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# DB-AVCNet-H

Lightweight Video Compression and  
Ultra-Low Latency

## 4K Video, Audio and Control over IP Solution

AVCNet-H is a new concept for AV distribution that adopts Gigabit Ethernet technology to switch, extend and distribute audio, control and lightweight compression video signals at visually lossless levels in real time with resolutions up to 4K (UHD). By leveraging Gigabit Ethernet technology, AVCNet-H delivers unprecedented levels of scalability, versatility and reliability.

AVCNet-H is an independent research and development product by Digibird, with high density encoding and decoding, redundant AV networks and streams, secure content distribution, network error resilience, critical-quality 4K video compression with extremely low latency. AVCNet-H can distribute AV signals using standard off-the-shelf 1GbE network switches, supports a wide array of applications including Point-to-Point Extension and complex Matrix Switching, as well as Video Wall and MultiViewer displays.



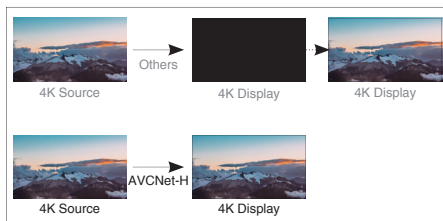
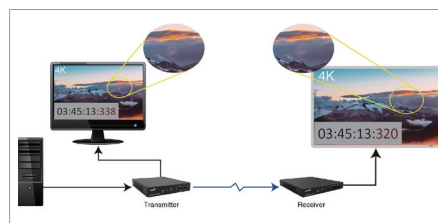


## Key Features

### Lightweight 4K UHD Video Compression with Ultra-Low Latency

Support up to 4K@30Hz and 1080p@60Hz signal, distribute lightweight compressed AV signals in real time.

AVCNet-H applies a lightweight compression algorithm and meets the mission-critical applications' requirements.



### Seamless Switching

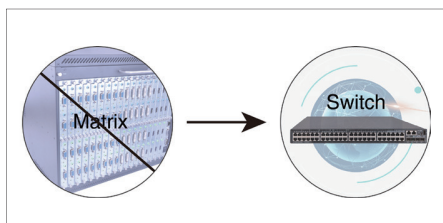
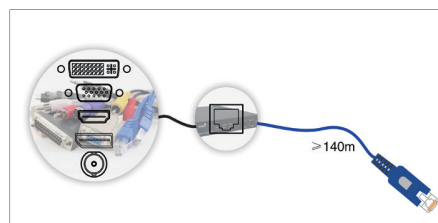
Compared with other Matrix Switches, AVCNet-H support seamless switching, the resolution is up to 4K.

Seamless Switching helps users escape from the bad impression of black screen, especially when applying to the live broadcast industry.

### Unified interface

AVCNet-H convert various interface to RJ45 interface, such as VGA, DVI, HDMI, SDI, DP, etc.

This convert is to get a longer transport distance, a stronger capacity of resisting disturbance and an easier way of installation.



### Budget Friendly

AVCNet-H run over Gigabit Ethernet, which can easily be integrated into existing network infrastructures.

When designing an AV system, no longer need an expensive AV Matrix Switcher, AVCNet-H is easily accessible and deployed, also cost-friendly AV distribution solution.

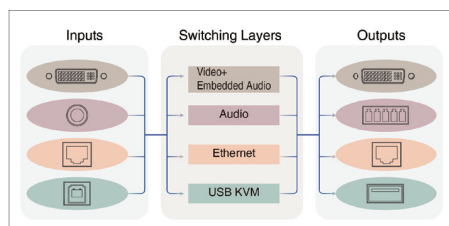
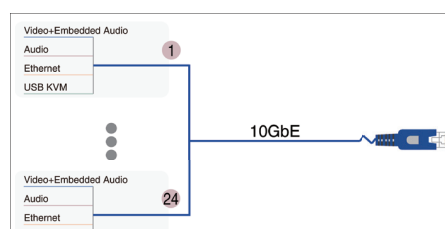


## Key Features

### Flexible Routing

A single 1GbE cable(CAT5e/6/6a) can transport video, audio and control signals, a 10GbE cable can carry 24 or more synthesize streams(Video, Audio and Control signals) .

Ensuring much greater flexibility and scalability.



