PTZ General Catalog

4K · SRT SECURE RELIABLE TRANSPORT · H.265/HEVC · NDI|HX

A New Line of IP-Controlled PTZ Cameras provide Optimal Quality in Streaming and Remote Production over the Internet

CONNECTED CAM™

Wide angle, NDI® |HX, SRT, VITC provide optimal streaming image quality and performance for Remote Production over the Internet.

House of Worship

■ Wide Field of View

Super-wide horizontal angle of view is 80° which is ideal for use in houses of worship, sports, and event venues.

■ Supports various protocols

Supports industry standard control protocols such as NDI®, Pelco, and JVC API, as well as SRT for streaming distribution.

Classrooms

■ SMART Auto Tracking

SMART (Subject Movement And Recognition Tracking) technology enables the camera to recognize and follow a specific person even within a small group in the frame.

Studios

■ 4K60p50p IP Streaming

4K 60p50p output capability for both IP streaming and HDMI, ideal for live productions, sporting events, and broadcasts.

■ HDMI output supports YUV 4:2:2 12bit and RGB 4:4:4 8bit.

Sports Venues

■ 30x Power Zoom

■ Multi-Camera Synchronization with VITC and NTP

Synchronization of live video streams is ideal for the mixing and streaming of concerts, shows, and sporting events.

offices

■ UVC

Provides Webcam function via USB connection.

■ Zero Config

Enables automatic camera detection for easy connection and set-up with JVC Live Production and Streaming Systems (KM-IP Series).

4K PTZ REMOTE CAMERA (NDI®|HX)

KY-PZ510NW/NB

4K PTZ REMOTE CAMERA

KY-PZ510W/B

4K 60p50p H.265/HEVC streaming, NDI® 5, SRT, and advanced auto tracking provides optimal image quality and performance for remote production over the internet.

■ Super-Wide 80-degree Field of View

Focal Length is 3.47mm to 41.7mm (21.8 mm to 261.8 mm, 35mm equivalent). Super-wide horizontal angle of view is 80° which is ideal for use in offices, classrooms, studios, event facilities, sports venues and houses of worship.

■ YUV 4:2:2 12bit

HDMI output supports YUV 4:2:2 12bit and RGB 4:4:4 8bit.
Some switchers may not support the above signals.

■ 4K 60p50p Streaming to YouTube

You can stream 4K(2160p60) from KY-PZ510/N to YouTube.

■ 4K60p H.265/HEVC Streaming

Ultra-high resolution 4K60p streaming is ideal for viewing sports and events. Highly efficient H.265/HEVC compression technology also produces similar or better image quality than H.264 at 50% of the bitrate.

■ SMART Auto Tracking

SMART (Subject Movement And Recognition Tracking) technology enables the camera to recognize and follow a specific person even within a small group in the frame. The target subject can be selected using the included remote control.

Select Person

■ NDI® 5

KY-PZ510N (Built-in NDI®|HX) support NDI®5. NDI®5 support Reliable UDP (RUDP) transmission protocol.
RUDP ensure reliability through retransmission with high-speed communication, such as UDP.
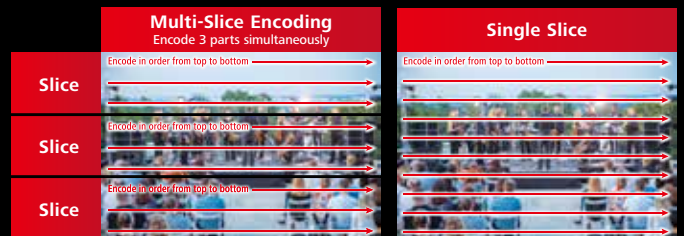
■ UVC (USB Video Class)

■ Multi-Camera Synchronization with VITC and NTP

■ Save Setup Files

You can save the menu settings as a setup file on a PC.

■ Multi-Slice Encoding Technology

Multi-slice encoding technology increases performance and efficiency while reducing latency to achieve optimal image quality of live transmissions in 4K60p HEVC mode.

