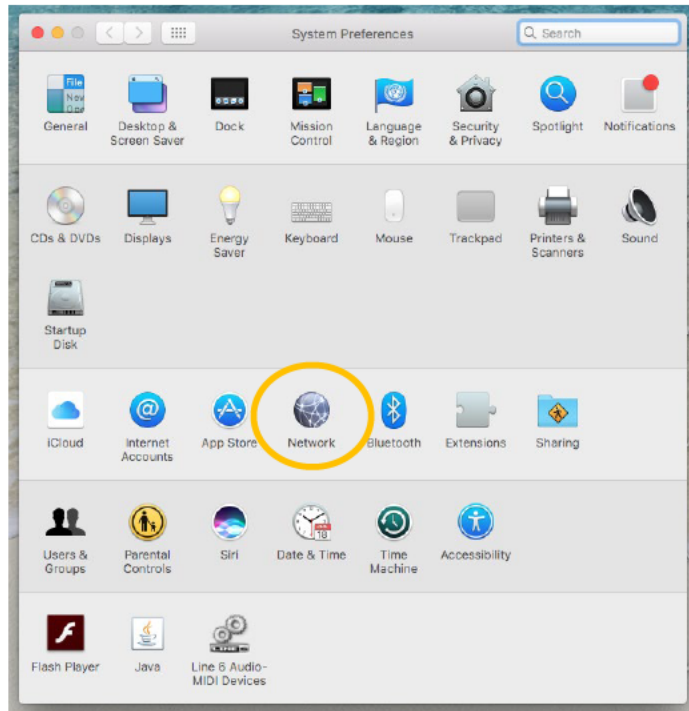
From the top menu bar, you can either click on the network symbol



Or click on the Apple icon in the upper left, and the select system preferences:



Then select Network:



Select the appropriate network adapter from the list in the left pane, and then set the correct IP subnet parameters.

Network switch requirements

The minimum requirements of a network switch for the VIP-CAM-100-NDI are:

- 100 BaseT Port speeds (H.264 codec has nominal data rate of 25Mbps)
- Backplane data rate performance that exceeds the total data rate of your VIP-CAM-100-NDI system
- IGMP Snooping
- Jumbo Frame

The VIP-CAM uses the h.264 codec and has a maximum data rate of ~ 25Mbps.

Network switch recommendations

It is also recommended from a system design standpoint that you consider VLAN management to isolate the multicast traffic generated by the transmitters from devices other than the receivers.

Installation

The VIP-CAM-100-NDI can be oriented the following ways:

- Desktop
- Ceiling
- Wall
- Tripod/pendant

Selection of desktop or ceiling mount is found in the on-screen display.

Connections

Power

Each VIP-CAM-100-NDI can be powered from the included AC to 12Vdc power adapter.

Network

The VIP-CAM-100-NDI supports standard category RJ45 connectivity. It is recommended to use CAT6a cabling to ensure best performance.

To acquire the camera multicast stream output, use the following format:

rtsp://nnn.nnn.nnn.nnn:5000/main.h264

rtsp://nnn.nnn.nnn.nnn:5000/sub.h264

Default IP address of camera is 192.168.1.180

Audio

The VIP-CAM-NDI supports a line input used with RTSP steam output only.

Video

Video will be output on the following connections:

RJ45: NDI-HX, RTSP, RTMP, RTMPS, HTTP control (VISCA/PELCO)

3G-SDI: up to 1080P60

HDMI: up to 1080P60

Infrared

The VIP-CAM-100-NDI can be controlled with the included infrared remote control.

RS232/RS485

The VIP-CAM-100-NDI system provides control through RS232/RS485 connection. The API allows for control signals to be sent to the RS232 ports over HTTP. Please reference the VIP-CAM-100-NDI API.

NDI Setup and Operation

Download and install the NDI Tools

<https://ndi.tv/tools/>

With the NDI® Tools installed on your Windows® device, make sure that both the Windows® device and video camera are powered and connected to the same local network via standard Ethernet cable.

From the Windows® device, open the NewTek NDI® Studio Monitor application (installed with your NDI® |HX driver) to finish the process.

