Angekïs®

BLADE 4K

U3-UFHD36-IP

CONTENT

SAFETY GUIDES

1. Before operating the camera, please read and follow all the instructions in the manual. For safety reasons, always keep this user manual close to the camera.
2. The Blade 4K's power input range is 100-240VAC (50-60Hz). Always ensure the power supply input is within this rate before turning it on.
3. The camera power voltage is 12VDC with a rated currency of 1.5A. We recommend that you use it with the original power supply adapter supplied by the factory.
4. Please keep the power cable, video cable and control cable in a safe place. Protect all cables especially the Connectors.
5. Operational environment: 0℃-50℃ with humidity less than 90%. To avoid any danger, do not put anything inside the Camera and keep out from corrosive liquid.
6. Avoid stress, vibration and damp during transportation, storage and installation.
7. Do not detach the camera housing and cover. If there's a need for service, contact your authorized technicians.
8. RF cable and control cable should be individually shielded and cannot be substituted with other cables. Do not direct the camera lens towards strong light (sun or intensive light).
9. Use a dry cloth to clean the camera housing. Apply it with a neutral cleaning agent to clean. To avoid damage on the camera lens, never use strong or abrasive cleaning agents on the camera housing.
10. Do not move the camera by holding the camera head. To avoid any mechanical issues, do not use your hands to rotate the camera head.
11. Place the camera on a fixed and smooth desk or base and avoid leaned Installation.
12. Power Supply Polarity (Drawing)
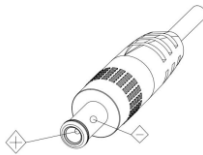
ACCESSORIES

Check all bellow items when open the package:

Camera ————————————————————————————————— 1 PCS

Power Adapter ————————————————————————————— 1 PCS

Power Cable ————————————————————————————— 1 PCS

RS232 Control Cable ———————————————————————— 1 PCS

USB3.0 Cable ————————————————————————————— 1 PCS

Remote Controller ————————————————————————— 1 PCS

User Manual ————————————————————————————— 1 PCS

Double-sided Adhesive ——————————————————————— 1 PCS

QUICK START

1. Ensure to check all cable connection before turning it on
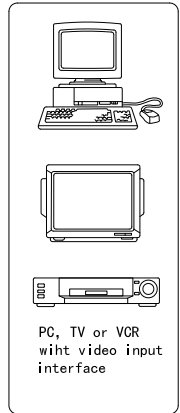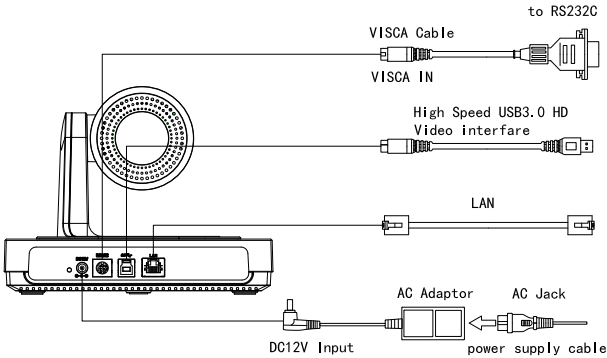
2. Dial Switch Setting (at the bottom of the camera):
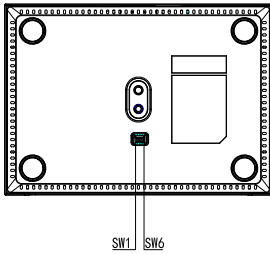
SW1 SW6

FUNCTION (ARM)			
	SW-1	SW-2	Instruction
1	OFF	OFF	Updating mode
2	ON	OFF	Debugging mode
3	OFF	ON	Undefined
4	ON	ON	Working mode

FUNCTION(IR CODE TYPE)			
	SW-3	SW-4	Instruction
1	OFF	OFF	Undefined
2	ON	OFF	Undefined
3	OFF	ON	Undefined
4	ON	ON	Undefined

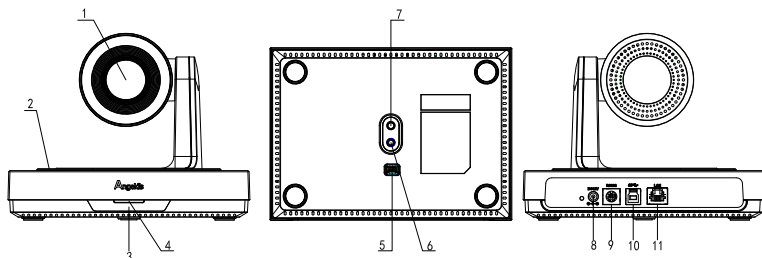| FUNCTION(USB)			
	SW-5	SW-6	Instruction
1	OFF	OFF	Undefined
2	ON	OFF	Undefined
3	OFF	ON	Undefined
4	ON	ON	Undefined

PRODUCT HIGHLIGHTS

The Blade 4K delivers class leading optics and crystal clear life like video that makes your video conferencefeel like you are sitting together in the same room. We've made significant technical improvements including USB Visca and UVC control, as well as zoom room controller support. Onscreen NECC rounds to the suite of control options. No more unreliable remotes! Advanced RF technology allows the remote to be used from any angle. We've also made upgrades to the cameras optics hence producing brilliant sharp images, in a small, smart and solid form factor at a price that will impress.