Multi-Slice Encoding
Encode 3 parts simultaneously

Slice — Encode in order from top to bottom
Slice — Encode in order from top to bottom
Slice — Encode in order from top to bottom

Single Slice

Encode in order from top to bottom

■ Still Image Capture

Up to four still images can be recorded internally. This is useful for storing the image from the camera's current location or recalling its previous field of view.

■ H.264/H.265/Motion JPEG and Dual Streaming

■ 2-Color Tally Useful for Studio Shooting

■ IP Address Display

Display of the IP address in front of the camera for easy identification and confirmation.

192.168

Internal Microphone
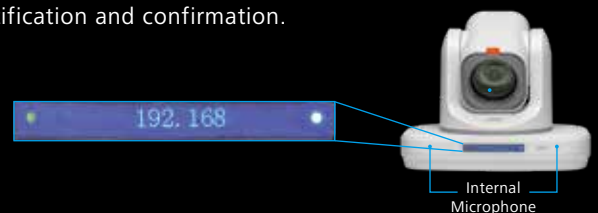
■ Internal Microphone

A built-in microphone is for convenient conferencing, meeting.

■ Rear Panel

| Restore switch | HDMI TypeA | BNC | Line In Φ 3.5mm audio interface | RS485 2pin phoenix port | USB Type-C | RS-232C 8pin Mini DIN | RJ-45 (Ethernet) | Power for AC adapter | Power switch |

2
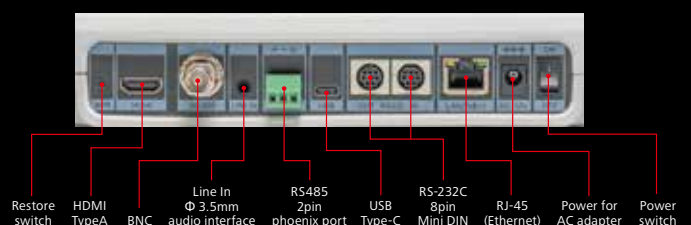
4K PTZ REMOTE CAMERA (NDI®|HX)
KY-PZ400NW/NB

HD PTZ REMOTE CAMERA (NDI®|HX)
KY-PZ200NW/NB

HD PTZ REMOTE CAMERA
KY-PZ200W/B

4K **NDI|HX** **SRT** SECURE RELIABLE TRANSPORT **H.265/HEVC**

NDI|HX **SRT** SECURE RELIABLE TRANSPORT **H.265/HEVC**

■ 4K 1/2.5-inch CMOS Image Sensor

The KY-PZ400N is equipped with a 4K 1/2.5" CMOS image sensor with 8.51M effective pixels. The KY-PZ200N/PZ200 is equipped with an HD 1/2.8" CMOS image sensor with 2.07M effective pixels.

■ Powerful Optical Zoom:
12x KY-PZ400N   **20x** KY-PZ200N/KY-PZ200

A performer's technique can be captured clearly, even in a large hall.

12x
KY-PZ400N

20x
KY-PZ200N/KY-PZ200

Optical Zoom 12x
f= 4.4mm – 52.8mm
Approx. 26.4mm – 316.8mm
(35mm equivalent)
Digital zoom: 16x

Optical Zoom 20x
f= 4.4mm – 88.5mm
Approx. 30.2mm – 606.9mm
(35mm equivalent)
Digital zoom: 16x

■ Quality Streaming with NDI® and SRT

For reliable, stable streaming, all models feature various QoS capabilities.

NDI|HX NDI®|HX is a high quality, low latency IP video transmission standard pioneered by NewTek.

SRT SECURE RELIABLE TRANSPORT SRT advanced streaming uses automatic repeat request (ARQ) and forward error correction (FEC) to prevent packet loss typical for internet connections. SRT also offers stream encryption for content protection.

■ Still Image Capture

Up to four still images can be recorded internally. This is useful for storing the image from the camera's current location or recalling its previous field of view.

■ Wide Horizontal Angle of View: 71°

KY-PZ400N

Wide horizontal angle is good for use in offices, classrooms, studios, and houses of worship.

