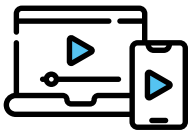
AV over IP Solution

ICP-5100 Multimedia PA System

ICP-5100 applies IoT, video streaming, and cloud technology to realize multimedia public addressing, security, environmental control, video intercom and more functions. It's a great solution for schools, department stores, factories, airports, train stations, hotels, communities, emergency command centers and even the large-scale smart city.

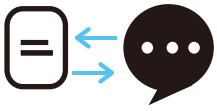
What we apply



Streaming



Environmental Control



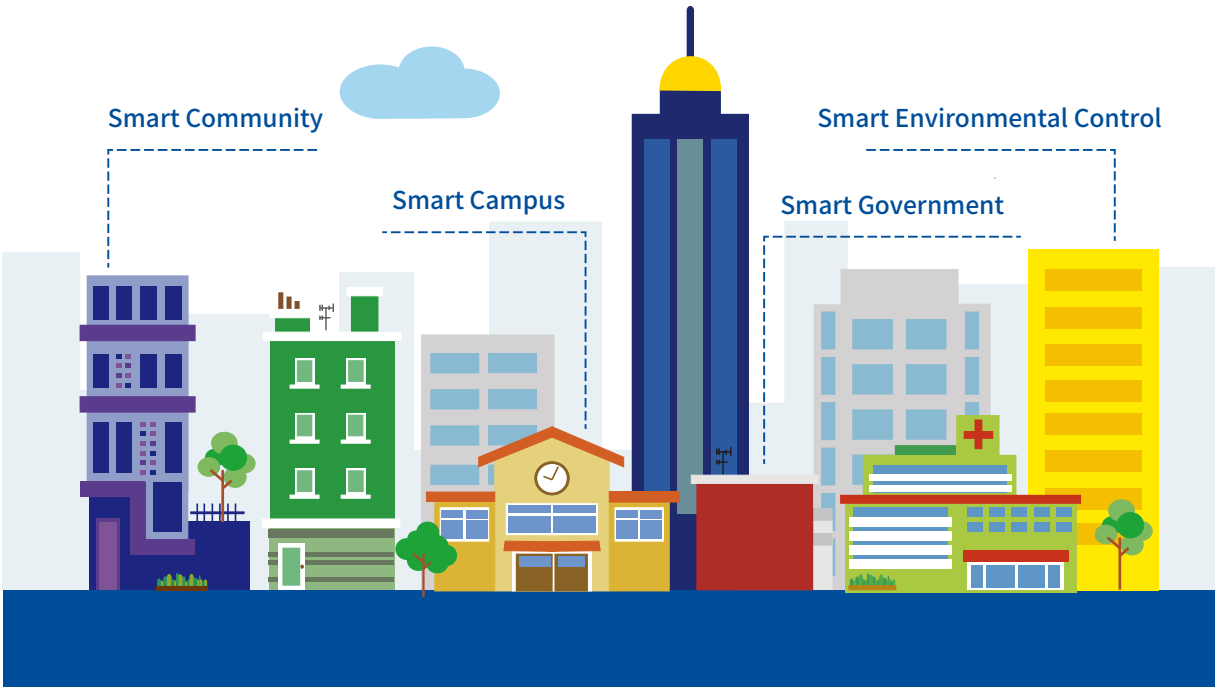
Text-to-Speech



Internet of Thing



Cloud Hosting



Intuitive Graphical Interface

Able to control the max. of 700 zones and 70 groups. Users can set the zone arrangement based on the actual building/area distribution.

Scheduling

The broadcasting data, mode, and time can be set in advance. It also offers 15 lists of schedule for random editing and adjustment.

APP Remote Control

For public addressing with mobile phone, VoIP, or TTS mode.

Scalable & Fully-Integrated

IP-structure for randomly adding video, security, and environmental control equipment. Easy installation without repiping.

Standard TCP/IP Structure

Video, audio, and control signals are transmitted via only one network cable.

Self-defined Graphical Interface

Able to control the max. of 700 zones and 70 groups. Users can set the zone arrangement based on the actual building/area distribution.

