

KEDACOM



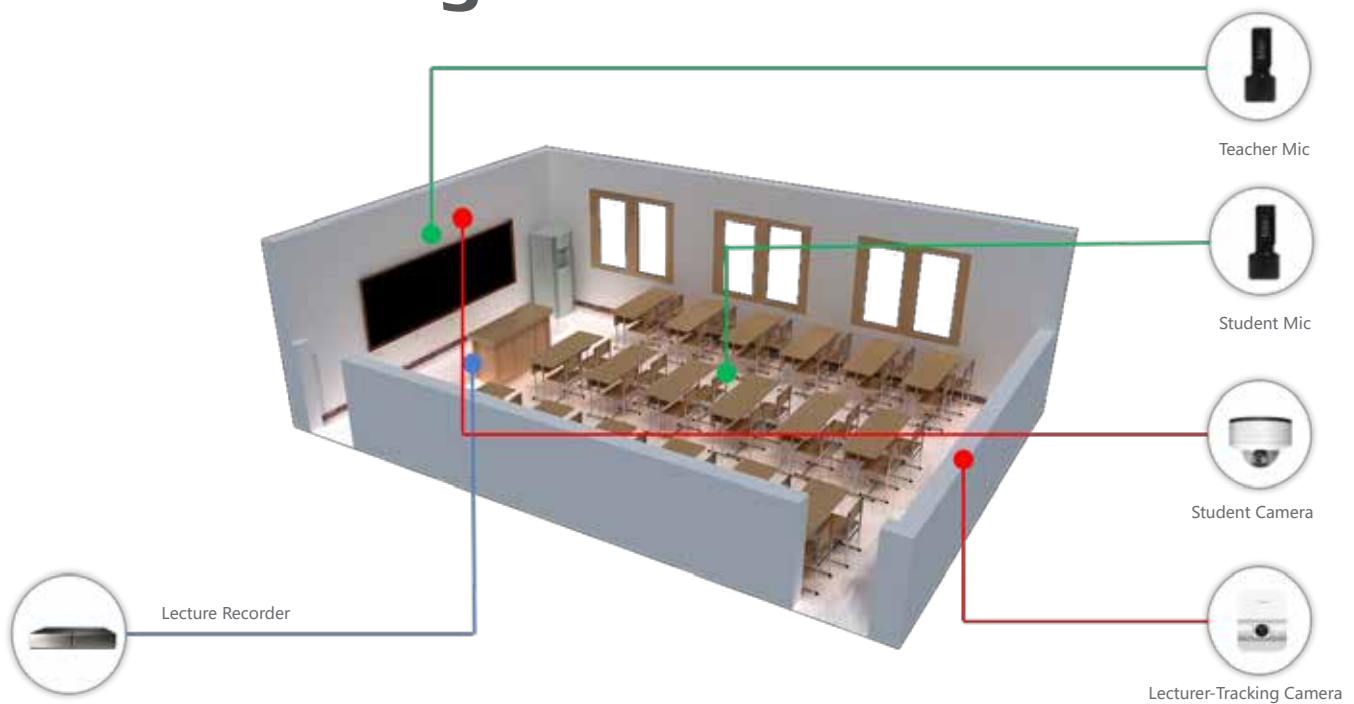
**Remote Interactive Lecture &
Recording Solution**



To better enhance and share the technology for advanced superior educational resource, KEDACOM had innovated intelligence solution by utilizing advanced audio and video technology, which provides convenient access of higher level of educational course solution which facilitates better educational equality in a more informative way.

As an innovation leader, KEDACOM combines advanced Audio and Video Technology and uses our core technology applications in the Education Industry. So as to create a concise and interactive Lecture & Recording Solution for the industry. Abundance Functions and features like Auto Tracking, Auto Video Directing, Auto Recording will free lecturer from any complicated current e-podium operating method. Therefore, large scale of educational resource can be shared with little investment involved for the school.

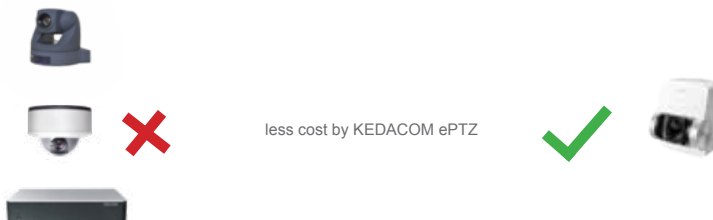
Lecture Recording & Broadcasting



Lecture Recording system can be deployed in any regular classroom, and used to record the whole course. It generates digital multi-media record comprising lecturer's tuition, board-writing, multi-media teaching material and interactive process between lecturer and students. The system includes Recording Terminal, Lecturer-Tracking ePTZ Camera, Student-Panoramic Camera and Voice Pickup technology. Lecturer-Tracking ePTZ Camera delivers video from lecturer and his/her board-writing. Student-Panoramic Camera captures video from student area, both audio and video are transmitted to Recording Terminal via LAN connection in the classroom.

