



4K HDMI Matrix Switch—2 x 2 or 4 x 2

Switch one of two or four HDMI source devices to one or two HDMI displays.

Supports 4K HDMI formats with IR remote control.



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10. El equipo eléctrico debe ser situado fuera del alcance de fuentes de calor como radiadores, registros de calor, estufas u otros aparatos (incluyendo amplificadores) que producen calor.
11. El aparato eléctrico deberá ser conectado a una fuente de poder sólo del tipo descrito en el instructivo de operación, o como se indique en el aparato.
12. Precaución debe ser tomada de tal manera que la tierra física y la polarización del equipo no sea eliminada.
13. Los cables de la fuente de poder deben ser guiados de tal manera que no sean pisados ni pellizcados por objetos colocados sobre o contra ellos, poniendo particular atención a los contactos y receptáculos donde salen del aparato.
14. El equipo eléctrico debe ser limpiado únicamente de acuerdo a las recomendaciones del fabricante.
15. En caso de existir, una antena externa deberá ser localizada lejos de las líneas de energía.
16. El cable de corriente deberá ser desconectado del cuando el equipo no sea usado por un largo periodo de tiempo.
17. Cuidado debe ser tomado de tal manera que objetos líquidos no sean derramados sobre la cubierta u orificios de ventilación.
18. Servicio por personal calificado deberá ser provisto cuando:
 - A: El cable de poder o el contacto ha sido dañado; u
 - B: Objetos han caído o líquido ha sido derramado dentro del aparato; o
 - C: El aparato ha sido expuesto a la lluvia; o
 - D: El aparato parece no operar normalmente o muestra un cambio en su desempeño; o
 - E: El aparato ha sido tirado o su cubierta ha sido dañada.

Table of Contents

- 1. [Specifications](#) 6
- 2. [Overview](#) 7
 - [2.1 Introduction](#) 7
 - [2.2 Features](#) 7
 - [2.3 What's Included](#) 8
 - [2.4 Hardware Description](#) 9
 - [2.4.1 VSW-HDMI2X2-4K](#) 9
 - [2.4.2 VSW-HDMI4X2-4K](#) 11
- 3. [Installation](#) 14
 - [3.1 Device Connection](#) 14
 - [3.2 Connection Pattern](#) 14
- 4. [Operation](#) 15
 - [4.1 LED Indicator](#) 15
 - [4.2 Push Button Control](#) 16
 - [4.2.1 A/V Source Selection](#) 16
 - [4.2.2 EDID Setting](#) 17
 - [4.2.3 EQ Adjustment](#) 19
 - [4.2.4 Factory Default Setting](#) 19
 - [4.3 IR Remote Control](#) 20

Chapter 1: Specifications

1. Specifications

Technology	
Standards	Video Mode: Supported Resolutions: 3840 x 2160p, 1920 x 1080p, 1280 x 720p
	EDID Configuration: Video: Auto/inventory, Audio: Auto/inventory
	Mode Configuration: Switch/Autosensing/Priority/Matrix
Interface	HDMI Ports: Input: VSW-HDMI2X2-4K: (2) HDMI female, VSW-HDMI4X2-4K: (4) HDMI female, Output: (2) HDMI female
	Serial Port (inactive, not used): VSW-HDMI2X2-4K or VSW-HDMI4X2-4K: (1) RJ-12 female
	IR Controls: VSW-HDMI2X2-4K or VSW-HDMI4X2-4K:: Yes
	User Controls: (2) Port Selection buttons, (1) EDID Copy button
Mechanical	Casing: Metal
	Dimensions: 0.78"H x 6.1"W x 2.6"D (2 x 15.6 x 6.5 cm)
Power	Power Supply: 9–12 VDC
Environment	Operating Temperature: 32 to 104° F (0 to 40° C), Storage Temperature: -5 to 140° F (-20 to 60° C), Ambient Relative Humidity: 80%
Approvals	FCC, CE, RoHS2, UL®

2. Overview

2.1 Introduction

The 4K HDMI Matrix Switch—2 x 2 or 4 x 2—routes two or four HDMI sources to two HDMI displays (projectors, monitors, and so on). It displays the same image from one video source to all monitors or images from different video sources to different monitors.