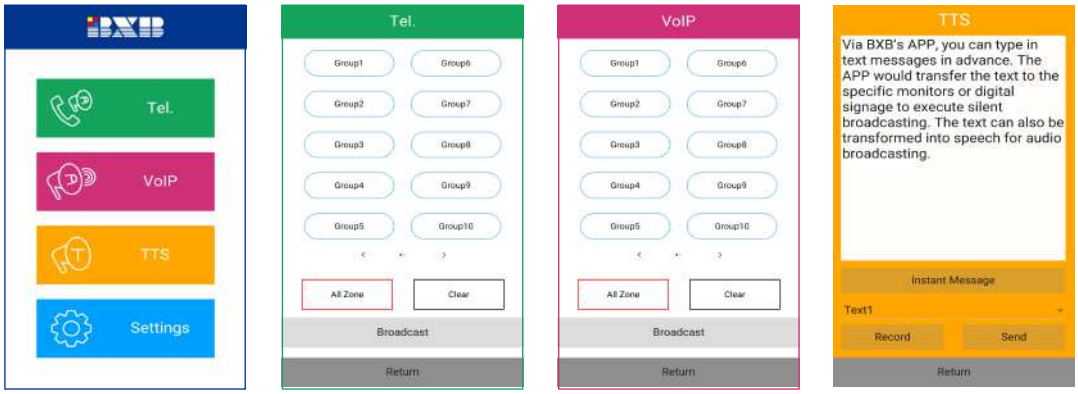


Scheduling & Auto-broadcasting without Manual Control

ICP-5100 can be used for the audio/video message announcement of hourly chime, daily routine, and special event promotion. The broadcasting mode and video files can be set well in advance. It also provides 15 lists of schedules for random editing and adjustment. Moreover, the system can play 8 groups of music, texts, and videos to 8 different zones/groups at the same time.

Supports Smart Phone PA

Remote PA and emergency command via mobile phone, VoIP, and TTS modes, making message announcement more instant and convenient.



Remote-detecting for Easy Troubleshooting

The system can show the status of each decoder. When any decoder, terminal equipment, and network connection are out of work, the server would receive the cue for quick troubleshooting.

Internal-line/External-line PA

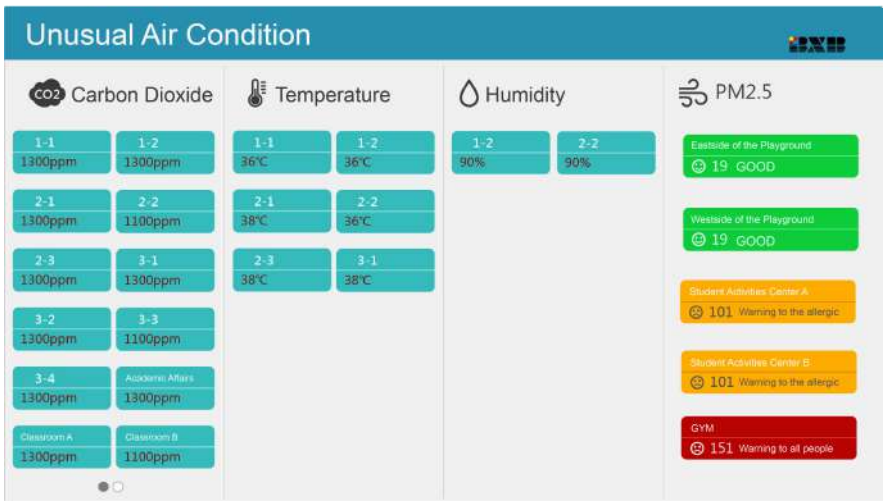
Fixed line can be applied via telephone or mobile phone to do instant PA, breaking the space limits. Users can also dial the extension number to broadcast; convenient, flexible, and cost-saving.

Emergency Call & Security

Integration with emergency call button, fire alarm, flash speaker, two-way intercom, and other security devices. The emergency signal can be transmitted back to the control room for monitoring and hindering the suspect at the first time, which effectively avoids the injury.