### Independent Switching

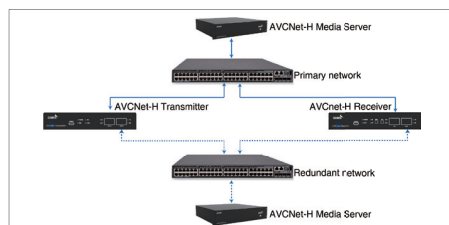
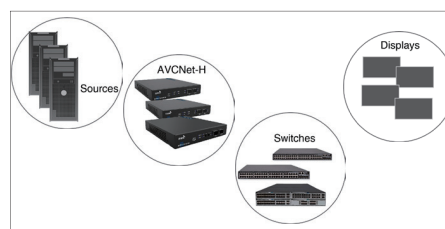
Compared with traditional matrix switches, AVCNet-H use Media layers to route independent signal types, such as video, audio, IR, RS232, etc.

Independent switching layers for all signal types provides fully routable, flexibility and freedom of independent signal switching.

### Unconstrained Scalability

No theoretical limitations on I/O size, switching capacity, or transmission distance. The size of the I/O array is only limited by the number of the ports of the Gigabit Ethernet Switch.

Easily add sources, displays, and additional switches as needed.



### System Redundancy

Replicate AV over two separate networks and IP streams. Enables primary and redundant networks, as well as delivering primary and redundant AV streams.

Greatly improved the safety and and stability of the AV system.

# Functionalities

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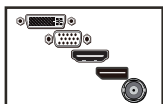
## *4K Transport*

4K/UHD @ 30 Hz and 1080p @ 60 Hz.



## *Audio Mode*

Supports Audio Embedding and De-embedding.



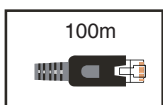
## *Varied Interface*

Supports HDMI, DVI, DP, VGA, SDI.



## *KVM*

Supports USB KVM, can realize remote control through keyboard, display and mouse.



## *100m Via Net*

Maximum range up to 100 meters (328 ft.) using a single CAT5e/CAT6/CAT6a cable.



## *30Km Via Fiber*

Maximum range up to 30 km using 1GbE optical version.



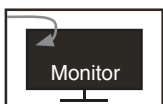
## *Unconstrained Scalability*

Supports nearly unlimited arrays of I/O nodes.



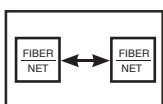
## *Integration Software*

Powerful Control Software and API enable deep integration into the new or existing AV systems.



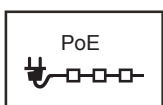
## *Loop-out For Monitoring*

Support a loop-out video interface to monitor the sources.



## *Redundant Backup*

Support two Net/Fiber interface to realize redundant backup.



## *PoE*

Power over Ethernet, can remotely power Transmitters and Receivers.

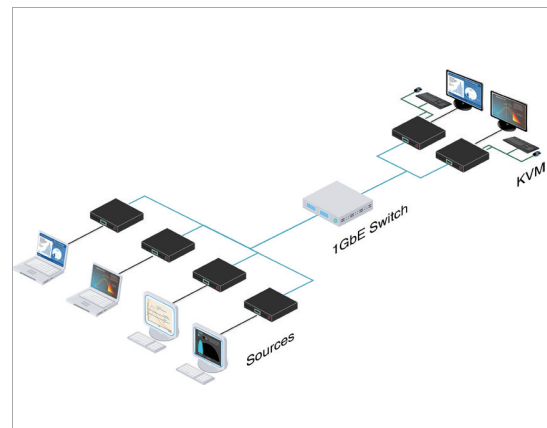
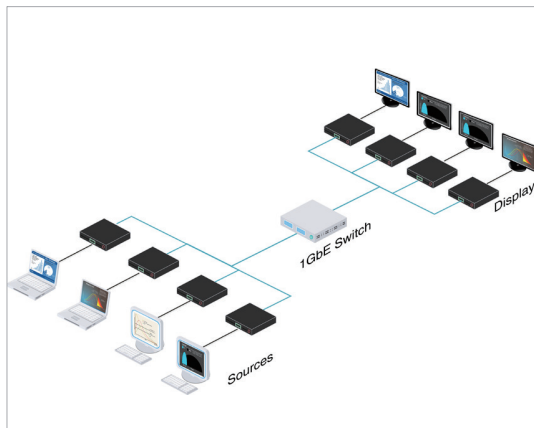
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# Typical Applications