71°

■ H.264/H.265/Motion JPEG and Dual Streaming

In addition to H.264, a video codec widely used in PCs, smartphones, or tablets, H.265 is also supported. Moreover, the dual streaming capability enables workflows such as editing videos with low load using low-resolution substreams and simultaneously generating edited videos with high-resolution mainstreams.

■ 2-Color Tally Useful for Studio Shooting

KY-PZ400N

A tally LED is available on top of the lens mount. It lights in either red or green depending on the mode, allowing you to easily check the program status or standby mode even while camera is panning.

■ UVC (USB Video Class) Support for Webcam Usage

KY-PZ200N/KY-PZ200

USB 3.0 with UVC Support

Photo shows KY-PZ200N/KY-PZ200.

Using an optional USB cable, you can connect the KY-PZ200N/KY-PZ200 directly to a PC and use it as a webcam. This allows for web conferencing and remote lectures with high quality, high magnification images.

KY-PZ100W/B

Your IP-Controlled HD Video Streaming and Delivery Solution

■ Wide Horizontal Angle of View: 63.7° Powerful Optical Zoom: 30x

Equipped with 30x optical zoom, the KY-PZ100 is capable of capturing distant subjects. Even in a grand hall or auditorium, the speaker's expressions and handwriting on a board will be clearly captured. 12x digital zoom is also available.

■ Super Fast Pan/Tilt of max. 480°/sec*.

With maximum 480°/sec*. movement offers the scene transition sharply.   *In case with AC adapter. 400°/sec. with PoE+.

■ Super Slow Pan/Tilt of min. 0.1°/sec.

Extremely slow movement of 0.1°/sec. offers a good look at the scene even at high zoom rates.

■ 0.02 lx of Minimum Illumination for Precise Color Reproduction

In High-Sensitivity mode, minimum illumination is 0.02 lx. Superior color reproduction is ensured even at low light. The Night Mode is also available for even darker environments (0.003 lx of minimum illumination).

Normal color reproduction   High Sensitivity mode

■ Direct Drive Mechanism for Accurate and Quiet Pan/Tilt

The KY-PZ100 incorporates JVC's Direct Drive Motor that offers precise, highly responsive pan/tilt and silent movement compare to the normal stepping motor mechanism.
Operating noise of Direct Drive is approx. 20% lower than normal stepping motor system, which is especially suitable for the usage of classic concert, church and so on.
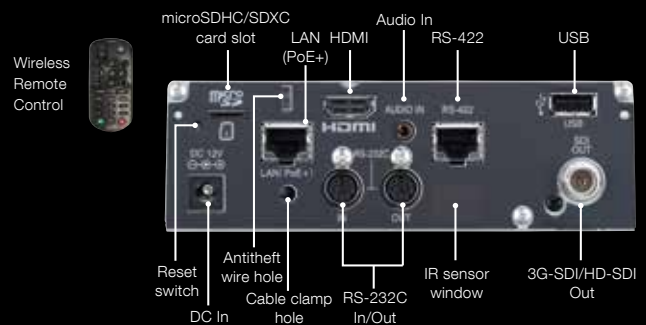
■ High Accuracy of +/-0.03° for Preset Positions

Adjusts to preset positions with high accuracy, offset less than 0.03°. Maintains precise shooting positions even at high magnification with virtually no deviation.

■ Simultaneous Output of 3G-SDI and HDMI in addition to IP

■ microSDHC/microSDXC Card Recording and File Upload Capability

The KY-PZ100 features a built-in digital recorder that records HD from 5Mbps to 50Mbps directly to microSDHC/microSDXC card. Recordings can be uploaded from the camera to an external server.
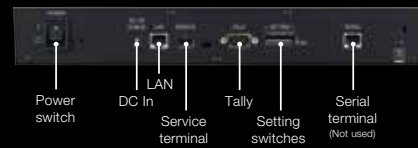
Wireless Remote Control

microSDHC/SDXC card slot | LAN (PoE+) | HDMI | Audio In | RS-422 | USB

Reset switch | Antitheft wire hole | Cable clamp hole | RS-232C In/Out | IR sensor window | 3G-SDI/HD-SDI Out

