



UH4501-10/12/20X Ultra HD PTZ Camera

10/12/20X Optical Zoom | 4K 30fps | AI Tracking | NDI®|HX2(Optional)

Multiple Output Ports | Free-D

LAN/USB 3.0/HDMI



Core Performance

4K 30fps Video

Using the new generation 1/2.8-inch SONY high-quality sensor, it supports 4K 30fps ultra HD output, suitable for recording large scenes. With 8.29 million effective pixels, it enables multi-range shooting from wide-angle to close-up while maintaining lossless image quality.



Free-D

Built-in Free-D protocol supports real-time spatial data output from the camera, enabling dynamic control of shooting angles and perspectives. It provides precise positioning for virtual studios, AR expansion, and mixed reality production, creating a seamless and immersive audio-visual experience.



Optical+Digital Double Zoom

Equipped with 10/12/20x high-quality optical zoom, combined with digital zoom, it achieves a smooth transition from expansive panoramas to delicate close-ups. Optical zoom maintains lossless image quality, digital zoom extends the field of view, and the dual zoom system removes limitations on near and far distances.



NDI®|HX2 Protocol

Supports NDI®|HX2 protocol for simultaneous transmission of high-quality audio, video, and control signals over a single cable—delivering low latency, high image quality, smooth PTZ control, and efficient bandwidth use in integrated IP production workflows.



Multiple Output Interfaces

Compatible with mainstream video output interfaces, supports ultra HD 4K video output via HDMI and USB 3.0, and can simultaneously output 1080P HD images through a LAN network.



AI Tracking

Equipped with multi-mode AI tracking algorithms, it supports portrait and area recognition, can automatically complete target tracking and intelligent composition, achieve precise follow-up and image optimization, significantly reduce manual operation requirements, and is suitable for shooting scenarios such as speeches, meetings, and teaching.



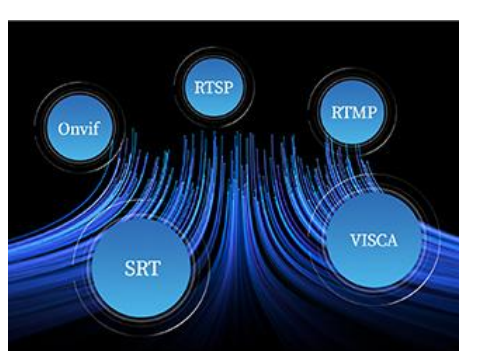
Low-light imaging

Using an ultra-high signal-to-noise ratio CMOS image sensor combined with advanced 2D/3D dual noise reduction algorithms, it can significantly suppress image noise even in ultra-low light conditions, delivering clear and pure images while ensuring rich details and excellent image quality.



Multi-format encoding and multi-protocol support

This PTZ camera supports H.264/H.265 encoding and network protocols including ONVIF, SRT, RTMP(S), and FreeD—ideal for surveillance, live streaming, professional production. It also features VISCA, ONVIF, and PELCO P/D control compatibility with auto-protocol detection for seamless integration and unified control.



Product Specifications

Camera Parameters

Sensor	1/2.8-inch SONY CMOS Sensor, approximately 8.29 million effective pixels	
Zoom	Optical Zoom	10/12/20X
	Digital Zoom	16X
Lens	10X: f=4.32mm(Wide angle)~40.9mm(Narrow angle) 12X: f=4.1mm(Wide angle)~49.2mm(Narrow angle) 20X: f=5.2mm(Wide angle)~104mm(Narrow angle)	
Horizontal Field of view	10X: 67.5° (W)~7.6° (T) 12X: 72.5° (W)~6.57° (T) 20X: 58.7° (W)~3.2° (T)	
Vertical Field of view	10X: 40.2° (W)~4.3° (T) 12X: 42.06° (W)~3.76° (T) 20X: 32.2° (W)~1.8° (T)	
Output Format	HDMI	3840*2160 p30/29.97/25; 1920*1080 p60/59.94/50/30/29.97/25; 1280*720 p60/59.94/50
	USB	MJPEG: 3840*2160, 2560*1440, 1920*1080, 1280*720, 960*540, 640*360, 480*270, 384*216, 320*180, 256*144
		YUY2: 1920*1080, 1280*720 NV12: 1920*1080, 1280*720

Gimbal

Preset	Remote Controls: 10, Keyboards: 255, Accuracy: 0.1°±10%
Gimbal Acceleration Curve	Gentle, Standard, Fast
Horizontal Rotation Angle	-168°~ +168°
Vertical Rotation Angle	-30°~ +90°
Horizontal Rotation Speed	0.01°~ 90°/S
Vertical Rotation Speed	0.01°~ 90°/S

Image Parameters

Noise reduction	2D & 3D
Exposure	Automatic, Manual, Aperture Priority, Shutter Priority
White Balance	Auto, Indoor, Outdoor, One-touch White Balance, Auto Tracking, Manual, Color Temperature
Low light	0.1Lux
Anti-flicker	Off, 50Hz,60Hz
Focusing Method	Automatic, Manual
Gamma	Standard, Linear, Pattern, Custom
Inversion/Image Freeze	Support
Backlight Compensation	Support
Flip/Mirror	Support
Defog	Support
Shutter	1/30S ~ 1/10000S

Online Streaming

Video Encoding Format	H.264, H.265
Rate Control	Variable bit rate, Constant bit rate
Bitrate	Main stream 1920*1080 p30; 1280*720 p30
Supported Protocol	TCP/IP, HTTP, RTSP, RTMP, RTMPS, SRT, ONVIF, DHCP, VISCA Over IP, Free-D

Audio Information

Compression Standard	AAC
Audio Bitrate	128kbps

AI Composition

Smart Tracking	Single-Person Tracking, Multi-Person Tracking, Zone tracking, Hybrid tracking
Composition Size	Half Body / Full Body
Composition Mode	Custom, Center, Left, Right
Composition Position	Current Position ,Preset Position , Initial Position
Horizontal Lock	Support(Only Single-person tracking)
Pitch Lock	Support(Only Single-person tracking)
Zoom Lock	Support(Only Single-person tracking)

Input/Output

HDMI Port	HDMI:Version 1.4 *1 Channel
USB Port	USB3.0, Type-B Socket *1 Channel
Audio Interface	3.5mm Line In audio port *1 Channel
Communication Interfac	RJ45 Interface, Supports RS232/RS422: VISCA/Pelco-D/P Protocol *1 Channel
Network Interface	RJ45:10M/100M adaptive Ethernet port *1 Channel
Power Connector	JEITA RC-5320A Type 4

Basic Parameters

Input Voltage	DC 12V
Input Current	Up to 1.5A
Operating Temperature	0~40°C
Power Consumption	Up to 18W
Color	Black
Specifications	224*170*174mm
Weight	1.3KG
Accessory List	DC12V Power Adapter, IR Remote Control, User Manual, USB 3.0 Video Cable, RS-232 Serial Cable (Optional), HDMI Cable (Optional), Bracket

Interface Diagram



Structural Dimensions