- 3840x2160P 30fps over USB2.0 and USB3.0
- 5 x 4K + 15x HD zoom over IP and USB3.0
- 86.5° wide angle FOV
- Up to 4K resolution at 30fps and Full HD at 60fps
- Video format: YUY2, MJPG, H.265 (IP)
- HTML5 supported multi-browser
- Video outputs: RJ45, USB3.0
- Visca over RS232 & IP. 128 presets
- Zoom Room remote RF Controller supported
- Angekis near end on screen app control
- RF remote control with 10 presets.
- RS232 & IP joystick or 128 presets from web/windows
- OSD settings menu via remote Video mute control Kensington lock hole
- 3D noise reduction
- Day/Night vision switch

PRODUCT SPECIFICATION

Resolution	MJPG	3840x2160p 30 , 1080P30，720P30，640x480p30USB3.0
	YUV	1080p 60/30 ,720P 60/30,640x480P30
Video Output	USB3.0,RJ45,USB2.0 downward ../AppData/Local/youdao/dict/Application/7.5.0.0/resultui/ dict/?keyword=compatibility	
Sensor	1/2.5", 5MP CMOS	
Lens	F4.7～47.mm(10X), F1.8 – 14, HFOV:86.5°(Wide)-6.43°(Tele)	
P/T Rotation	Pan: ±170°; Tilt:-30°~+90°,Mountable	
P/T speed	Pan: 0.1°-120°/s; Tilt: 0.1°-80°/s	
Presets	10 via RF remote setting, 128 via VISCA control, preset accuracy :0.1°	
Control	RS232, RS485, USB2.0	
Min. Lux	0.01lux	
White Balance	Auto/Manual	
Focus	Auto/Manual	
Iris	Auto/Manual	
Shutter	Auto/Manual	
WDR	Supported	
BLC	Supported	
2 DNR	Supported	
3 DNR	Supported	
Input Voltage	DC12V	
Dimension	200mm x 143mm x 152mm	
Net weight	1.25KG	

CAMERA INTERFACE
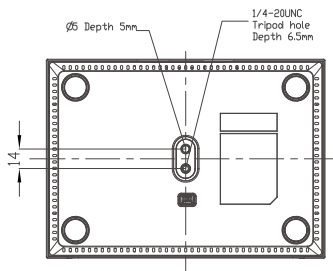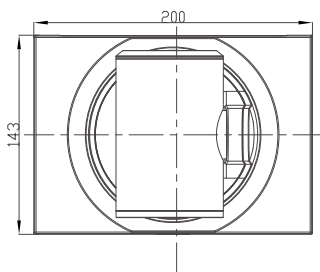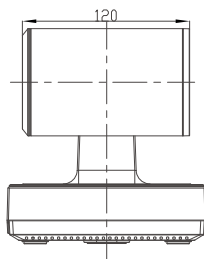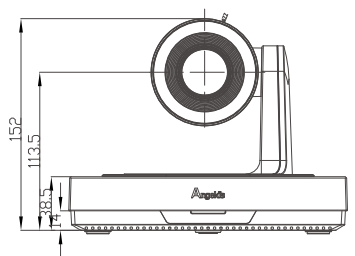

1. Camera Lens
2. Camera Base
3. RF Receiver Panel
4. Indicator Light
5. Dial Switch
6. Tripod Screw Hole
7. Installation Hole
8. DC12V Power Input
9. RS232(VISCA IN) Port
10. USB3.0
11. RJ45 Lan

CAMERA DIMENSION(MM)

IR REMOTE CONTROLLER

LED Function Instruction

Press any button and shows red: Current selection is to control the camera 1;
Press any button and shows green: Current selection is to control the camera 2;
Press any button and shows blue: Current selection is to control the camera 3;

CAM1/CAM2/CAM3
Short press to select the camera 1/2/3
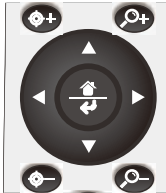
Focus (Left): +/ -
Manual focus, only valid under manual focus model;
Zoom (Right): +/ -
Control the lens zoom rate;

Navigation：Up/Down/Left/Right
In normal working mode, use navigate key to control pan/tilt;
Confirm/Home button:
In normal working mode, short press to let the camera go back to Home position.

Menu button: show the camera version

Number buttons
Set Preset: Long press(3seconds) the number button to save preset;
Clear Preset: Clear + number button to clear the relative preset;
            Long press(3seconds) the Clear button to clear all preset;
Run Preset: Short press the number button to run the relative preset.

Power button

In normal work mode, short press one time, camera will enter standby mode;
short press again, the camera will start self-configuration and go to HOME
position;

Camera address setting from remote control

1.Power off other cameras in the room, then power on the camera wait to pair

2.Holding CAM1/CAM2/CAM buttons to set need camera addressK

   LED will flash 3 times showing you a successfully setting.

Set IP Address via Menu

1. Press "menu" button for 3 seconds, enter IP setting menu.


```
────────IP SET────────
IP:   192.168.002.155
MASK:255.255.255.000
GW:   192.168.002.001
MENU/ESC   HOME/ENTER
```

2. Using "up" "down" navigation key on remote, select the parameter. IP, Mask, Gateway etc. can be set.
3. Short press "Home" key to setting mode, current setting parameter starts flickering
4. Short press number key to set needed parameter. After finishing setting, press "Home" key again.
5. If need to exit to menu, press "menu" key.
Note: Only press "Home" key after finish setting which then enable it to save the current parameter.

VISCA IN PORT
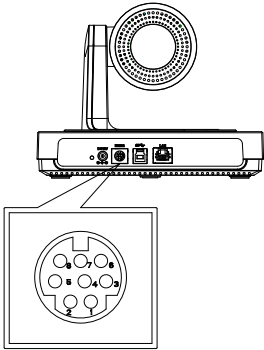
No.	function
1	DTR
2	DSR
3	TXD
4	GND
5	RXD
6	A
7	IR OUT
8	B

VISCA IN &RS485 Connection

Camera VISCA IN		RS485
1	DTR	
2	DSR	
3	TXD	
4	GND	GND
5	RXD	
6	A(+)	A(+)
7	IR OUT	
8	B(-)	B(-)

VISCA IN&DB9 Connection

Camera VISCA IN		Windows DB -9	
1	DTR	6	DSR
2	DSR	4	DTR
3	TXD	2	RXD
4	GND	5	GND
5	RXD	3	TXD
6	A(+)		
7	IR OUT		
8	B(-)		

SERIAL PORT CONFIGURATION:

Parameter	Value	Parameter	Value
Baud rate	2400, 9600,115200	Stop Bit	1bit
Start Bit	1 bit	Verify Bit	None
Date Bit	8 bit		

VISCA PROTOCOL

Part1 Camera Return Command

Ack/Completion Message		
	Command package	Note
ACK	z0 41 FF	Returned when the command is accepted.
Completion	z0 51 FF	Returned when the command has been executed.

z = camera address + 8

Error Messages		
	Command package	Note
Syntax Error	z0 60 02 FF	Returned when the command format is different or when a command with illegal command parameters is accepted
Command Not Executable	z0 61 41 FF	Returned when a command cannot be executed due to current conditions. For example, when commands controlling the focus manually are received during auto focus.