DC In

Comparison

	KY-PZ510N	KY-PZ510	KY-PZ400N	KY-PZ200N	KY-PZ200	KY-PZ100
Camera						
Resolution	3840x2160 60p50p		3840x2160 30p25p	1920x1080 60p50P		1920x1080 60p50P
Horizontal Angle	80°		71°	60.7°		63.7°
Optical Zoom	12x		12x	20x		30x
Unique Feature	●Smart Auto Tracking ●IP Address Display ●Internal Microphone					●Direct Drive Mechanism ●Recording (microSDHC,SDXC card)
Network						
IP Steraming	3840x2160 60p50p		3840x2160 30p25p	1920x1080 60p50P		1920x1080 60p50P
NDI®	NDI® 5 (KY-PZ510N built in NDI®|HX)		NDI® 4.x (KY-PZ400N built in NDI®|HX)	NDI® 4.x (KY-PZ200N built in NDI®|HX)		
SRT	Caller/Listener/Rendezvous		✓			
UVC	3840x2160 30p25p		Caller/Listener	1920x1080 30p25p		
Multi-Camera Synchronization	✓		✓	✓		

Remote Camera Controller

RM-LP100

This advanced controller connects to your network and provides complete IP control of multiple cameras on your network and over the Internet. Touch panel and control lever operation give you total control. Operate up to a hundred cameras from the controller.

- 7" touch-panel LCD for PTZ and CCU functions
- Professional zoom lever for smooth, variable speed zoom control
- Heavy duty control lever for precise pan/tilt control
- Focus dial with push-auto function
- User assignable function keys
- IP control of up to 100 cameras
- Tally Input/Output (D-Sub)

Power switch | DC In | LAN | Service terminal | Tally | Setting switches | Serial terminal (Not used)