Multi-controlled functions include front-panel buttons with LED indicators and IR remote, allowing you to operate the system easily. You won't have to frequently move around video input and output cables.

The 4K HDMI Matrix Switch can operate in Auto mode and Priority mode. The system can either automatically select the latest video source for display in Auto mode, or automatically select a video source following priority order in Priority mode. It also offers EDID Copy function to ensure the optimal resolution for your application.

2.2 Features

- Select from 2 or 4 HDMI sources and then distribute to 2 HDMI displays.
- Buttons provide easy switching.
- Non-volatile memory stores all settings in case of blackout.
- Supports innovative technology designed to avoid unnecessary flicker when adding system instruments.
- Optimizes signals by choosing the best output setting from the available alternatives.
- Complies with HDCP standard.
- Compatible with HDTV and 3D HDTV.
- Configurable audio channel setting is ideal for a 5.1/7.1 home theater AV receiver.
- Supports up to Full HD 1080p / 1920 x 1200 / 4K (3840 x 2160) resolution.
- Advanced auto-sensing supports versatile port selection functions including Priority, Auto-sensing, Switch, and Matrix modes.
 - Priority: System automatically selects highest priority source to display (Priority order: Source-1 > Source-2 >)
 - Auto-sensing: System automatically selects the latest video source to display
 - Matrix: supports 2-BUS function which can display 2 sources simultaneously
- Switches via either pressing a button or setting priority.
- Includes multiple functions for setting EDIDs, such as EDID Copy and EDID Pre-setting, which ensure accurate output display.
- Separately learns Audio and Video EDID for multimedia/ Home Theater system integration.
- Emulates EDID information to ensure optimum video performance.
- Read and store the EDID from the connecting display to the video extension.
- Most commonly used menu items are duplicated as icons on the top of the display.
- You can name and use your own images for every source and display icon.

2.3 What's Included

- (1) 4K HDMI Matrix Switch: 2 x 2 or 4 x 2
- (1) Power adapter
- (1) IR Remote Controller
- (1) set of foot pads

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2.4 Hardware Description

2.4.1 VSW-HDMI2X2-4K



Figure 2-1. VSW-HDMI2X2-4K front panel.

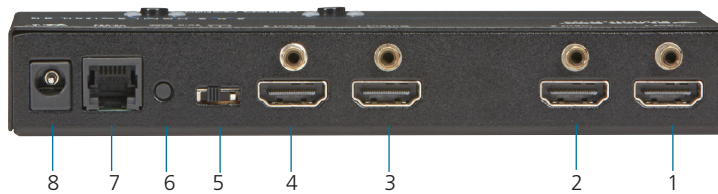


Figure 2-2. VSW-HDMI2X2-4K back panel.

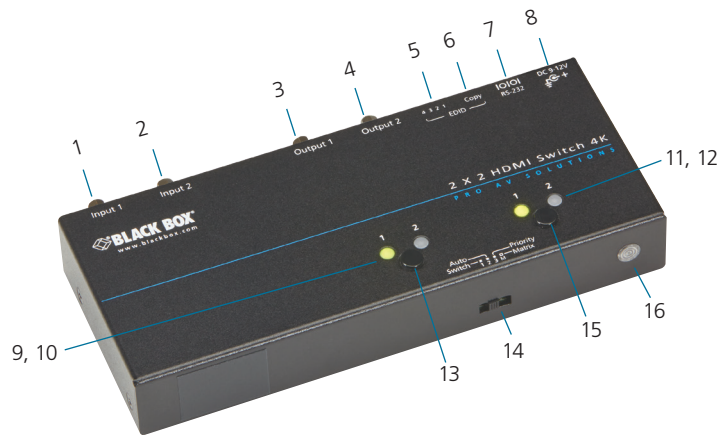


Figure 2-3. VSW-HDMI2X2-4K top panel.