Part2 Camera Control Command

Command	Founction	Command package	Note
AddressSet	Broadcast	88 30 01 FF	Address setting
IF_Clear	Broadcast	88 01 00 01 FF	I/F Clear
CAM_Power	On	8x 01 04 00 02 FF	Power ON/OFF
	Off	8x 01 04 00 03 FF	
CAM_Zoom	Stop	8x 01 04 07 00 FF	
	Tele(Standard)	8x 01 04 07 02 FF	
	Wide(Standard)	8x 01 04 07 03 FF	
	Tele(Variable)	8x 01 04 07 2p FF	p = 0(low)~7(high)
	Wide(Variable)	8x 01 04 07 3p FF	
	Direct	8x 01 04 47 0p 0q 0r 0s FF	pqrs: Zoom Position (0(wide) ~0x4000(tele))
CAM_Focus	Stop	8x 01 04 08 00 FF	
	Far(Standard)	8x 01 04 08 02 FF	
	Near(Standard)	8x 01 04 08 03 FF	
	Direct	8x 01 04 48 0p 0q 0r 0s FF	pqrs: Focus Position
	One Push AF	8x 01 04 18 01 FF	
CAM_ZoomFocus	Direct	8x 01 04 47 0p 0q 0r 0s 0t 0u 0v 0w FF	pqrs: Zoom Position (0(wide)~ 0x4000(tele)) tuvw: Focus Position
CAM_WB	Auto	8x 01 04 35 00 FF	
	Indoor	8x 01 04 35 01 FF	
	Outdoor	8x 01 04 35 02 FF	

Command	Founction	Command package	Note
	OnePush	8x 01 04 35 03 FF	
	Manual	8x 01 04 35 05 FF	
	Outdoor Auto	8x 01 04 35 06 FF	
	Sodium Lamp Auto	8x 01 04 35 07 FF	
	Sodium Auto	8x 01 04 35 08 FF	
CAM_RGain	Reset	8x 01 04 03 00 FF	Manual Control of R Gain
	Up	8x 01 04 03 02 FF	
	Down	8x 01 04 03 03 FF	
	Direct	8x 01 04 43 00 00 0p 0q FF	pq: R Gain (0~0xFF)
CAM_Bgain	Reset	8x 01 04 04 00 FF	Manual Control of B Gain
	Up	8x 01 04 04 02 FF	
	Down	8x 01 04 04 03 FF	
	Direct	8x 01 04 44 00 00 0p 0q FF	pq: B Gain (0-0xFF)
CAM_AE	Full Auto	8x 01 04 39 00 FF	Automatic Exposure mode
	Manual	8x 01 04 39 03 FF	Manual Control mode
	Bright	8x 01 04 39 0D FF	Bright mode(Manual control)
CAM_Shutter	Reset	8x 01 04 0A 00 FF	Shutter Setting
	Up	8x 01 04 0A 02 FF	
	Down	8x 01 04 0A 03 FF	
	Direct	8x 01 04 4A 00 00 0p 0q FF	pq: Shutter Position (0~0x15)
CAM_Iris	Reset	8x 01 04 0B 00 FF	Iris Setting
	Up	8x 01 04 0B 02 FF	
	Down	8x 01 04 0B 03 FF	
	Direct	8x 01 04 4B 00 00 0p 0q FF	pq: Iris Position (0~ 0x11)
CAM_Gain	Reset	8x 01 04 0C 00 FF	Gain Setting
	Up	8x 01 04 0C 02 FF	
	Down	8x 01 04 0C 03 FF	
	Direct	8x 01 04 0C 00 00 0p 0q FF	pq: Gain Positon (0~0x0E)
CAM_Bright	Reset	8x 01 04 0D 00 FF	Bright Setting
	Up	8x 01 04 0D 02 FF	
	Down	8x 01 04 0D 03 FF	
	Direct	8x 01 04 4D 00 00 0p 0q FF	pq: Bright l Positon ()
CAM_WDR	On	8x 01 04 3D 02 FF	WDR ON/OFF

