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VigilLink VLPT-52K2HD Seamless Presentation Switcher with
KVM Dual HDMI Output

VigilLink VLPT-52K2HD Seamless Presentation Switcher with KVM Dual HDMI Output User Manual

Contents

VigilLink VLPT-52K2HD Seamless Presentation Switcher with KVM Dual HDMI Output

Product Information

Specifications

- Product Name: 5×2 HDMI 2.0 Seamless Presentation Switcher with KVM/Dual HDMI output
- Model Number: VLPT-52K2HD
- Version: 1.0
- Power Supply: DC 12V/3A
- Video Resolution: Up to 4K2K@60Hz with 24-bit RGB/YCBCR 4:4:4
- Audio Formats: LPCM, AC3, DD+, DTS, DTS-HD Up to 7.1 channel
- ESD Protection
- Operating Temperature: 10 – 70% RH (no-condensing)
- Dimensions: 219mm [W] x 146mm [D] x 44mm [H]
- Weight: 1.2kg

Product Usage Instructions

Setup
Before connecting the product, ensure that all devices are powered off.

Connection
Connect the HDMI input sources to the designated input ports on the switcher.

Power On
Plug in the power adapter to the DC input of the switcher and connect it to a power source.

Operation
Use the IR remote or front panel buttons to control input sources and display modes.

Frequently Asked Questions (FAQ)

Q: Is surge protection necessary for this product?
A: Yes, surge protection is recommended to safeguard the sensitive electrical components.

Q: What are the supported video resolutions?
A: The product supports up to 4K2K@60Hz with 24-bit RGB/YCBCR 4:4:4.

Thank you for purchasing this product
For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.

Surge protection device recommended
This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lighting strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

Introduction

The 5x Inputs and 2x Outputs seamless multiview video switcher with USB- KVM control was developed for the purpose of multiple sources displayed on a single screen. It supports high input and output resolutions (up to 3840 x2160@60Hz).

The switcher can combine up to four video signals onto a single UHD or HD displayer.
The switcher supports 4x USB-Type B inputs which are connected to PC and 2x USB-Type A outputs which are

connected to Mouse and Keyboard. User can easily manage the switcher via the front panel buttons, IR remote, RS-232 or TCP/IP commands.

The HDMI B mirror output port can be used for audio amplifier, video capture (with HDMI to USB dongle), or remote display (with HDBaseT Extender). This multi-functional product can be widely applied in a variety of fields, such as Home Theatre, Video Conference, Security Monitoring, Presentation and Broadcasting, Teaching System, Financial Stock Analysis, Game E-Sports, Medical Display.

Features

- HDMI 2.0b, HDCP 2.2 and HDCP 1.4 compliant
- Up to 4K2K@60Hz with 24-bit RGB/YCBCR 4:4:4
- Multiple output resolutions from 720p to 4K60
- 4x HDMI, 1x USB-C (AV only) inputs and 2x HDMI mirror outputs
- Up to 5 display modes: SINGLE, PIP, PBP, 3xWIN, 4xWIN
- Seamless switching on single display mode
- Fast switching on multiview display mode
- 4x USB KVM switcher with 2 USB devices for Mouse/Keyboard
- Support USB Roaming, hot-key to switch input
- Support volume control and independent audio selection
- Support LPCM, AC3, DD+, DTS, DTS-HD, up to 7.1 audio channel
- Support OSD navigation for advanced setting
- EDID management