Table 2-1. VSW-HDMI2X2-4K components.

Number in Figure 2-1, 2-2, or 2-3	Component	Description
1, 2	Video input 1 and 2	Connect to an HDMI video source
3, 4	Video Output 1 and 2	Connect to an HDMI display
5	Audio/Video EDID Setting Switch	Configure Audio/Video EDID Setting
6	EDID Copy button	Copy the monitor's EDID
7	Serial port	Inactive, not used
8	Power supply	Apply power to the unit.
9, 10	Video Output 1 Status LED	Lights when Output 1 is selected
11, 12	Video Output 2 Status LED	Lights when Output 2 is selected
13	BTNA	Selects Input for Output 1
14	Advanced auto-sensing setting switch	Switch/Auto-sensing/Priority/Matrix mode setting
15	BTNB	Selects Input for Output 2
16	IR sensor	Sensor for IR remote control

2.4.2 VSW-HDMI4X2-4K



Figure 2-4. VSW-HDMI4X2-4K front panel.

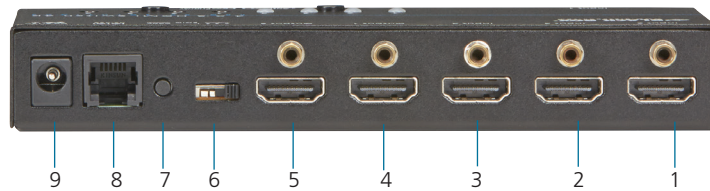


Figure 2-5. VSW-HDMI4X2-4K back panel.

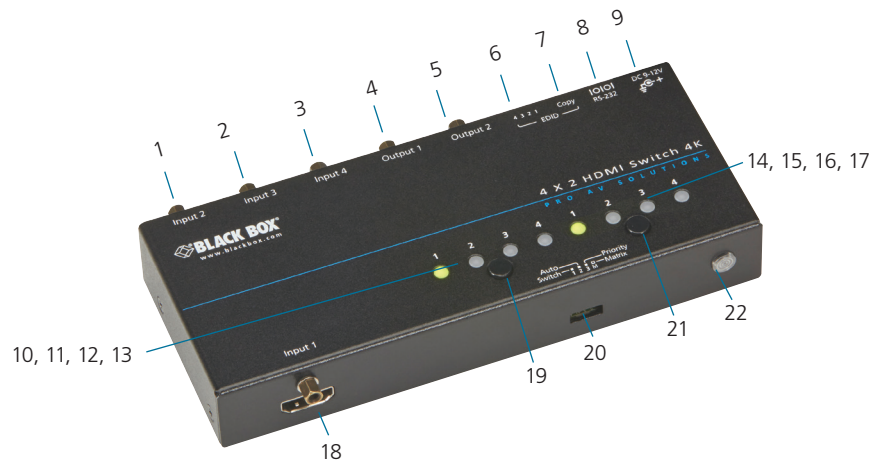


Figure 2-6. VSW-HDMI4X2-4K top panel.

Table 2-2. VSW-HDMI4X2-4K components.

Number in Figure 2-4, 2-5, or 2-6	Component	Description
1, 2, 3, 18	Video Input 1, 2, 3, and 4	Connect to an HDMI video source
4, 5	Video Output 1 and 2	Connect to an HDMI display
6	Audio/Video EDID Setting Switch	Configure Audio/Video EDID Setting
7	EDID Copy button	Copy the monitor's EDID
8	Serial port	Inactive, not used
9	Power supply	Apply power to the unit.
10, 11, 12, 13	Video Output 1 Status LED 1, 2, 3, and 4	
14, 15, 16, 17	Video Output 2 Status LED 1, 2, 3, and 4	
19	BTNA	Selects Input for Output 1
20	Advanced auto-sensing) setting switch	Switch/Auto-sensing/Priority/Matrix mode setting
21	BTNB	Selects Input for Output 2
22	IR sensor	Sensor for IR remote control

Slide Switch



EDID Setting switch

Figure 2-7. Audio/Video EDID Setting switch on back panel of Matrix Switch.

