

QUICK START GUIDE/USER MANUAL

KV6224DPH

DUAL-MONITOR HDMI/DP USB 3.1 KVM SWITCH

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



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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

- ♦ (1) Switch
- ♦ (1) 12V Power Supply with US, UK, EU, and AU adapters

INSTALLATION STEPS

1. Power up your KVM Switch by connecting the external power adapter to it.
2. Connect the shared USB keyboard, mouse, two monitors, speaker/headphone and microphone to corresponding ports on console section of the KVM Switch.

NOTE: The two left-side white USB ports are for keyboard and mouse and two blue USB 3.1 ports are for other USB devices.



FIGURE 3-1. KV6224DPH – REAR VIEW

3. Connect each KVM PC port to a computer, using one HDMI 2.0 video cable (male-to-male) and one DP 1.2 video cable (male-to-male), one USB cable (type A to type B), and one audio and mic combo cable (male-to-male).
4. Connect each of your USB devices to the USB hub ports (on the left).

You can now begin to use the KVM switch.

OPERATION COMMANDS QUICK REFERENCE CHART

OPERATION COMMANDS FOR HOTKEYS/FRONT-PANEL BUTTONS

COMMAND	HOTKEYS ¹	FRONT-PANEL BUTTON	DESCRIPTION
Select PC Port ² (Jointly select PC port/ hub port control/ audio and mic, if binding is enabled)	Scr-Lock, Scr-Lock + "X" X = 1-4 PC port Number	Press the corresponding button to select the active PC port.	Select the active PC port (Jointly select PC port/ hub port control/ audio and mic, if binding is enabled)
Select Hub Port Control ² (Jointly select PC and hub port control, if binding is enabled)	Scr-Lock, Scr-Lock + "Fx" Fx = F1-F4 (Fx is a Function Key) x = 1-4 for Hub port number	Press the button to toggle the specific PC + USB hub port control. (It works only if PC port/ hub port control binding is enabled.)	Select the PC port that control all USB hub ports (Jointly select PC and hub port control, if PC/hub port control binding is enabled)
Select Audio and Mic Port ³ (Jointly select PC port and audio and mic, if binding is enabled)	Scr-Lock, Scr-Lock + "Fy" Fy = F5-F6 (for 2-port) or F5-F8 (for 4-port) (Fy is a Function Key) y = 5-6 (for 2-port) or 5-8 (for 4-port) for Audio and Mic number	—	Select the active audio and mic port (Jointly select PC and audio and mic port, if binding is enabled)

OPERATION COMMANDS FOR HOTKEYS/FRONT-PANEL BUTTONS (CONTINUED)

COMMAND	HOTKEYS ¹	FRONT-PANEL BUTTON	DESCRIPTION
Bind PC and Hub Port Control Switching ² [Default]	Scr-Lock, Scr-Lock + "Z"	—	Enable the binding of PC port and hub port control (Once this feature is enabled, any pc and/or hub port control switching is bound together) (factory default)
Unbind PC and Hub Port Control Switching ² [Default]	Scr-Lock, Scr-Lock + "X"	—	Disable the binding of PC port and hub port control switching
Bind PC and Audio and Mic Switching ³ [Default]	Scr-Lock, Scr-Lock + "Q"	—	Enable the binding of PC port and audio and mic switching. (Once this feature is enabled, any PC and/or audio and mic switching is bound together) (factory default)
Unbind PC and Audio and Mic Switching ³ [Default]	Scr-Lock, Scr-Lock + "W"	—	Disable the binding of PC port and audio and mic
Previous PC port ² (Jointly select PC/ hub port control, if binding is enabled)	Scr-Lock, Scr-Lock + "" (Arrow Up)	—	Select the previous connected PC port (Jointly select PC/ hub port control, if binding is enabled)
Next PC port ²	Scr-Lock, Scr-Lock + "" (Arrow Down)	—	Select the next connected PC port (Jointly select PC/ hub port control, if binding is enabled)
Previous PC port	Scr-Lock, Scr-Lock + " " (Backspace)	—	Toggle between the previous port and current port
Beep Sound On/Off	Scr-Lock, Scr-Lock + "B"	—	Toggle on/off the beep sound
Define Hotkey Preceding	Scr-Lock, Scr-Lock + "H" + "y" y=Scroll Lock, Caps Lock, ESC, F12, Num Lock	Press and hold down last button (Button 2) till two beeps, release the button, then press (y)	Select the hotkey preceding sequence among 5 alternative keys
Autoscan	Scr-Lock, Scr-Lock + "S"	—	Autoscan through every connected port for quick screen browsing of each port (scan delay = 5 sec.)
Autoscan with Programmable Delay	Scr-Lock, Scr-Lock + "H" + "z" z = 1>10', 2>20', 3>30', 4>40', 5>50', 6>60', 7>70', 8>80', 9>90', 0>100'	—	Autoscan with a user-defined delay time within a range of 10 to 100 seconds
Stop Auto Scan	Press any key on keyboard	Press any button	Terminate Autoscan activity
DisplayPort Link Training	Scr-Lock, Scr-Lock+"P"	—	Toggles DisplayPort Link Training ON/OFF