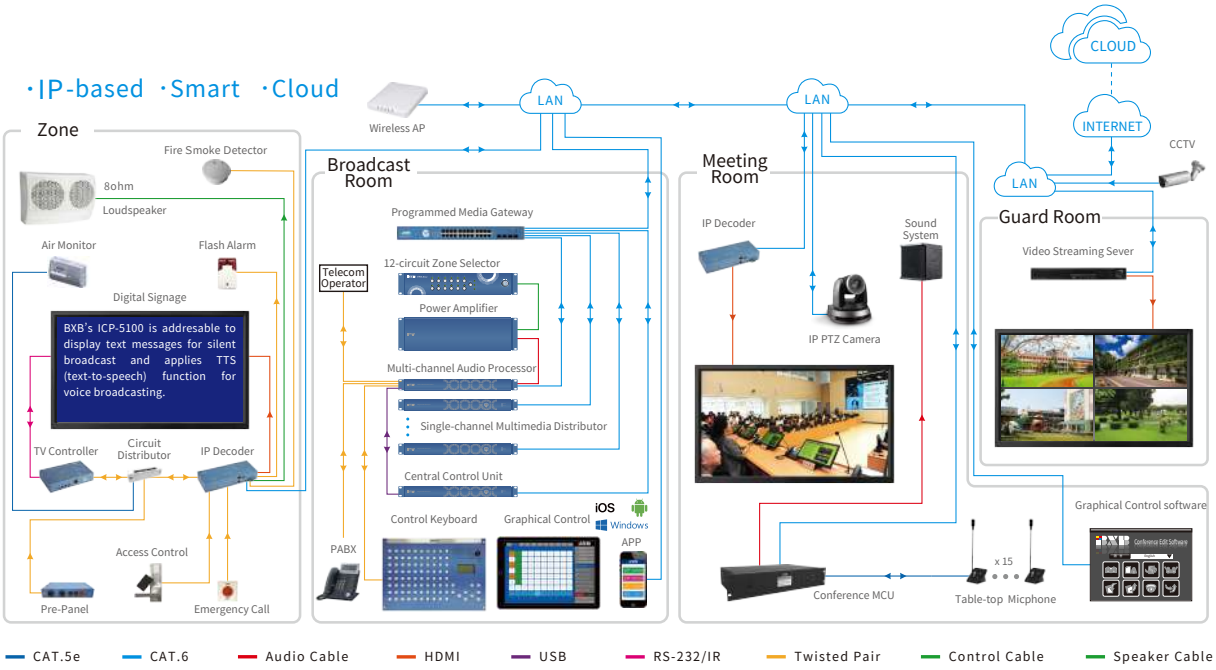
All-zone Environmental Control

By integrating with air quality detector, hygrometer, and other environmental devices, the system would auto-broadcast the warning messages as the value of CO2, temperature, humidity, and PM2.5 exceeds the default setting. Moreover, it also can control the power of TVs, projectors, fans, air conditioners, and other electrical appliances. Smart and energy-saving.



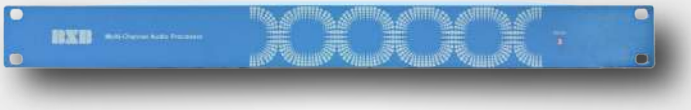
Quick Installation of Emergency Command Station

The system is ordinarily applied for multimedia teaching, policy propaganda, and music playback. As any emergency occurs, it can quickly function for emergency command. By integrating with conference system, it makes decision-making and commanding more instantly and efficiently.



▲ ICP-5100 System Diagram ▲

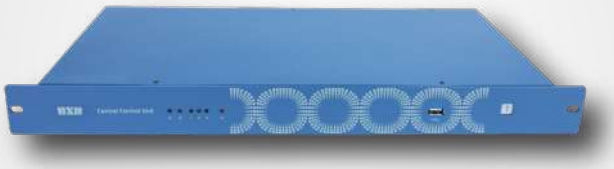
Products



ICP-3150

Multi-channel Audio Processor

- Interconnects with ICP-3151 Control Keyboard and ICP-5180 Central Control Unit for IP network PA.
- Equipped with internal line PA interface: users can broadcast with any extension phone within IP PBX.
- Equipped with external line PA interface: users can do remote audio PA via telephone or mobile phone with the fixed line.
- Built in USB two-way audio decoder: via ICP-5180 Central Control Unit, it can execute music playback, broadcasting, recording, and intercommunication.



ICP-5180

Central Control Unit

- TCP/IP network control: transmit video and control signals via internet.
- Scheduling & auto-broadcasting without manual control: schedule hourly chime, daily routine, and special event promotion in advance; the system would execute broadcasting automatically and announce the messages to the monitors, digital signage, and electronic marquee on site.
- Multi-channel play: transmit 8 different sources (audio, text, video) to different zones at the same time. It’ s ideal for the multimedia teaching and exam at school.

- Mobile & remote control: use APP to execute broadcasting with telephone, VoIP, and TTS mode, greatly enhancing the security and command efficacy.
- Energy-saving: based on the scheduling, the system can intelligently control the power of AV equipment, light, air-conditioner, and other equipment, which saves energy and ensures the safety of electric use.
- Built-in dual network card: connect to the LAN and extranet simultaneously, convenient and efficient.
- Equipped with a service button: press the button when the system has unusual conditions. The system would transmit the user' s information and system' s condition back to BXB' s headquarter. It efficiently realizes remote troubleshooting.

Hardware Specifications

Power Connection	DC12/7A MAX x 1	Audio	LINE OUT x 1 LINE IN x 1 MIC IN x 1
RS-232 Control	DIN-9PIN x 2		
USB Ports	USB2.0 x 3 USB3.0 x 4		
LAN	RJ-45 TCP/IP x 2	Status Indication	Indicator x 6
Video Output	HDMI OUT x 2	Abnormal Report	Service button x 1

Physical Properties

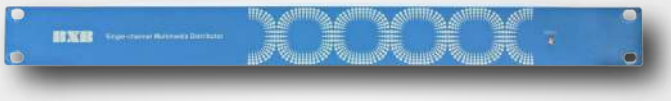
Dimension (W x H xD)	431 x 44 x 205mm	Operating Temperature	0°C ~ +45°C
Weight	3Kg (adapter excluded)	Storage Temperature	-20°C ~ +80°C
Cabinet 19"	1U		



ICP-3151
Control Keyboard

- Intuitive control panel: all the actions and system statuses can be clearly shown on the panel.
- Equipped with 70 keys for single-zone PA and 10 keys for group PA. The bottom of each key has a space for labeling, quickly recognizing each zone' s name. It avoids the inconvenience of human memory and note-taking.