Table 2-3. Slide switch settings.

Mode	Video	Audio
1	Auto	Auto
2	Auto	Inventory
3	Inventory	Auto
4	Inventory	Inventory

NOTE: For more operation details, refer to the Operation section.

Advanced Auto-sensing Setting Switch



Figure 2-8. Advanced Autosensing Setting switch.

Table 2-4. Advanced Autosensing switch functions.

Number in Figure 2-8	Setting	Description
1	Switch	Press BTNA or BTNB on the top panel to select source in sequence.
2	Auto-sensing	System will automatically select the latest video source for display. <i>NOTE: If the latest video source is unplugged, the system will automatically display the second latest one.</i>
3	Priority	System will automatically select the high-priority video source for display. (Priority: Source-1> Source-2> Source-3> Source-4)
M	Matrix	Divide 2 monitors into 2 groups (1 + 1): BUS-A (Monitor 1) plays Sn; BUS-B (Monitor 2) plays Sn

NOTE: Functions in Switch mode apply to Auto-sensing, Priority, and Matrix modes.

Chapter 3: Installation

3. Installation

WARNING:

- Before installing the switch, power off all devices that will be connected to this system.
- Make sure that all devices you will connect are properly grounded.
- Place cables away from fluorescent lights, air conditioners and machines that are likely to generate electrical noise.

3.1 Device Connection

1. Use a video cable (HDMI) to connect the display to the video output port on the unit.
2. Use a video cable (HDMI) to connect the source device to the video input port on the unit.
3. Apply power to the unit.
4. Turn on the display (monitor, projector, or TV) and then power on the source device(s).
5. If necessary, apply EDID Copy process (see EDID Setting section).

NOTE: When each video source is powered on, make sure it has a display pointing to it for EDID communication. If a source does not have a display pointing to it, a video image might not display.

If no screen displays, follow these steps:

1. Make sure the device cables are correctly and firmly attached.
2. Set your display device's input source as HDMI.
3. Check the PC BIOS configuration for the video output settings.
4. Connect your video source to the display DIRECTLY to check if the video signal gets through.
5. Apply EDID Copy to your display (see EDID Setting section).

3.2 Connection Pattern

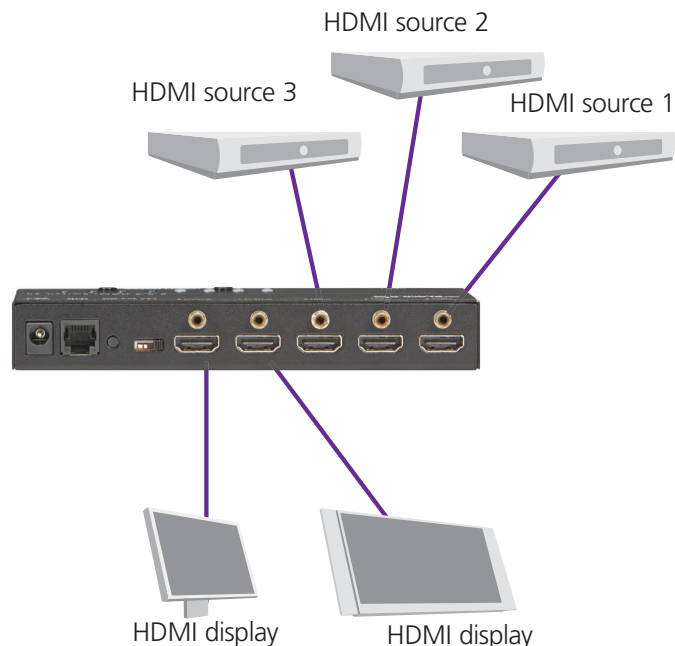


Figure 3-1. Connection pattern.

