AVSP-HDMI1X2
AVSP-HDMI1X4
AVSP-HDMI1X8

1 x 2, 1 x 4, and 1 x 8 HDMI Splitters

Broadcast the same video plus audio signal source to two, four, or eight HDMI or DVI compatible outputs.

Support HDMI /DVI display resolutions of up to Full HD (1920 x 1080), WUXGA (1920 x 1200), and UXGA (1600 x 1200).
Splitters are Blu-ray ready.

Customer Support Information

Order toll-free in the U.S.: Call 877-877-BBOX (outside U.S. call 724-746-5500) • FREE technical support 24 hours a day, 7 days a week: Call 724-746-5500 or fax 724-746-0746 • Mailing address: Black Box Corporation, 1000 Park Drive, Lawrence, PA 15055-1018
Web site: www.blackbox.com • E-mail: info@blackbox.com

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FEDERAL COMMUNICATIONS COMMISSION AND INDUSTRY CANADA RADIO FREQUENCY INTERFERENCE STATEMENTS

This equipment generates, uses, and can radiate radio-frequency energy, and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio communication. It has been tested and found to comply with the limits for a Class A computing device in accordance with the specifications in Subpart B of Part 15 of FCC rules, which are designed to provide reasonable protection against such interference when the equipment is operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference, in which case the user at his own expense will be required to take whatever measures may be necessary to correct the interference.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This digital apparatus does not exceed the Class A limits for radio noise emission from digital apparatus set out in the Radio Interference Regulation of Industry Canada.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.

Normas Oficiales Mexicanas (NOM)Electrical Safety Statement INSTRUCCIONES DE SEGURIDAD

1. Todas las instrucciones de seguridad y operación deberán ser leídas antes de que el aparato eléctrico sea operado.

2. Las instrucciones de seguridad y operación deberán ser guardadas para referencia futura.

3. Todas las advertencias en el aparato eléctrico y en sus instrucciones de operación deben ser respetadas.

4. Todas las instrucciones de operación y uso deben ser seguidas.

5. El aparato eléctrico no deberá ser usado cerca del agua—por ejemplo, cerca de la tina de baño, lavabo, sótano mojado o cerca de una alberca, etc.

6. El aparato eléctrico debe ser usado únicamente con carritos o pedestales que sean recomendados por el fabricante.

7. El aparato eléctrico debe ser montado a la pared o al techo sólo como sea recomendado por el fabricante.

8. Servicio—El usuario no debe intentar dar servicio al equipo eléctrico más allá a lo descrito en las instrucciones de operación. Todo otro servicio deberá ser referido a personal de servicio calificado.

9. El aparato eléctrico debe ser situado de tal manera que su posición no interfiera su uso. La colocación del aparato eléctrico sobre una cama, sofá, alfombra o superficie similar puede bloquea la ventilación, no se debe colocar en libreros o gabinetes que impidan el flujo de aire por los orificios de ventilación.

10. El equipo eléctrico deber 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 connectado 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 fisica 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 lineas de energia.

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 objectos liquidos 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: Objectos 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.

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1. Specifications

Enclosure: Metal

Maximum Cable Length: 16.4 feet (5 meters)

Maximum Video Resolution/Signal Type:
Full HD 1080p (1920 x 1080), VGA (640 x 480), SXGA (1280 x 1024), UXGA (1800 x 1200), WUXGA (1920 x 1200);

Number of Video Outputs: AVSP-HDMI1X2: (2);
AVSP-HDMI1X4: (4);
AVSP-HDMI1X8: (8)

Rackmountable: AVSP-HDMI1X2: No;
AVSP-HDMI1X4, AVSP-HDMI1X8: Yes

Connectors: AVSP-HDMI1X2: Input: (1) HDMI female, (1) set of audio jacks, Output: (2) HDMI female, (1) set of audio jacks;
AVSP-HDMI1X4: Input: (1) HDMI female, (1) set of audio jacks, Output: (4) HDMI female, (2) sets of audio jacks;
AVSP-HDMI1X8: Input: (1) HDMI female, (1) set of audio jacks, Output: (8) HDMI female, (4) sets of audio jacks

Indicators: AVSP-HDMI1X2: (1) dual-color LED: Power Active/Video OK, (2) Video Output LEDs;
AVSP-HDMI1X4: (1) dual-color LED: Power Active/Video OK, (4) Video Output LEDs;
AVSP-HDMI1X8: (1) dual-color LED: Power Active/Video OK, (8) Video Output LEDs

