

Dual Link DVI Splitters

Easily split and distribute dual-link DVI source video to two or four different screens.



**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.

NOM Statement

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 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.

Safety Instructions

Safety Instructions

The splitters have been tested for conformance to safety regulations and requirements, and have been certified for international use. However, like all electronic equipment, the splitters should be used with care. Please read and follow the safety instructions to protect yourself from possible injury and to minimize the risk of damage to the unit.

- Follow all instructions and warnings marked on this unit.
- Do not attempt to service this unit yourself, except where explained in this manual.
- Provide proper ventilation and air circulation and do not use near water.
- Keep objects that might damage the device away from it and be sure to place this unit on a stable surface.
- Use only the power adapter and power cords and connection cables designed for this unit.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

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Chapter 1: Specifications

1. Specifications

Audio Support — No

CEC Channel — N/A

DVI Compliance — DVI 1.1

ESD Protection — (1) human-body model: +19kV (air-gap discharge)
± 12 kV (contact discharge)

Firmware Update — Via RS-232 port

HDCP Compliance — No

Housing — Metal enclosure

Input DDC Channel — 5 volts (peak-to-peak, TTL)

Input TMDs Channel — 1.2 volts (peak-to-peak)

PCB Stack-Up — 4-layer board;
Impedance control: Differential: 100 ohms,
Single: 50 ohms

Resolutions — Up to 2560 x 1600

Video Bandwidth — 300 MHz

Connectors — VSP-DLdV1X2: Input: (1) DVI-I (29-pin female digital only),
Output: (2) DVI-I (29-pin female digital only),
RS-232: (1) mini DB9;
VSP-DLdV1X4: Input: (1) DVI-I (29-pin female digital only),
Output: (4) DVI-I (29-pin female digital only),
RS-232: (1) mini DB9

Temperature Tolerance — Operating: 32 to 104° F (0 to 40° C);
Storage: -4 to +140° F (-20 to +60° C)

Relative Humidity — 20 to 90%, noncondensing

Power — Input: AC input: 100–240 VAC, 50–60 Hz, 0.8 A;
Output: 5 VDC, 4 A;
Consumption (maximum): 15 Watts

Size — VSP-DLdV1X2: 1"H x 2.2"W x 8.2"D (2.4 x 5.7 x 21 cm);
VSP-DLdV1X4: 1.7"H x 3.9"W x 8.6"D (4.3 x 10 x 21.9 cm)

Weight — VSP-DLdV1X4: 1.6 lb. (0.7 kg);
VSP-DLdV1X2: 0.9 lb. (0.4 kg)

2. Overview

2.1 Introduction

The Dual Link DVI Splitter (VSP-DLDVI1X2 or VSP-DLDVI1X4) transmits super-high-definition graphics to 2 or 4 different locations without losing quality. It can also function as a typical single link 4-port DVI splitter. Use the splitter for CAD, post production, broadcast, or control room applications.

2.2 Features

- DVI 1.1 compliant.
- Provides a wide frequency range: up to 300 MHz.
- Enables EDID learning using a DIP switch.
- Firmware upgradable via an RS-232 connection.
- Uses wallmount housing design for easy installation.

NOTES:

1. *The VSP-DLDVI1X2 and VSP-DLDVI1X4 do not support HDCP.*
2. *To correctly display dual link DVI, users must pay attention to the EDID content. The graphics card will send video according to the presented EDID.*

2.3 What's Included

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

VSP-DLDVI1X2:

- (1) 1 x 2 Dual Link DVI Splitter
- (1) 5-VDC, 4-A power supply
- (2) mounting screws
- This user's manual

VSP-DLDVI1X4:

- (1) 1 x 4 Dual Link DVI Splitter
- (1) 5-VDC, 4-A power supply
- (2) mounting screws
- This user's manual

Chapter 2: Overview

2.4 Hardware Description

2.4.1 VSP-DLVDI1X2

The front panel of the splitter is blank metal. Figure 2-1 shows the back panel. Table 2-1 describes its components.

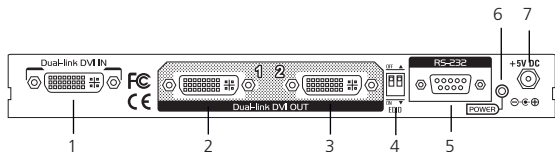


Figure 2-1. VSP-DLVDI1X2 back panel.

Table 2-1. VSP-DLVDI1X2 components.

Number	Component	Description
1	Dual-Link DVI IN connector	Links to DVI input source.
2	Dual-Link DVI OUT connector	DVI output 1.
3	Dual-Link DVI OUT connector	DVI output 2.
4	DIP switch	Used for EDID learning.
5	DB9 F connector	Used for firmware update and control.
6	Power signal LED	Lights when power to the unit is on.
7	+5-VDC 4-A interlocking power jack	Connects to interlocking 5-V, 4-A power supply.

2.4.2 VSP-DLDVI1X4

The front panel of the VSP-DLDVI1X4 splitter is blank metal. Figure 2-2 shows the back panel. Table 2-2 describes its components.