4. Operation



Figure 4-1. LEDs on the top panel of the 2 x 2 switch.



Figure 4-2. LEDs on the top panel of the 4 x 2 switch.

4.1 LED Indicator

- Switch Mode (Switch, EGO-Auto, EGO-Priority)
 - S1-S4 LED: 4 x 2 switch/ S1-S2 LED: 2 x 2 switch
- Matrix Mode (2-Bus)
 - (Left) S1-S4 LED: BUS-A (4 x 2 switch)
 - (Right) S1-S4 LED: BUS-B (4 x 2 switch)
 - (Left) S1-S2 LED: BUS-A (2 x 2 switch)
 - (Right) S1-S2 LED: BUS-B (2 x 2 switch)

Table 4-1. LED indicators on the unit.

Input or Output in Figure 4-1 or 4-2	LED	Switch/Auto/Priority Modes Status
Video Input Status LED 1	The selected LED emits green and goes off 3 times per 2 seconds.	The input video signal isn't ready.
Video Input Status LED 2	The selected LED emits green and goes off once per 2 seconds.	The input video signal is ready but cannot detect the monitor.
Video Input Status LED 3	The selected LED emits steady green.	The input video signal is ready and can detect the monitor.
Video Input Status LED 4	The selected LED emits green with red flashing 3 times.	The input video signal and monitor HDCP are not matched.
Video Output Status LED 1, 2, 3, or 4	Off	Not selected: the LED turns off when it's not selected, no matter what the source condition is (with or without source input, HDCP...etc.).

4.2 Push Button Control

4.2.1 A/V Source Selection

- Switch Mode (Switch, Auto, Priority): left LED S1–S4 (4 x 2 switch)/ left LED S1–S2 (2 x 2 switch)>

Press BTNA or BTNB once to select the source in sequence (S1—>S2—>S3—>S4—>S1...). The monitor immediately shows the video source once selected. The corresponding LED lights when the source is selected.

- Matrix Mode (2-Bus):
 BUS-A: left LED S1–S4 (4 x 2 switch)/left LED S1–S2 (2 x 2 switch);
 BUS-B: right LED S1–S4 (4 x 2 switch)/ right LED S1–S2 (2 x 2 switch)

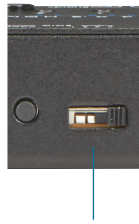
For BUS-A (Monitor 1): Press BTNA: Select Source1/Source 2/Source 3/Source 4.

For BUS-B (Monitor 2): Press BTNB: Select Source 1/Source 2/Source 3/Source 4.

NOTE: Idle time-out is set to around 6 seconds.

4.2.2 EDID Setting

NOTE: Before starting, slide the Audio/Video EDID Setting Switch to position 2/3/4.



EDID Setting switch

Figure 4-3. EDID Setting switch on back panel of Matrix Switch.

Copy Monitor EDID (2 methods):

Method 1

Step 1: Apply power to the unit.

Step 2: Connect the (EDID compliant) monitor to the output port of the unit and power on the monitor.

Step 3: Press and hold the button "EDID COPY" for 3–5 sec. and release the button RIGHT AFTER the LED L1–L4 (4 x 2 switch)/ LED L1 and L2 (2 x 2 switch) flash GREEN and RED.

Result: If the LED S1–S4 (4 x 2 switch)/ LED S1 and S2 (2 x 2 switch) return to normal status, it indicates that the EDID Copy is completed.

Method 2

NOTE: Before starting, power off the unit and connect monitor to the output port of the unit.

Step 1: Press and hold the button "EDID COPY."

Step 2: Apply power to the unit.

Step 3: Release right after the LED L1–L4 (4 x 2 switch) LED L1 and L2 (2 x 2 switch) flash GREEN & RED. (3–4 seconds).

Result: If the LED L1–L4 (4 x 2 switch)/ LED L1 and L2 (2 x 2 switch) return to normal status, it indicates that the EDID Copy is completed.

