

USER MANUAL

VSW-HDMI2-3X1

HDMI 2.0 VIDEO SWITCH — 3 X 1

24/7 TECHNICAL SUPPORT AT 1.877.877.2269 OR VISIT BLACKBOX.COM

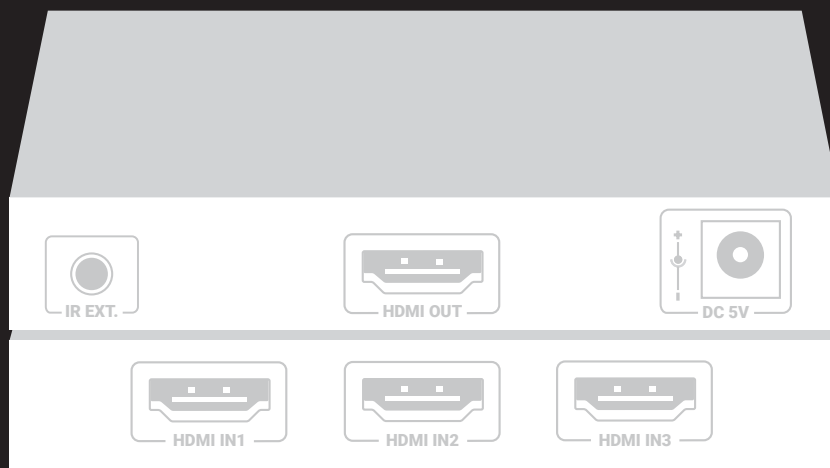


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IMPORTANT SAFETY INSTRUCTIONS

1. Do not expose this apparatus to rain, moisture, dripping or splashing liquids. Do not place any objects filled with liquids, such as vases, on the apparatus.
2. Do not install or place this unit in a bookcase, built-in cabinet or in another confined space. Make sure the unit is well ventilated.
3. To prevent risk of electric shock or fire hazard due to overheating, do not obstruct the unit's ventilation openings with newspapers, tablecloths, curtains, and similar items.
4. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
5. Do not place sources of open flames, such as lighted candles, on the unit.
6. Clean this apparatus only with a dry cloth.
7. Unplug this apparatus during lightning storms or when unused for long periods of time.
8. Do not walk on or pinch the power cord, particularly at plugs.
9. Only use attachments/accessories specified by the manufacturer.
10. Refer all servicing to qualified service personnel.



CHAPTER 1: SPECIFICATIONS

TABLE 1-1. SPECIFICATIONS

SPECIFICATION	DESCRIPTION
Video	
Input	(3) HDMI Type A female
Output	(1) HDMI Type A female
Input/Output Signal Type	HDMI with 4K
Input/Output Resolution Support	VESA: 640 x 480, 800 x 600, 1024 x 768, 1280 x 768, 1280 x 800, 1280 x 960, 1280 x 1024, 1360 x 768, 1366 x 768, 1400 x 1050, 1440 x 900, 1600 x 900, 1600 x 1200, 1680 x 1050, 1920 x 1200, SMPTE: 720 x 480p, 720 x 576p, 1280 x 720p, 1920 x 1080i, 1920 x 1080p, 3840 x 2160, 4096 x 2160
Maximum Data Rate	18 Gbps
Control Method	IR control, switch button control
Audio	
Audio Format Supported	Fully supports audio formats in HDMI 2.0 specification, including PCM, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio, DTS:X
General	
Operating Temperature	32 to 113° F (0 to 45° C)
Storage Temperature	-4 to +158° F (-20 to +70° C)
Humidity	10 to 90%, noncondensing
ESD Protection	Human-Body Model: ±8 kV (air-gap discharge)/±4 kV (contact discharge)
Power Consumption (Maximum)	1.735 W
Dimensions	Each unit: 0.77" H x 3.93" W x 2.61" D (1.95 x 10 x 6.62 cm)
Weight	Each unit: 0.5 lb. (0.2 kg)
Approvals	CE, FCC, IC, RCM, and VCCI



CHAPTER 2: OVERVIEW

2.1 INTRODUCTION

The HDMI 2.0 Video Switch - 4K60, HDCP, 3x1 features HDMI 2.0 and HDCP 2.2 compatibility and supports resolutions up to 4K @ 60 Hz 4:4:4 8-bit, enabling three Ultra HD sources to be switched to one Ultra HD display. It also allows control through a top panel button, IR remote and automatic switch.