Simultaneously, Recording Terminal supports connection from lecturer's laptop or object projector, then to record, manage and play all audio & video files integrally. Furthermore, an open SDK can be used for multiple features based on Recording & Broadcasting system requirements

• ePTZ Intelligent Tracking



The Lecturer-Tracking ePTZ Camera is embedded with high-performance image processing module and intelligent tracking algorithm based on people movement.

It can be installed easily without much restriction or conditions, and record the whole course without any manual intervention. The embedded intelligent tracking algorithm also makes sure lecturer's tuition during movement and board writing are recorded concurrently. Thanks to its excellent lens and structure design, this camera can be placed almost anywhere that is suitable for classroom regardless of size of classroom.

• Multiple Recording & Broadcasting Application



To cater for different applications, KEDACOM provides two kinds of recorders - Auto Directing Lecture Recorder and Multi-Stream Lecture Recorder. Auto Directing Lecture Recorder comprises Auto CP and Auto Directing functions. During the tuition, lecturer's picture, students' picture, lecturer's laptop's and object projector's display will be or can be layout together in one picture.

Furthermore, the main window in the continuous presence (CP) layout will change its content according to laptop's. When lecturer is playing PPT, PPT will be in CP's main window; when lecturer is writing on board, CP's window will automatically change to the board-writing. Multi-Stream Lecture Recorder supports separated recording for lecturer, student, lecturer's laptop's or object projector's display. This provides flexibility in terms of selection on what to watch based on course's content or personal preferences, either to watch in CP mode or single video layout mode. Content in CP's main window can also be changed accordingly. This personalized operation allows details to be view accordingly to user needs and no tuition detail will be missed by the users.

• High Efficiency Video & Audio Processing

High Efficiency Video Coding (HEVC) H.265 helps decrease required Hard Disks' space substantially. The system also supports Intelligent Packet Loss Recovery (IPLR), which ensures usability even in a bad network. Embedded audio processing module supports broadband audio coding, noise reduction and lip synchronization, which can reflect audio from tuition site more truly.

• Digital & Analog Video Input

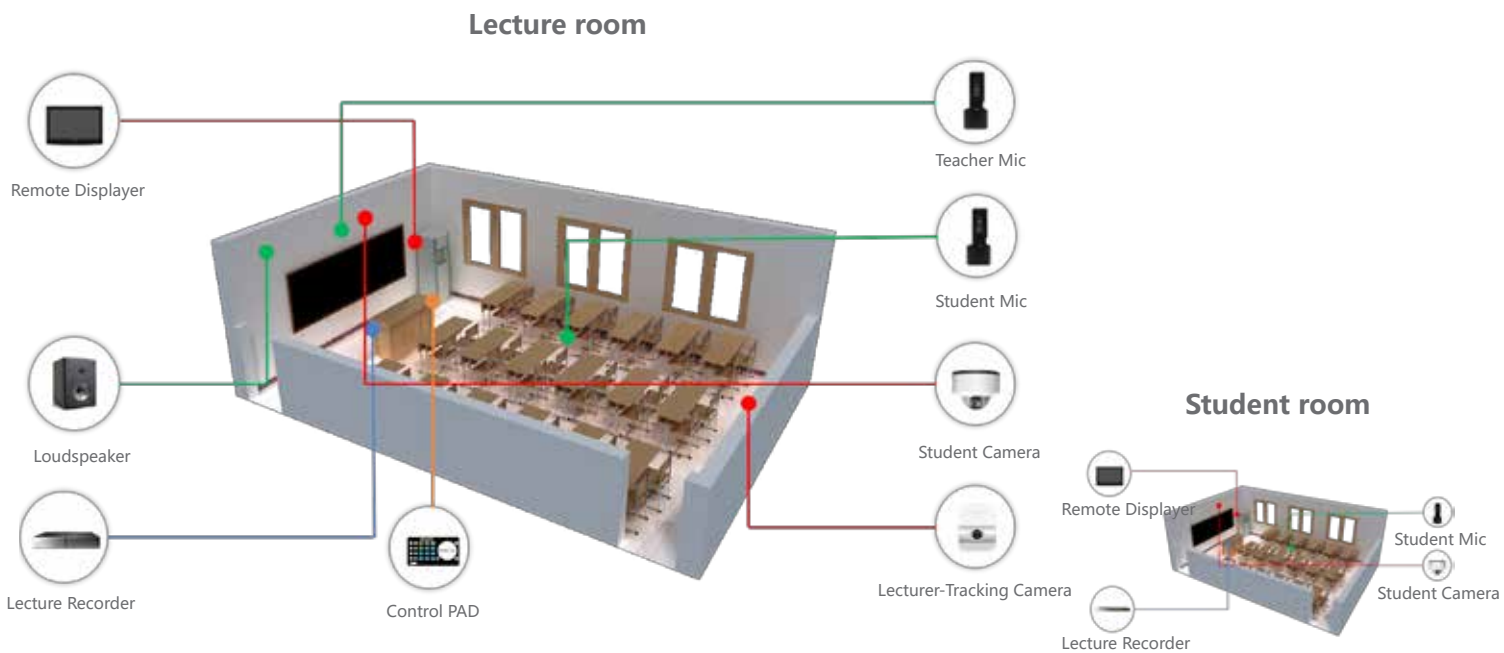
The system supports mixed video input, lecturer and student's cameras are connected via IP, while DVI-I (non-proprietary connector, compatible with VGA/HDMI) interface is used for laptop's and object projector's connection. Cable deployment will be a much easier job where all video source can be integrated to one single Recording Terminal.