Click the menu icon in the upper-left corner to view all the available NDI® sources, then locate and select the camera.



IMPORTANT: Your camera must be connected to the same local network as the Windows® computer or device with your NDI® Tools installed to proceed. Make sure the IP address of you video camera and computer are in a same network segment.



Configure and control your camera using the on-screen user interface as seen above.

On Screen Display OSD

Top Level Menu

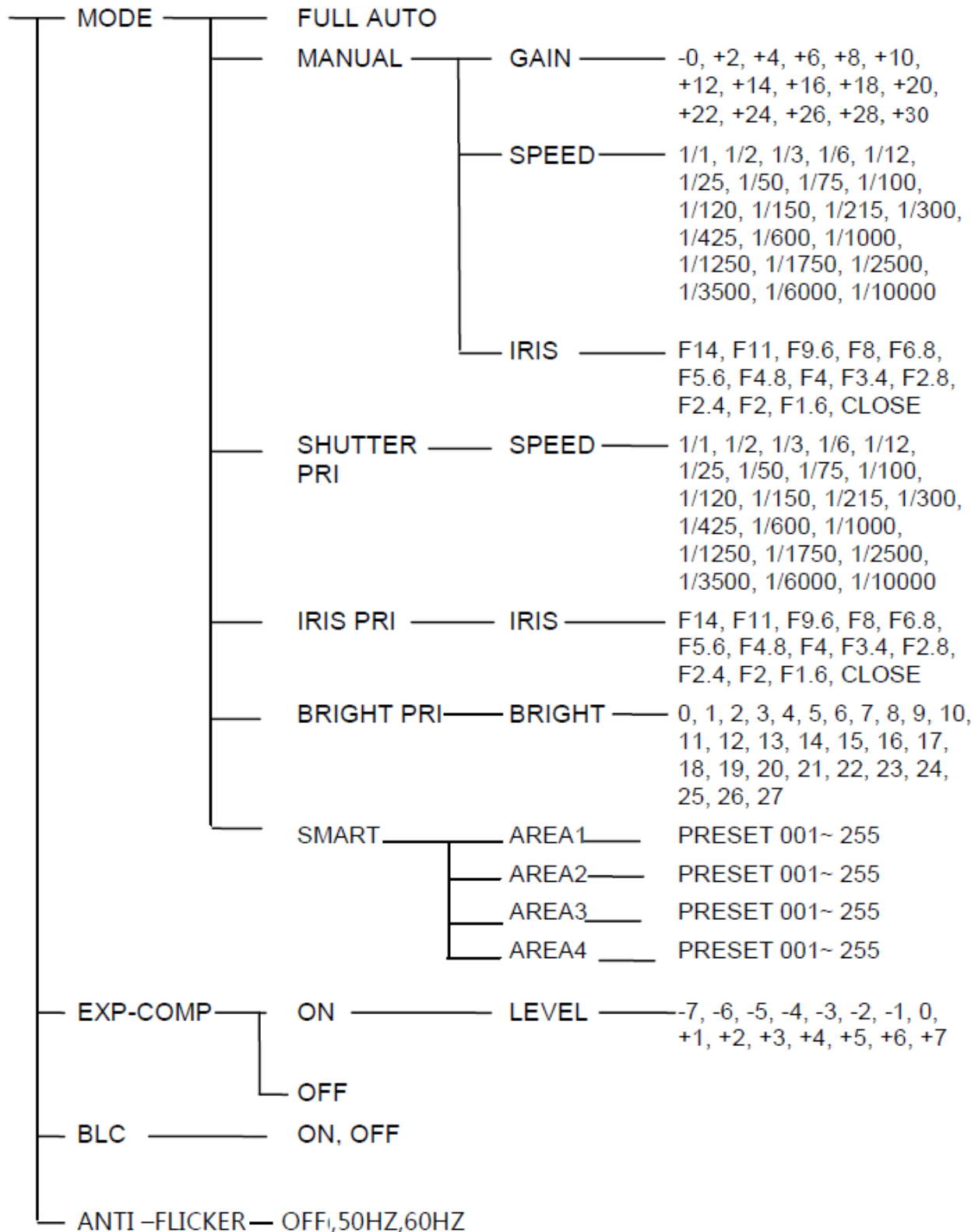
<MENU>

VIDEO
EXPOSURE
WHITE BALANCE
PAN TILT ZOOM
SYSTEM
STATUS
RESTORE DEFAULT

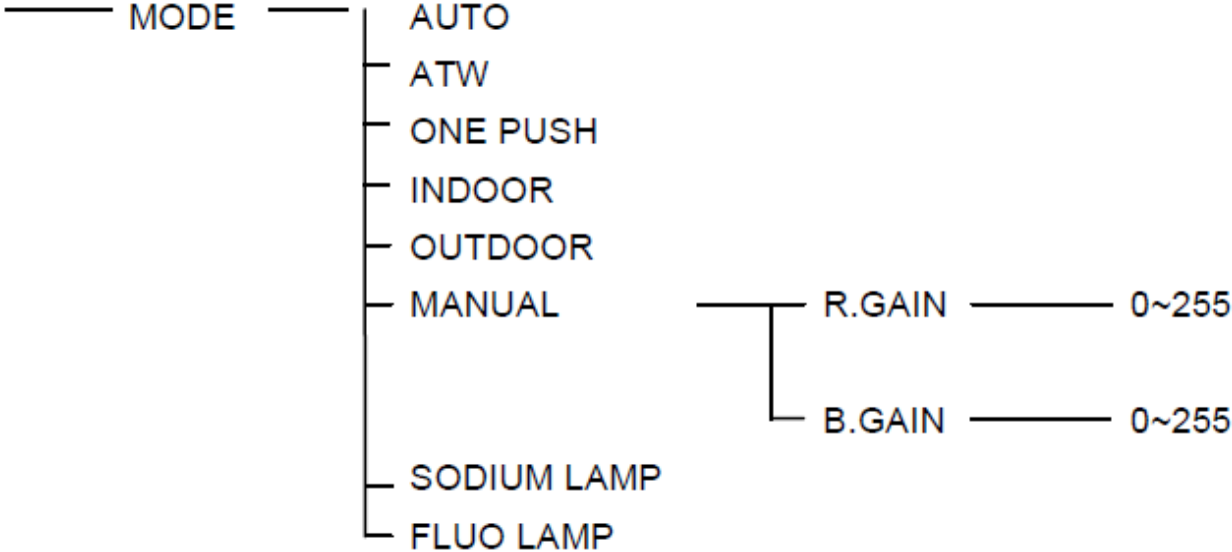
VIDEO Menu

SHARPNESS	0, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
CONTRAST	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15
SATURATION	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