NOTES:

1. The USB keyboard hotkeys allow you a faster and broader control for your KVM switching operation in addition to the front-panel button. If you have configured a hotkey preceding sequence other than two consecutive scroll locks, here you should change your hotkey sequence accordingly. (For preceding sequence key configuration, please refer to "Define Hotkey Preceding Sequence" in above table.)
2. When the binding of PC and USB hub port control switching is enabled by the hotkey sequence: ScrLk + ScrLk + Z, any PC and hub port control switching are bound together. To remove this binding, use the hotkey sequence: ScrLk + ScrLk + X.
3. When the binding of PC and audio and mic switching is enabled by the hotkey sequence: ScrLk + ScrLk + Q, any PC and audio and mic switching are bound together. To remove this binding, use the hotkey sequence: ScrLk + ScrLk + W.

CHAPTER 1: SPECIFICATIONS

1. SPECIFICATIONS

TABLE 1-1. SPECIFICATIONS

SPECIFICATION	KV6224DPH
Number of Ports	(4)
Number of Consoles	(2)
PC Keyboard/Mouse Connectors	(4) USB Type B female
PC Video Connectors	(4) HDMI 2.0 female, (4) DisplayPort 1.2 female
PC Audio/Mic	(8) 3.5-mm audio/mic Jack female
Console Keyboard Connector	(1) USB Type A female
Console Mouse Connector	(1) USB Type A female
Console Monitor Connector	(1) HDMI 2.0 female, (1) DisplayPort 1.2 female
USB Hub Ports	(2) USB 3.1 Type A female (5 Gbps data transfer rates)
PC Selection	Pushbuttons/Hotkeys
Beeper	Yes
PC Port LEDs	4 (Green)
Hub Port LEDs	4 (Red)
Digital Display Resolution	3840 x 2180 @ 60 Hz
Keyboard and Mouse Emulation	Yes (TTU)
Autoscan Delay Time	10 to 60 sec.
Power Adapter	12 VDC, 3 A
Weight	2.6 lb. (1.2 kg)
Dimensions	2.6" H x 3.9" W x 9.9" D (6.6 x 10.0 x 25.3 cm)
Safety/Emissions	FCC, CE



2. OVERVIEW

2.1 INTRODUCTION

The KV6224DPH 4-Port Dual-Monitor HDMI 2.0/DisplayPort 1.2 USB 3.1 (5 Gbps data transfer rates), Audio KVM Switch is designed specifically for sharing two 4K monitors between four multimedia computers with dual-monitor HDMI/DP display. It is the perfect solution for computers using mixed DisplayPort/HDMI graphics cards.

With KV6224DPH, you can fully control four dual-monitor PCs using only one keyboard, mouse and two 4K monitors; essential for saving valuable desktop space.

This dual-monitor HDMI/DisplayPort KVM switch supports two monitors at 3840 x 2160/4K 60 Hz resolution for maximum convenience in adapting to your display requirements.

True Transparent USB Emulation Technology allows complete versatility in dealing with the advanced functional requirements of today's keyboards and mice. From gaming mice/keyboards to advanced business mice/keyboards, users will appreciate what this technology can do for them.

Share all your USB peripheral devices with ease using the separate built-in 2-port USB 3.1 hub (5Gbps data transfer rates) between each connected computer. The USB hub automatically switches the connected USB peripheral to the selected computer saving you the cost of adding additional peripherals.