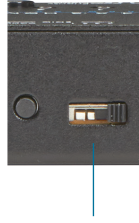
Otherwise, the LED flashes RED, indicating that:

- a. The monitor is not properly connected.
- b. The monitor is not powered on.
- c. EDID data of the monitor is not applicable.

Chapter 4: Operation

EDID Emulation

Slide the switch to the desired position as shown below.



EDID Setting switch

Figure 4-2. Audio/Video EDID Setting switch on back panel of Matrix Switch.

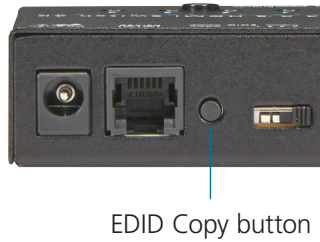
Table 4-2. Slide switch settings.

Mode	Video	Audio
1	Auto (Va)	Auto (Aa)
2	Auto (Va)	Inventory (Ai)
3	Inventory (Vi)	Auto (Aa)
4	Inventory (Vi)	Inventory (Ai)

Table 4-2. Slide switch settings.

Va	Video Auto	Automatically use the EDID of the attached display (video algorithm).
Aa	Audio Auto	Automatically use the EDID of the attached display (audio algorithm).
Vi	Video Inventory	After copying Video EDID, use the copied Video EDID on the connected display.
Ai	Audio Inventory	After copying Audio EDID, use the copied Audio EDID on the connected display.

4.2.3 EQ Adjustment



EDID Copy button

Figure 4-3. EQ Adjustment switch on the units.

Press the BTNB and EDID Copy buttons for 3 seconds and release right after the (left) LED L1–L4 flash red. (LED L1–L4 indicates which level is on). Then press BTNA to decrease one level or press BTNB to increase one level. (8 levels: GREEN: level 1–4, RED: level 5–8). Press the EDID Copy button once to exit the setting.



Figure 4-4. EQ adjustment steps.

4.2.4 Factory Default Setting

If you have problems with the unit's settings, reset it to the factory default. To return all settings to the factory default, press the BTNB and EDID Copy buttons for 9 seconds, and release right after four LEDs (L1–L4) flash green twice.

NOTE: After resetting to factory default, the system will select source 1 to start displaying. When the system is in Priority or Auto Mode, refer to Figure 2-8 and Table 2-4, Advanced Auto-sensing Setting switch and functions.

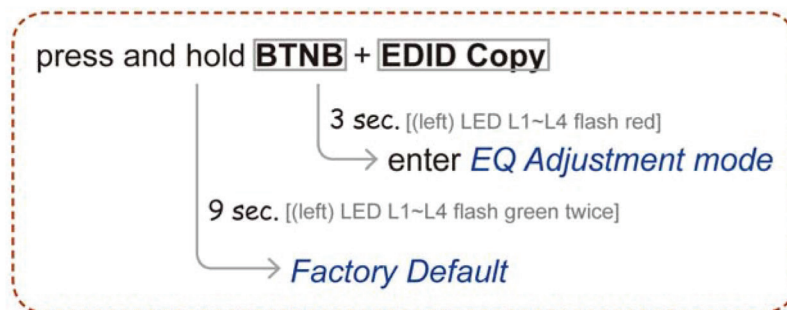


Figure 4-3. User control functions.

Chapter 4: Operation

4.3 IR Remote Control

- A/V Source selection:

- Switch Mode (Switch, Auto, Priority)

Press 1/ 2/3/4: Select Source1/Source 2/Source 3/Source 4.

- Matrix Mode (2-BUS)

For BUS-A (Monitor 1): Press 1/2/3/4: Select Source1/Source 2/Source 3/Source 4.

For BUS-B ((Monitor 2): Press S1/S2/S3/S4: Select Source1/Source 2/Source 3/Source 4.



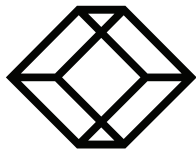
Figure 4-4. IR remote control.

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