HUE	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14
2DNR LEVEL	ON, OFF
3DNR LEVEL	AUTO, 1, 2, 3, 4, OFF
WIDE DYNAMIC	ON, OFF

EXPOSURE Menu



WHITE BALANCE Menu



PAN TILT ZOOM Menu

—	PAN/TILT SPEED	—	1, 2, 3, 4, 5, 6, 7, 8
—	PAN/TILT LIMIT	—	ON, OFF
—	UP	—	-30°~+90°
—	DOWN	—	-30°~+90°
—	LEFT	—	-170°~+170°
—	RIGHT	—	-170°~+170°
—	D-ZOOM LIMIT	—	X1, X2, X3, X4, X5, X6, X7, X8, X9, X10, X11, X12
—	PTZ TRIG AF	—	ON, OFF
—	RATIO SPEED	—	ON , OFF
—	PRESET FREEZE	—	ON , OFF
—	POWER UP ACTION	—	PRESET 1, PRESET 2, PRESET 3, PRESET 4, PRESET 5, PRESET 6, PRESET 7, PRESET 8, PRESET 9, HOME

SYSTEM Menu

ADDRESS	1, 2, 3, 4, 5, 6, 7
PROTOCOL	VISCA, PELCO-P, PELCO-D
BAUDRATE	2400, 4800, 9600, 38400
VIDEO FORMAT	1080P60, 1080P50, 1080I60, 1080I50, 1080P30, 1080P25, 720P60, 720P50
MOUNT MODE	STAND , CEILING
RS485 PORT	HALF-DUPLEX-1 , HALF-DUPLEX-2
DISPLAY INFO	ON , OFF
LANGUAGE	ENGLISH, CHINESE