Command	Founction	Command package	Note
	Off	8x 01 04 3D 03 FF	
	Direct	8x 01 04 D3 0p FF	pq: WDR Position (1~0x06)
CAM_BackLight	On	8x 01 04 33 02 FF	BackLight On
	Off	8x 01 04 33 03 FF	BackLight Off
CAM_Aperture	Reset	8x 01 04 02 00 FF	Aperture Control
	Up	8x 01 04 02 02 FF	
	Down	8x 01 04 02 03 FF	
	Direct	8x 01 04 42 00 00 0p 0q FF	pq: Aperture Gain (0~0x04)
CAM_Memory	Reset	8x 01 04 3F 00 0p FF	p: Memory Number(=0 to 127) Corresponds to 0 to 9 on the Remote Commander
	Set	8x 01 04 3F 01 0p FF	
	Recall	8x 01 04 3F 02 0p FF	
CAM_LR_Reverse	On	8x 01 04 61 02 FF	Image Flip Horizontal ON/OFF
	Off	8x 01 04 61 03 FF	
CAM_PictureFlip	On	8x 01 04 66 02 FF	Image Flip Vertical ON/OFF
	Off	8x 01 04 66 03 FF	
CAM_ColorGain	Direct	8x 01 04 49 00 00 00 0p FF	(0~0x0E)
CAM_2D Noise Reduction	Direct	8x 01 04 53 0p FF	0Ω OFF 1Ω ON
CAM_3D Noise Reduction	Direct	8x 01 04 54 0p FF	0:OFF 1ΩAUTO 2~5ΩLEVEL
FLICK	50HZ	81 01 04 23 01 FF	
	60HZ	81 01 04 23 02 FF	
Freeze	Freeze On	81 01 04 62 02 FF	Freeze On Immediately
	Freeze Off	81 01 04 62 03 FF	Freeze Off Immediately
	Preset Freeze On	81 01 04 62 22 FF	Freeze On When Running Preset
	Preset Freeze Off	81 01 04 62 23 FF	Freeze Off When Running Preset
IR_Transfer	Transfer On	8x 01 06 1A 02 FF	Receive IR(remote commander) CODE from VISCA communication ON/OFF
	Transfer Off	8x 01 06 1A 03 FF	
Pan_tiltDrive	Up	8x 01 06 01 VV WW 03 01 FF	VV: Pan speed 0x01 (low speed) to 0x18 (high speed) WW: Tilt speed 0x01 (low speed) to 0x14 (high speed) YYYY: Pan Position(TBD) ZZZZ: Tilt Position(TBD)
	Down	8x 01 06 01 VV WW 03 02 FF	
	Left	8x 01 06 01 VV WW 01 03 FF	
	Right	8x 01 06 01 VV WW 02 03 FF	
	Upleft	8x 01 06 01 VV WW 01 01 FF	
	Upright	8x 01 06 01 VV WW 02 01 FF	

Command	Founction	Command package	Note
	DownLeft	8x 01 06 01 VV WW 01 02 FF	
	DownRight	8x 01 06 01 VV WW 02 02 FF	
	Stop	8x 01 06 01 VV WW 03 03 FF	
	AbsolutePositio n	8x 01 06 02 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
	RelativePositio n	8x 01 06 03 VV WW 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	
	Home	8x 01 06 04 FF	
	Reset	8x 01 06 05 FF	
Pan-tiltLimitSet	Set	8x 01 06 07 00 0W 0Y 0Y 0Y 0Y 0Z 0Z 0Z 0Z FF	W:1 UpRight 0:DownLeft YYYY: Pan Limit Position(TBD) ZZZZ: Tilt Limit Position(TBD)
	Clear	8x 01 06 07 01 0W 07 0F 0F 0F 07 0F 0F 0F FF	

Part3 Inquiry Command

Command	Command Packet	Return Packet	Note
CAM_PowerInq	8x 09 04 00 FF	y0 50 02 FF	On
		y0 50 03 FF	Off(Standby)
CAM_ZoomPosInq	8x 09 04 47 FF	y0 50 0p 0q 0r 0s FF	pqrs: Zoom Position
CAM_FocusModeInq	8x 09 04 38 FF	y0 50 02 FF	Auto Focus
		y0 50 03 FF	Manual Focus
CAM_FocusPosInq	8x 09 04 48 FF	y0 50 0p 0q 0r 0s FF	pqrs: Focus Position
CAM_WBModeInq	8x 09 04 35 FF	y0 50 00 FF	Auto
		y0 50 01 FF	Indoor mode
		y0 50 02 FF	Outdoor mode
		y0 50 03 FF	OnePush mode
		y0 50 04 FF	ATW
		y0 50 05 FF	Manual
CAM_RGainInq	8x 09 04 43 FF	y0 50 00 00 0p 0q FF	pq: R Gain
CAM_BGainInq	8x 09 04 44 FF	y0 50 00 00 0p 0q FF	pq: B Gain
CAM_AEModeInq	8x 09 04 39 FF	y0 50 00 FF	Full Auto
		y0 50 03 FF	Manual
		y0 50 0A FF	Shutter priority
		y0 50 0B FF	Iris priority
		y0 50 0D FF	Bright
CAM_ShutterPosInq	8x 09 04 4A FF	y0 50 00 00 0p 0q FF	pq: Shutter Position
CAM_IrisPosInq	8x 09 04 4B FF	y0 50 00 00 0p 0q FF	pq: Iris Position

CAM_GainPosInq	8x 09 04 4C FF	y0 50 00 00 0p 0q FF	pq: Gain Position
CAM_ BrightPosInq	8x 09 04 4D FF	y0 50 00 00 0p 0q FF	pq: Bright Position
CAM_ExpCompModeI nq	8x 09 04 3E FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_ExpCompPosIn q	8x 09 04 4E FF	y0 50 00 00 0p 0q FF	pq: ExpComp Position
CAM_ApertureInq	8x 09 04 42 FF	y0 50 00 00 0p 0q FF	pq: Aperture Gain
CAM_MemoryInq	8x 09 04 3F FF	y0 50pp FF	pp: Memory number last operated.
SYS_MenuModeInq	8x 09 06 06 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_LR_ReverseInq	8x 09 04 61 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_PictureFlipInq	8x 09 04 66 FF	y0 50 02 FF	On
		y0 50 03 FF	Off
CAM_IDInq	8x 09 04 22 FF	y0 50 0p 0q 0r 0s FF	pqrs: Camera ID
CAM_VersionInq	8x 09 00 02 FF	y0 50 ab cd mn pq rs tu vw FF	
IR_Transfer	8x 09 06 1A FF	y0 50 02 FF	On
		y0 50 03 FF	Off
Pan-tiltMaxSpeedInq	8x 09 06 11 FF	y0 50 ww zz FF	ww: PanMaxSpeed zz: Tilt Max Speed
Pan-tiltPosInq	8x 09 06 12 FF	y0 50 0w 0w 0w 0w 0z 0z 0z 0z FF	wwww: PanPosition zzzz: Tilt Position

Note: 【x】 means the camera address ; 【y】 = 【x + 8】 .