Independent audio switching lets users freeze audio while simultaneously working on a different system. With 3.5 mm stereo audio input for each channel, two-way audio support for speakers and microphone is available; perfect for sound design or editing applications.

2.2 FEATURES

- ♦ Mixed input/output; ideal for mixed video graphics cards
- ♦ 4-port dual monitor HDMI 2.0/DisplayPort 1.2 USB 3.1 KVM switch with audio and microphone switching
- ♦ (2) additional USB 3.1 hub ports (5 Gbps data transfer rates) for sharing high-speed USB devices
- ♦ True transparent USB (TTU) emulation technology full driver supports advanced USB keyboards and mice
- ♦ USB 3.1/USB 2.0/USB 1.1 specification compliant (up to 5 Gbps data transfer rates)
- ♦ Supports digital video resolution up to 3840 x 2160 at 60 Hz (dual monitors)
- ♦ Independent/simultaneous PC/hub/audio and mic port selection
- ♦ Multi-platform support for Windows® XP/7/8/10, Linux®, and Mac® OS
- ♦ Switching by front-panel pushbuttons and keyboard hotkeys
- ♦ Two-channel stereo audio
- ♦ Low power consumption
- ♦ Firmware upgradable via USB port
- ♦ TAA compliant

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

- ♦ (1) Switch
- ♦ (1) 12V Power Supply with US, UK, EU, and AU adapters

2.4 HARDWARE DESCRIPTION

KV6224DPH

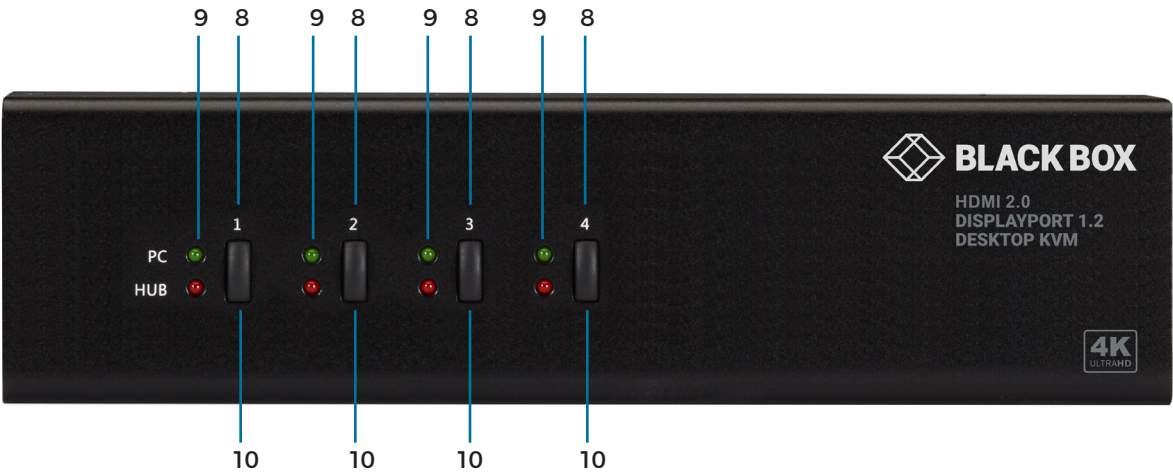


FIGURE 2-1. FRONT PANEL OF THE KV6224DPH

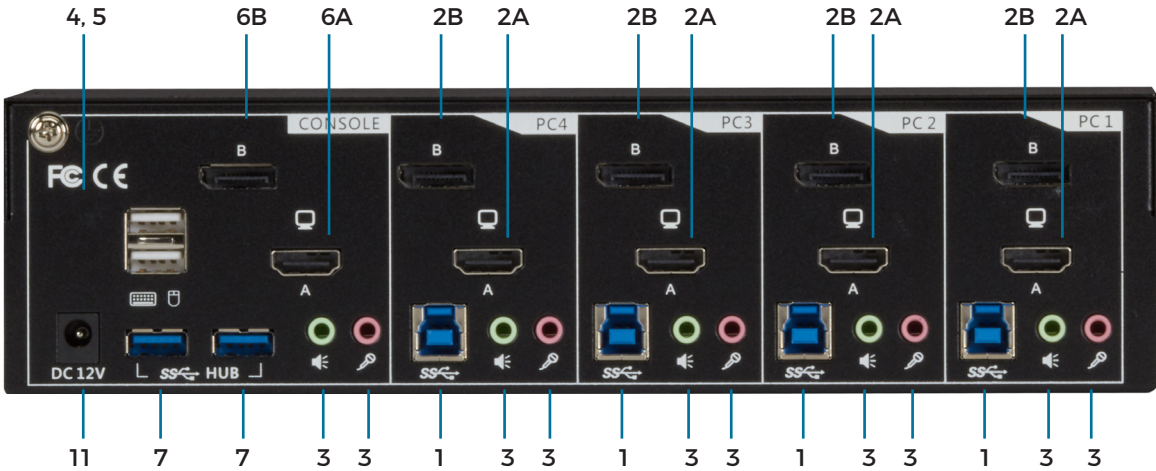