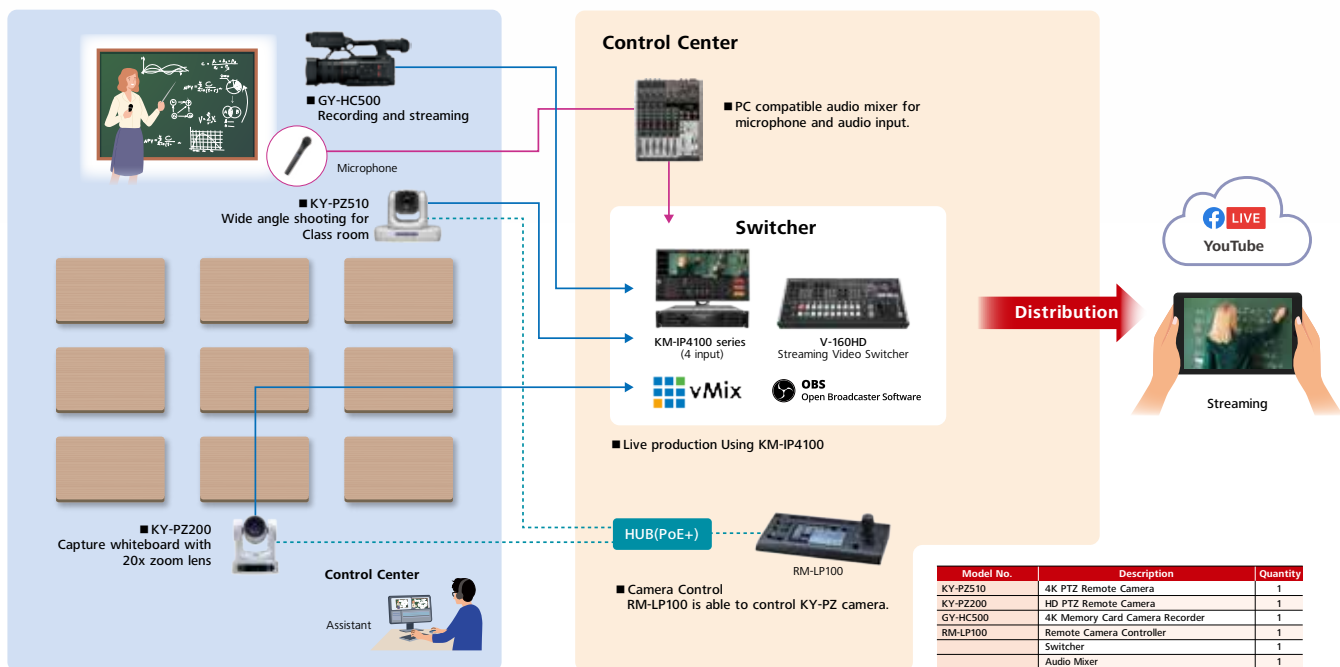# Peripheral devices and Partners

Haivision Makito X4 4K and HDR Video Decoder HAIVISION	**Haivision Play 2000** 4K Set-Top Box HAIVISION	**Pro Convert Decoder Family (NDI® included)** MAGEWELL®
V-160HD Streaming Video Switcher Roland	**Live Streaming Production Suite** KM-IP6000 KM-IP4100 KM-IP4000/S* *for Americas market ProHD	**Extron control panels** Extron®
MGW ACE Decoder 4K HEVC, H.264 & MPEG-2 Decoder VITEC	**BR-DE900** ProHD HD/SD Decoder ProHD	**IDS - 4RU Control Panel** DENSITRON
vMix	**OBS** Open Broadcaster Software	NewTek™	SKAARHOJ

*We do not guarantee our prodoucts will work with all functions of peripheral devices. Some functions may not be available depending on the device and settings.

System configuration example

■ Live classroom streaming system with 3x cameras and microphone. Capture whiteboards and classroom and deliver them to Students.
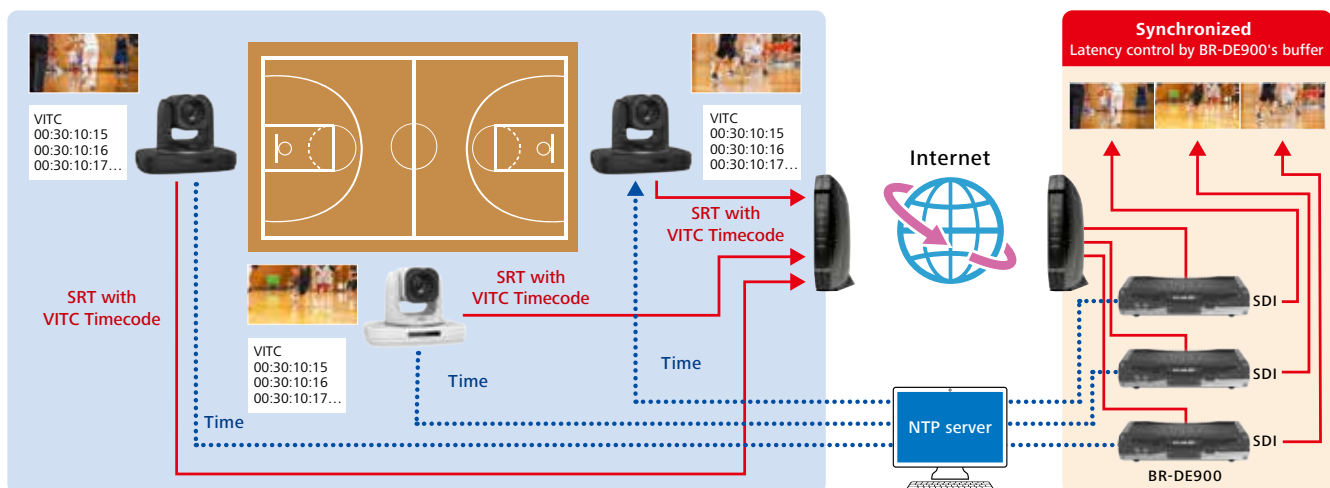
- ■ Purpose : Live Streaming the classes
- ■ Audio : 1 x Microphone for instructor speech
- ■ Camera : 1 x for shooting whiteboard, 1 x for classroom, 1 x for recording and streaming
- ■ Distribution : The assistant will operate the switcher and stream video to YouTube, etc.