STATUS Menu

ADDRESS	1
PROTOCOL	VISCA
BAUDRATE	9600
VIDEO FORMAT	1080P25
MOUNT MODE	STAND
IMAGE VER	V6629
FIRMWARE VER	V1.0.0

RESTORE DEFAULTS Menu

The Restore Defaults menu provides an OK or Cancel function. The table below lists the defaults after a restore.

- Changes the IP address to 192.168.1.180

Default Settings	
Address	1
Baud Rate	9600bps
Protocol	VISCA
Video Format	1080P25
Analog Video Format	PAL
Mounting Type	Desktop Installation

Preset functions

Using the remote control, preset management requires that the camera is receiving the remote-control commands.

Create Preset

- Press desired preset location with numeric keys. E.G.: 0 0 1
- Press the “Set” button on the remote.

Recall Preset

- Press desired preset location with numeric keys. E.G.: 0 0 1
- Press the “Call” button on the remote.

Clear Preset

- Press desired preset location with numeric keys. E.G.: 0 0 1
- Press the “Clear” button on the remote.

Note: A special reserved preset number 99 will **erase** ALL presets.

Reserved Presets

Presets that have factory defined usage. Note: changing the video format with a preset will cause the camera to reboot in to the new format.

Preset No.	Function
93	Cruise, camera switches among saved 0~29 presets repeatedly and sequentially in fixed interval.
95	Get into menu
96	Delete all presets
99	Reboot the PTZ
100	Video format: 1920X1080P50
101	Video format: 1920X1080P25
102	Video format: 1920X1080I50
103	Video format: 1280X720P50
105	Video format: 1920X1080P60
106	Video format: 1920X1080P30
107	Video format: 1920X1080I60
108	Video format: 1280X720P60

Troubleshooting

No image

- Check Power adapter is connected, and is outputting 12VDC
- Check output video cables
- Check output resolution is set to an accepted resolution of display
- Check exposure level

Camera unresponsive to remote

- Check remote is addressed to camera
- Check remote batteries
- Check line of sight for infrared receiver on front of camera

Camera unresponsive to control

- Check camera address
- Check control protocol is set correctly (VISCA vs PELCO)
- Check control wiring and pin designation

VIP-CAM-100-NDI Control API

The VIP-CAM-100-NDI can easily be controlled via NDI-HX without any setup requirements.

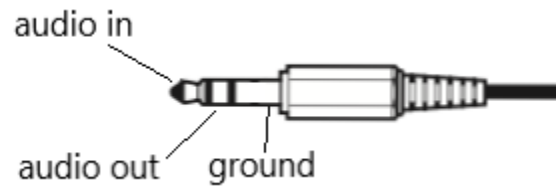
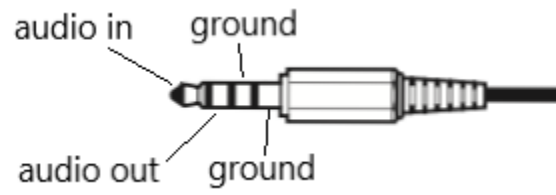
The VIP-CAM-100-NDI VISCA API is a separate document that can be found on the VIP-CAM-100-NDI product page at purelinkav.com

RS232/485 pinout

1	/
2	/
3	232-TX
4	GND
5	232-RX
6	GND
7	485+
8	485-

Please see the VIP-CAM-100 Control Wiring Application Note found on the product web page for detailed support on how to wire controllers and cameras.

Audio connector pinout



The audio connector only supports Line In when combined with the RTSP stream output.

PureLink™
220-10 State Route 208
Fair Lawn, NJ 07410 USA
Tel: +1.201.488.3232
Fax: +1.201.621.6118
E-mail: sales@purelinkav.com

For order support, please contact your local dealer.
For technical support, please contact us at support@purelinkav.com.