FIGURE 2-2. BACK PANEL OF THE KV6224DPH

TABLE 2-1. KV6224DPH COMPONENTS

NUMBER IN FIGURE 2-1 OR 2-2	COMPONENT	DESCRIPTION
1	PC Keyboard/Mouse Connectors	(4) USB Type B female
2A	PC Video Connectors	(2) HDMI female
2B	PC Video Connectors	(2) DisplayPort female
3	PC Audio/Mic	(8) 3.5-mm audio/mic jack female
4	Console Keyboard Connector	(1) USB Type A female
5	Console Mouse Connector	(1) USB Type A female
6	Console Monitor Connector	(2) HDMI female, (2) DisplayPort female
7	USB Hub Ports	(2) USB 3.1 Type A female
8	PC Selection	Pushbuttons/Hotkeys
9	PC Port LEDs	4 (Green)
10	Hub Port LEDs	4 (Red)



3. INSTALLATION

1. Power up your KVM Switch by connecting the external power adapter to it.
2. Connect the shared USB keyboard, mouse, two monitors, speaker/headphone and microphone to corresponding ports on console section of the KVM Switch.

NOTE: The two left-side white USB ports are for keyboard and mouse and two blue USB 3.1 ports are for other USB devices.

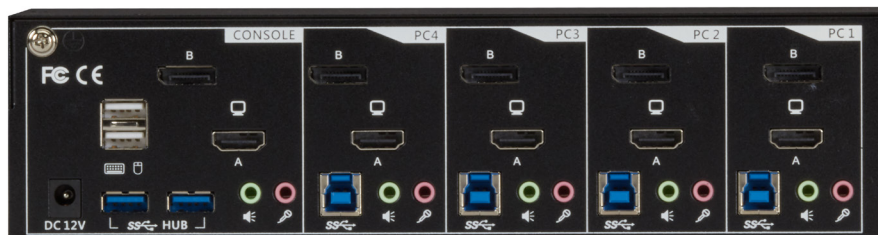


FIGURE 3-1. KV6224DPH – REAR VIEW

3. Connect each KVM PC port to a computer, using one HDMI 2.0 video cable (male-to-male) and one DP 1.2 video cable (male-to-male), one USB cable (type A to type B), and one audio and mic combo cable (male-to-male).
4. Connect each of your USB devices to the USB hub ports (on the left).

You can now begin to use the KVM switch.