Package Contents

1. 1 x Seamless UHD Video Switcher
2. 1 x IR Remote
3. 1 x 4-pin Phoenix Connector (male)
4. 2 x Brackets
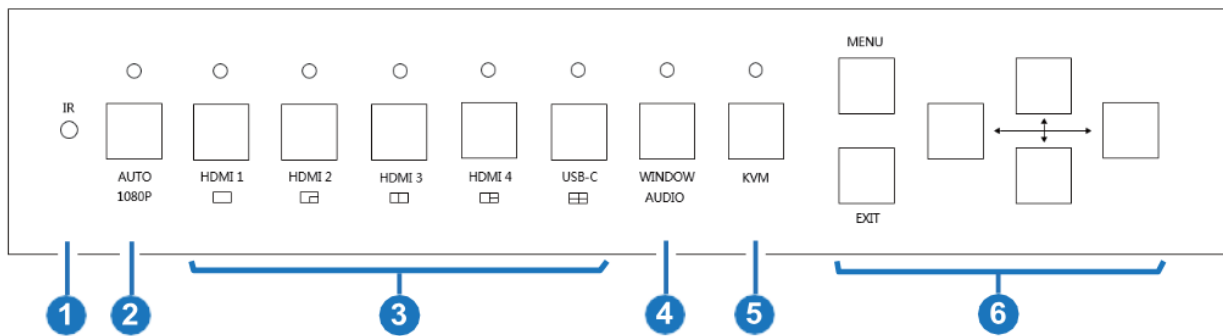5. 1 x 12V/3A Power Adapter
6. 1 x User Manual

Specifications

Technical	
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2 / 1.4
Video Bandwidth	18Gbps
Video Resolution	Up to 4K2K@60Hz with 24-bit RGB/YCBCR 4:4:4
Audio Formats	LPCM, AC3, DD+, DTS, DTS-HD Up to 7.1 channel
ESD Protection	Human body model — ±8kV (Air-gap discharge) & ±4kV (Contact discharge)
Connection	
Input ports	4 x HDMI IN [Type A, 19-pin female] 1 x USB-C 4 x USB-B (Host)
Output ports	2 x HDMI OUT [Type A, 19-pin female] 2 x USB-A (Device) 1 x L/R AUDIO OUT [3.5mm Jack] 1 x Toslink digital audio
Control ports	1 x RS232 [4-pin phoenix connector] 1 x LAN [RJ45 connector] 1 x SERVICE [USB-A]

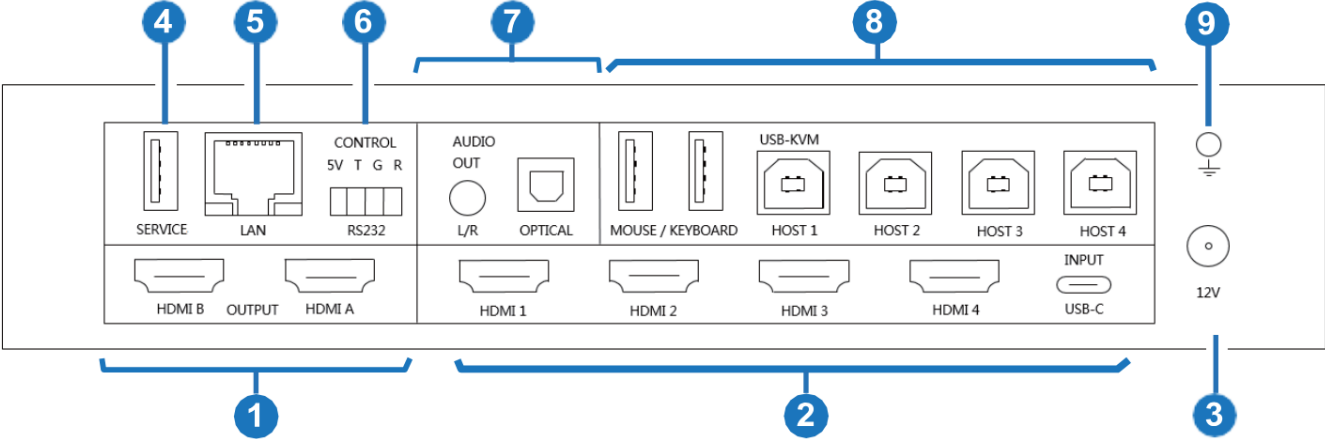| Mechanical	
Housing	Metal Enclosure
Color	Black
Dimensions	219mm [W] x 146mm [D] x 44mm [H]
Weight	1.2kg
Power Supply	DC 12V/3A
Power Consumption	15W (Max)
Operating Temperature	32 – 104°F / 0 – 40°C
Storage Temperature	-4 – 140°F / -20 – 60°C
Relative Humidity	10 – 70% RH (no-condensing)