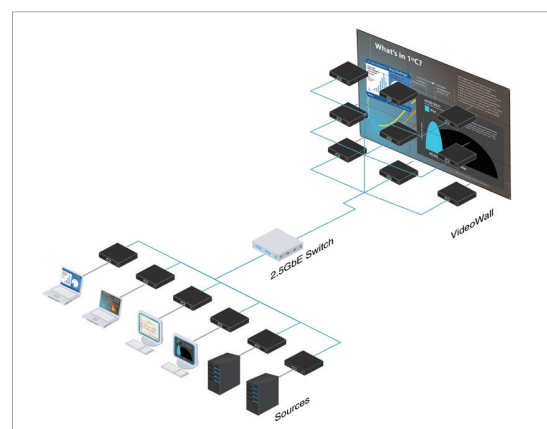
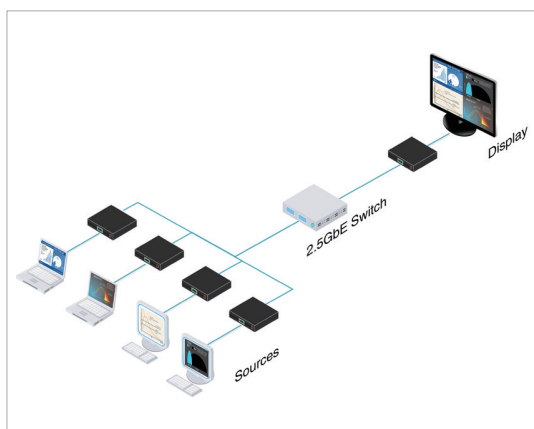
## Matrix Switching and KVM

Using a standard management ethernet switch, create a scalable and expandable custom KVM and video matrix. Connect up to 1024 Transmitter and Receiver units. This technology runs on standard network infrastructure, enabling virtually limitless distribution and matrix switching combinations. Easily connect an HDMI, DVI, VGA, DP or SDI source into a transmitter. Video and KVM can all be shared anywhere over a LAN with just a receiver unit and display.