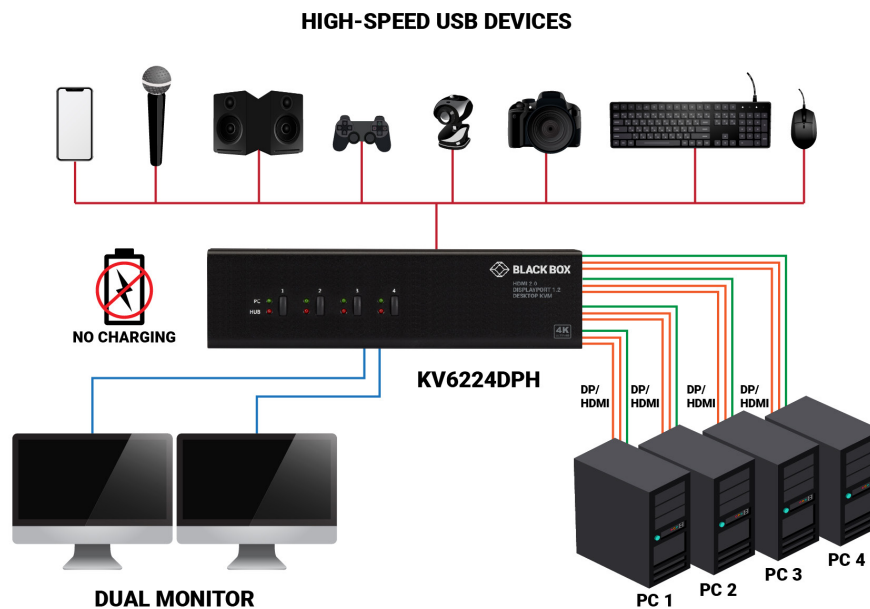


FIGURE 3-2. CONNECTION ILLUSTRATION

CHAPTER 4: OPERATION

4. OPERATION

A keyboard hotkey sequence consists of at least three specific keystrokes:

Hotkey sequence = [ScrLk]* + [ScrLk] * + Command key(s)

* User-definable = SCROLL LOCK, CAPS, ESC, F12 or NUM LOCK

Hotkey preceding sequence configuration: For users who want to use a preceding sequence other than two consecutive Scroll Locks, there is also one convenient way to configure it.

1. Press ScrollLock + ScrollLock + H, then two beeps will signal readiness for new preceding sequence selection (or Press and hold down the last front-panel button [Button 2 or Button 4] until you hear two beeps, then release the button.)
2. Select and press the key you would like to use as your preceding sequence (SCROLL LOCK, CAPS, ESC, F12 or NUM LOCK keys are available for selection) and you'll hear a beep for selection confirmation. Now you can use the new preceding sequence to execute your hotkey commands.

NOTE: Press each keystroke within a hotkey sequence within 2 seconds. Otherwise, the hotkey sequence will not be validated.

NOTE: Hotkey sequence = [ScrLk]* + [ScrLk] * + Command key(s)

* User-definable Preceding sequence = SCROLL LOCK, CAPS, ESC, F12, or NUM LOCK

TABLE 4-1. OPERATION COMMANDS FOR HOTKEYS/FRONT-PANEL BUTTONS

COMMAND	HOTKEYS ¹	FRONT-PANEL BUTTON	DESCRIPTION
Select PC Port ² (Jointly select PC port/ hub port control/ audio and mic, if binding is enabled)	Scr-Lock, Scr-Lock + "X" X = 1-4 PC port Number	Press the corresponding button to select the active PC port.	Select the active PC port (Jointly select PC port/ hub port control/ audio and mic, if binding is enabled)
Select Hub Port Control ² (Jointly select PC and hub port control, if binding is enabled)	Scr-Lock, Scr-Lock + "Fx" Fx = F1-F4 (Fx is a Function Key) x = 1-4 for Hub port number	Press the button to toggle the specific PC + USB hub port control. (It works only if PC port/ hub port control binding is enabled.)	Select the PC port that control all USB hub ports (Jointly select PC and hub port control, if PC/hub port control binding is enabled)
Select Audio and Mic Port ³ (Jointly select PC port and audio and mic, if binding is enabled)	Scr-Lock, Scr-Lock + "Fy" Fy = F5-F6 (for 2-port) or F5-F8 (for 4-port) (Fy is a Function Key) y = 5-6 (for 2-port) or 5-8 (for 4-port) for Audio and Mic number	—	Select the active audio and mic port (Jointly select PC and audio and mic port, if binding is enabled)
Bind PC and Hub Port Control Switching ² [Default]	Scr-Lock, Scr-Lock + "Z"	—	Enable the binding of PC port and hub port control (Once this feature is enabled, any pc and/ or hub port control switching is bound together) (factory default)

NOTES:

1. The USB keyboard hotkeys allow you a faster and broader control for your KVM switching operation in addition to the front-panel button. If you have configured a hotkey preceding sequence other than two consecutive scroll locks, here you should change your hotkey sequence accordingly. (For preceding sequence key configuration, please refer to "Define Hotkey Preceding Sequence" in above table.)
2. When the binding of PC and USB hub port control switching is enabled by the hotkey sequence: ScrLk + ScrLk + Z, any PC and hub port control switching are bound together. To remove this binding, use the hotkey sequence: ScrLk + ScrLk + X.
3. When the binding of PC and audio and mic switching is enabled by the hotkey sequence: ScrLk + ScrLk + Q, any PC and audio and mic switching are bound together. To remove this binding, use the hotkey sequence: ScrLk + ScrLk + W.



