StarTech.com

Hard-to-find **made easy**®

4x4 HDMI Matrix Switch w/ Picture-and-Picture – 1080p

VS424HDPIP

*actual product may vary from photos

DE: Bedienungsanleitung - de.startech.com
FR: Guide de l'utilisateur - fr.startech.com
ES: Guía del usuario - es.startech.com
IT: Guida per l'uso - it.startech.com
NL: Gebruiksaanwijzing - nl.startech.com
PT: Guia do usuário - pt.startech.com

For the most up-to-date information, please visit: www.startech.com

FCC Compliance Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.

- Increase the separation between the equipment and receiver.

- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

- Consult the dealer or an experienced radio/TV technician for help

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by StarTech.com could void the user's authority to operate the equipment.

Industry Canada Statement

This Class B digital apparatus complies with Canadian ICES-003.
Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.

CAN ICES-3 (B)/NMB-3(B)

Use of Trademarks, Registered Trademarks, and other Protected Names and Symbols

This manual may make reference to trademarks, registered trademarks, and other protected names and/or symbols of third-party companies not related in any way to StarTech.com. Where they occur these references are for illustrative purposes only and do not represent an endorsement of a product or service by StarTech.com, or an endorsement of the product(s) to which this manual applies by the third-party company in question. Regardless of any direct acknowledgement elsewhere in the body of this document, StarTech.com hereby acknowledges that all trademarks, registered trademarks, service marks, and other protected names and/or symbols contained in this manual and related documents are the property of their respective holders.

StarTech.com
Hard-to-find made easy®

Table of Contents

StarTech.com

Hard-to-find made easy®

Introduction

Packaging Contents

- 1 x HDMI Matrix Switch (VS424HDPIP)
- 1 x Remote control
- 1 x Mounting brackets
- 1 x Universal Power Adapter (NA/UK/EU/AUS)
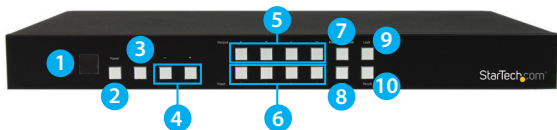- 1 x Quick Install Guide

System Requirements

- Up to 4 x HDMI-enabled Video Source Devices (i.e. computer, Blu-ray Player)
- Up to 4 x HDMI-enabled Display Devices (i.e. television, projector)
- Up to 8 x M/M HDMI cables for displays and video sources

StarTech.com
Hard-to-find made easy®

Product Diagram

Front View

1. IR Sensor
2. Power Button / LED
3. Menu Button / LED
4. Menu Operation Buttons / LEDs
5. Output Selection Buttons / LEDs
6. Input Selection Buttons / LEDs
7. Mode Selection Button / LEDs

8. Save Button / LED
9. Lock Button / LED
10. Recall Button

Rear View

1. HDMI Input Ports
2. HDMI Output Ports
3. LAN Port
4. USB Service Port
5. RS232 Serial Port
6. Power Adapter Port

StarTech.com
Hard-to-find made easy®

Hardware Installation

1. Connect up to four HDMI cables (not included) from each of your HDMI video source devices (i.e. computers, Blu-ray Players) to each of the HDMI input ports on the matrix switch.

2. Connect up to 4 HDMI cables (not included) from each HDMI output port on the matrix switch to the HDMI input ports on your display devices (i.e. televisions, projectors).

3. Connect the power adapter from an available power outlet to the Power adapter port the Matrix switch.

4. (Optional) If you would like to control your Matrix Switch with RS232, connect a DB-9 pin serial cable (not included) from the RS232 serial port on the matrix switch to your RS232 serial port on your computer system.

5. (Optional) If you would like to control your Matrix Switch over your network, connect a network cable (not included) from the LAN port on the matrix switch to an available LAN port on your network device.

Hardware Operation

Matrix Operation

1. Press the Mode button repeatedly until the Mode LED is solid to indicate Matrix Mode.

2. Press the Output select button (that corresponds with the lettered output display) you wish to select.

3. Press the input select button (that corresponds with the numbered input display) you wish to output on your selected output display.