• Open and Interoperable System

The system is open and supports standard protocol like Onvif, RTSP, for third party equipment interoperation. SDK is also another option for integrating to multiple kinds of Recording & Broadcasting system.

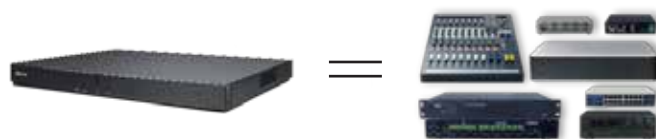
Remote Interactive Lecture



Remote Interactive Lecture is a value-added application for Lecture Recording & Broadcasting system. By using Remote Interactive Lecture Recorder, not only all functions from Lecture Recording & Broadcasting can be done, but it can also be an interactive system with students in different sites and bring them into tuition process gradually. There are Remote Interactive Lecture Recorder, Lecturer-Tracking ePTZ Camera, Student-Panoramic Camera, Voice Pickup and Display device included. In the remote site classroom, same Remote Interactive Lecture system can be used, or user can select standard ITU-T H.323 video conference terminal to join the tuition.

- All In One

The system is All-in-One designed, one Remote Interactive Lecture Terminal which includes two major functions - remote video communication and lecture recording & broadcasting. Abundant functions like PoE switch, audio & video matrix, center control and amplifier are also included in the terminal. The system is highly integrated, with less cost input and less failure points, thus providing an easier maintenance with a better ROI.



- Standard Video Communication Protocol

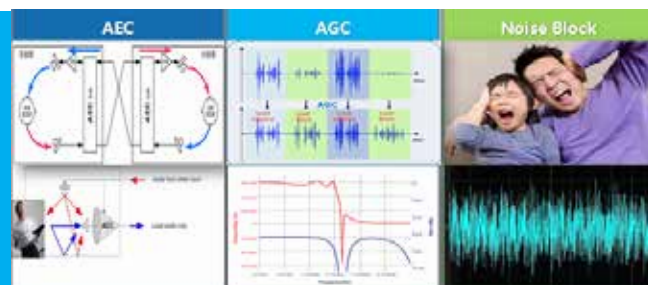
Standard ITU-T H.323 protocol and H.239 dual stream protocol that are used in video conference are also supported. The majority of terminal and platform from different brands of video conference industry will be compatible to the system. In addition, it can communicate with multiple same Remote Interactive Lecture Recorder or video conference system.

- Ultra-Low Latency, Better Interaction

Video latency had always been a issue for user experience even with today's maturity of network stability. To ensure a favorable interactive experience between different places. KEDACOM's IPLR, HEVC H.265 Video Coding and Ultra-Low latency mechanism help decrease delay when video is transmitted over Internet, meanwhile maintaining lip synchronization for better user experience.

- Authentic Voice Presentation

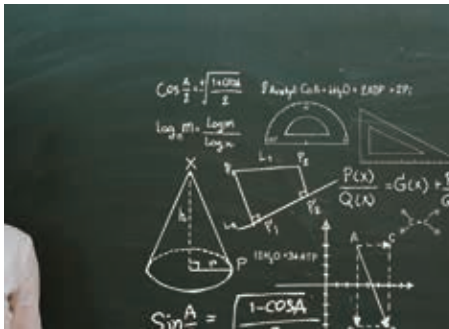
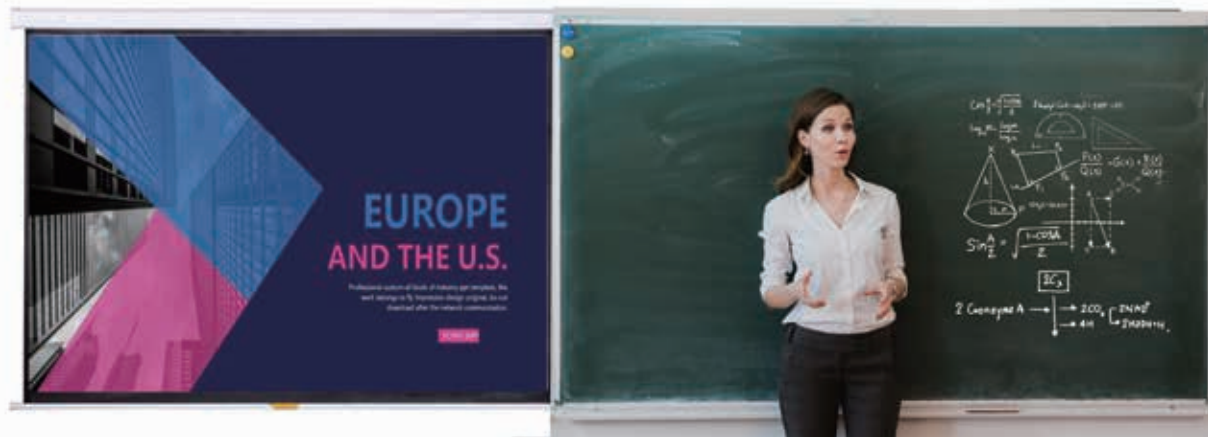
The terminal is embedded with professional audio processing module, which supports echo cancellation, squeaking suppression, noise reduction and related audio processing functions. These ensure favorable audio quality during the interaction sessions.