VISCA PAN TILT ABSOL UTE POSITION VALUE

Pan Angle	VISCA Value	Tilt Angle	VISCA Value
-170	0xF670	-30	0xFE50
-135	0xF868	0	0x0000
-90	0xFAF0	30	0x01B0
-45	0xFD78	60	0x0360
0	0x0000	90	0x510
45	0x0288		
90	0x0510		
135	0x0798		
170	0x0990		

VISCA PAN TILT SPEED VALUE

Pan(degree/second)		tilt(degree/second)	
0	0.3	0	0.3
1	1	1	1
2	1.5	2	1.5
3	2.2	3	2.2
4	2.4	4	3.6
5	2.6	5	4.7
6	2.8	6	6
7	3.0	7	8
8	3.2	8	10
9	3.4	9	12
10	3.8	10	15
11	4.5	11	18
12	6	12	23
13	9	13	30

14	15	14	39
15	19	15	48
16	25	16	59
17	32	17	69
18	38	18	80
19	45		
20	58		
21	75		
22	88		
23	105		
24	120		

		60/30mode	50/25mode			
	21	1/10000	1/10000		0	close
	20	1/6000	1/6000		1	F14
	19	1/4000	1/3500		2	F11
	18	1/3000	1/2500		3	F9.6
	17	1/2000	1/1750		4	F8
	16	1/1500	1/1250		5	F6.8
	15	1/1000	1/1000		6	F5.6
	14	1/725	1/600		7	F4.8
	13	1/500	1/425	Iris	8	F4
Shutter speed	12	1/350	1/300		9	F3.4
	11	1/250	1/215		10	F2.8
	10	1/180	1/150		11	F2.4
	9	1/125	1/120		12	F2
	8	1/100	1/100		13	F1.6
	7	1/90	1/75			
	6	1/60	1/50			
	5	1/30	1/25			
	4	1/15	1/12			
	3	1/8	1/6			
	2	1/4	1/3			
	1	1/2	1/2			
	0	1/1	1/1			
	0	0dB			8	16dB
	1	2dB			9	18dB
	2	4dB			10	20dB
Gain	3	6dB		Gain	11	22dB
	4	8dB			12	24dB
	5	10dB			13	26dB
	6	12dB			14	28dB
	7	14dB			15	30dB

PELCO-D PROTOCOL

Function	Byte1	Byte2	Byte 3	Byte 4	Byte5	Byte6	Byte 7
Up	0xFF	Address	0x00	0x08	Pan Speed	Tilt Speed	SUM
Down	0xFF	Address	0x00	0x10	Pan Speed	Tilt Speed	SUM
Left	0xFF	Address	0x00	0x04	Pan Speed	Tilt Speed	SUM
Right	0xFF	Address	0x00	0x02	Pan Speed	Tilt Speed	SUM
Upleft	0xFF	Address	0x00	0x0C	Pan Speed	Tilt Speed	SUM
Upright	0xFF	Address	0x00	0x0A	Pan Speed	Tilt Speed	SUM
DownLeft	0xFF	Address	0x00	0x14	Pan Speed	Tilt Speed	SUM
DownRight	0xFF	Address	0x00	0x12	Pan Speed	Tilt Speed	SUM
Zoom In	0xFF	Address	0x00	0x20	0x00	0x00	SUM
Zoom Out	0xFF	Address	0x00	0x40	0x00	0x00	SUM
Focus Far	0xFF	Address	0x00	0x80	0x00	0x00	SUM
Focus Near	0xFF	Address	0x01	0x00	0x00	0x00	SUM
Set Preset	0xFF	Address	0x00	0x03	0x00	Preset ID	SUM
Clear Preset	0xFF	Address	0x00	0x05	0x00	Preset ID	SUM
Call Preset	0xFF	Address	0x00	0x07	0x00	Preset ID	SUM
Query Pan Position	0xFF	Address	0x00	0x51	0x00	0x00	SUM
Query Pan Position Response	0xFF	Address	0x00	0x59	Value High Byte	Value Low Byte	SUM
Query Tilt Position	0xFF	Address	0x00	0x53	0x00	0x00	SUM
Query Tilt Position Response	0xFF	Address	0x00	0x5B	Value High Byte	Value Low Byte	SUM
Query Zoom Position	0xFF	Address	0x00	0x55	0x00	0x00	SUM
Query Zoom Position Response	0xFF	Address	0x00	0x5D	Value High Byte	Value Low Byte	SUM

PELCO-P PROTOCOL

Function	Byte1	Byte2	Byte 3	Byte 4	Byte5	Byte6	Byte 7	Byte 8
Up	0xA0	Address	0x00	0x08	Pan Speed	Tilt Speed	0xAF	XOR
Down	0xA0	Address	0x00	0x10	Pan Speed	Tilt Speed	0xAF	XOR
Left	0xA0	Address	0x00	0x04	Pan Speed	Tilt Speed	0xAF	XOR
Right	0xA0	Address	0x00	0x02	Pan Speed	Tilt Speed	0xAF	XOR
Upleft	0xA0	Address	0x00	0x0C	Pan Speed	Tilt Speed	0xAF	XOR
Upright	0xA0	Address	0x00	0x0A	Pan Speed	Tilt Speed	0xAF	XOR
DownLeft	0xA0	Address	0x00	0x14	Pan Speed	Tilt Speed	0xAF	XOR
DownRight	0xA0	Address	0x00	0x12	Pan Speed	Tilt Speed	0xAF	XOR
Zoom In	0xA0	Address	0x00	0x20	0x00	0x00	0xAF	XOR
Zoom Out	0xA0	Address	0x00	0x40	0x00	0x00	0xAF	XOR
Focus Far	0xA0	Address	0x00	0x80	0x00	0x00	0xAF	XOR
Focus Near	0xA0	Address	0x01	0x00	0x00	0x00	0xAF	XOR
Set Preset	0xA0	Address	0x00	0x03	0x00	Preset ID	0xAF	XOR
Clear Preset	0xA0	Address	0x00	0x05	0x00	Preset ID	0xAF	XOR
Call Preset	0xA0	Address	0x00	0x07	0x00	Preset ID	0xAF	XOR
Query Pan Position	0xA0	Address	0x00	0x51	0x00	0x00	0xAF	XOR
Query Pan Position Response	0xA0	Address	0x00	0x59	Value High Byte	Value Low Byte	0xAF	XOR
Query Tilt Position	0xA0	Address	0x00	0x53	0x00	0x00	0xAF	XOR
Query Tilt Position Response	0xA0	Address	0x00	0x5B	Value High Byte	Value Low Byte	0xAF	XOR
Query Zoom Position	0xA0	Address	0x00	0x55	0x00	0x00	0xAF	XOR
Query Zoom Position Response	0xA0	Address	0x00	0x55	Value High Byte	Value Low Byte	0xAF	XOR