4. Your selected video input will now be displayed on your selected video output. Repeat steps 2- 3 for each video output you wish to adjust. Each output setting must be made individually.

Dual Mode Operation

1. Press the Mode button repeatedly until the Mode LED is unilluminated to indicate Dual Mode.

2. Press output A/B and then press corresponding input 1/2.

    For example: If you press output A then press input 1, output A will display the input 1 image on the left side. If you then press output B followed by input 2, output A will display the input 2 image on the right side. Both output A and B will have an identical image.

StarTech.com
Hard-to-find made easy®

Note: Dual A group are output A and B, Dual B group are output C and D. Each group will output the same image simultaneously.

3. To switch the audio source between output A or B, Press button A or B for 3 seconds.

4. To switch the audio source between output C or D, Press button C or D for 3 seconds.

TV Wall Mode Operation

1. Press the Mode button repeatedly until the LED is blinking to indicate TV Wall Mode.

2. Press the input select button (that corresponds with the numbered input display) you wish to output on all displays.

Note: Audio will Output on the device connected to Video Output A only

On Screen Display Menu

The OSD menu gives you access to advanced functionality. The below table lists each OSD menu option. The description field outlines the functionality of each menu selection.

Main Menu	Sub Menu				Description
		CONTRAST	0 ~ 100	50	*Enables you to adjust the specified attributes for your desired picture quality.*
		BRIGHTNESS	0 ~ 100	50	
		SATURATION	0 ~ 100	50	
PICUTRE	ALL				***Note: In Matrix mode, four pictures adjust** simultaneously.*
		HUE	0 ~ 100	50	*In Dual/TV Wall mode, each picture can adjust individual and support individual last memory feature.*

StarTech.com
Hard-to-find made easy®

	DUAL	DUAL AL		*Enables you to select Dual mode with your desired video outputs selected.*
		DUAL AR		
		DUAL BL		
		DUAL BR		
	TV WALL	OUT A		*Enables you to select TV WALL mode with your desired video output.*
		OUT B		
		OUT C		
		OUT D		
	D/T	RESET		*Restores default output settings.*
	ALL	RESET ALL		
		EXIT		*Returns to Main Menu.*
OUTPUT RESOLUTION	480p, 576p, 720p50, 720p60, 1080i50, 1080i60, 1080p24, 1080p50, 1080p60, 1024x768, 1280x800, 1280x1024, 1366x768, 1440x900, 1600x900, 1600x1200, 1680x1050, 1920x1200		720p60	*Enables you to select your desired output resolution.* ***Note: 1080i@50/60 are supported in Matrix mode only.***
	EXIT			*Returns to Main Menu.*

StarTech.com
Hard-to-find made easy®
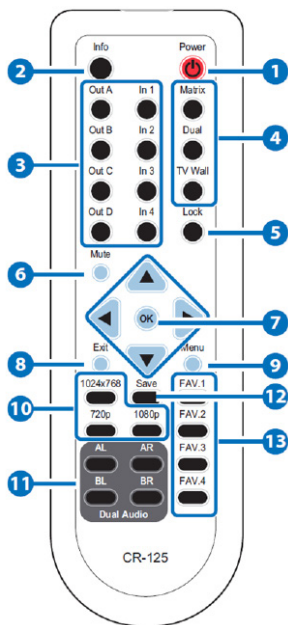
AUDIO EDID	LPCM 2CH, LPCM, 6CH, LPCM 8CH, BIT-STREAM, HD		LPCM 2CH	*Enables you to define your available audio specification to your audio source device.* ***Note: Whichever is selected will limit the audio distributed by your source device.***
	EXIT			*Returns to Main Menu.*
OSD SETTINGS	POSITION	LEFT T, RIGHT T, LEFT B, RIGHT B	LEFT T	*Enables you to adjust the specified attributes in relation to the On the Screen display positioning and operation.* ***Note: TIMEOUT =OFF means MENU and INFO will continue showing on the screen***
	H OFFSET	0 ~ 20	10	
	V OFFSET	0 ~ 20	10	
	TRANSPARENCY	0 ~ 9	4	
	MENU TIMEOUT	5 ~ 50 OFF	8	
	INFO.TIMEOUT	5 ~ 50 OFF	8	
	INFO.DISPLAY	ON, OFF	ON	
	BRIEF INFO	ON, OFF	OFF	
	EXIT			Returns to Main Menu.
HDCP	INPUT	ACCEPT, NOT ACCEPT	ACCEPT	*Enables you to turn HDCP support on and off.*
	OUTPUT	FOLLOW INPUT, ALWAYS ON		
	EXIT			*Returns to Main Menu.*