Operation Controls and Functions

Front Panel

No.	Name	Function Description
1	IR Window	IR signal receiving window.
2	AUTO 1080P button & LED	▪ Press AUTO button to enable or disable the auto switching function on single display mode. ▪ Long press this button for 3 seconds to change the output resolution to 1080p 60.
3	HDMI 1, HDMI 2, HDMI 3, HDMI 4, USB-C buttons & LEDs	▪ Press these buttons to directly select HDMI 1/HDMI 2/HDMI 3/HDMI 4/USB-C (AV only) as the input source for WIN 1 display. ▪ Long press these buttons for 3 seconds to select SINGLE, PIP, PBP, 3xWIN or 4xWIN Multiview mode.

|		
4	WINDOW AUDIO button & LED	▪ Press this button, there will be a border shown on window 1, 2, 3 or 4, circularly press this button to select a window. Then press one input button such as HDMI 1, and then HDMI 1 source signal will be displayed on the current selected window. ▪ Long press this button for 3 seconds, there will be an Audio selection list on the screen, use ↑ ↓ ← → and Enter (MENU) button on the front panel to select the required audio. **Note:** when working on the non-SINGLE mode, the LED is always lit.
5	KVM button & LED	Circularly press this button, the screen will show up one border on window 1, 2, 3 or 4, then user can select one display window as KVM source. For example if select WIN 2 as KVM source, then rear USB- Keyboard / Mouse will switch to the USB-HOST device which is displayed on WIN 2.
6	MENU, EXIT, ↑ ↓ ← → buttons	OSD Menu navigation buttons.

Rear Panel

No.	Name	Function Description
1	HDMI A, B OUTPUT ports	HDMI signal output ports (HDMI scaling output up to 3840x 2160@60). HDMI A is the main output.
2	HDMI 1, HDMI 2, HDMI 3, HDMI 4, USB-C INPUT ports	HDMI signal input ports, connecting to HDMI source device such as DVD or Set-top box with HDMI cable. **Note:** The USB-C port only supports audio and video signal.

3	12V	DC 12V/3A power input port.
4	SERVICE port	Firmware update port.
5	LAN port	TCP/IP control port. Default parameters as following: IP address: 192.168.0.247; Sub Mask: 255.255.255.0; GATEWAY: 192.168.0.1; NETPORT: 2000 All the parameters can be changed by RS-232 command.
6	RS232 port	4-pin male phoenix connector. Default: Baud rate 9600, 8 data bits, 1 stop bit, no parity. Baud rate can be changed via OSD menu. 5V means 5V output; T means "Switcher to PC"; R means "PC to Switcher"; G means Ground.
7	AUDIO OUT (L/R,OPTICAL) ports	L/R: 3.5mm anaolg audio output port (20Hz ~ 20kHz, 1.5Vrms max). OPTICAL: Toslink-optical digital audio output port.
8	KVM ports	USB ports which are connected to PC or Mouse/Keyboard. 4 x USB Type B ports connected to PC 2 x USB Type A ports to be plugged in Mouse or Keyboard The binding relationship between video inputs and USB Host devices as following: HDMI 1<> Host 1, HDMI 2<> Host 2, HDMI 3<> Host 3, HDMI 4<> Host 4, USB-C <> Host 4 **Note:** HDMI 4 and USB-C port can't be used as KVM source at the same time.
9	Grounding port	Connect the housing to the ground.