Lecturer-Tracking ePTZ Camera



No matter in a non-Remote Interactive or Remote Interactive Lecture Recording & Broadcasting system, it is always a core requirement to show clear video which lecturer displays and lecturer's board-writing. IPC7201-i323-N is an intelligent Lecturer-Tracking ePTZ Camera newly designed by KEDACOM. Different from traditional "Dual Camera Tracking", the Lecturer-Tracking ePTZ Camera is embedded with high-performance image processing module and intelligent tracking algorithm based on people movement. It can be installed very easily, and record the whole course without any manual intervention. The embedded intelligent tracking algorithm also makes sure lecturer's tuition during movement and board writing are recorded.



• Intelligent Auto Tracking

IPC7201-i323-N supports two modes - Follow-up Tracking and Virtual Multiple Camera Tracking. For the Follow-up Tracking mode, camera will detect lecturer's movement within board area intelligently, which then maximize lecturer's image for a clear observation of the impressions, gestures and board-writing. When lecturer is moving within board area, view from camera following lecturer will be smooth and will always keep the lecturer in the middle of the video. In Virtual Multiple Camera Tracking mode, camera can switch between view of lecturer's writing and panoramic view. When lecturer is moving, camera will be in panoramic view; When lecturer stops moving with writing on board for explanation, view from camera will be changed to close-up view of lecturer. Besides, this camera will be able to detect multiple people. When there are multiple people appearing in the board area (for example, lecturer invites the student for participation), they will be detected and then camera will switch its view to panoramic.

- Long Focal Length, Suitable for Multiple Classrooms
- Excellent Image Quality

IPC7201-i323-N uses 23x Optical Zoom Motorized Vari-focal lens, with focal length 6-138mm, horizontal viewing angle 3° -60° and it can be used for regular classroom, Lecture Theater, professional studio and so on.

IPC7201-i323-N takes 6Mpx, 1/1.8" Sony Sensor and 6Mpx HD lens; It also supports H.265 video coding with 1080P resolution; It can support Auto White Balance, Auto Gain Control (AGC), 2D/3D Digital Noise Reduction (DNR), then providing brilliant image quality.

- Immersed Appearance

IPC7201-i323-N comes with white colored and compact design which will easily incorporate into a classroom. Which eliminates averseness by students or teacher feeling they are being monitored. The compact design can be mounted on to any wall, decreasing the possibilities of being touched or blocked by student or objects in classroom..

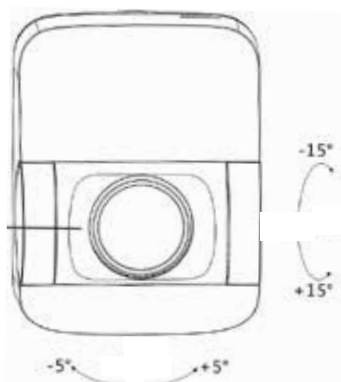


- High Reliability, Long Lifespan

ePTZ tracking does not require a drive mechanism, this avoid issues generated by traditional tracking camera by using mechanical drive. Traditionally PTZ solution holder's gear and belt when faulty will then result in image shaking or jitter. Therefore, ePTZ tracking raises product's reliability and lifespan substantially.

- Standard Protocol, Integration Supported


IPC7201-i323-N supports standard Onvif protocol, and embedded intelligent module that can be run independently. This camera can be integrated into third party Recording & Broadcasting system.



- Easy Installation & Maintenance

Wall-mount Bracket, which do not required the use of any cardan joint. Delicate design for lens part, which can be adjusted manually.

Left/Right angle: $\pm 5^\circ$, Up Down angle: $\pm 15^\circ$ Angle can be adjusted finely based on site's requirement, supports Auto Focus, supports PoE, which can be configured from Web Client.