StarTech.com
Hard-to-find made easy®

BEZEL CORRECTION	CORRECTION	ON, OFF	OFF	*Enables you to define image compensation for the bezel size of your monitors for when the switch is in TV WALL mode.*
	H CORRECTION	0~ by output resolution	0	
	V CORRECTION	0~ by output resolution	0	
		EXIT		*Returns to Main Menu.*
RECALL / SAVE	RECALL	CANCEL, FAV .1 ~ 4		*Enables you to access the save and recall features from the OSD menu.*
	SAVE	CANCEL, FAV .1 ~ 4		
		EXIT		*Returns to Main Menu.*
ETHERNET	IP MODE	DHCP, STATIC	DHCP	*Enables you to define Network communication protocols for remote operation.*
	STATIC SET	IP, MASK, GATE	IP	
	BYTE1		192	
	BYTE2		168	
	BYTE3		5	
	BYTE4		155	
	RE-LINK			
	TIMEOUT (Min.)	5~60, OFF	10	
		EXIT		*Returns to Main Menu.*
OTHERS	IR ADDRESS	0~3	0	*Enables you to specify up to three different IR modes for the use of multiple switches with multiple remote controls.*
		EXIT		*Returns to Main Menu.*

StarTech.com
Hard-to-find made easy®

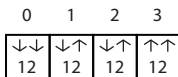| INFORMATION | IN/OUT RESOLUTION | *Enables you to view the technical specifications of the specified attributes.* |
	SOURCE HDCP/AUDIO	
	OUT MODE, FIRMWARE VER	
	EXIT	*Returns to Main Menu.*
	EXIT	*Closes OSD Menu.*

IR Remote Control Operation

An IR remote control is included with the VS424HDPIP for hassle-free remote operation. Please review the legend below for a detailed description of each remote control function.

StarTech.com
Hard-to-find made easy®

1. **Power:** Press this button to switch on the device or press it again to set it to standby mode.

2. Info: Press this button to show the device's firmware version.

3. **Out A~D and In 1~4:** Press out¬put A~D and then press input 1~4 to select display input. For example: press Out A then press In 1, output A will display input 1's image.

4. **MATRIX/DUAL/WALL:** Press to switch between Matrix mode, Dual mode and TV Wall mode.

5. **Lock:** Press once to lock the keypad and remote control, press 3 second again to re¬lease the lock function.

6. **Mute:** Press this button to mute the audio from HDMI output port.

7. ▲/▼/←/→/OK: Press these buttons to scroll through the OSD selec¬tion and press OK to enter and confirm the setting.

8. **Exit:** Press this button to exit the OSD menu or the OSD settings.

9. **Menu:** Press this button to enter into the OSD menu.

10. **1024x768/720p/1080p:** Press these hot keys to switch between each resolution.

11. **AL/AR/BL/BR:** When in Dual mode, press these hot keys to switch the audio channel in Left or Right side for Dual A and Dual B group.

12. **SAVE:** To save the customized input and output corresponding settings.

    i. Press "Matrix/Dual/Wall" button to select mode status.

    ii. Press each output channel A~D and then press corresponding input channel 1~4.

    iii. Press "SAVE", then input 1~4's LED will illuminate at the same time, then press remote control FAV.1~FAV.4 to save to the system memory.