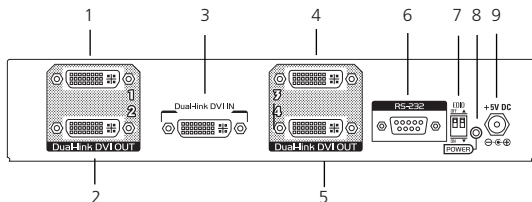


Figure 2-2. VSP-DLDVI1X4 back panel.

Table 2-2. VSP-DLDVI1X4 components.

Number	Component	Description
1	Dual-Link DVI OUT connector	DVI output 1.
2	Dual-Link DVI OUT connector	DVI output 2.
3	Dual-Link DVI IN connector	Links to DVI input source.
4	Dual-Link DVI OUT connector	DVI output 3.
5	Dual-Link DVI OUT connector	DVI output 4.
6	DB9 F connector	Used for firmware update and control.
7	DIP switch	Used for EDID learning.
8	Power signal LED	Lights when power to the unit is on.
9	+5-VDC 4-A interlocking power jack	Connects to interlocking 5-V, 4-A power supply.

Chapter 3: Configuration

3. Configuration

3.1 DIP Switch

Figure 3-1 shows the DIP switch on the VSP-DLDV11X2 or VSP-DLDV11X4 unit. Table 3-1 describes the settings.



Figure 3-1. DIP switch.

Table 3-1. DIP switch settings.

Pin #1	Pin #2	EDID Feature
OFF (UP)	OFF (UP)	Default for dual-link mode.
OFF (UP)	ON (DOWN)	Default for single-link mode.
ON (DOWN)	ON (DOWN)	EDID learning mode.
ON (DOWN)	OFF (UP)	Reserved mode.

*NOTE: For the VSP-DLDV11X2 unit, only DVI output 2 can be used to learn EDID.
For the VSP-DLDV11X4 unit, only DVI output 4 can be used to learn EDID.*

3.2 EDID Learning

Follow these steps to identify the output display.

1. Connect the output display to Output 2 on the VSP-DLDV11X2 or to Output 4 on the VSP-DLDV11X4.
2. Adjust the DIP switch to EDID learning mode (both switches are ON).
3. Unplug the power adapter, then plug it back it again.
4. The Power LED will start blinking.
5. When the EDID learning is done, the LED will stop blinking.

4. Hardware Installation

Broadcast DVI Signal to 2 or 4 DVI Displays

1. Switch off all devices, including monitors.
2. Connect to the receivers.
3. Connect a DVI source to the DVI IN port.
4. Plug in a 5-VDC power supply (included).
5. Power on the DVI monitors.
6. Power on the DVI source.

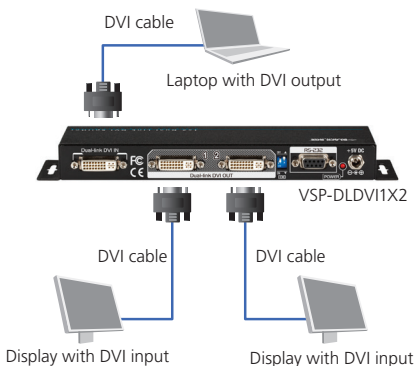


Figure 4-1. VSP-DLDV11X2 installation diagram.

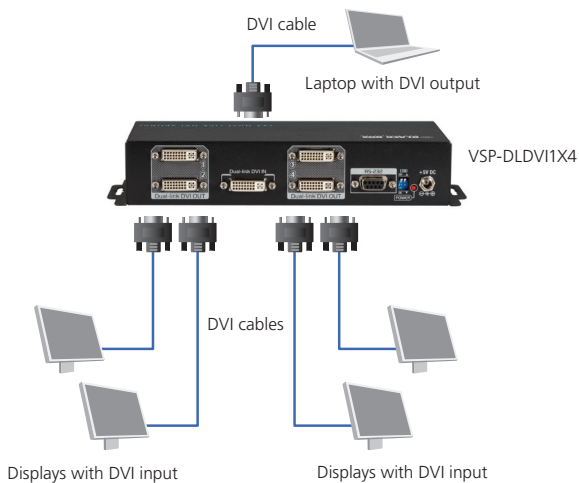


Figure 4-2. VSP-DLDV11X4 installation diagram.

Appendix. Troubleshooting

A.1 Contacting Black Box

If you determine that your splitter is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box Technical Support at 724-746-5500 or info@blackbox.com.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- the nature and duration of the problem.
- when the problem occurs.
- the components involved in the problem.
- any particular application that, when used, appears to create the problem or make it worse.

A.2 Shipping and Packaging

If you need to transport or ship your splitter:

- Package it carefully. We recommend that you use the original container.
- If you are returning the unit, make sure you include everything you received with it. Before you ship for return or repair, contact Black Box to get a Return Authorization (RA) number.

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

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way it should be.



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VSP-DLDVI1X2, version 4

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