Control Center

■ GY-HC500
Recording and streaming

Microphone

■ PC compatible audio mixer for microphone and audio input.

■ KY-PZ510
Wide angle shooting for Class room

Switcher

KM-IP4100 series (4 input)

V-160HD
Streaming Video Switcher

vMix

OBS Open Broadcaster Software

■ Live production Using KM-IP4100

■ KY-PZ200
Capture whiteboard with 20x zoom lens

Control Center

Assistant

HUB(PoE+)

RM-LP100

■ Camera Control
RM-LP100 is able to control KY-PZ camera.

LIVE
YouTube

Distribution

Streaming

Model No.	Description	Quantity
KY-PZ510	4K PTZ Remote Camera	1
KY-PZ200	HD PTZ Remote Camera	1
GY-HC500	4K Memory Card Camera Recorder	1
RM-LP100	Remote Camera Controller	1
	Switcher	1
	Audio Mixer	1

■ Multi-Camera Synchronization with VITC and NTP

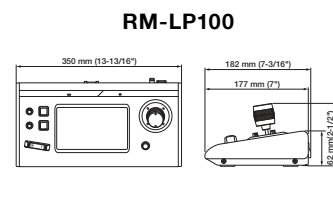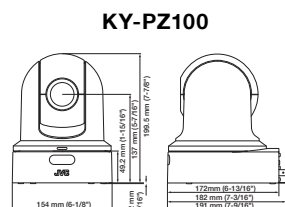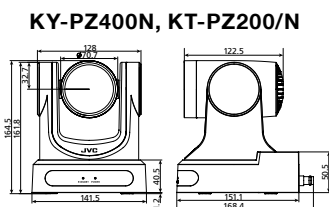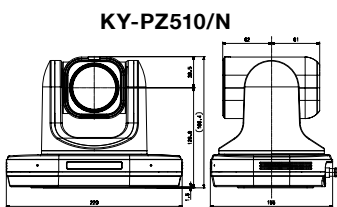### KY-PZ510/N , KY-PZ400N , KY-PZ200/N series

Multi-camera synchronization of live video streams is made possible with the VITC (Vertical Interval Time Code) and NTP (Network Time Protocol) used in 1920x1080 60p50p mode. This feature is ideal for the mixing and streaming of concerts, shows, and sporting events where image synchronization is critical.