13. **FAV.1~FAV.4:** Press favorite hot keys 1~4 to bring up the customized screen save settings.

IR Remote Control Dip Switch

If you're using multiple switches in the same location you can configure up to three remote controls on different IR addressing to avoid interference with each other. To adjust the remote control, open the Remote control back cover and adjust the dip-switch ON/OFF to match IR address setting in the OSD menu. Factory default setting is 0.

0	1	2	3
↓↓	↓↑	↓↑	↑↑
12	12	12	12

StarTech.com
Hard-to-find made easy®

You must then adjust the switch itself using the OSD menu, to the specific number you've set your remote control to. To adjust the IR addressing of the switch itself please access the below setting in the OSD menu.

Others -> IR addressing

RS232 Serial Operation

RS232 Pin Assignment

VS424HDPIP		Serial Controller (PC)	
PIN	Assignment	**PIN**	Definition
1	NC	**1**	NC
2	TxD	**2**	TxD
3	RxD	**3**	RxD
4	NC	**4**	NC
5	GND	**5**	GND
6	NC	**6**	NC
7	NC	**7**	NC
8	NC	**8**	NC
9	NC	**9**	NC

RS232 Protocols

Baud Rate: 115200bps

Data Bit: 8 bits

Parity: None

Flow Control: None

Stop Bit: 1

StarTech.com

Hard-to-find made easy®

RS232 Telent Commands

Note: All commands will be not executed unless followed with a carriage return (0x0D) and commands are case-sensitive.

Command	Action	Return
AUA001	Dual A Audio channel in Left side	AUA001
AUA002	Dual A Audio channel in Right side	AUA002
AUA999	Check Dual A audio channel status	AUA???
AUB001	Dual B Audio channel in Left side	AUB001
AUB002	Dual B Audio channel in Right side	AUB002
AUB999	Check Dual B audio channel status	AUB???
AUD000	Audio output Off	AUD000
AUD001	Audio output On	AUD001
AUD999	Check audio on/off status	AUD???
AUE000	Audio edid is LPCM 2CH	AUE000
AUE001	Audio edid is LPCM 6CH	AUE001
AUE002	Audio edid is LPCM 8CH	AUE002
AUE003	Audio edid is BITSTREAM	AUE003
AUE004	Audio edid is HD	AUE004
AUE999	Check audio edid setting	AUE???
BEZ000	Bezel Correction OFF	BEZ000
BEZ001	Bezel Correction ON	BEZ001
BEZ999	Check bezel correction on/off status	BEZ???

StarTech.com
Hard-to-find made easy®

BEH???	Horizontal (H) Bezel correction???=000 ~ Maximum	BEH???
BEH998	Check the current Horizontal(H) Bezel correction Maximum value	BEH???
BEH999	Check the current Horizontal(H) Bezel correction setting value	BEH???
BEV???	Vertical (V) Bezel correction???=000 ~ Maximum	BEV???
BEV998	Check the current Vertical(V) Bezel correction Maximum value	BEV???
BEV999	Check the current Vertical(V) Bezel correction setting value	BEV???
BRI???	Setting Brightness	No response
	???=000~100 for matrix mode	
	???=(000~100)+200*(OUT No.-1) for dual/tv wall mode	
	For example: OUT B set the Brightness value to 57 =(57)+200*(2-1) = 257	
BRI99?	Check current Brightness value	BRI???
	99?=999 for matrix mode	
	99?=991~994=OUT1~4 for dual/tv wall mode	
CAL???	RECALL FAV. ???=001~004=FAV.1~4	CAL???

StarTech.com
Hard-to-find made easy®

IP Operation Using Web Browser

Before you begin:

- Power Status must be set to on, and source status must be unlocked
- Ensure step 5. of hardware Setup has been completed.
- Obtain the IP address of the VS424HDPIP using the OSD menu. Access the following sub menu:

    ETHERNET -> IP

    Your IP address will be displayed next to IP.