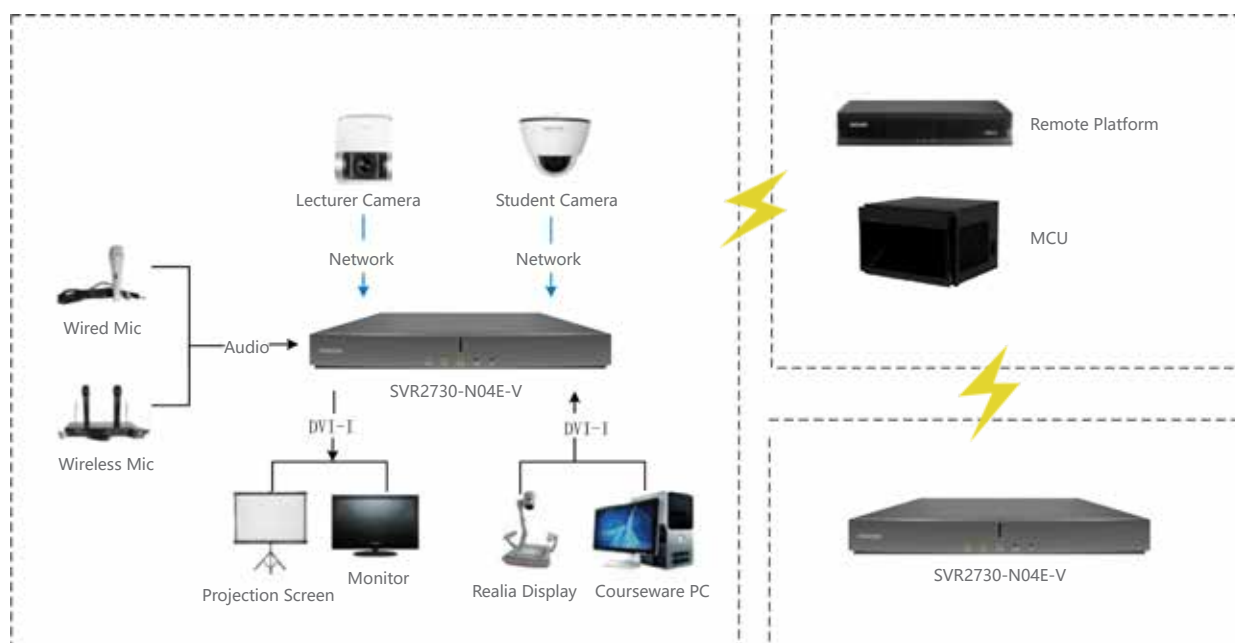
Model	IPC7201-i323-N
Picture	
Camera	
Image Sensor	1/1.8" progressive scan CMOS
Pixels	6.0 Megapixel
Focal Length	6 ~ 138mm, 23x optical
Aperture Ratio	F1.5 (W) ~ F3.4 (T), DC drive
Pan / Tilt Range	Pan: ±5°, Tilt: ±15°, manual
Min. Illumination	Color: 0.002lux @ (F1.5, AGC ON) B/W: 0.0002lux @ (F1.5, AGC ON)
Shutter Speed	1 ~ 1/30,000s
Day / Night	Auto (ICR) / Color / B/W
Wide Dynamic Range	Digital WDR
S/N Ratio	≥ 52dB
White Balance	Auto / Manual
Gain Control	Auto / Manual
Digital Noise Reduction	2D, 3D noise reduction
Electronic Defog	Supported
Backlight Compensation	Supported
Video	
Compression	H.265 / H.264
Image Resolution	1080p
Frame Rate	1 ~ 30fps
Bitrate	32 ~ 16384Kbps
Multi-stream	Main stream 1: 1080p Main stream 2: 1080p Secondary stream: D1
Bitrate Control	VBR / CBR
Caption	Date and time / Customized
Privacy Masking	Supported
Image Adjustment	Brightness, Contrast, Saturation, Sharpness
Motion Detection	Supported
Image Flip	Flip / Mirror / Rotation at 90°, 180°, 270°
HLC	Supported
PTZ	ePTZ, Auto tracking
Audio	
Compression	G.711a / G.711u / ADPCM / G.722 / G.722.1c / G.726 / AAC-LC
Bitrate	32 ~ 64kbps
Audio Function	Bi-directional audio / AEC / Mixed audio recording / Dumb / Mute
Network	
Max. User Access	Max. 20 Users
Network Protocols	TCP/IP, UDP, HTTP, DHCP, DNS/DDNS, RTSP, PPPoE, NAT, QoS, UPnP, SMTP
Application Programming	ONVIF (Profile S, Profile G), GB/T 28181-2011, CGI
Automatic Network Replenishment (ANR)	Supported
System	
Recovery	Supported
Heartbeat Detection	Supported
User Authentication	Multilevel, Password
Interfaces	
Ethernet	1 x Gigabit network port, RJ45 interface
Audio In / Out	1 x Line in / 1 x Line out
Control	1 x RS485
Memory Slot	Micro SD card slot, supports up to 256GB
Environmental	
Power	12V DC ± 10% / PoE (IEEE802.3at)
Power Consumption	Max. 15W
Operating Temperature	-20° C ~ 50° C / -4° F ~ 122° F
Operating Humidity	10% ~ 95%
Mechanical	
Dimensions	219 x 170 x 144mm / 8.62" x 6.69" x 5.67"
Weight	1.35kg / 2.98lb

Remote Interactive Lecture Recorder



SVR2730-N04E-V is an All-in-One Remote Interactive Lecture Terminal. It is comprised of two major functions - remote video communication and lecture recording & broadcasting, can be used for two major applications – Auto CP and Auto Directing in Lecture Recording & Broadcasting. It can also be interactive with students in different sites and bring them into tuition process.