VITC
00:30:10:15
00:30:10:16
00:30:10:17…

VITC
00:30:10:15
00:30:10:16
00:30:10:17…

VITC
00:30:10:15
00:30:10:16
00:30:10:17…

SRT with VITC Timecode

SRT with VITC Timecode

SRT with VITC Timecode

Internet

Time

Time

Time

Synchronized
Latency control by BR-DE900's buffer

SDI

SDI

SDI

NTP server

BR-DE900

General Specification

	KY-PZ510N	KY-PZ510	KY-PZ400N	KY-PZ200N	KY-PZ200	KY-PZ100
Camera						
Sensor	1/2.8 inch CMOS, effective pixels: 8.40M		1/2.5 inch CMOS, effective pixels: 8.51M	1/2.8 inch, CMOS, effective pixels: 2.07M		1/2.8 inch, CMOS, effective pixels: 2.13M
Lens	F1.8 to F3.7, f = 3.4 to 41.6mm 35mm equivalent (approx.): 21.8 to 261.8mm		F1.8 to F2.6 f=4.4 to 52.8mm 35mm equivalent (approx.): 26.4 to 316.8mm	F1.8 to F2.8 f=4.4mm to 88.5mm 35mm equivalent (approx.): 30.2 to 606.9mm		F1.6 to F4.7 f=4.3 to 129mm 35mm equivalent (approx.): 30.5 to 915 mm
Optical Zoom	12x		12x	20x		30x
Digital Zoom	16x		16x	16x		12x
Minimal Illumination	0.5lx @ (F1.8, AGC ON)		0.5lx @ (F1.8, AGC ON)			High sensitive mode ON: 0.02 lx
Gain	0 dB to 45 dB		0 dB to 48 dB			0 dB to 48 dB
Shutter	【60Hz】1/30s ~ 1/10000s 【50Hz】1/25s ~ 1/10000					1/6(E model) or 1/8(U model) to 1/10000
White Balance	Auto, Indoor, Outdoor, One Push, Manual					FAW, AWB, AWB Paint, Indoor, Outdoor, Manual
Angle of View	Horizontal: 80° to 8°		Horizontal: 71° to 8.2°	Horizontal: 60.7° to 3.36°		Horizontal: 63.7° to 2.3°
Rotation Range	Horizontal ±162.5 °, Vertical -30°to +90°		Horizontal ±170 °, Vertical -30°to +90°			Horizontal ±175 °, Vertical -30°to +90°
Pan Tilt Speed	PAN: 1.8°/s to 80.5°/s, TILT: 1.5°/s to 49°/s		PAN: 1.7°/s to 100°/s, TILT: 1.7°/s to 69.9°/s			PAN: 0.1°/s to 480°/s (AC adapter) TILT: 0.1°/s to 300°/s (AC adapter)
Image	H/V flip, Image freeze, H/V auto inverting function					H/V flip, Image freeze
Preset Accuracy	Number of preset: 255, Preset accuracy: 0.1°					Number of presets: 100 Preset accuracy: 0.03°
Input / Output Interfaces						
HDMI Output	TYPE A, Max 3840x2160 60p50p YUV4:2:2 12bit RGB4:4:4 8bit		TYPE A, Max 3840x2160 30p25p	TYPE A, Max 1920x1080 60p50p		TYPE A, Max 1920x1080 60p50p
3G-SDI Output	BNC type (3G-SDI), Embedded audio Video: SMPTE 424M, SMPTE 292M Audio: SMPTE 299M, Max 1920x1080 60p50p					
Network Interface(LAN)	RJ45: 10BASE-T/100BASE-TX/1000BASE-T					
Audio Interface	Φ3.5mm mini jack x1 LINE IN :Unbalanced Stereo Internal Microphone		Φ3.5mm mini jack x1 LINE IN : Unbalanced Stereo LINE OUT : Unbalanced Stereo			Φ3.5mm mini jack x1 LINE IN: Balanced Mono / Unbalaced Stereo MIC IN: Balanced Monaural MIC IN: Unbalanced stereo plug-in power 2.5V
USB	C type for UVC, Host mode is not supported, UAC UVC 1.1 to 1.5,		A type for maintenance	A type for maintenance B type USB3.0 for UVC 1.1 to 1.5,		A Type HOST x 1 for Network Connection
Communication Interface	RS232 IN: 8-pin mini DIN, Protocols: Standard/Pelco-D/Pelco-P RS232 OUT: 8-pin mini DIN, Protocols: Use only Standard protocol RS485: 2-pin Phoenix port Protocols: Standard/Pelco-D/Pelco-P					RS232 IN: 8-pin mini DIN RS232 OUT: 8-pin mini DIN RS422: Serial Control (RJ-45)
Network						
Video Compression	H.265/HEVC, H.264, MotionJPEG					H.264