IR Remote
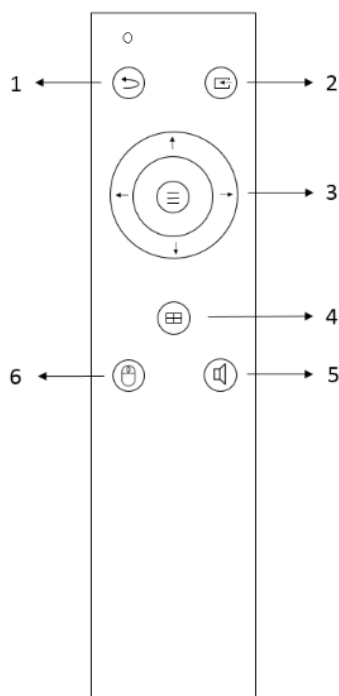
1. Return / Exit button

2. Video input selection button

3. OSD Menu navigation buttons: Menu (Enter),UP, DOWN, LEFT, RIGHT

4. Multiview mode selection button

5. Audio input selection button

6. USB-KVM selection button

EDID & HDCP Settings
User can select following EDID modes via RS-232 command or OSD menu navigation.

No.	EDID Mode	No.	EDID Mode
1	4K60-2.0CH	10	1600×1200
2	4K60-5.1CH	11	1440×900
3	4K30-2.0CH	12	1360×768
4	4K30-5.1CH	13	1280×1024
5	1080P-2.0CH	14	1024×768
6	1080P-5.1CH	15	AUTO
7	720P	16	4K60-7.1CH
8	1920×1200	17	4K30-7.1CH
9	1680×1050	18	1080P-7.1CH

The HDMI output supports 3 HDCP options: FORCE-1.4, FORCE-2.2, FORCE-OFF (User can select it via RS-232 command).

Video & Audio
The switcher supports multiple resolution video input up to 3840×2160@60, and supports multiple audio formats

such as LPCM, AC3, DD+, DTS, DTS- HD, up to 7.1 channel pass through function via HDMI cable.

User can control the volume of audio in LPCM format.
Please note, USB-C input port can only accept LPCM 2.0 audio.
The switcher supports following video output resolutions via a powerful scaling engine.

No.	Output Resolution	No.	Output Resolution
1	4096x2160p 60Hz	8	1920x1080p 60Hz
2	4096x2160p 50Hz	9	1920x1080p 50Hz
3	3840x2160p 60Hz	10	1360x768p 60Hz
4	3840x2160p 50Hz	11	1280x800p 60Hz
5	3840x2160p 30Hz	12	1280x720p 60Hz
6	3840x2160p 25Hz	13	1280x720p 50Hz
7	1920x1200p60Hz RB	14	1024×768 60Hz

Multiview

The switcher supports 5 categories of multiview display modes: SINGLE, PIP, PBP, 3xWIN, 4xWIN
Users can select different operations for different Multiview modes as following:

- **SINGLE:** Inputs selection

- **PIP:** Inputs selection, Sub window size and position selection

- **PBP, 3xWIN, 4xWIN:** Inputs selection, Display mode selection, Display aspect selection Multiview window

  distributions are as following:
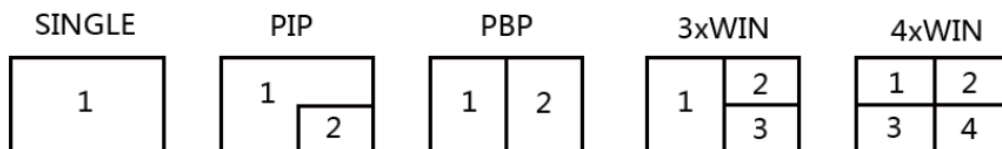
User can select Multiview modes via RS-232 commands or OSD menu navigation.

Keyboard KVM Selection
Besides front panel buttons, IR remote and RS-232 commands, Keyboard also can do KVM selection. For all these selections, there will be a border on the selected window.
For example: Press Ctrl + Ctrl + 1 (2, 3, or 4) in sequence, then the input signal corresponding to WIN1 will be selected as KVM source.

