DATA SHEET

4K HDMI IP Video Wall Controller

IPVDS-700-ED

Contents

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■ Description

IPVDS-700-ED, 4K HDMI IP Video Wall Controller, is an integrated control solution that plays multi-source of audio/video (such as PC, Media player, DVD, or Blu-ray) on the video wall system and multiple individual displays simutaneously.

This solution offers advanced video/audio matrix feature as well as control of video wall system which divide high quality video source(4K30Hz or 1080p60Hz) into multiple video walls with using Encoder and Decoder on IP network. IPVDS-700-ED enables convenient system configuration and control for AV system integrator and installer, and cost-efficiency compared to complicated matrix system. For these reasons, solution using IPVDS-700-ED provides optimal soltion not only to large video wall system like control room, security, traffic control system, but also to general places like conference room, classroom, presentation room, and worship service.

Program provided for system control offers preview function for source devices, and various display configuration like merging, overlaying, clearing of displays on the layout management with allocating audio/video sources with drag and drop operation of mouse.

■ Features

- TCP/IP base IP network: Gigabit Ethernet
- Support up to 4K (3840x2160@30Hz 4:4:4 or 3840x2160@60Hz 4:2:0) input resolution
- Support up to 4K (3840x2160@30Hz 4:4:4) output resolution
- Supports Analog/HDMI audio input and output
- Fast switching time / low video latency
- Transmits HDMI/DVI video, audio, USB, RS-232, IR signal over IP network
- Provides HDMI loop-thru port for local display (Up to 4K 60Hz 4:2:0)
- Provides merge, overlay and split function on multiple video wall layout of PC program
- Supports up to 256 displays (16x16 - 4x64 - 1x256) video wall and multi-sources
- Supports M:N virtual matrix
- Supports 802.3af standard PoE (Power-over-Ethernet)
- Provides 5V/2A power adapter (Optional)
- Provides mounting bracket (model: OPSCB): VESA 75,100 standard (optional)
- Provides 1U rack (4 devices in 1 rack) & Power rack (PR5V-16: 16* 5V output) (optional)

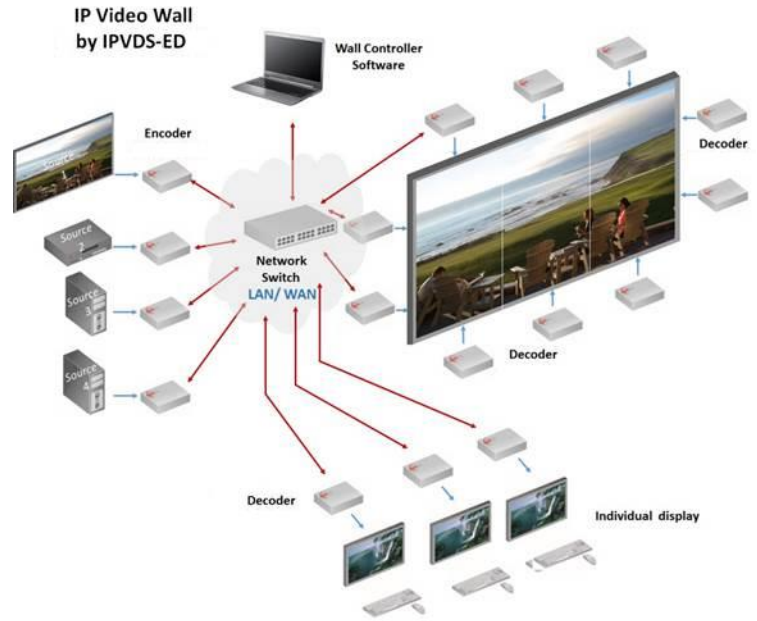
■ Supporting Video Resolutions for Input / Output