- Each key is equipped with 3-color LED indicator (green/orange/red). Each color individually indicates the present operation status: 1) PA; 2) two-way intercom and emergency call; 3) door access. It helps users react in time.
- Equipped with a LCD monitor for displaying decoding/communicating signals, telephone broadcasting in-use, volume of Multi-channel Audio Processor, and more settings.
- Built-in monitor speaker: as any emergency occurs, the administrator can monitor and hinder the suspect at the first time.
- Scalable with the second panel for reaching more than 175 zones and 25 groups.



ICP-5130P

Single-channel Multimedia Distributor

- Code the multimedia files into IP streaming signals.
- Support TCP/IP standard protocol and apply 64bit CPU.
- Support 1080p Full-HD video coding.
- Scalable for the connection with 8 units to play 8-channel audio and video files at the same time.
- File formats supported:
  - video formats : avi、mpg、mpeg、wmv、mts、mov、rmvb、mp4
  - image formats : jpg、jpeg、bmp、png
  - audio formats : mp3、wav、wma、aac、ac3



ICP-5131

HDMI Network Signal Converter

- Connect with DVD players, cameras, PCs, and other video equipment for AV streaming.
- Equipped with one HDMI 1.3b input connector to encode 1080p signal to IP streaming signal.
- Operate with ICP-5180 Central Control Unit to execute audio & video matrix broadcasting.
- Support 480i/p、576i/p、720p、1080i/p resolution.
- Able to connect 8 converters to play 8 sets of multimedia files at the same time.



ICP-5152

Programmed Media Gateway

- Collect and manage all the equipments via network exchange and execute audio/video matrix play.
- Connect with ICP-5180 Central Control Unit for playing 1080p video with digital IP packet transmission. The transmission distance can reach 100M and it supports connecting with switches for distance extension.
- Provide 24 sets of 10/100/1000M bps LAN ports and 4 sets of Combo optical fiber modules; the connection can reach 10 miles.
- Work with the graphical control software to auto-recognize the connected receivers (IP decoders), transmitters (various converters), serial ports (network switches), and PCs. It can manage over 255 sets of receivers/transmitters.
- Equipped with network traffic control: set the bandwidth limit to each port and user's IP. Plug-and-play without installing any software or driver.



GS-2804-D

28-Port Gigabit Switch

- Ports included:

  - 10/100/100 Mbps RJ45 NWay ports: 24 ports
  - SFP 100/100 Mbps ports: 4 ports
  - DB9 Console port: 1 port
  - Reset to default setting button: 1 set

- Supports MDI / MDI-X auto-crossmatching
- Meet Ethernet standards: IEEE802.3,802.3u, 802.3ab
- Supports IEEE802.3x network traffic control
- Supports IGMP Snooping v2 / v3
- Supports QoS: CoS, DSCP, CoS-DSCP, IP Precedence
- Supports eight queues handling SP & WRR
- Supports Jumbo Frame: 1518~10K Bytes
- Supports 8 Link Aggregation Groups with Static & LACP types



ICP-5110

IP Decoder

- Metal texture for cooling without equipping any fan.
- The energy-conversion efficiency reaches 90%.

- The image, audio, and control signals are transmitted via IP mode. The transmission distance can reach 100M.
- Circuit-protection design: equipped with thundering prevention mechanism and WATCH DOG to avoid circuit crashing.
- Support various security and emergency call equipments: equipped with programmable N.O and N.C connector for door access, alarming, and two-way intercom devices.
- Easily integrate with sound amplification: equipped with 1 set of digital connector that enables teaching microphone and computer be inputted to the pre-panel. The audio signals can be mixed with the PA signal. Administrators can also remote-control the loudspeaker' s volume of the class-room via this decoder.



ICP-5111

IP Decoder (with Class-D Amplifier)

- Metal texture for cooling without equipping any fan.
- Built-in Class-D amplifier; the energy-conversion efficiency can reach 90%.
- The image, audio, and control signals are transmitted via IP mode. The transmission distance can reach 100M.
- Circuit-protection design: equipped with thundering prevention mechanism and WATCH DOG to avoid circuit crashing.
- Support various security and emergency call equipments: equipped with programmable N.O and N.C connector for door access, alarming, and two-way intercom devices.
- Easily integrate with sound amplification: equipped with 1 set of digital connector that enables teaching microphone and computer be inputted to the pre-panel. The audio signals can be mixed with the PA signal. Administrators can also remote-control the loudspeaker' s volume of the class-room via this decoder.



ICP-TV1

TV Controller

- It should work with ICP-5111 IP decoder and can receive the command from ICP-5180 Central Control Unit to control TV' s power, signal input, and volume.
- Support 3 kinds of control signals: RS-232, UART, and infrared rays.
- Equipped with a 3-color indicator for showing the status of power and digital transmission/control.
- Equipped with 2 sets of infrared control input and 1 set of output connectors. It supports the maximum of 30-set infrared control.
- Equipped with 1 set of AC power control plug/8A and electric current detection module for accurately checking the condition of TV' s power.
- Equipped with 1 set of RS-232 connector for controlling TVs, projectors, and other equipments.
- Via RS-232 control, it can check, detect, report the TV' s operating condition.