The switch is small, compact and easy to install, giving you the convenience of future-ready Ultra HD AV switching, and the reliability of cutting-edge HDMI 2.0 and HDCP 2.2 compatibility.

2.2 FEATURES

- ◆ Cost-effective 3 to 1 HDMI switch
- ◆ Fully compliant with HDMI 2.0 and HDCP 2.2
- ◆ HDMI inputs and output support resolutions up to 4K @ 60 Hz 4:4:4 8-bit
- ◆ Supports top panel button, IR remote and automatic switch control options
- ◆ Compact size and easy to install
- ◆ Supports locking HDMI cables to prevent accidental cable disconnects

2.3 WHAT'S INCLUDED

Your package should include the following items. If anything is missing or damaged, contact Black Box Technical Support at 877-877-2269 or info@blackbox.com

VSW-HDMI2-3X1 includes:

- ◆ (1) HDMI 2.0 Video Switch – 4K60, HDCP, 3 x 1
- ◆ (1) 5-VDC power adapter with U.S. plug
- ◆ (1) Remote control
- ◆ (1) 38-kHz IR extension cable
- ◆ (2) Mounting brackets

CHAPTER 2: OVERVIEW

2.4 HARDWARE DESCRIPTION

2.4.1 TOP PANEL

Figure 2-1 shows the top panel of the switch. Table 2-1 describes its components.