Power: All: Input: 9–12 VDC;
AVSP-HDMI1X2: Output: 2.8 W;
AVSP-HDMI1X4: Output: 4.1 W;
AVSP-HDMI1X8: Output: 10.2 W

Size: AVSP-HDMI1X2: 0.8"H x 7.1"W x 3.4"D (2 x 18 x 8.5 cm);
AVSP-HDMI1X4: 1.7"H x 8.7"W x 5.3"D (4.4 x 22 x 13.5 cm);
AVSP-HDMI1X8: 1.7"H x 17.2"W x 7.1"D (4.4 x 43.8 x 18 cm)

2. Overview

2.1 Introduction

The 1 x 2, 1 x 4, or 1 x 8 HDMI Splitters broadcast the same video plus audio signal source to two, four, or eight HDMI or DVI compatible outputs.

Depending on the cable's length and quality, these fully compliant splitters support HDMI/DVI display resolutions of up to Full HD (1920 x 1080), WUXGA (1920 x 1200), and UXGA (1600 x 1200), and are also Blu-ray ready.

You don't need to install or configure an interface card. Just connect the cables, power up the system, and you are ready to have duplicated video images on multiple monitors with excellent clarity. The 1 x 8 model can also be rackmounted.

Use the HDMI Splitters for a variety of public broadcasting applications, including:

- Presentations
- Demonstrations
- Monitor testing and burn-in
- News
- Airline/train/bus schedules
- Exhibits
- Trade shows
- Business meetings
- Stock tickers
- Retail stores

2.2 Features

- Provides an easy and affordable way to duplicate video input to multiple HDMI outputs.
- Includes automatic power-save when the signal input is lost.
- Cascade units for more signal outputs.
- Gives you crisp, clear video images.
- Supports EDID, HDCP, and is Blu-ray ready for high-definition display.
- Supports HDMI display resolutions of up to UXGA (1600 x 1200), WUXGA (1920 x 1200), and Full HD 1080p (1920 x 1080).
- LED indicators enable you to monitor signal activity.
- Accurately and reliably reproduces digital video signals without attenutation and distortion.
- Installs in seconds.

2.3 What's Included

Your package should include the following items. If anything is missing or damaged, contact Black Box Technical Support at 724-746-5500 or info@blackbox.com.

- Video splitter
- Power adapter with AC cord or plug-in power adapter
- Foot pad
- Rackmount bracket (included with 1 x 8 unit only)
- This user's manual

2.4 Optional Items You Might Also Need

- HDMI male-to-male cable for connecting the HDMI source
- Audio cable
- DVI-to-HDMI adapter
- HDMI-to-DVI adapter

2.5 Hardware Requirements

- Video sources (PS3, Blu-ray, DVD players, etc. with HDMI output and audio output
- HDMI cables
- HDCP-compliant display devices (TVs, monitors, projectors, etc.) for the HDCP video source (optional)
- Speakers for audio

2.6 Hardware Description

2.6.1 AVSP-HDMI1X2

Figures 2-1 and 2-2 show the front and side panels of the AVSP-HDMI1X2. Table 2-1 describes its components.

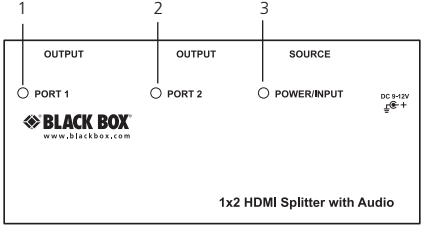


Figure 2-1. AVSP-HDMI1X2 front panel.

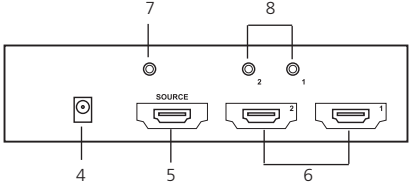


Figure 2-2. AVSP-HDMI1X2 side panel.

Table 2-1. AVSP-HDMI1X2 components.

Number	Component	Description
1	Port 1 LED	Lights when there is activity on Port 1.
2	Port 2 LED	Lights when there is activity on Port 2.
3	Power input LED	Lights when power is connected.
4	Power connector	Connects to AC power source.
5	HDMI connector	Connects to input source.
6	(2) HDMI connectors	Links to output monitors..
7	Audio connector	Connects to audio input.
8	(2) audio connectors	Connects to audio outputs.

2.6.2 AVSP-HDMI1X4

Figures 2-3 and 2-4 show the front and back panels of the AVSP-HDMI1X4. Table 2-2 describes its components.