ICP-PRE

Pre-amplifier Panel

- Work with IP Decoder for teaching microphone and audio source plugin and sound amplification.
- Equipped with digital button for volume control, avoiding the noise caused by the ageing variable resistor.
- The design of the pre-mixer module is separated with the post-amplifier. It' s able to be installed in the classroom for easy use and maintenance.
- Equipped with 2 sets of RJ45 connectors. Parallel-connection for more pre-panels is feasible.
- When any microphone is plugged into the pre-panel, the power would be automatically on; when pulled out, the power would be off.



ICP-3121

Intercom Microphone

- Connect with IP Decoder for talking to the administrator of the control room.
- Equipped with OLED monitor for displaying the microphone status.
- Equipped with a backlit button for sound amplification. As the user presses the button, the loud-speakers that connect with the IP Decoder would be activated for teaching.
- Equipped with a backlit button for request-to-speak. The LED indicator of the button would be flash as the user pressed the button. Meanwhile, the user can request the administrator of the control room to communicate.
- Digital volume control with 1-15 levels.
- Standard gooseneck microphone length: 43CM±2CM, 48CM±2CM, 56CM±2CM. Adaptable with different using demands.
- Attached with CAT5e cable for quick connection with IP Decoder.

Successful Cases

Ming-Dao High School, Taiwan

All Offices of the 5 Educational Systems

Classrooms of 15 Grades

Total of 170 Zones





Solutions

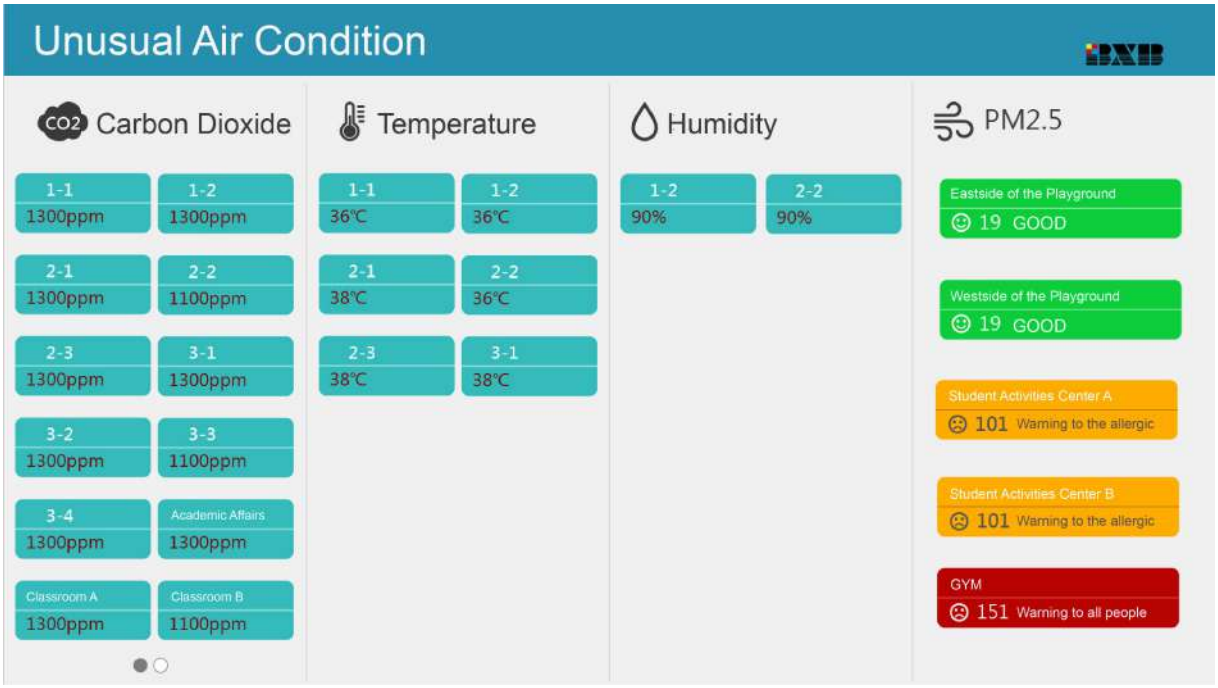
- CAT6 tree-structure with optical fiber network enables stable AV transmission with no latency even for the large-scale site.
- Intelligent-recognition procedure enables auto-broadcasting daily schedules, exam schedules, special events, and other complex schedules to different zones at the same time.
- TTS (text-to-speech) function reminds students that a lesson is going to start. The administrator doesn't need to stay besides the control room all the time, which greatly saves labor cost.
- The Office of Student Affairs has the highest authorization for broadcasting to any zones. It can terminate the present broadcasting of the other departments to make emergency messages have the first priority to be announced.
- Integration with telephone switching system for group/all-zone broadcasting.
- All the offices of the 5 educational systems have sub-control station for broadcasting and live-streaming.