    Note: The switch supports DHCP and it is activated by default. As a result if you connect it to a piece of network equipment that supports DHCP your IP address will automatically change. If your network equipment does not support DHCP your default IP address will be 192.168.5.155

Access IP Operation Web GUI

1. Open your web browser.
2. In the address bar type the IP address obtained from your OSD menu, and press enter.
3. The VS424HDPIP web GUI is now displayed.

Operate your VS424HDPIP using the Web GUI

The web GUI enables you to remotely operate your VS424HDPIP with basic and advanced functionality. The below sections outline the features and navigation of the Web GUI.

Operation Pane

The operation pane gives you a high level overview as well as access to basic switch operation. The Operation pane is always visible at the top of every page in the Web GUI.

The **Information-in** and **information-out** sections gives you an overview of the current connected video source and display devices.

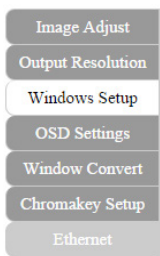The **Status** section enables you to power off the device.

The **Source** section enables you to select your desired mode as well as define which video source devices will be shown on each display.

The Save/Factory section enables you to save and action the customized input and output corresponding settings.

StarTech.com

Hard-to-find made easy®

Advanced Menu

The Advanced menu is available on the left hand side of the GUI, and enables you to navigate between advanced sections of operation.
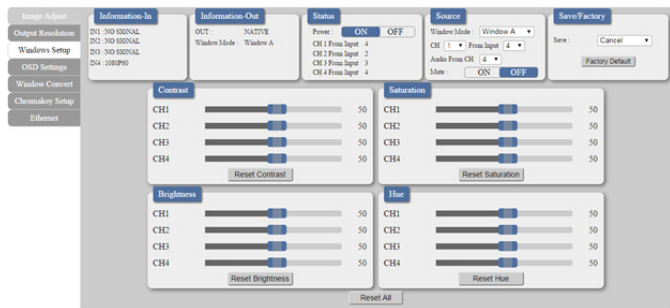

Descriptions outlining navigation as well as the available functionality for each tab are listed below.

Image Adjust

By default, the **Image Adjust** tab is the first window displayed when the web GUI is opened. If you would like to access the **Image Adjust** tab, and have navigated away from the Window, click **Image Adjust** tab from the side menu.

The Image Adjust tab enables you to define the specific attributes listed for optimal picture quality based on the requirements of your application.
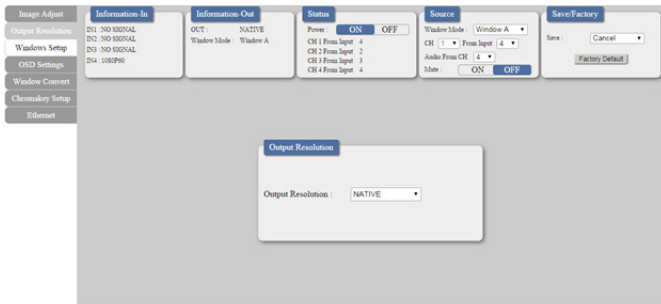

Note: In Matrix mode, all four pictures adjust simultaneously.

In Dual/TV Wall mode, each picture can adjust individual and support individual last memory feature.

StarTech.com
Hard-to-find made easy®

Output Resolution

To access the **Output Resolution** tab, click **Output Resolution** on the side menu.

The **Output Resolution** tab enables you to set your desired output resolution from the available drop down menu.
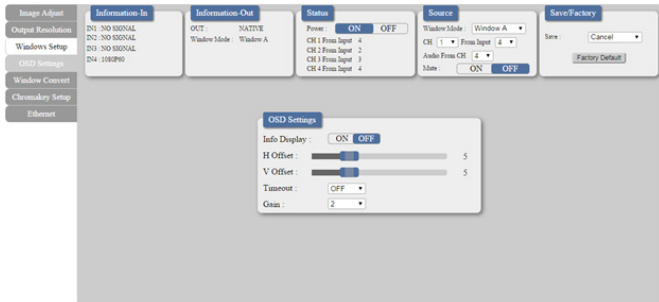

Notes:

- 1080i@50/60 are supported in Matrix mode only.
- Selecting NATIVE enables the VS424HDPIP to use EDID to determine the best output resolution automatically.