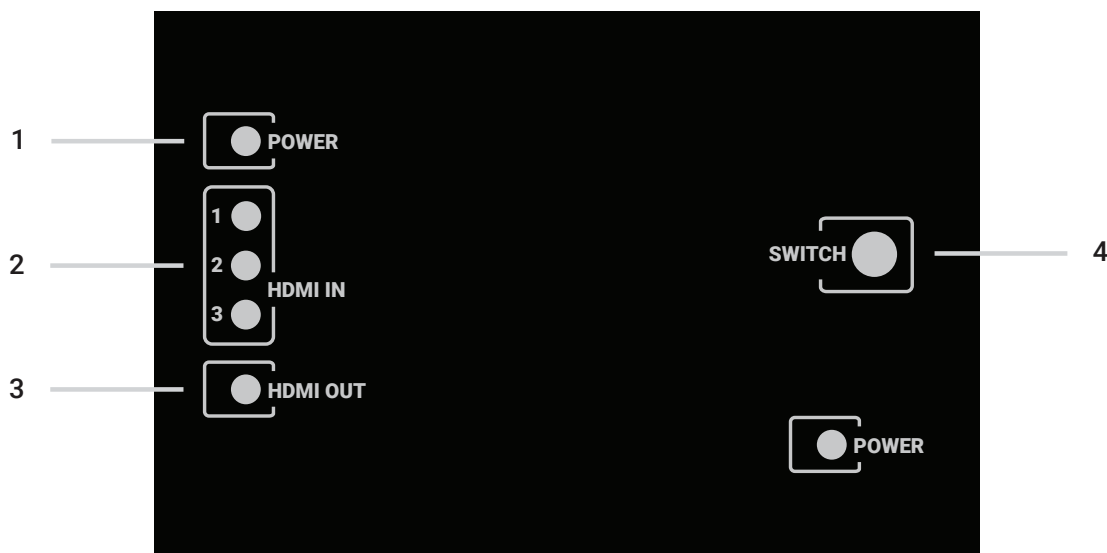


FIGURE 2-1. SWITCH TOP PANEL

TABLE 2-1. SWITCH TOP PANEL COMPONENTS

NUMBER IN FIGURE 2-1	COMPONENT	DESCRIPTION
1	Power LED (red)	ON: The switch is powered on. OFF: The switch is powered off.
2	HDMI IN LEDs 1–3 (red)	ON: The HDMI source is selected. OFF: The HDMI source is not selected.
3	HDM OUT LED (red)	ON: An HDMI display is connected to the switch. OFF: No HDMI display is connected to the switch.
4	Switch button	Press to cycle through sources. Press and hold to enable or disable auto switch mode

2.4.2 FRONT PANEL

Figure 2-2 shows the front panel of the switch. Table 2-2 describes its components.

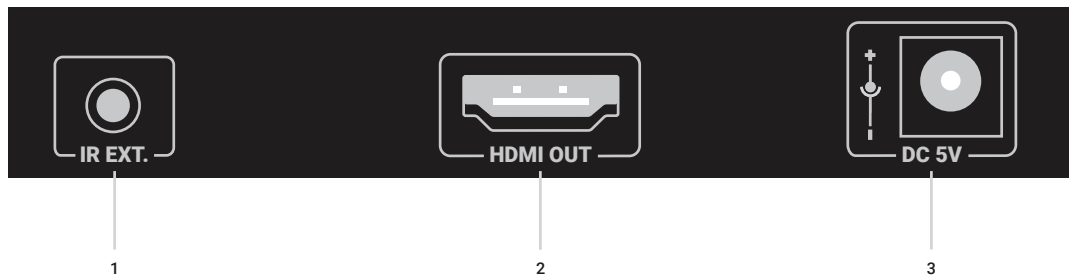


FIGURE 2-2. SWITCH FRONT PANEL

TABLE 2-2. SWITCH FRONT PANEL COMPONENTS

NUMBER IN FIGURE 2-2	COMPONENT	DESCRIPTION
1	IR Extension port	Connect to the IR extension cable provided.
2	Locking HDMI OUT connector	Connect to an HDMI display.
3	Power connector	Connect to the included 5-VDC power supply.

2.4.3 BACK PANEL

Figure 2-3 shows the back panel of the switch. Table 2-3 describes its components.

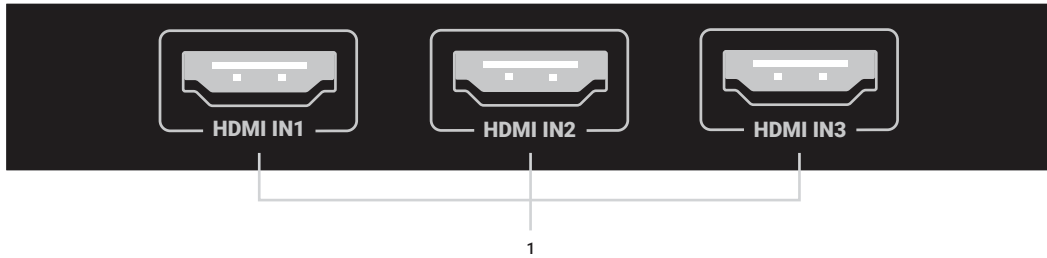


FIGURE 2-3. SWITCH BACK PANEL

TABLE 2-3. SWITCH BACK PANEL COMPONENTS

NUMBER IN FIGURE 2-3	COMPONENT	DESCRIPTION
1	Locking HDMI 1–3 connectors	Connect to HDMI sources

CHAPTER 3: INSTALLATION AND WIRING

3.1 INSTALLATION STEPS

NOTE: Before installation, make sure the device is disconnected from the power source.