In the remote site classroom, same Remote Interactive Lecture system can be used, or user can choose standard H.323 video conference terminal for participation of the tuition session.



- High Integrity, High Reliability

The terminal is an Embedded Linux OS All-in-One designed with 19", 1U size outer casing, which is a combination of remote communication function with Lecture Recording & Broadcasting terminal, that provides stable operation. Abundant functions like PoE switch, audio & video matrix, center control and amplifier are also included.

- Auto CP & Directing

SVR2730-N04E-V comprises of Auto CP and Auto Directing functions. During the tuition, lecturer's picture, students' picture, lecture's laptop's and object projector's display can be placed together in one picture. Furthermore, the main window in CP will change its content according to laptop's. For example, when lecturer is playing PPT, PPT will be in CP's main window; when lecturer is writing on board, CP's main window will automatically change to the board-writing.

- Standard Video Communication Protocol

Standard H.323 protocol and H.239 dual stream protocol used in video conference are supported in SVR2730-N04E-V. In addition, it can communicate with one or multiple SVR2730-N04E-V for a remote interactive lecture. The majority of terminal and platform from video conference industry are interoperable with it. It can communicate with KEDACOM or third party video conference terminal or MCU interactively.

- Professional Audio & Video Processing

The new H.265 being used by SVR2730-N04E-V helps decrease required Hard Disks' space substantially. High resolution video can also be transmitted in a low bandwidth by using H.265. The system also supports Intelligent Packet Loss Recovery (IPLR), which ensures usability even in a bad network. Embedded audio processing module in SVR2730-N04E-V supports broadband audio coding, noise reduction and lip synchronization, which can reflect audio from tuition site more truly.

- Excellent Network Adaptability


As a result of the super IPLR technology that SVR2730-N04E-V uses, it has a great network adaptability, which makes sure there is no halt, no disorder in screen and no blinking of video images. In cooperation with the ultra-low latency mechanism, video stream delay over transmission is greatly reduced, thus providing a better real-time interaction experience during classes.

- Digital & Analog Video Input

SVR2730-N04E-V supports mixed video input, lecturer and student's cameras are connected via IP, while DVI-I (compatible with VGA/HDMI) interface is used for laptop's and object projector's connection. Cable deployment and design of class rooms will be of minimal parts, where all video source can be integrated to one single recording terminal technology unseen in the industry.

- Interoperable System

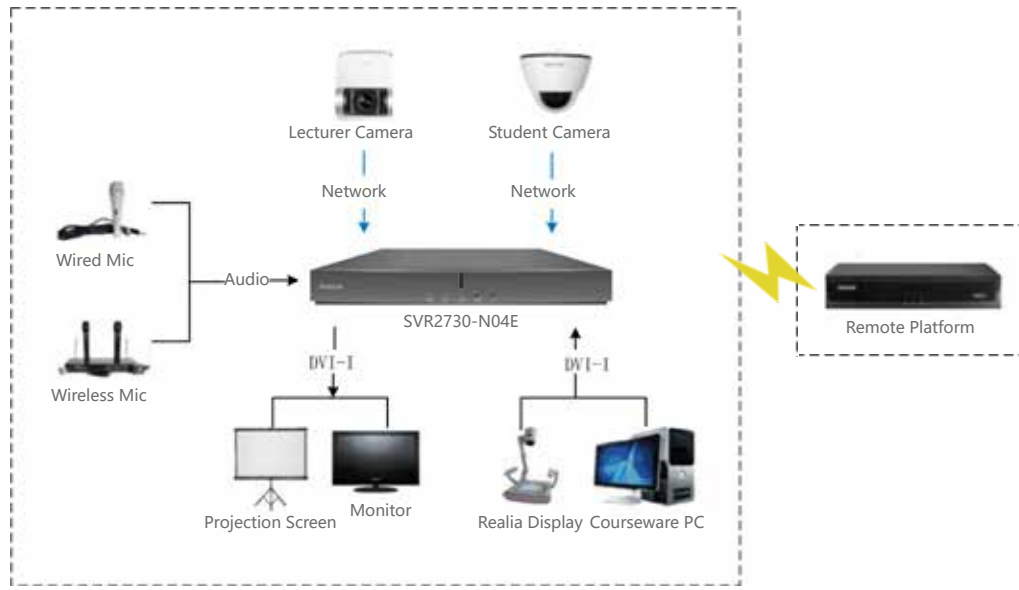
SVR2730-N04E-V is open and supports standard protocol like Onvif, RTSP, for third party equipment interoperation. SDK is also well prepared, which is convenient for integrating to multiple kinds of Recording & Broadcasting system.