Taichung Municipal Hui-Wen High School, Taiwan

90 Zones

Integrated with Environmental Sensor System





Solutions

- Environmental condition display: showing warning messages as the temperature, humidity, and the concentration of CO2 & PM2.5 exceed the standard value.
- Instant display of bus timetable: showing the dynamic information on the digital signages on campus, offering a real-time and convenient service for teachers and students.

De La Salle Secondary School, Hong Kong

47 Zones

Integration with Emergency Call and Security



Solutions

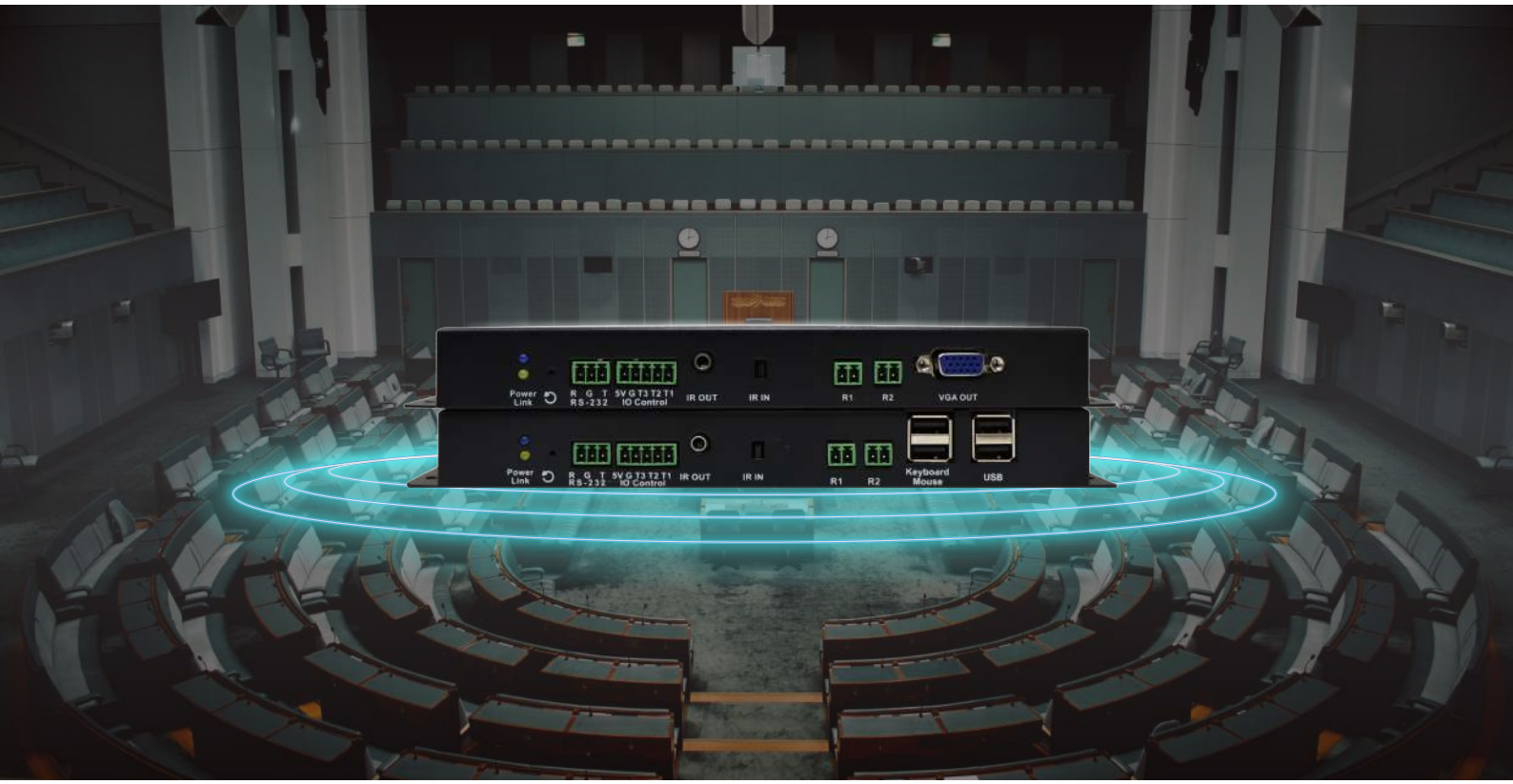
- Daily schedule broadcasting and school bell auto-ring. The audio sources of over 80 zones (outside/inside) can all be controlled.
- 1+3 Channels: beside the default channel, the school adds three more channels for broadcasting different AV sources at the same time.
- Classrooms are equipped with emergency call button with intercom function, securing the safety of teachers and students.