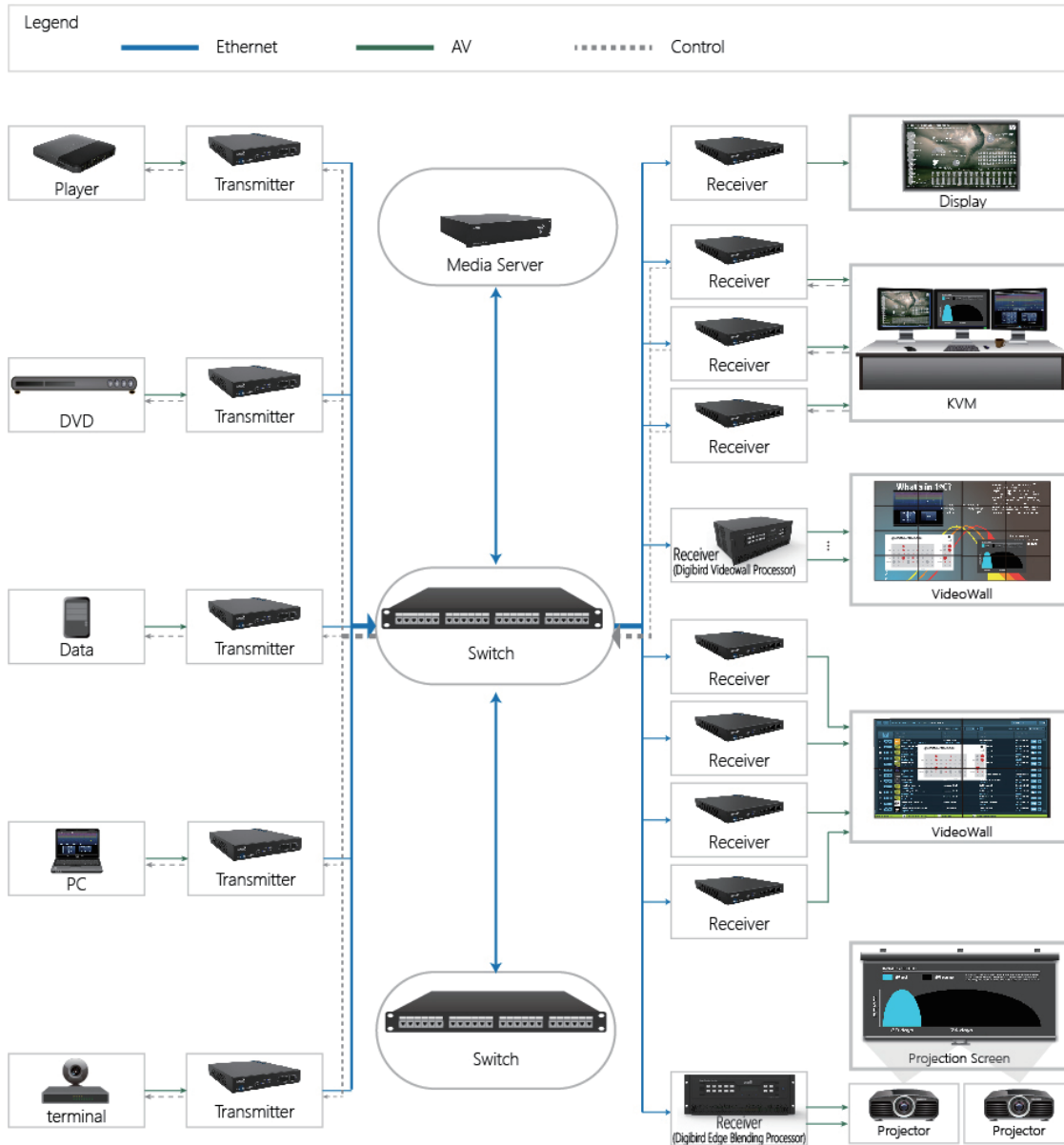


## Multiviewer and Videowall

Using a special unit can achieve a large-scale display. Multiple screens are effectively combined to display a large-scale source, at the same, several other windows of sources can be scattered on the videowall as needed. By concurrently supporting both matrix switching and video wall capabilities in the same system, AVCNet-H provides two valuable display solutions in one, scalable product. This unique capability gives system integrators the power to go beyond the limits of traditional AV distribution products.