OSD MENU

1. Under working mode, press the menu button on the IR remote, to enter the OSD menu; press the menu button again to exit and save modified parameters.
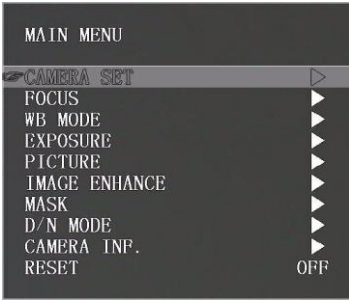
2. Use the navigate button to select the main menu. As above picture, once been selected, the main menu will change to grey color background, and the right side will show all parameters under this sub menu:
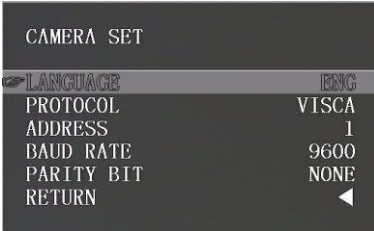
3. In the second grade menu, press the up/down navigate button to select the sub menu, use left/right navigate button to set the parameter;

4. Select the last option ñreturn ñand press the right navigate button to get back to previous menu;

5. Press OSD button again to exit the menu.

	LANGUAGE	Chinese/English
	PROTOCOL	VISCA/PELCO-P/PELCO-D
CAMERA SET	ADDRESS	1~7
	BAUD RATE	2400,9600,115200
	PARITY BIT	NONE
	RETURN	Back to the main menu

FOCUS	FOCUS MODE	AUTO/MANUAL/PUSH
	SENSITIVITY	LOW/MID/HIGH
	FOCUS LIMIT	1.5M/2M/3M/6M/10M
	D_ZOOM	OFF/ON
	ZOOM SPEED	0-7
	LENS INIT	OFF/5K/10K/15K/20K/EXE
	DIS ZOOM RATIO	OFF/ON
	RETURN	Back to the main menu
WB MODE	WB MODE	ATW/MANU/MANU2/SON./FL./AUTO/IDR./ODR./PUSH
	B_GAIN	0~255　(Only Valid when WB MODE set to MANU)
	R_GAIN	0~255　　(Only Valid when WB MODE set to MANU)
	RETURN	Back to the main menu
EXPOSURE	EXP MODE	AUTO/MANU/IRIS/SHUT/BRL
	SHUT TIME	Shutter time: 1/1~1/5000　　Only Valid when EXP MODE set to MANU
	IRIS	Iris value: 0-13　 Only Valid when EXP MODE set to MANU
	AGC	Gain value: 0dB~15dB　Only Valid when EXP MODE set to MANU
	BRIGHT	Brightness value: 0-27　Only Valid when EXP MODE set to BRI
	SLOW SHUT	OFF/ON
	FLICK	OFF/50HZ/60HZ
	RETURN	Back to the main menu
PICTURE	BRIGHTNESS	1-15
	SHARPNESS	0-15

	CONSTRAST	0-15
	SATURATION	0-14
	MIRROR	Image 180degree rotation left/right: OFF/ON
	PIC FLIP	Image 180degree rotation up/down: OFF/ON
	FREEZE	OFF/ON
	DEFOG	OFF/1-15
	RETURN	Back to the main menu
IMAGE ENHANCE	2D NR	OFF/ONÏ
	3D NR	OFF/AUTO/ 2-4
	D_WDR	OFF/1-6
	GAMMA	0-4
	BACKLIGHT	OFF/ON
	HIGHLIGHT	OFF/ON
	RETURN	Back to the main menu
MASK	MASK SWITCH	ON/OFF
	COLOUR	WHITE/YELLOW/GRAY/GREEN/VIOLET/RED/
	INDEX	1-8
	INDEX SWITCH	OFF/ON
	ROW START	0-1919
	ROW END	1-1920
	LINE START	0-1079
	LINE END	1-1079
	RETURN	Back to the main menu
D/N MODE	D/N MODE	DAY/NIGHT/AUTO/EXT
	DAY TO NIGHT	15-126
	NIGHT TO DAY	5-190

	SWITCH DELAY	1-60
	GAIN LIMIT	2-511
	RETURN	Back to the main menu
CAMERA INF.	IMAGE VER.	PC-V0.0.6　(changes without additional notices)
	IMAGE DATE	16.10.20　　(changes without additional notices)
	CONTROL VER.	UC V0.1.4 (changes without additional notices)
	CONTROL DATE	17.01.07 (changes without additional notices)
	BAUDRATE	9600
	PARITY BIT	NONE
	FRAMERATE	1080P30
	RETURN	Back to the main menu

UVC CONTROL .