OSD Menu Navigation
A total of six buttons are used for OSD menu navigation, including MENU, EXIT, UP, DOWN, LEFT, RIGHT
Menu contents are as follows:

Output	Resolution	3840x2160p60	3840x2160p60,…
	VKA	BLACKSCREEN,	BLACKSCREEN, BLUESCREEN
	4K-Auto	ON	ON,OFF
	ITC	OFF	ON,OFF
Multiview	Single	Input select	HDMI1, …
	PIP	Win1 Select	HDMI1,…
		Win2 Select	HDMI1,…
		PIP Position	RightBottom,…
		PIP Size	SMALL,…
	PBP	Win1 Select	HDMI1,…
		Win2 Select	HDMI1,…
		MODE	1, 2
		Aspect	Full, 16:9

		Win1 Select	HDMI1,…
	3xWIN	Win1 Select	HDMI1,…
		Win2 Select	HDMI1,…
		Win3 Select	HDMI1,…
		MODE	1, 2
		Aspect	Full, 16:9
	4xWIN	Win1 Select	HDMI1,…
		Win2 Select	HDMI1,…
		Win3 Select	HDMI1,…
		Win4 Select	HDMI1,…
		MODE	1, 2
		Aspect	Full,16:9
AUDIO	Audio Select	WIN1	WIN1,HDMI1,…
	Volume	100	0..100
	AUDIO-MUTE	OFF	ON, OFF
System	Language/	English	English,
	EDID	4K60-2.0	4K60-2.0,…
	USB Roaming	OFF	ON, OFF
	Baud rate	9600	9600, 19200, 38400,57600, 115200
	Reset		
	FW Version		Read only
	IP Address		Read only

Note:

1. USB Roaming function can only be enabled on PBP, 3xWIN or 4xWIN multiview mode.

   In terms of KVM function, HDMI 4 and USB-C are repeated source.

   The following sketch map shows the USB Roaming when moving mouse cursor from left (WIN1) to right for 4xWIN multiview display mode.

2. For ITC setting, suggest OFF for video display and ON for PC especially desktop display, default setting is OFF.

RS-232 Command

Note: All the commands begin with SET or GET, end with Carriage Return (CR). 8 represents Carriage Return (CR). All return messages always end with CR.

System and IP Command

Command	Details
GET HELP8	Get the Commands list
SET RESET8	Recover to default setting
GET VERSION8	Get firmware version Return: VERSION w (w is version number)
SET IP ADDRESS w8	For example: SET IP ADDRESS 192.168.0.247 Return: IP ADDRESS w
GET IP ADDRESS8	Return: IP ADDRESS w
SET SUBMASK w8	For example: SET SUBMASK 255.255.255.0 Return: SUBMASK w
GET SUBMASK8	Return: SUBMASK w
SET GATEWAY w8	For example: SET GATEWAY 192.168.0.1 Return: GATEWAY w
GET GATEWAY8	Return: GATEWAY w
SET NETPORT w8	For example: SET NETPORT 2000 Return: NETPORT w
GET NETPORT8	Return: NETPORT w

Switching Command, only Available on SINGLE Mode

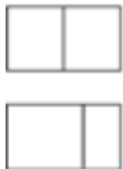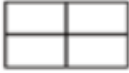| Command	Details
SET AUTO SWITCH w8	w is ON or OFF, default OFF Return: AUTO SWITCH w
GET AUTO SWITCH8	Return: AUTO SWITCH w
SET IN SOURCE w8	w is one of the following: HDMI1, HDMI2, HDMI3, HDMI4, USB-C Return: IN SOURCE w
GET IN SOURCE8	Get current input channel selection information Return: IN SOURCE w
GET IN RESOLUTION8	Get current input resolution Return: IN RESOLUTION w (w is input resolution)
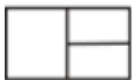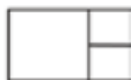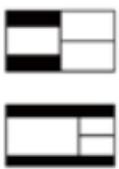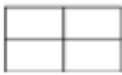
Output Command