Follow these steps:

1. Remove the four screws that secure the side panels to the device.

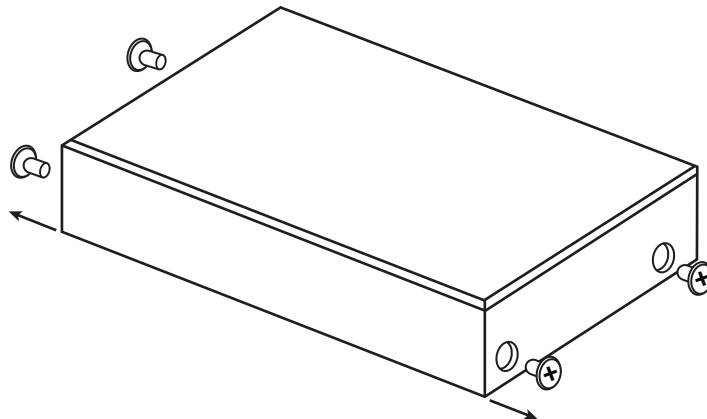


FIGURE 3-1. REMOVE THE SCREWS FROM THE SIDE PANELS

2. Position and install the mounting brackets with the four mounting screws mentioned above.

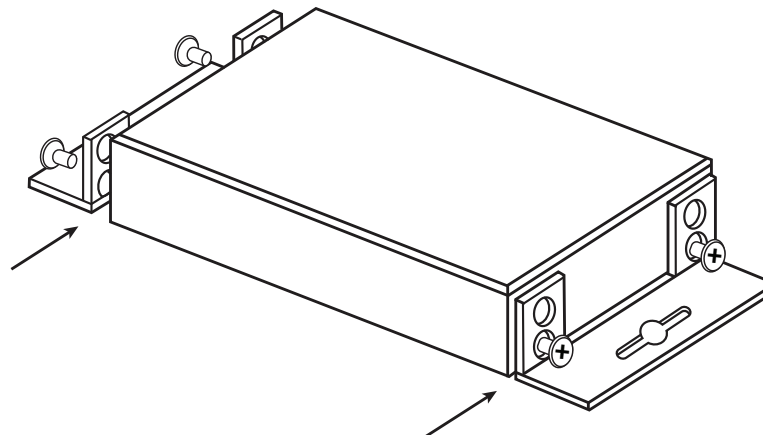


FIGURE 3-2. ATTACH THE INCLUDED BRACKETS TO THE SIDE PANELS OF THE DEVICE

3. Mount and secure the device to a surface or a suitable location with the mounting screws.

CHAPTER 3: INSTALLATION AND WIRING

3.2 WIRING

WARNINGS:

Before wiring, disconnect the power from all devices.

During wiring, connect and disconnect the cables gently.

Follow these steps:

1. Connect HDMI IN: Connect HDMI source devices to HDMI IN (1-3) of the switch using high-quality HDMI cables (e.g. PC, Blu-ray player, Apple TV, STB, etc.).
2. Connect HDMI OUT: Connect an HDMI display device to HDMI OUT of the switch (e.g. TV, projector, LCD/LED display, etc.).
3. Connect for IR signal extension control: Connect the IR extension cable provided to IR Ext. port of the switch.
4. Connect the power adapter provided to the switch.
5. Power on all attached devices.