AV over IP Solution

VDM Series

The Best Networked AVoIP Solution

VDM is a solution with high functionality, ultra-low latency, and scalability without limit. Via a standard 1Gb network, you can extend, switch, and split your AV sources, easily deploying 1-to-1, 1-to-many, many-to-many, to hundreds of network system to various applications.



Crystal-clear video quality with stable image

Avoid fragment, over/under exposure, offset, and other noises.

HDMI high-quality transmission without distance limit

Supports 4K2KUHD resolution. No signal attenuation and distortion.

Flexible deployment with unlimited scalability

Find your best network structure with 1-to-1, 1-to-many, many-to-many, to hundreds of endpoints.

Simple setup

Via the network switch, you can easily construct a AVoIP system without extra video devices (such as matrix switchers, distributors, video wall processors, extenders, etc.) VDM offers you quick and easy installation.

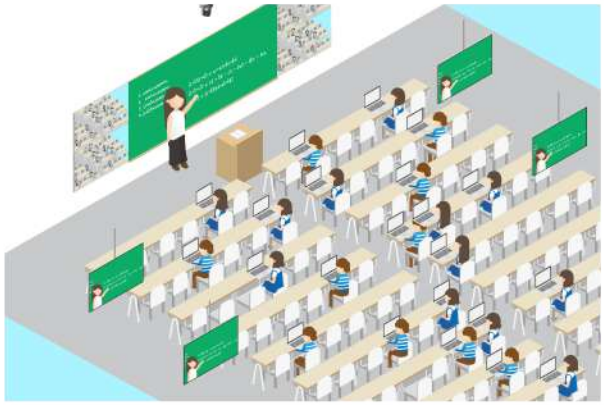
Any Type of AV Structure	· 1-to-1, 1-to-many, many-to-many · Horizontal / vertical display	· 100M transmission distance for each endpoint
Any Type of AV Signals	· Supports 4K · Supports SFP module	· Scaler for high compatibility with various display devices
Various Applications	· Video walls · Multiview display	· KVM solutions
Effortless Management	· Web GUI control · Intuitive drag-and-drop	· Easy configuration & preview · IT-friendly

Application Areas

VDM can be applied for video broadcasting, digital signage, video playback on the tradeshow, distributed AV display for marketing, timetable display for transportation, department store, highway broadcasting, command centers, campus broadcasting, server rooms, and more.



▲ Airports/Train Stations ▲



▲ Classrooms/Seminar Rooms ▲



▲ Control Rooms/Command Centers ▲

Products



VDM-4050
AV over IP Processor

- Easily control all networked AVoIP equipment such as encoders and decoders. Intuitive and easy-to-use WebGUI interface offers direct operation without installing extra software.
- Quickly scan the devices for further naming the devices, checking the status, and configuring MAC & IP address information.
- Self-define/switch video layout by uploading the scenario image. You can also control the ON/OFF of each video output and restart the equipment.
- Set more than 10 layouts for video wall. Easy drag-and-move to change the layout and switch video sources.
- Just one-click to switch video sources to the target receivers.
- Preview the video sources and receiver inputs to quickly edit and adjust the video layouts.
- Drag and drop the area to foucs the point.
- Group the devices for easy management and quick source switch.

Hardware Specifications

LAN	RJ45 TCP/IP x 1	RS-485 Control	RS-485 Connector x 1
Video	HDMI IN x 1	RS-232 Control	RS-232 Connector x 1
Audio	Φ3.5 OUT x 1	N.O. Trigger	Connector x 1
USB	USB2.0 x 2		

Physical Properties

Dimensions(L x W xH)	45x485x105 (mm)	Cabinet 19"	1U
Weight	1.15KG		



VDM-4010

4K Over IP Matrix Encoder

- Supports various video signals: 480i 720p, 1080i 1080p, 4K.
- VGA & HDMI inputs for providing modes including automatic detection input, locking the specific input, or code selection input.
- Enables HDMI 1.4 output and separates analog unbalanced 3.5mm audio output.
- IR & RS-232 bidirectional transmission: integration with central control system to manage the devices of every RS-232 endpoint.

Hardware Specifications

HDMI IN	Type-A x 1	IR Receiver	LED x 1
VGA IN	D-SUB x 1	IR Control	3.5mm x 1
VGA OUT	D-SUB x 1	RS232 Control	3P Euro Terminal x 1
Audio IN	3.5mm x 1	5V OUT	2P Euro Terminal x 1
Audio OUT	3.5mm x 1	3.3V Control	3P Euro Terminal x 1
LAN	RJ45 x 1	Function Key	2P Euro Terminal x 2
Fiber Uplink	SFP x 1		Dip Switch x 1
USB	Type B x 1	Power Input	DC 5-19V

Physical Properties

Dimensions (L x W xH)	238 x 26 x 108mm	Storage Temperature	-20°C ~ +60°C
Weight	556.5g	Package Size	243 x 70 x 141mm
Operation Temperature	0°C ~ +50°C	Gross Weight	850g



VDM-4020

4K Over IP Matrix Decoder

- Scaler function supporting more than 10 types of constant frequency outputs, which is highly compatible with various display equipment.
- Supports USB2.0 for mouse/keyboard, ID reader, PC/tablet, printer, and other USB peripherals.
- IR & RS-232 bidirectional transmission: integration with central control system to manage the devices of every RS-232 endpoint.
- Supports dynamic image overlay. You can capture the screen of the video source and then overlay the image on the display of receivers.