Command	Details
SET OUT RESOLUTION w8	w is one of the following, default: 3840x2160p60 4096x2160p60, 4096x2160p50, 3840x2160p60, 3840x2160p50, 3840x2160p30, 3840x2160p25, 1920x1200p60RB, 1920x1080p60, 1920x1080p50, 1360x768p60, 1280x800p60, 1280x720p60, 1280x720p50, 1024x768p60 Return: OUT RESOLUTION w
GET OUT RESOLUTION8	Get current output resolution setting Return: OUT RESOLUTION w
SET OUT 4K-AUTO w8	w is ON or OFF, default ON If we set 4K output to a displayer which can't support 4K, then the ON setting can change the resolution to 1080p or 4K-4:2:0 Return: OUT 4K-AUTO w
GET OUT 4K-AUTO8	Get current OUT 4K-AUTO mode Return: OUT 4K-AUTO w
SET OUT HDCP w8	w is one of following, default FORCE-1.4 FORCE-1.4,FORCE-2.2,FORCE-OFF Return: OUT HDCP w
GET OUT HDCP8	Return: OUT HDCP w

SET OUT VKA w8	w is BLUESCREEN or BLACKSCREEN. Default BLACKSCREEN. It is for no signal display Return: OUT VKA w
GET OUT VKA8	Return: OUT VKA w
SET OUT ITC w8	w is ON or OFF, default OFF Return: OUT ITC w
GET OUT ITC8	Return: OUT ITC w

Multiview Command

Command	Details
SET MULTIVIEW w8	Select one Multiview mode for current display w is one of the following, default SINGLE SINGLE ▭ , PIP ⊟ , PBP ⊓⊓, 3xWIN ⊟ , 4xWIN ⊞ Return: MULTIVIEW w
GET MULTIVIEW8	Get the current Multiview mode Return: MULTIVIEW w
SET WINDOWx IN y8	Select one input for one display window for the current Multiview mode . x is one of 1, 2, 3 or 4 y is one of HDMI1, HDMI2, HDMI3, HDMI4, USB-C Return: WINDOWx IN y
GET WINDOWx IN8	This command to get which is the input source for one display window for the current Multiview mode Return: WINDOWx IN y
SET PIP POS w8	This command to select the PIP sub window position. w is one of the following, default RightBottom LeftTop, LeftBottom, RightTop, RightBottom Return: PIP POS w
GET PIP POS8	This command to get the PIP sub window position Return: PIP POS w
SET PIP SIZE w8	This command to select the PIP sub window size. w is one of the following, default LARGE SMALL, MIDDLE, LARGE Return: PIP SIZE w
GET PIP SIZE8	Return: PIP SIZE w

SET PBP MODE w8	Set the PBP display mode w is one of 1 or 2, default 1 Return: PBP MODE w
GET PBP MODE8	Return: PBP MODE w
SET PBP ASPECT w8	Set the PBP window display aspect w is FULL or 16:9, default FULL Return: PBP ASPECT w
GET PBP ASPECT8	Return: PBP ASPECT w
SET 3xWIN MODE w8	Set the 3xWIN display mode w is one of 1 or 2, default 1 Return: 3xWIN MODE w
GET 3xWIN MODE8	Return: 3xWIN MODE w
SET 3xWIN ASPECT w8	Set the 3xWIN window display aspect w is FULL or 16:9, default FULL Return: 3xWIN ASPECT w
GET 3xWIN ASPECT8	Return: 3xWIN ASPECT w
SET 4xWIN MODE w8	Set the 4xWIN display mode w is 1 or 2 ,default 1 Return: 4xWIN MODE w
GET 4xWIN MODE8	Return: 4xWIN MODE w

Command	Details
SET 4xWIN ASPECT w8	Set the 4xWIN window display aspect w is FULL or 16:9, default FULL FULL 16:9 Return: 4xWIN ASPECT w
GET 4xWIN ASPECT8	Return: 4xWIN ASPECT w