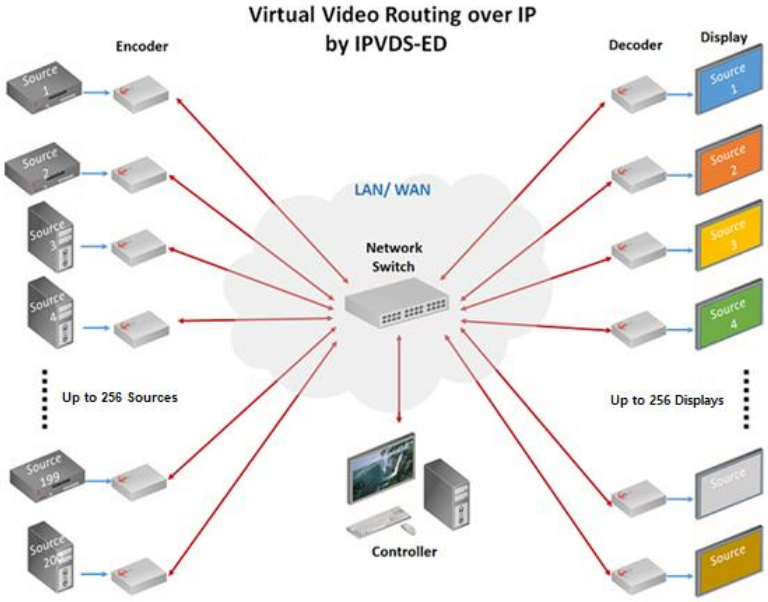
- HDMI 1.4 3840x2160p/24/25/30Hz
- HDMI 1.4/HDTV up to 1920x1280p60Hz
- VESA Digital up to 1920x1200p60Hz

Note: Some PC resolutions may not work properly.

■ Applications

- Control Room
- Traffic Control System
- Security & Education
- Digital Signage / Pro AV for Video Wall & individual display





Connection diagram

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■ Technical Specification

- General Specification

	Description	
Network	TCP/IP based IP network: 100/1000 Base-T Ethernet with CAT5e/ CAT6 Cables	
Network media	UTP CAT5e, 6 cable Max 100m	
Jumbo Frame	8,000	
Input Resolution	Max 3840x2160@30Hz 4:4:4 or 3840x2160@60Hz YCbCr4:2:0	
Output Resolution	Max 3840x2160@30Hz 4:4:4	
Video Wall	Up to 256 (16x16, 4x64, 1x256, etc.) Video Wall with multi-sources	
Virtual IP Matrix	Supports Rows by Columns Virtual Matrix with individual displays	
Multicast streaming	1 to N (up to 256 RXs)	
Video Interface Standard	HDMI 1.4 and DVI 1.0	
HDCP	HDCP 1.4 and 2.2	
Video latency	< 1 frame	
Fast switching	< 2 seconds	
Data rate (changeable)	50, 100, 150, 200Mbps(default) and Best At Best bit rate, IPVDS-700-EDs are in ‘ Visually lossless’ .	
Video Interface	IPVDS-700-E	Input: 1 HDMI Input Output: 1 HDMI Output
	IPVDS-700-D	Output: 1 HDMI Output
Analog Audio Interface	IPVDS-700-E	LINE IN 1 port
	IPVDS-700-D	LINE OUT 1 port
USB	IPVDS-700-E	Host: 2 x USB A type Client:1 x mini USB B type
	IPVDS-700-D	Host: 2 x USB A type
IR (TBD)	IR Tx/Rx (Mode select)	
RS-232	3 Pin Terminal block for Control Authority (Externally)	
Reset Switch	SW reset & Factory reset	
EDID	Built-in EDID & EDID Read/Write (decoder read only)	
Dimension	112 x 28 x 104mm (WHD)	
Power	PoE : IEEE 802.3af(15.4W) * option: Adapter 5V 2A, 100-240VAC, 50-60Hz	
Power Consumption(TBD)	TX < 6W	RX < 5W
Operating Temperature	0 ~ 50°C	
Storage Temperature	-20 ~ 60°C	
Certification	FCC, CE, KC	
1U Rack	Provides 1U rack (model: OPSCR-1U), Optional	
Mounting bracket	Provide Mounting bracket (model: OPSCB): VESA 75,100 standard, Optional	
Control	Provide IPVDS-wallcontroller PC application and API	

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- Video Resolution

Spec	Support
Interlace mode	O
HDMI 1.4b up to 1080p	O
HDMI 1.4b 2160p 30Hz	O
HDMI 1.4b 3D	O
HDMI 1.4b deep color	O
HDMI 2.0a 2160p 60Hz	O **Note. 1 Only 2160p 60Hz YUV420 input** **Note. 2 Will do horizontal half down scale and convert 2160p 60Hz YUV420 input to 2160p 30Hz output**
VESA DVI **up to 1920x1200 60Hz** **Pixel clock < 165MHz**	O
VESA VGA **up to 1920x1200 60Hz** **Pixel clock < 150MHz**	O
Maximum Frame Rate	full frame rate up to 60fps