Model	SVR2730-N04E-V
Picture	
IP Video Input	
IP Camera Input	6 channel
Compression	H.265 / H.264
Max. Resolution	1080p
Max. Frame Rate	30fps
Protocols	Onvif, RTSP, KEDACOM
Recording	
Compression	H.265 / H.264
Max. Resolution	1080p
Max. Frame Rate	30fps
Bitrate	128 ~ 8192Kbps
Streaming	Flash / HTML5
Image Composition	Supported
Continuous Presence	Cinema mode, PiP, VIP1+2, VIP1+3, 4
Auto Directing	Supported
Audio	
Compression	G.711a / G.711u / ADPCM / G.722 / AAC-LC
Bitrate	32 ~ 128kbps
Functions	AEC, AGC, ANS, AFC
Interfaces	
Video Input	2 x DVI-I
Video Output	2 x DVI-I
Audio Input	6 x Mic in 2 x Line in, Stereo
Audio Output	2 x Line out, Stereo S/PDIF
Ethernet	1 x Gigabite network port, RJ45 interface 2 x 10/100M, RJ45 interface 4 x 10/100M, RJ45 interface (PoE)
Internal HDDs	2 x SATA (1 x 1TB 2.5" HDD Included)
Control	2 x RS485, 8 x RS232
Protocols	
Video Conferencing	H.323, H.239, H.460
Environmental	
Power	100 ~ 240V AC, 50 ~ 60Hz
Power Consumption	Max. 115W
Operating Temperature	-10° C ~ 55° C / 14° F ~ 131° F
Operating Humidity	10% ~ 90%
Mechanical	
Dimensions	483 x 49 x 355mm / 19.02" x 1.93" x 13.98"
Weight	5kg/ 11lb

Auto Directing Lecture Recorder



SVR2730-N04E is a Lecture Recorder comprising two major functions- Auto CP and Auto Directing in Lecture Recording & Broadcasting. It can be deployed in classroom, can gather multiple video into CP, and use the intelligent image recognition technology to change auto directing image.



• Auto CP & Directing

SVR2730-N04E comprises Auto CP and Auto Directing functions. During the tuition, lecturer's picture, students' picture, lecturer's laptop's and object projector's display can be layout together in one picture. There is no need for any manual intervention when using Auto Directing function that creates a smooth content switching process. Therefore, less bandwidth is required even when using cp layout, which provides better video transmission over internet.

• Digital & Analog Video Input

SVR2730-N04E supports mixed video input, lecturer and student's cameras are connected via IP, while DVI-I (compatible with VGA/HDMI) interface is used for laptop's and object projector's connection. All video source can be integrated to one single Recording Terminal.

• Professional Audio & Video Processing


The new H.265 being used by SVR2730-N04 helps decrease required Hard Disks' space substantially. High resolution video can also be transmitted in a low bandwidth by using H.265. The system also supports Intelligent Packet Loss Recovery (IPLR), which ensures usability even in a poor network conditions. It supports broadband audio coding, noise reduction and lip synchronization, which can enhance user experience for Audio/Video from tuition site more truly.

• Interoperable System

SVR2730-N04E is open and supports standard protocol like Onvif, RTSP, for third party equipment interoperation. SDK is also well prepared, which is convenient for integrating to multiple kinds of Recording & Broadcasting system.

• Plug & Play, Easy Operation

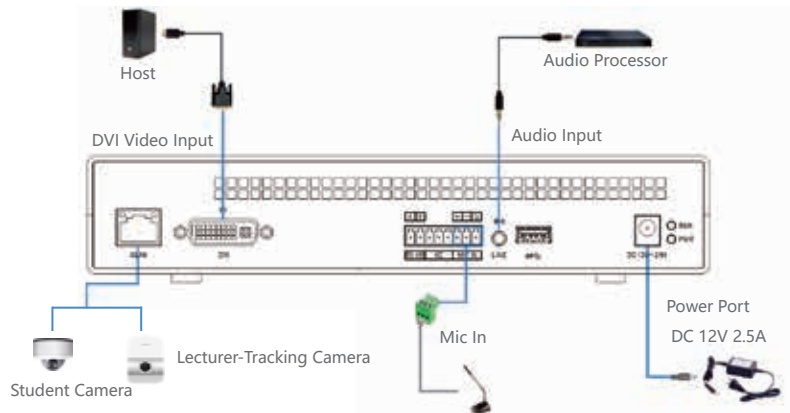
Default interface and parameter configuration can be used for Plug & Play. Friendly user interface, Getting when seeing. Concise configuration manual, modularized configurable parameters, easy operation.