Audio Command

Command	Details
SET AUDIO SOURCE w8	w is one of the following: WIN1, HDMI1, HDMI2, HDMI3, HDMI4, USB-C Return: AUDIO SOURCE w
GET AUDIO SOURCE8	Return: AUDIO SOURCE w
SET AUDIO VOL+8	Increase audio out volume Return: AUDIO VOL w (w is the volume value)
SET AUDIO VOL-8	Decrease audio out volume Return: AUDIO VOL w (w is the volume value)
SET AUDIO VOL w8	Set audio volume value w is 0,1…,or 100, default 100 For example: SET AUDIO VOL 100 Return: AUDIO VOL w
GET AUDIO VOL8	Return: AUDIO VOL w
SET AUDIO-MUTE w8	Mute or unmute audio output Here w is ON or OFF, default OFF Return: AUDIO-MUTE w
GET AUDIO-MUTE8	Return: AUDIO-MUTE w

KVM Command

Command	Details
SET KVM w8	w is one of WIN1, WIN2, WIN3, WIN4 Return: KVM w
GET KVM	Return: KVM w
SET USB ROAMING w8	w is ON or OFF, default OFF Return: USB ROAMING w
GET USB ROAMING8	Return: USB ROAMING w

Note: When working on SINGLE display mode, the KVM function of current selected source is always activated.

EDID Command
The following commands are used to set EDID mode for the inputs.

Command	Details
SET IN EDIDMODE w8	w is one of the following:
	4K60-2.0, 4K60-5.1, 4K60-7.1, 4K30-2.0,
	4K30-5.1, 4K30-7.1, 1080p60-2.0,1080p60-5.1,
	1080p60-7.1,1920×1200, 1680×1050, 1600×1200, 1440×900, 1360×768, 1280×1024, 1024×768, 720p,
	AUTO
	Default: 4K60-2.0
	Return: IN EDIDMODE w
GET IN EDIDMODE8	Return: IN EDIDMODE w

Common Troubleshooting

Q: Why there is no image displayed on screen?
A: Please check if the switcher output resolution is set to 4K, and the 4K- AUTO setting is OFF.
If it is, and the displayer doesn't support 4K, the issue should happened. Then please long press the AUTO button on the front panel to change the output resolution to 1080p and set 4K-AUTO to ON.

Q: Why there is no audio heard?
A: About 4 possibilities:

- Since audio selection is separately from video selection, please check if the audio selection is the required source via OSD menu or RS-232 command. It is recommended to select WIN1 if no special requirement.
- Please check if Audio-Mute is enabled via OSD menu or RS-232 command.
- Please check Audio Volume value via OSD menu or RS232 command.
- Please check if the audio format is compressed format and your audio receiver doesn't support this format.

Q: Why does the displayer show 1080p input when the output resolution is set to 3840×2160?

A: Please check if the 4K-AUTO setting is ON. If so, it should because your displayer doesn't support 4K.