- Audio Format

Audio Format	Support
Dolby Digital 5.1ch	O
Dolby Digital Plus	O
Dolby TrueHD	O
DTS 5.1ch	O
DTS-HD High Resolution Audio	O
DTS-HD Master Audio	O
Linear PCM 2ch 44.1/88.2/176.4/32/48/96/192 kHz	O
Linear PCM 5.1ch 44.1/88.2/176.4/32/48/96/192 kHz	O
Linear PCM 7.1ch 44.1/88.2/176.4/32/48/96/192 kHz	O

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- Electrical Characteristics

	Parameter		Symbol	Minimum	Typical	Maximum	Units
Power Supply	Supply Voltage, Temp 25°C		VCC	+ 4.75	+ 5.0	+ 5.25	V
	Supply Current	Tx	ITCC	-	2	-	A
		Rx	IRCC	-	2	-	A
	Power Dissipation	Tx	PTX	5	6	7	W
		Rx	PRX	4	5	6	W
TMDS	Data Output Load		RLD		50		Ω
	Graphic Supply Voltage		GVCC	+ 3.15	+ 3.3	+ 3.45	V
	Single-Ended High Level Input Voltage		GVIH	GVCC - 0.01	GVCC	GVCC + 0.01	V
	Single-Ended Low Level Input Voltage		GVIL	GVCC - 0.6	-	GVCC - 0.4	V
	Single-Ended Input Swing Voltage		GVISWING	0.4	-	0.6	V
Ethernet Link	Maximum Bit rate				200		Mbps
	Network Speed				100/1000		Mbps
	RGMII/GMII		-0.2		2.5		V

(T_A = 0 °C to +50 °C, unless otherwise noted)

- Absolute Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Units
Supply Adaptor Voltage, Temp=25°C	VCC	-0.3	+5.25	V
Operating Temperature	Top	0	50	°C
Operating Relative Humidity	RHop	5	80*	%RH
Storage Temperature	Tsto	- 30	+ 70	°C
Storage Relative Humidity	RHsto	10	95*	%RH

- Recommended Operating Conditions

Parameter	Symbol	Minimum	Typical	Maximum	Units
Ambient Operating Temperature	TA	0		+ 50	°C
Data Output Load (HDMI)	RLD		50		Ω
Power Supply Rejection (Note1)	PSR		100		mVp-p
Supply Voltage	VCC	+ 4.75	+ 5.0	+ 5.25	V

■ EMC Test

- EMI: Meet *FCC* and *CE class A*

STANDARDS		CONDITIONS
EN 55032:2015, Class A FCC; PART 15 SUBPART B, Class A	CE (Conducted Emission) & RE (Radiated Emission)	Meet Class A
EN 61000-3-2:2014	Harmonics	
EN 61000-3-3:2013	Flickers	