Warranty

PureLink Three (3) Year Limited Warranty for PureStream™ Branded Products Only

Dtrovision, LLC. (hereinafter “PureLink”) warrants its HDTools and PureStream™ branded products (hereinafter “Product”) purchased directly from PureLink or Dealer shall be free from defects in workmanship and materials, under normal use and service, for a period of three (3) years on parts and three (3) years on labor. Any repaired or replaced equipment related to Product shall be covered only under the remaining portion of the warranty. This warranty has no relationship to and exists independently of any warranty offered by Dealer. This warranty is a limited warranty and gives you specific legal rights. You may also have other rights which vary from state to state.

TERMS & CONDITIONS

PureLink shall repair or replace the Product if it develops a material fault during the period of warranty, on condition that i) the Product has only been subject to normal use in a domestic or commercial environment in a manner consistent with its specification and functionality, ii) the Product has been cared for reasonably and only subjected to reasonable wear and tear, iii) the defect has not been caused by willful or negligent abuse or neglect, or any accident or improper installation procedure, iv) the serial number of the Product has not been altered or removed.

This warranty only applies to the original purchaser, and shall be the exclusive remedy to the original purchaser. PureLink shall not be liable for any damages whatsoever caused by Product or the failure of Product to perform, including incidental or consequential damages. PureLink shall not be liable for any claim made by a third party or made by the purchaser for a third party.

Except as expressly set forth in this warranty, PureLink makes no other warranties, expressed or implied, including any implied warranties of merchantability and fitness for a particular purpose. PureLink expressly disclaims all warranties not satisfied in this limited warranty. Any implied warranties that may be imposed by law are limited to the terms of this limited warranty. This warranty statement supersedes all previous warranties.

WARRANTY RETURNS/REPAIRS/EXCHANGES

No merchandise may be returned without prior authorization from PureLink, and a Return Materials Authorization (RMA) number. Failure to comply with these conditions will result in rejection of the returned merchandise.

Any warranty service on Products must be arranged through Dealer. Authorized returns must be shipped freight prepaid and fully insured to PureLink, Ramsey, NJ USA, with the RMA number clearly marked on the outside of all shipping boxes and containers. PureLink reserves the right at its sole discretion to refuse any shipments arriving freight collect or without an RMA number. Any authorized returned merchandise must be accompanied by a note describing the reason for return, along with contact information including name, phone number, return mailing and shipping addresses, e-mail address, and RMA number.

On any products returned and accepted with an RMA number, return freight charges following repair of items under warranty shall be paid by PureLink, shipping by the standard ground carrier of its choice.

ADVANCE WARRANTY REPLACEMENTS

PureLink's advance replacement service offers a Replacement Unit upon request - free of charge for eligible products purchased less than one (1) year of the warranty claim. Products purchased more than one (1) year prior to the warranty claim do not qualify for advance replacement services.

Advance replacement requests must be validated by a member of PureLink's Technical Support Team. Replacement units may be new or refurbished and is subject to availability. PureLink is responsible for shipping the Replacement Unit to your designated location by standard ground service. All other shipping methods will be responsibility of the Dealer.

Original Unit Return – the Original Unit must be returned within thirty (30) calendar days of the return authorization date. Failure to return the Original Unit within this period will be subject to a minimum 15% re-stocking fee. Dealer is solely responsible for the shipping of the Original Unit to PureLink.

TO MAKE A WARRANTY CLAIM

To make a warranty claim, promptly notify PureLink within the warranty periods described above by calling PureLink's Technical Support Department at 1-201-488-3232. PureLink, in its sole discretion, will determine what action, if any, is required under this warranty.

Most problems can be corrected over the phone through close cooperation between Customer and a PureLink technician. To better enable PureLink to address a warranty claim, please have the Product's serial and model numbers. If PureLink, in its sole discretion, determines that an on-site visit or other remedial action is necessary, PureLink may send a representative to Customer's site.

CUSTOMER SERVICE

Technical support inquiries can be submitted electronically through the PureLink website at www.purelinkav.com. For immediate assistance please contact PureLink's Customer Care Team at

+1 (201) 488-3232