Hardware Specifications

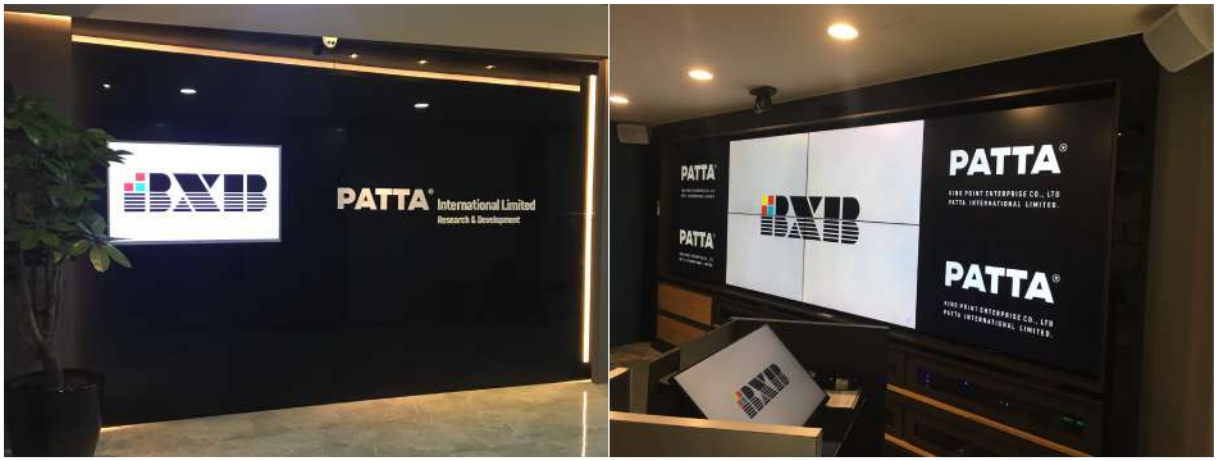
HDMI OUT	Type-A x 1	IR Receiver	LED x 1
VGA OUT	D-SUB x 1	IR Control	3.5mm x 1
Audio IN	3.5mm x 1	RS232 Control	3P Euro Terminal x 1
Audio OUT	3.5mm x 1	5V OUT	2P Euro Terminal x 1
LAN	RJ45 x 1	3.3V Control	3P Euro Terminal x 1
Fiber Uplink	SFP x 1	Function Key	2P Euro Terminal x 2
USB	Type A x 4	Power Input	DC 5-19V

Physical Properties

Dimensions (L x W x H)	238 x 26 x 108mm	Storage Temperature	-20°C ~ +60°C
Weight	556.5g	Package Size	243 x 70 x 141mm
Operation Temperature	0°C ~ +50°C	Gross Weight	850g

Successful Cases

PATTA International Ltd., Taiwan





Solution

There’re two large-scale and medium-scale meeting rooms with video wall (4 x 2 & 2 x 4) to enhance the meeting efficiency. The system is also integrated with BXB’s HDR-731 Streaming Media Processor, constructing a multi-functional meeting room for recording and live streaming the company training/seminars.

Products Used

Model	Name	Quantity
VDM-4010	4K Over IP Matrix Encoder	9
VDM-4020	4K Over IP Matrix Decoder	15
ICP-5180	Central Control Unit	1
ICP-3150	Multi-channel Audio Processor	1
ICP-5130	Single-channel Multimedia Distributor	2
ICP-5152	Programmed Media Gateway	3
ICP-5111	IP Decoder (with Class-D Amplifier)	17
ICP-5110	IP Decoder	3
ICP-TV1	TV Controller	3
HDR-731	Streaming Media Processor	1
QCU-100	Video Conferencing MCU	2
FUN-6314	Table-top Delegate Unit	2
HDC-613	HD PTZ USB Camera	4

Royal Hotel, Taiwan



Solution

BXB's VDM solution supports 4K resolution, presenting the best image quality. The video seamless switch can be perfectly done under IP distributed matrix structure. The guests don't need to wait for the video switch.

Products Used

Model	Name	Quantity	Remarks
HDC-713	HD IP Camera	2	Support PoE & streaming
HCK-700	Camera Controller	1	Control HDC-713 via RS-422
VDM-4010	4K Over IP Matrix Encoder	11	VGA/HDMI input (support 4K@30Hz)
VDM-4020	4K Over IP Matrix Decoder	16	VGA/HDMI input (support 4K@30Hz)
GS-2804	28-Port Gigabit Switch	2	
BXB-CCU	Cenrtral Control Unit	1	