OSD Settings

To access the **OSD settings** tab, click **OSD Settings** on the side menu.

The **OSD settings** tab enables you to adjust the specified attributes in relation to the On the Screen display positioning and operation.

StarTech.com
Hard-to-find made easy®

Note: TIMEOUT =OFF means MENU and INFO will continue showing on the

  Screen.

Window Convert

To access the **Window Convert** tab, click **Window Convert** on the side menu.

The **Window Convert** tab enables you to implement transition effects while switching between video sources.

Chromakey Setup

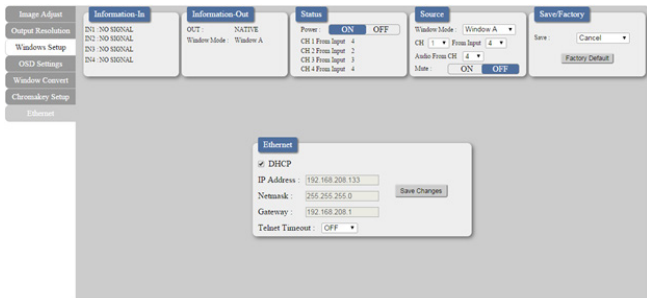To access the **Chromakey Setup** tab, click **Chromakey setup** on the side menu.

The Chromakey Setup section enables you to isolate a particular color for chroma keying special effects.

StarTech.com
Hard-to-find made easy®

Ethernet

To access the **Ethernet** tab, click **Ethernet** on the side menu.

The **Ethernet** section enables you to define Network communication protocols for remote operation.

StarTech.com
Hard-to-find made easy®

Technical Support

StarTech.com's lifetime technical support is an integral part of our commitment to provide industry-leading solutions. If you ever need help with your product, visit **www.startech.com/support** and access our comprehensive selection of online tools, documentation, and downloads.

For the latest drivers/software, please visit **www.startech.com/downloads**

Warranty Information

This product is backed by a two year warranty.

In addition, StarTech.com warrants its products against defects in materials and workmanship for the periods noted, following the initial date of purchase. During this period, the products may be returned for repair, or replacement with equivalent products at our discretion. The warranty covers parts and labor costs only. StarTech.com does not warrant its products from defects or damages arising from misuse, abuse, alteration, or normal wear and tear.

Limitation of Liability

In no event shall the liability of StarTech.com Ltd. and StarTech.com USA LLP (or their officers, directors, employees or agents) for any damages (whether direct or indirect, special, punitive, incidental, consequential, or otherwise), loss of profits, loss of business, or any pecuniary loss, arising out of or related to the use of the product exceed the actual price paid for the product. Some states do not allow the exclusion or limitation of incidental or consequential damages. If such laws apply, the limitations or exclusions contained in this statement may not apply to you.

StarTech.com
Hard-to-find made easy®

StarTech.com

Hard-to-find **made easy**®

Hard-to-find made easy. At StarTech.com, that isn't a slogan. It's a promise.

StarTech.com is your one-stop source for every connectivity part you need. From the latest technology to legacy products — and all the parts that bridge the old and new — we can help you find the parts that connect your solutions.

We make it easy to locate the parts, and we quickly deliver them wherever they need to go. Just talk to one of our tech advisors or visit our website. You'll be connected to the products you need in no time.

Visit www.startech.com for complete information on all StarTech.com products and to access exclusive resources and time-saving tools.

StarTech.com is an ISO 9001 Registered manufacturer of connectivity and technology parts. StarTech.com was founded in 1985 and has operations in the United States, Canada, the United Kingdom and Taiwan servicing a worldwide market.