Q: Why there is no feedback when adjusting audio volume (VOL+ or VOL-)?
A: It should because the audio source is in non-LPCM format (such as AC3, DTS 5.1).
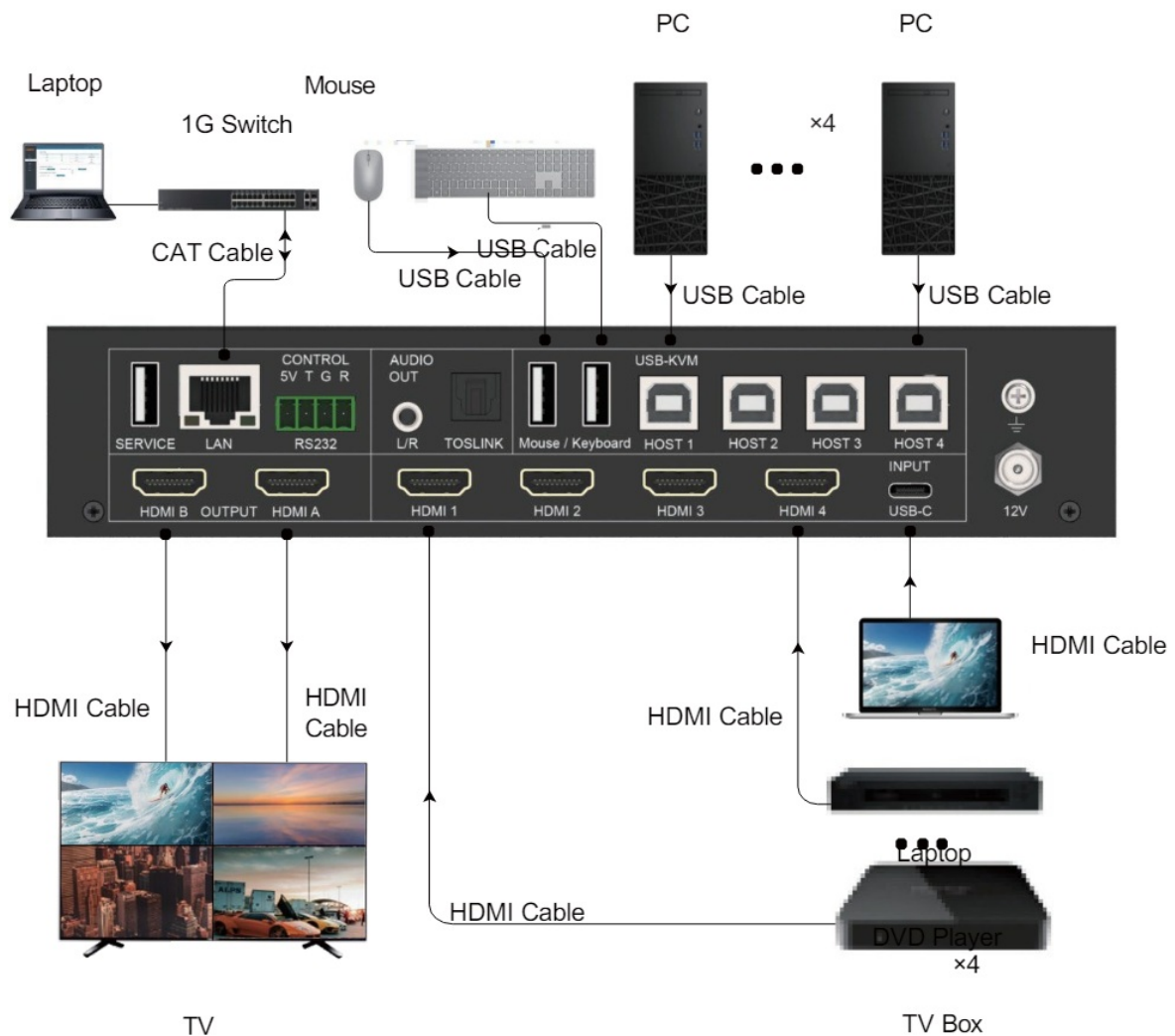we can't change the volume of audio in non-LPCM format with the switcher.

Q: Why there is no response when controlling the switcher via RS-232 command?
A: Please find the exact RS-232 baud rate value via the OSD menu.

Q: Why there is no response when controlling the switcher via TCP/IP port?
A: Please check the IP address, NetPort, Baud rate setting. The switcher and your router must be in the same network segment.

Application Example

Documents / Resources

VigilLink VLPT-52K2HD Seamless Presentation Switcher with KVM Dual HDMI Output [pdf] User Manual

VLPT-52K2HD Seamless Presentation Switcher with KVM, Dual HDMI Output, VLPT-52K2HD, Seamless Presentation Switcher with KVM Dual HDMI Output, Presentation Switcher with KVM Dual HDMI Output, KVM Dual HDMI Output, Dual HDMI Output

References

- **User Manual**