TABLE 4-1 (CONTINUED). OPERATION COMMANDS FOR HOTKEYS/FRONT-PANEL BUTTONS

COMMAND	HOTKEYS ¹	FRONT-PANEL BUTTON	DESCRIPTION
Unbind PC and Hub Port Control Switching ² [Default]	Scr-Lock, Scr-Lock + "X"	—	Disable the binding of PC port and hub port control switching
Bind PC and Audio and Mic Switching ³ [Default]	Scr-Lock, Scr-Lock + "Q"	—	Enable the binding of PC port and audio and mic switching. (Once this feature is enabled, any PC and/or audio and mic switching is bound together) (factory default)
Unbind PC and Audio and Mic Switching ³ [Default]	Scr-Lock, Scr-Lock + "W"	—	Disable the binding of PC port and audio and mic
Previous PC port ² (Jointly select PC/ hub port control, if binding is enabled)	Scr-Lock, Scr-Lock + "" (Arrow Up)	—	Select the previous connected PC port (Jointly select PC/ hub port control, if binding is enabled)
Next PC port ²	Scr-Lock, Scr-Lock + "" (Arrow Down)	—	Select the next connected PC port (Jointly select PC/ hub port control, if binding is enabled)
Previous PC port	Scr-Lock, Scr-Lock + " " (Backspace)	—	Toggle between the previous port and current port
Beep Sound On/Off	Scr-Lock, Scr-Lock + "B"	—	Toggle on/off the beep sound
Define Hotkey Preceding	Scr-Lock, Scr-Lock + "H" + "y" y=Scroll Lock, Caps Lock, ESC, F12, Num Lock	Press and hold down last button (Button 2) till two beeps, release the button, then press (y)	Select the hotkey preceding sequence among 5 alternative keys
Autoscan	Scr-Lock, Scr-Lock + "S"	—	Autoscan through every connected port for quick screen browsing of each port (scan delay = 5 sec.)
Autoscan with Programmable Delay	Scr-Lock, Scr-Lock + "H" + "z" z = 1>10', 2>20', 3>30', 4>40', 5>50', 6>60', 7>70', 8>80', 9>90', 0>100'	—	Autoscan with a user-defined delay time within a range of 10 to 100 seconds
Stop Auto Scan	Press any key on keyboard	Press any button	Terminate Autoscan activity
DisplayPort Link Training	Scr-Lock, Scr-Lock+"P"	—	Toggles DisplayPort Link Training ON/OFF

NOTES:

1. The USB keyboard hotkeys allow you a faster and broader control for your KVM switching operation in addition to the front-panel button. If you have configured a hotkey preceding sequence other than two consecutive scroll locks, here you should change your hotkey sequence accordingly. (For preceding sequence key configuration, please refer to "Define Hotkey Preceding Sequence" in above table.)
2. When the binding of PC and USB hub port control switching is enabled by the hotkey sequence: ScrLk + ScrLk + Z, any PC and hub port control switching are bound together. To remove this binding, use the hotkey sequence: ScrLk + ScrLk + X.
3. When the binding of PC and audio and mic switching is enabled by the hotkey sequence: ScrLk + ScrLk + Q, any PC and audio and mic switching are bound together. To remove this binding, use the hotkey sequence: ScrLk + ScrLk + W.

APPENDIX A: REGULATORY INFORMATION

A.1 FCC STATEMENT

This equipment has been tested and found to comply with the regulations 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 when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with this Quick Installation Guide, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case, the user will be required to correct the interference at his/her own expense.

A.2 CE STATEMENT

This is a Class B product in a domestic environment, this product may cause radio interference, in which case the user may be required to take adequate measures.

A.3 ROHS

This product is RoHS compliant.



APPENDIX A: REGULATORY INFORMATION

A.4 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 de 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

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