Video Stream	Main Stream Resolution: 640x360 to 3840x2160 (KY-PZ510/N,KY-PZ400N) 1920x1080 (KY-PZ200/N), Frame Rate: 25p to 60p Sub Stream Resolution: 320x240 to 720x480, Frame Rate: 25p to 60p					Main Stream
TC	VITC		VITC	VITC		LTC
Streaming Protocol :Video Compression / Protocol / Resolution / Maximum Frame rate / Maximum bit rate				*Streaming quality depends on network environment		
H.265/HEVC	SRT 3840x2160 60p50p 60Mbps with VITC 3840x2160 30p25p 60Mbps with VITC NDI® 5 (KY-PZ510N built in NDI®|HX) 3840x2160 60p50p 60Mbps 3840x2160 30p25p 60Mbps RTSP/RTP 3840x2160 60p50p 60Mbps with VITC 3840x2160 30p25p 60Mbps with VITC		SRT 1920x1080 60p50p 60Mbps with VITC NDI® 4.x (KY-PZ400N built in NDI®|HX) 1920x1080 60p50p 60Mbps RTSP/RTP 3840x2160 30p25p 60Mbps	SRT 1920x1080 60p50p 60Mbps with VITC NDI® 4.x (KY-PZ200N built in NDI®|HX) 1920x1080 60p50p 60Mbps RTSP/RTP 1920x1080 60p50p 60Mbps with VITC		
H.264	SRT 3840x2160 60p50p 60Mbps with VITC NDI® 5 (KY-PZ510N built in NDI®|HX) 3840x2160 60p50p 60Mbps RTSP/RTP 3840x2160 60p50p 60Mbps with VITC RTMP, RTMPS 3840x2160 60p50p 60Mbps UVC 3840x2160 30p25p		SRT 3840x2160 30p25p 60Mbps with VITC NDI® 4.x (KY-PZ400N built in NDI®|HX) 3840x2160 30p25p 60Mbps RTSP/RTP 3840x2160 30p25p 60Mbps with VITC RTMP, RTMPS 3840x2160 30p25p 60Mbps	SRT 1920x1080 60p50p 60Mbps with VITC NDI® 4.x (KY-PZ200N built in NDI®|HX) 1920x1080 60p50p 60Mbps RTSP/RTP 1920x1080 60p50p 60Mbps with VITC RTMP, RTMPS 1920x1080 60p50p 60Mbps UVC 1920x1080 30p25p		RTSP/RTP 1920x1080 60p50p RTMP, RTMPS 1920x1080 60p50p
Motion JPEG	RTSP/RTP 1920x1080 60p50p UVC 3840x2160 30p25p		RTSP/RTP 1920x1080 60p50p	RTSP/RTP 1920x1080 60p50p 60Mbps UVC 1920x1080 30p25p		
Others	MPEG2-TS/RTP, MPEG2-TS/UDP					MPEG2 TS/UDP, MPEG2 TS/RTP, Zixi
Remote Protocol	NDI®(KY-PZ510N,KY-PZ400N,KY-PZ200N), Standard, Pelco, JVC (WEB API, RM-LP100)					Standard, JVC (WEB API, RM-LP100)
General						
LED	Tally in top of lens : Green x1, Red x 1 Power in front :Blue x1		Tally in top of lens : Green x1, Red x 1 Power: Blue x 1, Standby: Yellow-green x 1	Power: Blue x 1, Standby: Yellow-green x 1		Tally: Red x 1
Power	DC12V(AC adapter) , KY-PZ510/N PoE+(IEEE802.3at standard) , KY-PZ400 KY-PZ200/N PoE(IEEE802.3af standard)					DC12V (AC adapter), PoE+
Current consumption	0.95A A (AC adapter) 0.25 A (PoE+)		Approx. 0.62A (AC Adapter) Approx. 0.18A (PoE)	Approx. 0.65A (AC Adapter) Approx. 0.19A (PoE)		1.2 A (AC adapter) 0.4 A (PoE+)
Temperature	Operating: 0℃~ 40℃ Storage: -40℃~ 60℃		Operating: 0℃ to 40℃ Storage: -20℃ to 50℃			Operationg: 0℃ to 40℃ Storage: -20℃ to 50℃
Humidiy	Operating: 30% to 80% Storage: Under 85%		Operating: 30% to 80% Storage: Under 85%			Operating: 30% to 80%
Dimensions (WxHxD)	223.0mm x 166.4 x 163.0mm		142mm x 165mm x 169mm			154mm x 200.7mm x 191mm
Net Weight	Approx. 2.0 kg		Approx. 1.7kg	Approx. 1.5kg		Approx. 2.0 kg

KY-PZ510/N

KY-PZ400N, KT-PZ200/N

KY-PZ100

RM-LP100

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For Instruction Manual

http://www32.jvckenwood.com/
jvc/manual_e/index.asp

JVC Professional Video website

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