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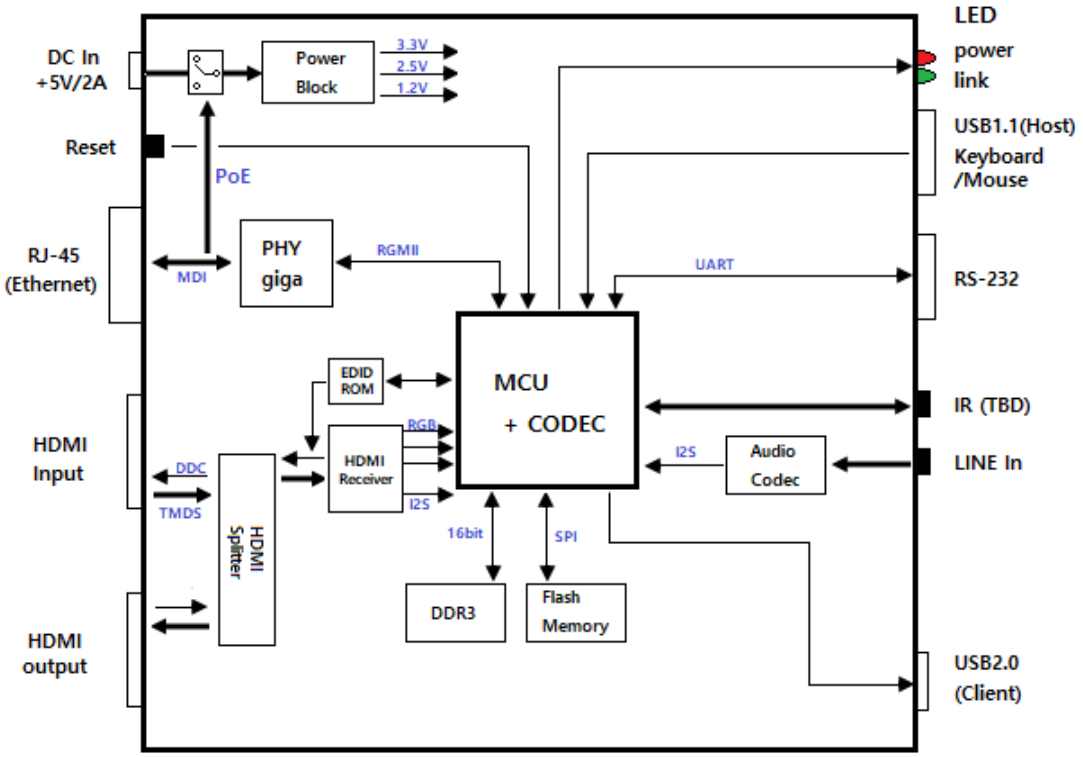
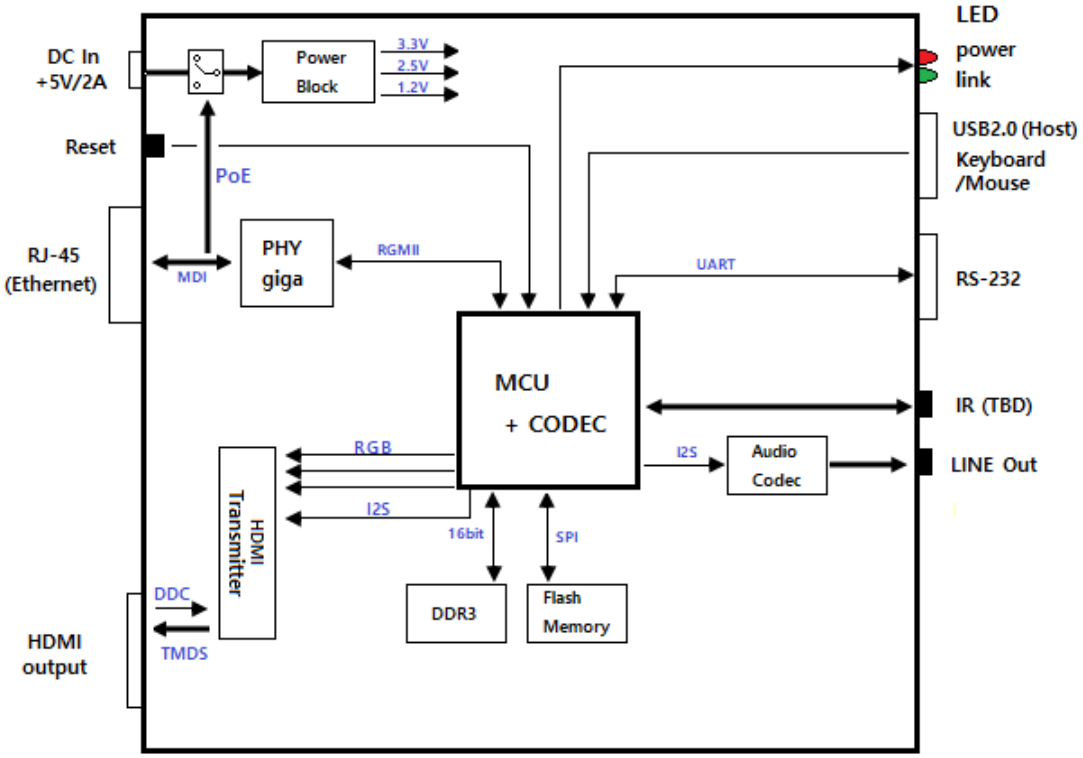
■ Block Diagram

IPVDS-700-E Encoder: Internal schematic circuit diagram & I/O port



IPVDS-700-D Decoder : Internal schematic circuit diagram & I/O port



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■ Dimensions

IPVDS-700-E Encoder: 112 x 104 x 28 mm

IPVDS-700-D Decoder: 112 x 104 x 28 mm

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