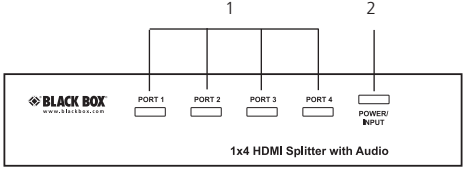


Figure 2-3. AVSP-HDMI1X4 front panel.

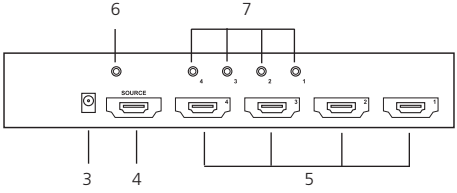


Figure 2-4. AVSP-HDMI1X4 back panel.

Table 2-2. AVSP-HDMI1X4 components.

Number	Component	Description
1	Ports 1–4 LEDs	Lights when there is activity on Ports 1–4.
2	Power input LED	Lights when power is connected.
3	Power connector	Connects to AC power source.
4	HDMI connector	Connects to input source.
5	(4) HDMI connectors	Links to output monitors.
6	Audio connector	Connects to audio input.
7	(4) audio connectors	Connects to audio outputs.

2.6.3 AVSP-HDMI1X8

Figures 2-5 and 2-6 show the front and back panels of the AVSP-HDMI1X8. Table 2-3 describes its components.

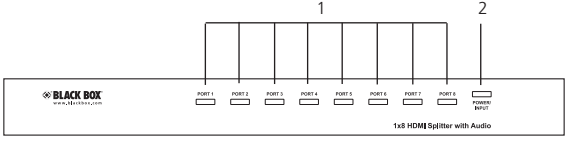


Figure 2-5. AVSP-HDMI1X8 front panel.

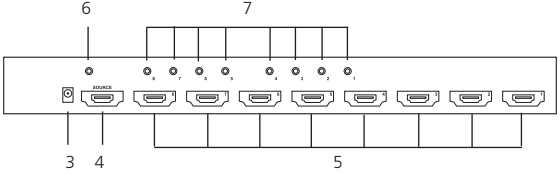


Figure 2-6. AVSP-HDMI1X8 back panel.

Table 2-3. AVSP-HDMI1X8 components.

Number	Component	Description
1	Ports 1–8 LEDs	Lights when there is activity on Ports 1–8.
2	Power input LED	Lights when power is connected.
3	Power connector	Connects to AC power source.
4	HDMI connector	Connects to input source.
5	(8) HDMI connectors	Links to output monitors.
6	Audio connector	Connects to audio input.
7	(8) audio connectors	Connects to audio outputs.

3. Installation

WARNINGS: Before installation, make sure you 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.

Use one HDMI male-to-male cable to connect a video source to the video splitter input (SOURCE). Connect multiple monitors or TVs to the video splitter's output ports as shown in Figures 3-1 through 3-3.

Plug a set of audio jacks from the speaker to the splitter's audio port.

Turn on your video source only after you've made all the connections.

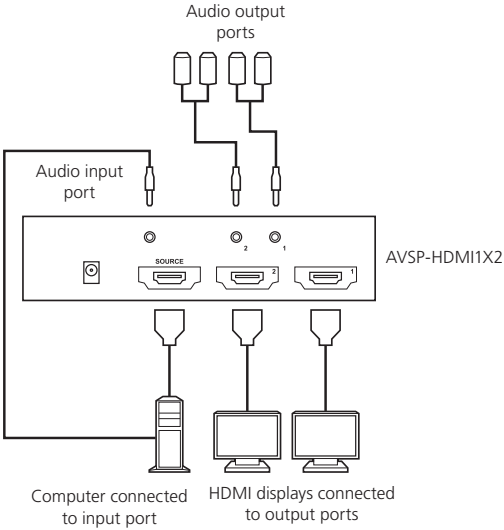


Figure 3-1. AVSP-HDMI1X2 connection.

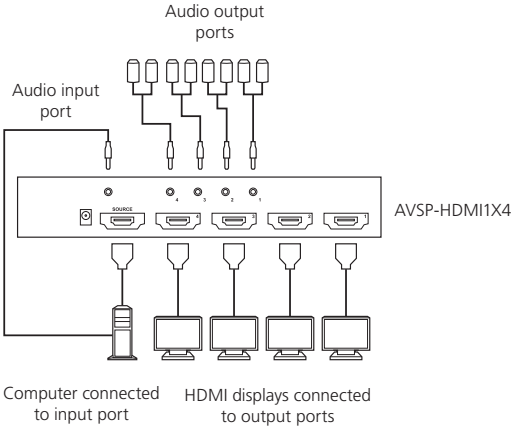


Figure 3-2. AVSP-HDMI1X4 connection.