	Control Requests	Control Selector
1	Brightness Control	PU_BRIGHTNESS_CONTROL
2	Contrast Control	PU_CONTRAST_CONTROL
3	Hue Control	PU_HUE_CONTROL
4	Saturation Control	PU_SATURATION_CONTROL
5	Sharpness Control	PU_SHARPNESS_CONTROL
6	Gamma Control	PU_GAMMA_CONTROL
7	White Balance Temperature Control	PU_WHITE_BALANCE_TEMPERATURE_CONTROL
8	Gain Control	PU_GAIN_CONTROL
9	Power Line Frequency Control	PU_POWER_LINE_FREQUENCY_CONTROL
10	Zoom (Absolute) Control	CT_ZOOM_ABSOLUTE_CONTROL
11	Zoom (Relative) Control	CT_ZOOM_RELATIVE_CONTROL
12	PanTilt (Absolute) Control	CT_PANTILT_ABSOLUTE_CONTROL
13	PanTilt (Relative) Control	CT_PANTILT_RELATIVE_CONTROL

Web Setting

1.Download and install Flash Player
When launching the IP camera via Internet Explore browser for the first time, please install the Flash Player. We suggest users to download it from flash official website to get the latest version: https://www.flash.cn/englishafter installation, you will be able to see bellow via PC's Programs and Features Control Panel:
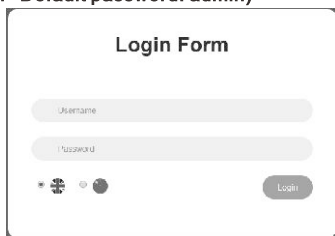
| Adobe Flash Player 31 NPAPI | Adobe Systems Incorporated |
| Adobe Flash Player 31 PPAPI | Adobe Systems Incorporated |

2.Login
Run browser, input IP address **(defaulted IP address is 192.168.1.188)**, to enter login interface, can select Language (Chinese or English), input admin and password to login as following:
 (Default admin: admin   Default password: admin)

3.Real-time Preview:
If you are logging in the web interface for the first time, a pop up might be appearing showing the mistake notice as below. Reason being, the explorer is preventing the web interface to run Flash Player. What we need to do is to enter the explorer settings, to allow to use / enable Flash Player.
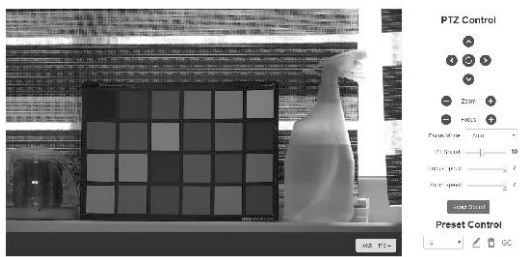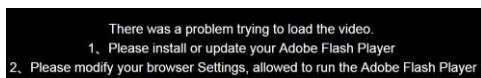
The above image is a preview interface. On the right side, there are options to control camera which includes pan, tilt, zoom, focus, presets, focus speed and zoom speed. On the top of the image, main stream and sub stream preview can be selected, image width & height rate can be adjusted, and full size view can be accessed.

1.Parameter Setting
Click "Setting" to enter into parameter setting interface as following:

"Video Encode": can set image encode mode, main stream and sub stream resolution/bit rate/frame rate, bit rate control way, and I frame interval etc. as above image"Image Parameter" can adjust the focus, exposure, white balance, image, image quality, noise-reduction (see image below)Focus include focus mode, default focal distance, digital zoom etc.

Exposure includes exposure mode, shutter speed, gain, iris, brightness, and anti-flicker.

White Balance includes white balance mode, red gain, blue gain.

Image includes mirror, flip, backlight compensation, Gamma, WDR (wide dynamic range).

Image Setting includes brightness, sharpness, contrast, saturation
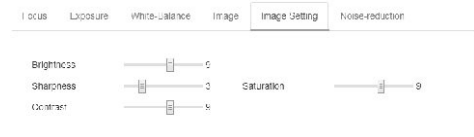
Noise reduction includes 2D/3D reduction. There is on/off option for 2D, and off/auto/1~4 six options.

"Ethernet" includes DHCP mode, IP address, subnet mask, default gateway, http port, web port, main stream port, sub stream port.
Default parameter as following:

DHCP	OFF	HTTP port	80
IP address	192.168.1.188	RTSP port	554
Subnet mask	255.255.255.0	RTMP port	1935
Default gateway	192.168.1.1		

"Firmware upgrade": it is for camera program upgrade, currently only for ISP part update.
How to update:
As the picture below, click "clicking to upload file" icon, open dialog box, select to open the ile, and click "upgrade" to start. DO NOT power off or do other operation when upgrading, reboot the camera after 5 minutes when upgrade is completed. Then login web end to select "reset all" to reset the camera.
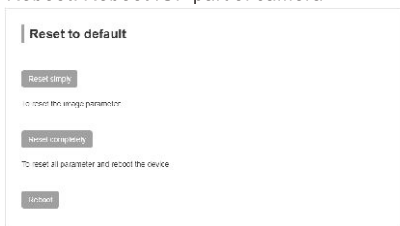
Reset to default: reset the camera to default setting
Reset simply: reset camera's image parameter
Reset Completely all: reset camera's Ethernet and image parameter, language and protocol will not be reset.
Reboot: Reboot ISP part of camera

Account Setting: is used for setting camera account and password
Firstly, input the account name then input the same password twice, click set to finish
Please remember your account name and password, otherwise you may be not able to login.

Using VCL to view RTSP/RTMP Video

Default RTSP main streaming address: rtsp://192.168.1.188/stream/main
Default RTSP sub streaming address: rtsp://192.168.1.188/stream/sub
Default RTMP main streaming address: rtmp://192.168.1.188:1935/app/rtmpstream0
Default RTMP sub streaming address: rtmp://192.168.1.188:1935/app/rtmpstream
1, Run VLC Media Player.
2, Media->network stream, to enter into "open media" interface.
3, Input RTSP address in URL as following:

4, Click play to view the real time image.
Note: If there is a heavy image lag, select "more option" to enter into following setting, reduce the buffer time (VLC default buffer time is 1000ms).