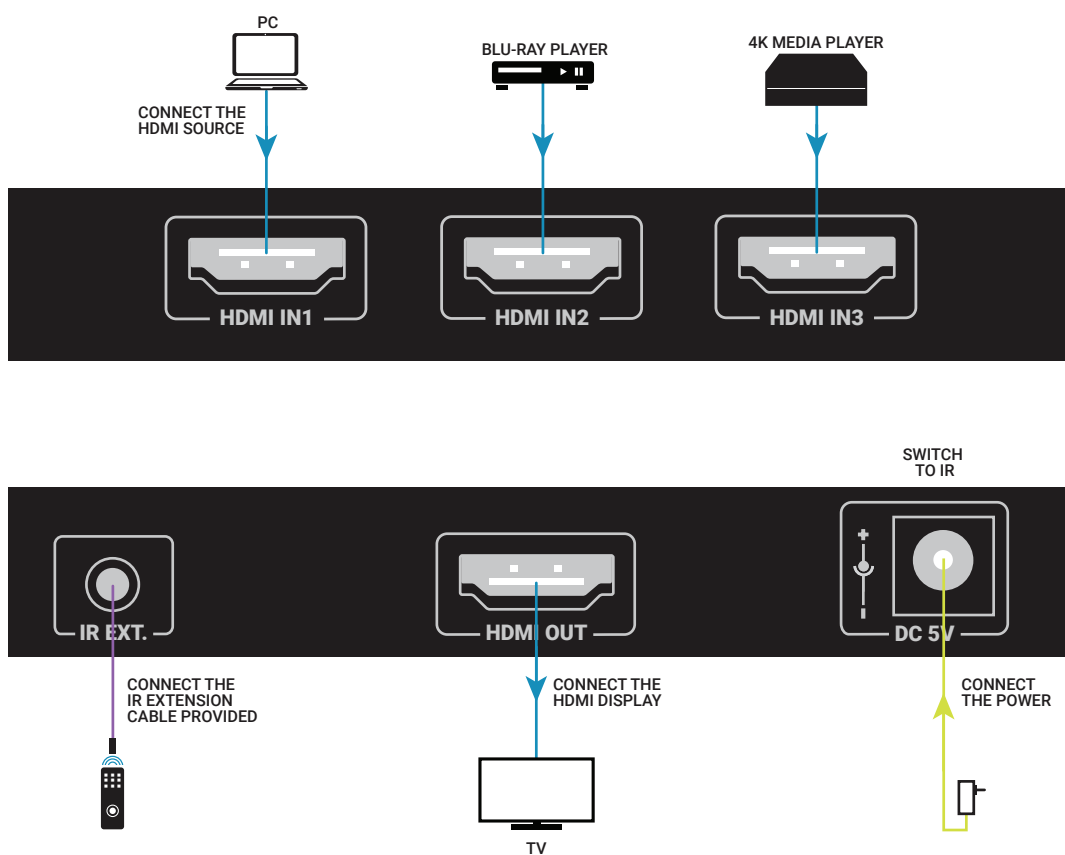


FIGURE 3-3. TYPICAL INSTALLATION

CHAPTER 4: CONTROL OF THE SWITCH

You can choose to control the HDMI 2.0 Video Switch at your convenience through the top panel button, IR remote or automatic switch function.

4.1 TOP PANEL BUTTON CONTROL

Press the switch button on the top of the unit to cycle through multiple sources.

Press and hold the button to enable or disable auto switch mode.

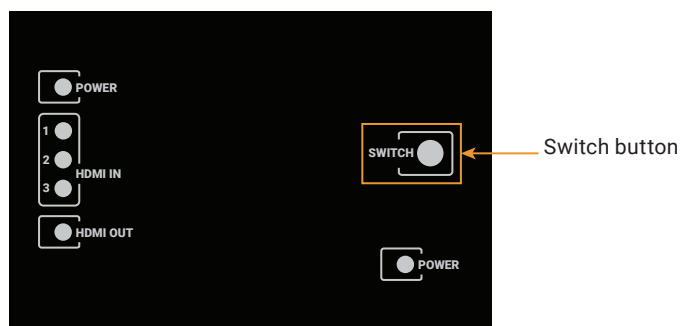


FIGURE 4-1. TOP PANEL CONTROL BUTTON

4.2 IR REMOTE CONTROL

The switch can be controlled by the IR remote provided. Point the remote directly at the IR extension cable connected to the "IR Ext." port and switch to the desired input source.