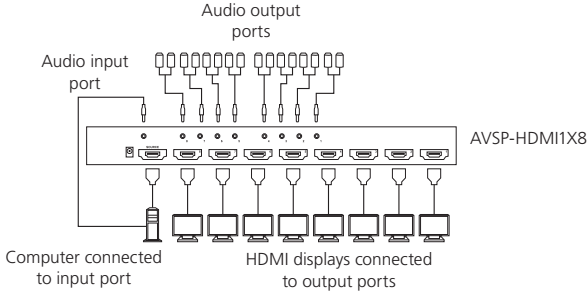


Figure 3-3. AVSP-HDMI1X8 connection.

NOTES: At least one monitor connection to the splitter unit is required when powering on the source device.

Connect the splitter unit to the computer before powering on the computer.

The splitter unit is HDMI compliant and must use the HDCP compliant display when it is connecting to the HDCP video source.

NOTE: Do not use mixed (HDMI and DVI) ouptut connections, as shown in Figure 3-4. This configuration might cause signal degradation. For example, an AVSP-HDMI1X4 unit cannot have one output connection to an HDMI monitor via an HDMI cable and another output connection to a DVI monitor via a DVI cable.

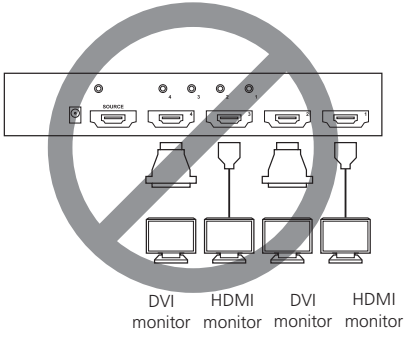


Figure 3-4. Do not use this type of mixed connection pattern

Blu-ray Ready

The splitter can support high-definition video such as DVD or Blu-ray and multichannel audio, and carry the best signal from source to displays. The high bandwidth enables large amounts of information to transmit at a very high speed.

Blu-ray uses a blue-violet laser to read and write data, while current optical disk technologies such as DVD, DVD±R, DVD±RW, and DVD-RAM rely on a red laser to read and write data. The blue-violet laser operates at a shorter wavelength (405 nm) than the red laser (650 nm). The shorter-wavelength laser spot focuses with even greater precision, so more data will fit on the disk even though it's the same size as a CD/DVD.

4. Operation

The quality of the output signal depends upon the quality of the video source, cable, and display device used. Low-quality cables degrade the output signal, causing elevated noise levels. Use the proper cable and make sure the display can handle the resolution and refresh rate you select. Interference from nearby electrical devices can adversely affect signal quality.

LED Display

The splitter has two LEDs: one dual-color LED (lights green for power on and blue for video signal OK), and one video output signal LED.

5. Troubleshooting

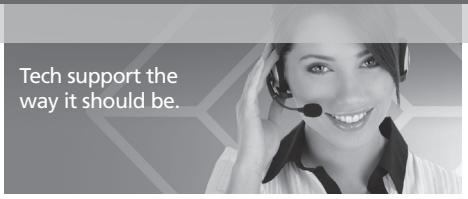
Table 5-1. Symptoms, Possible Causes, and Solutions.

Symptom	Possible Cause	Solution
Video does not display on some ports	The source's HDMI specification doesn't match the HDMI cable and/or the HDMI display device.	Check if the splitter unit has been connected to the source computer before the computer powered on.
Erratic behavior	The splitter may not be receiving enough power.	Check the power adapter attached to the splitter to make sure it matches the system specifications and is functioning properly.
Not receiving picture or sound	Wrong installation process	The video splitter requires at least one monitor connection before powering on the source device.
	The signal source may require a display device that is HDCP compliant.	Check that the display monitor is HDCP compliant. HDCP prevents the transfer of digital content to unauthorized HDMI devices.

Table 5-1 (continued). Symptoms, Possible Causes, and Solutions.

Symptom	Possible Cause	Solution
Not receiving picture or sound	The display monitor is added to the unit by hot-plug, but the video source may not support hot-plug.	Check if the video source supports hot-plug. If it doesn't, shut down the source device and reboot it again.
	The attached devices are not well connected.	Check if you have connected your components correctly.

Black Box Tech Support: FREE! Live. 24/7.



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