VISCA over IP

VISCA over IP means VISCA protocol transmit via IP, to reduce RS232/RS485 cable layout (the controller must support IP communication function)
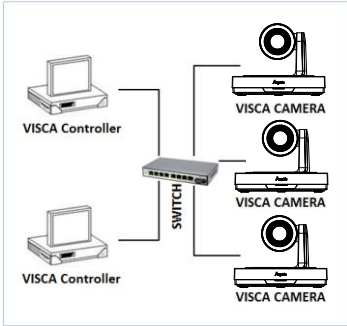
Communication port spec:
· Control port: RJ45 Gigabit LAN
· IP protocol: IPv4
· Transmit protocol: UDP
· IP address: set via web end or OSD menu
· Port address: 52381
· Confirm send/transmission control: depend on applied program
· Applied range: in the same segment, not suitable for bridge network.
· Turn on camera: In the menu, set VISCA option to OVER IP

How to use VISCA over IP

VISCA Command:
It means commands from controller to peripheral equipment, when peripheral equipment receives commands, then return ACK. When commands executed, will return complete message. For different commands, camera will return different message.
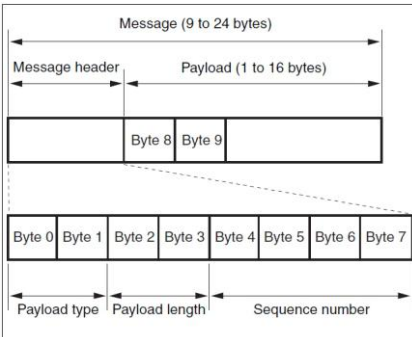VISCA Inquiry
It means inquiry from controller to peripheral equipment when peripheral equipment receives this kind of commands, it will return required message.
VISCA Reply
It means ACK, complete message, reply or error reply, it is sent from peripheral equipment to controller.
Command format: the following is message head and valid message format.

Note: LAN output way is big-endian, LSB is in the front.

Payload type:

Data definition as following:

Name	Value (Byte 0)	Value (Byte 0)	Value (Byte 0)
VISCA command	0x01	0x00	Stores the VISCA command.
VISCA inquiry	0x01	0x10	Stores the VISCA inquiry.
VISCA reply	0x01	0x11	Stores the reply for the VISCA command and VISCA inquiry, or VISCA device setting command.
VISCA device setting command	0x01	0x20	Stores the VISCA device setting command.
Control command	0x02	0x00	Stores the control command.
Control reply	0x02	0x01	Stores the reply for the control command.

Payload length

Valid data length in Payload (1~16), is command length.
>   For example, when valid data length is 16 byte
>   Byte 2: 0x00
>   Byte 3: 0x10

Controller will save sequence number of each command, when one command sent, the sequence number of the command will add 1, when the sequence number becomes the max value, it will change to 0 for next time. The peripheral equipment will save sequence number of each command, and return the sequence number to the controller.

Payload

According to Payload type, the following data will be saved.
· VISCA command
   Save VISCA command packet
· VISCA inquiry
   Save VISCA message packet
· VISCA reply
   Save VISCA return packet
· VISCA device setting command
   Save VISCA equipment setting command packet.
· Control command
   The following data is saved in control command payload

Name	Value	Description
RESET	0x01	Resets the sequence number to 0. The value that was set as the sequence number is ignored.
ERROR	0x0Fyy	yy=01: Abnormality in the sequence number.
		yy=02: Abnormality in the message (message type)

· Controlled reply
   The following data is saved in return command payload of control command.、

| Message	Value	Description
ACK	0x01	Reply for RESET.

Delivery confirmation

VISCA over IP uses UDP as transmission communication protocol, UDP communication message transmission is not stable, it is necessary to confirm delivery and resent in application.Generally, when controller sends a command to peripheral equipment, controller will wait for the return message then send the next command, we can detect and confirm if the peripheral equipment receive the commands from return message's lag time. If controller shows it is overtime, it is regarded as error transmission.If controller shows it is overtime, resend the commands to check peripheral's status, resent command sequence number is same as last command, the following chart list the received message and status after resending the commands.

Lost message	Received message for retransmission	Status after retransmission	Correspondence after retransmission
Command	ACK message	Command is performed by retransmission.	Continue processing.
ACK message	ERROR (Abnormality in the sequence number.)	Command has been performed. If only the ACK message is lost, the completion message returns.	If the result by the completion message is needed, retransmit by updating the sequence number.
Completion message for the command	ERROR (Abnormality in the sequence number.)	Command has been performed.	If the result by the completion message is needed, retransmit by updating the sequence number.
Inquiry	Reply message	Inquiry is performed by retransmission.	Continue processing.
Reply message for the inquiry	ERROR (Abnormality in the sequence number.)	Inquiry has been performed.	If the result by the reply message is needed, retransmit by updating the sequence number.
Error message	Error message	Command is not performed. If the error cause eliminates, normal reply is returns (ACK, reply message).	Eliminate the error cause. If normal reply returns, continue processing.
Inquiry of the VISCA device setting command	Reply message of the VISCA device setting command	Inquiry has been performed by retransmission.	Continue processing.
Reply message of the VISCA device setting command	ERROR (Abnormality in the sequence number.)	Inquiry has been performed.	If the result by the reply message is needed, retransmit by updating the sequence number.

Sequence chart as following
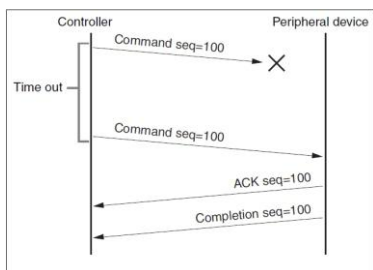
Sequence chart when returned message lost
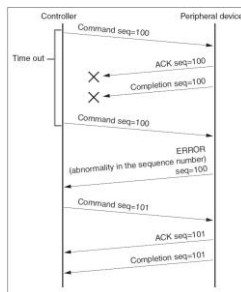
Sequence chart when command lost

Note: Do not set IP address, subnet mask, gateway parameter in VISCA over IP command, otherwise, it will cause network breaks off. Due to change these parameter, network will be in off status.

WEB   FACEBOOK

https://www.angekis.com