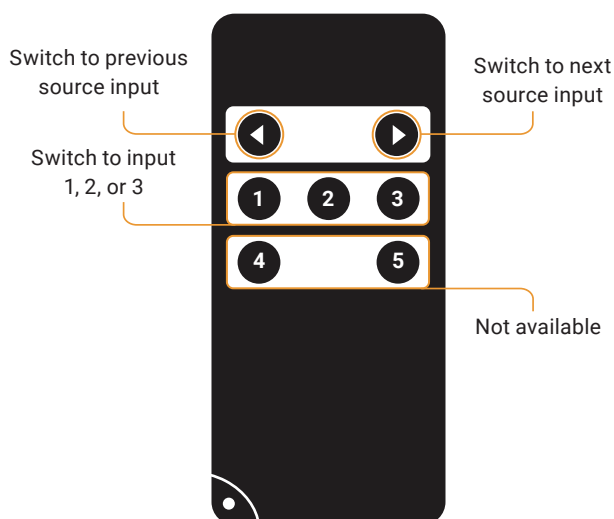









FIGURE 4-2. IR REMOTE CONTROL

CHAPTER 4: CONTROL OF THE SWITCH

TABLE 4-1. IR REMOTE CONTROL BUTTON FUNCTIONS

BUTTON	IR CODES	DESCRIPTION
	0X02 0X0A	Switch to next active source input (Cycle 1 → 3)
	0X02 0X08	Switch to previous active source input (Cycle 3 → 1)
	0x02 0x04	Switch to source input 1
	0x02 0x05	Switch to source input 2
	0X02 0X06	Switch to source input 3
	N/A	Not available
	N/A	Not available

NOTE: Since the encoding format for IR codes above is NEC (38 kHz), make sure any third party device used to IR control the switch supports NEC (38 kHz).

4.3 AUTOMATIC SWITCH CONTROL

The switch supports automatic switching, which is enabled by default, and allows you to control it without staying near it or using the IR remote.

When the switch is powered on, automatic switching will function as follows:

1. When HDMI sources are inserted, the switch will switch to the latest connected source for output display.
2. When the HDMI source selected is removed, the switch will switch to the active source with top priority for output display (Priority: input 1 > input 2 > input 3).

NOTE: Automatic Switching function can only detect 5V of the input source device. If the selected HDMI source in standby mode provides a continuous 5V power output, the Automatic Switching function will not work, i.e. the switch will not switch the input to other active sources. In this case, turn off the standby source device selected or remove it from the switch.

To disable auto switching, press and hold the button. To re-enable, do the same.

CHAPTER 5: TROUBLESHOOTING

5.1 TROUBLESHOOTING STEPS

Follow these steps to troubleshoot your switch:

1. Power: Make sure all devices are powered on (the sources, switch and display devices).
2. Indicator: Make sure LED indicators of the switch are normal according to user manual.
3. Devices: Make sure a picture can be shown normally when connecting source to display devices directly.
4. Cable: Plug in and out an HDMI cable or try another HDMI cable. Make sure the specific cable length is within the transmission range in the user manual Specification section.
5. Compatibility: Test other source and display devices to determine if it is a compatibility issue.

5.2 CONTACTING BLACK BOX

If you determine that your switch is malfunctioning, do not attempt to alter or repair the unit. It contains no user-serviceable parts. Contact Black Box Technical Support at 877-877-2269 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.

APPENDIX A: REGULATORY INFORMATION

A.1 FCC STATEMENT

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.



APPENDIX A: REGULATORY INFORMATION

A.2 NOM STATEMENT

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 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.

APPENDIX B: DISCLAIMER/TRADEMARKS

B.1 DISCLAIMER

Black Box Corporation shall not be liable for damages of any kind, including, but not limited to, punitive, consequential or cost of cover damages, resulting from any errors in the product information or specifications set forth in this document and Black Box Corporation may revise this document at any time without notice.

B.2 TRADEMARKS USED IN THIS MANUAL

Black Box and the Black Box logo type and mark are registered trademarks of Black Box Corporation.

Any other trademarks mentioned in this manual are acknowledged to be the property of the trademark owners.



NOTES

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LEAVE THE TECH TO US

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SUPPORT**

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Lined area for notes with horizontal dashed lines.



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