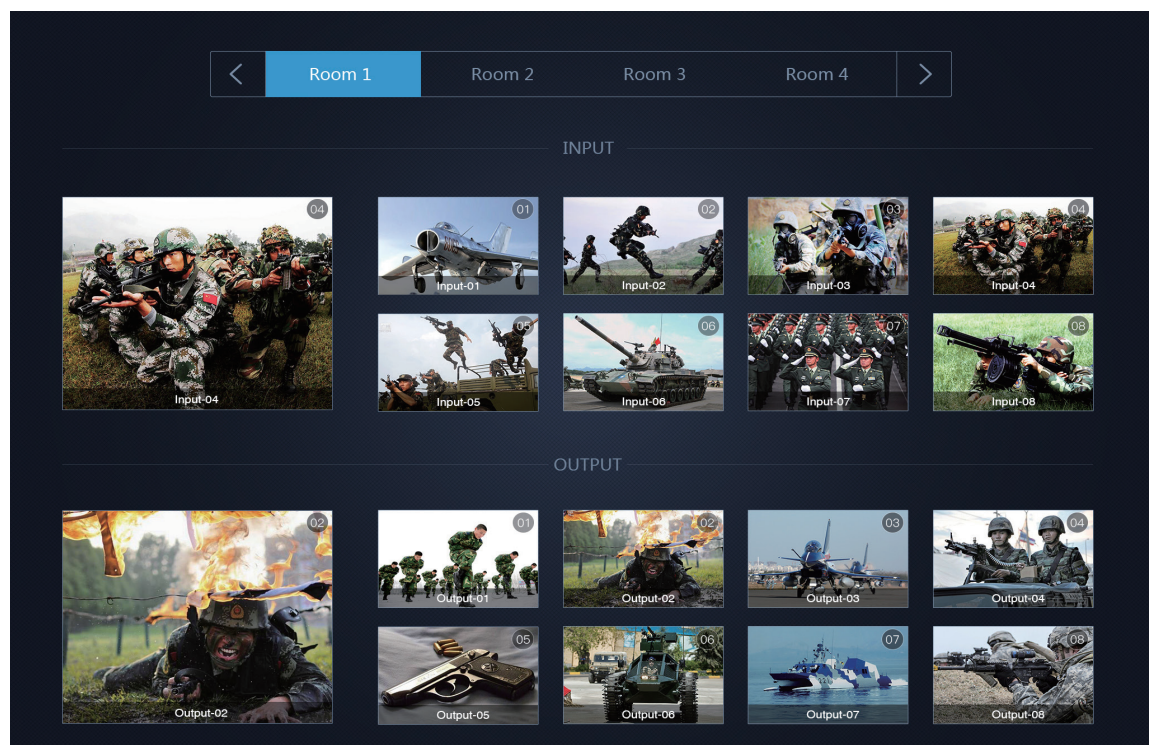
# Diagram



# Software

## Network management and configuration of AVCNet-H products

The AVCNet-H Management and Control System integrates product configuration, management, and updates to reduce installation time and enable remote support.



### Features:

- Web-based GUI.
- Distributed Software Architecture.
- Online Upgrade.
- Cross-platform support makes the system easy to control, including PCs, Pads, smart phones and touch panels.
- Multiple User Management: Each user has their own ID and system permissions.
- Visible Operations.



# Specifications

## Transmitter Rear View

### ● DP



### ● DVI



### ● HDMI



### ● SDI



### ● VGA



## Receiver Rear View

### ● DVI



### ● SDI



### ● HDMI



## Recommended Network Switches

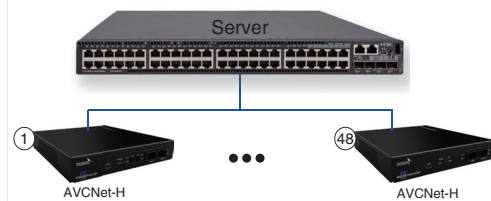
### ● 48x1GbE Ports



48x1GbE Ports

4x10GbE SFP+ Ports

### Network Connection

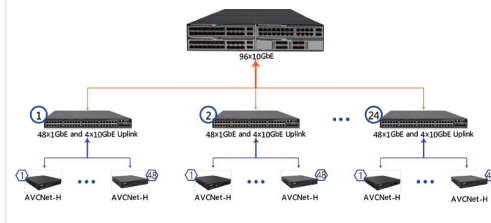


### ● 96x10GbE Ports



Each card support 24x10GbE SFP+Ports,  
Totaled 96x10GbE SFP+ Ports.

### Network Connection



# Specifications

Overview		
Names	AVCNet-H Transmitter	AVCNet-H Receiver
Control Mode	Client(browser server architecture)	Client(browser server architecture)
	DMIS(Digibird)	DMIS(Digibird)
Transmission Mode	cat-5e and above	cat-5e and above
Core Function	Uncompressed transmission of audio, video, keyboard and mouse	Uncompressed transmission of audio, video, keyboard and mouse

Performance		
Network Protocol	Multicast	Multicast
Output Channel	1080P @60 x 1	1080P @60 x 1
Latency	≤20ms(from Encoder to Decoder)	
Seamless Switching	≤16ms(During transitions, no black field, blue screen, splash screen)	
System Scale	Up to 1024 node	

Video Codec		
Resolution	Main Stream: 1920*1080 / 1280*720	Main Stream: 1920*1080 / 1280*720
	Sub Stream: 704*576 / 352*288	Sub Stream: 704*576 / 352*288
Chroma Subsampling	4:4:4	4:4:4
Encoding format	VC-2 High Quality	VC-2 High Quality
System Scale	5-60	5-60
Data Rate	Main Stream: 700M-500Mbps	Main Stream:700M-500Mbps
Out Rate	Sub Stream:200K-50Mbps	Sub Stream:200K-50Mbps

Interface		
Video Input	1* HDMI 1.3/DVI-D/VGA/ SDI/DP 1.1	1* HDMI 1.3/DVI-D/VGA/SDI/DP 1.1
Loop out	support	N/A
Audio	2* 3.5mm Mini-Jack	5-pole Phoenix connector
Network	1* 1GbE Ports(shields RJ45 connector with LED indicators)	1* 1GbE Ports(shields RJ45 connector with LED indicators)

Others		
Dimensions	147*168*27 mm	147*168*27 mm
Weight	0.462kg	0.462kg
Power	DC 12V±10% 15W	DC 12V±10% 15W
Operation Temperature	0-70℃	0-70℃
Operation Humidity	90%(Non condensing)	90%(Non condensing)
MTBF	100000 hours	100000 hours