Model	SVR2730-N04E
Picture	
IP Video Input	
IP Camera Input	6 channel
Compression	H.265 / H.264
Max. Resolution	1080p
Max. Frame Rate	30fps
Protocols	Onvif, RTSP, KEDACOM
Recording	
Compression	H.265 / H.264
Max. Resolution	1080p
Max. Frame Rate	30fps
Bitrate	128 ~ 8192Kbps
Streaming	Flash / HTML5
Image Composition	Supported
Continuous Presence	Cinema mode, PiP, VIP1+2, VIP1+3, 4
Auto Directing	Supported
Audio	
Compression	G.711a / G.711u / ADPCM / G.722 / AAC-LC
Bitrate	32 ~ 128kbps
Functions	AGC, ANS, AFC
Interfaces	
Video Input	2 x DVI-I
Video Output	2 x DVI-I
Audio Input	6 x Mic in 2 x Line in, Stereo
Audio Output	2 x Line out, Stereo S/PDIF
Ethernet	1 x Gigabite network port, RJ45 interface 2 x 10/100M, RJ45 interface 4 x 10/100M, RJ45 interface (PoE)
Internal HDDs	2 x SATA (1 x 1TB 2.5" HDD Included)
Control	2 x RS485, 8 x RS232
Environmental	
Power	100 ~ 240V AC, 50 ~ 60Hz
Power Consumption	Max. 115W
Operating Temperature	-10° C ~ 55° C / 14° F ~ 131° F
Operating Humidity	10% ~ 90%
Mechanical	
Dimensions	483 x 49 x 355mm / 19.02" x 1.93" x 13.98"
Weight	5kg / 11lb

Multi-Stream Lecture Recorder



KEDU-CCT220-N04A/E is a Multi-Stream Lecture Recorder which can support 4 x IP and 1 x DVI-I input. Lecturer, student and tuition material can be recorded separately, which is suitable for observer's personalized operation. Multi-Stream Lecture Recorder supports separated recording for lecturer, student, lecturer's laptop's or object projector's display. Recorder provides flexibility in terms of selection on what to watch based on course's content or personal preferences, either to watch in CP mode or single video mode.



- Personalized VOD

KEDU-CCT220-N04A/E supports separated recording for lecturer, student, lecturer's laptop's or object projector's display. Recorder provides flexibility in terms of selection on what to watch based on course's content or personal preferences, either to watch in CP mode or single video mode. Content in CP's main window can also be changed accordingly. This personalized operation can make sure no tuition detail will be missed by the observer.

- Delicate Design, Flexible Installation

Compact design with abundant functions, can be placed on table or wall-mounted, flexible installation.

- Digital & Analog Video Input


KEDU-CCT220-N04A/E supports mixed video input, lecturer and student's cameras are connected via IP, while DVI-I interface is used for laptop's and object projector's connection.

- High Integrity, High Reliability

Supports 4 x IPC and 1 x DVI-I video input, supports Mic, Line audio input, supports noise reduction and audio mix. Incorporated 1 TB, 2.5" Hard Disk can help distribute the record on site which eliminates tuition video lost due to bad network transmission.

- Interoperable System

KEDU-CCT220-N04A/E is open and supports standard protocols like Onvif, RTSP, for third party equipment interoperability. SDK is also convenient for integrating to multiple kinds of Recording & Broadcasting systems.

Model	KEDU-CCT220-N04A/E
Picture	
IP Video Input	
IP Camera Input	4 channel
Incoming Bandwidth	64Mbps
Video	
Resolution	8MP(4K), 6MP, 5MP, 4MP, 3MP, 1080p, UXGA, 960p, 720p, XGA, SVGA, D1, CIF, QCIF
Compression	H.265 / H.264
Audio	
Compression	AAC-LC
Playback	
Lesson Playback	6 x 1080p
Functions	
Recording	Manual / Schedule / Event
Synchronize Playback	Supported
Network	
Protocols	Onvif, RTSP
Network Protocols	TCP/IP, UDP, HTTP, DHCP, DNS/DDNS, RTP/RTCP, RTSP, FTP, SNTSP
Function	NAT / Socks5 / Multiple network access / Packet loss recovery
Interfaces	
Video Input	1 x DVI-I (H.264 encoding)
Audio Input	1 x HDMI Audio 1 x Line in 1 x Mic in
Control	1 x RS485
Internal HDDs	1 x 1TB 2.5" HDD Included
Ethernet	1 x Gigabite network port, RJ45 interface
USB	1 x USB 3.0
Environmental	
Power	100 ~ 240V AC, 50 ~ 60Hz
Power Consumption	Max. 30W
Operating Temperature	-10° C ~ 55° C / 14° F ~ 131° F
Operating Humidity	10% ~ 90%
Mechanical	
Dimensions	234.5 x 156.6 x 47.5mm / 9.23" x 6.17" x 1.87"
Weight	1.35kg / 2.98lb (HDD included)



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