The quickest way to extend quality DVI video plus four USB devices up to nearly 200 feet from your computer.

Making full use of a single length of category 5e, 6 or 7 twisted pair cabling.
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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 la classe A prescrites dans le Règlement sur le brouillage radioélectrique publié par Industrie Canada.
Instrucciones de Seguridad
(Normas Oficiales Mexicanas Electrical Safety 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 deberá 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: 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

Approvals: CE, FCC

Hardware Compatibility: All computers with DVI digital video and USB interfaces

Software Compatibility: Operates with all known software and operating systems including Windows®, Linux®, Unix®, BSD, all Sun® OS, all Mac® OS, NetWare®, etc.

Connectors:
- **Video:** DVI-D female
- **USB:** USB Type B female
- **Other:** RJ-45 CATx link socket
- **Power jack**

Connectors:
- **Video:** DVI-D female
- **USB:** (4) USB Type A female
- **Other:** RJ-45 CATx link socket
- **Power jack**

Operating Temperature: 32 to 104°F (0 to 40°C)

Power: DC jack (power adapter included)
- **Input:** 100–240 VAC, 50/60 Hz
- **Output:** 5VDC, 12.5W

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**Local unit**

- **Dimensions (w x h x d):** 118.4mm (4.66”) x 26mm (1.02”) x 74.8mm (2.94”)
- **Weights:** 0.34kg (0.75lbs)

**Remote unit**

- **Dimensions (w x h x d):** 163.4mm (6.43”) x 26mm (1.02”) x 74.8mm (2.94”)
- **Weights:** 0.43kg (0.95lbs)
Chapter 2: Overview

2. Overview
Thank you for choosing the ServSwitch Wizard DVI/USB SRX extenders. These compact modules present the quickest way to extend high quality DVI digital video plus USB keyboard and mouse with additional 2 USB peripherals up to 60 metres away from your computer.

Thanks to our long involvement and investment in extender technology we have succeeded in overcoming the numerous problems associated with extending digital video signals. Using our proprietary transmission techniques the ServSwitch Wizard DVI/USB SRX modules can reliably transfer video rates up to 165 Mpixels per second. This is in addition to two USB channels for keyboard and mouse - all via the same single length of Category 5e, 6 or 7a twisted pair cabling.

The ServSwitch Wizard DVI/USB SRX extenders have been designed to be quick to install and totally transparent in operation.

Cable distance rules
- Extension distances up to 60m are supported.
- An extension of 60m may be achieved with a single uninterrupted run of recommended cable (Black Box CAT7a patch cable) at full resolution.
- An extension of 55m may be achieved with a single uninterrupted run of CAT6 bulk/trunk (not patch) cable at full resolution.
- Black Box does not recommend CAT5e cables for use with this product. However, 45m may be typically achieved with a single uninterrupted run of CAT5e bulk/trunk (not patch) cable at full resolution.
- The overall cable run must be reduced by 5m for each additional cable coupling.
- The run specification may be increase by 10m when using resolutions of 1280 x 1024 or lower.
- All patch cables should be as short as possible and should be no longer than 2m.
- It is recommended that Black Box CAT7a patch cables are used for maximum performance.
3. Installation

3.1 Mounting the modules – desk or rack
The ServSwitch Wizard DVI/USB SRX modules can be situated on a desk or alternatively, for larger installations, mounted within an optional rack mount chassis.

3.1.1 Desk mount
Apply the supplied self-adhesive rubber feet to the underside of the module as shown in Figure 3-1:

![Figure 3-1. Applying the supplied self-adhesive rubber feet to the underside of the module](image-url)
3.1.2 Rack mount

Note: The module switches are not accessible once it is inserted into the rack, therefore, check all settings before insertion.

1. Place the rack securing plate (available as a separate kit) onto the front of the module and secure it with the two countersunk screws.

2. Orient the ServSwitch Wizard DVI/USB SRX module on its side so that its labeled face is the correct way up.

3. Slide the module into the required rack position. The rectangular cut-out in the front upper lip of the rack allows the two screws on the module’s upper edge to slide through.

4. The rack mount chassis has a series of holes in its floor that are spaced to accommodate the two screws on the module’s lower edge. Ensure that the screws correctly locate into the two holes of the chosen slot. The rack securing plate on the module should now be flush with the front of the rack mount chassis.

5. Use the third (pan-head) screw, in the top hole of the rack securing plate to fasten the module to the rack as shown in Figure 3-2:

Figure 3-2. Fixing the module into the rack
3.2 Connections
Installation of the ServSwitch Wizard DVI/USB SRX modules is straightforward and requires minimal configuration in most cases.

- Connections at the local module
- Connections at the remote module

Note: After all connections are made, power up the monitor connected to the remote module, then power up the remote module and finally switch on the computer connected to the local module.

3.2.1 Connections at the local module

3.2.1.1 Video connection

1. Use the supplied DVI/D link cable to connect the DVI input socket of the local module to the digital video output socket of the computer as shown in Figure 3-3:

![Figure 3-3. Attaching the DVI/D video link cable](image)

3.2.1.2 USB connection

1. Use the supplied USB cable to link the USB socket of the local module to a vacant USB socket on the computer as shown in Figure 3-4:

![Figure 3-4. Attaching the USB link cable](image)
3.2.1.3 Link connection

1 Connect the link cable (see Overview page for cable advice) to the local module socket labeled TO REMOTE as shown in Figure 3-5:

![Figure 3-5. Attaching the CATx link cable](image)

3.2.1.4 Power connection

The local module is designed to derive its power from the host computer via the USB connection. If this is not possible, then use an optional Black Box power adapter.

1 Connect the output lead of the optional power adapter to the socket labeled ‘POWER’ on the local module as shown in Figure 3-6:

![Figure 3-6. Attaching the power adapter connection](image)

2 Insert the IEC connector of the separate power cord into the corresponding socket of the power adapter. Connect the other end of the power cord to a nearby mains socket.

Note: After all connections are made, power up the monitor and remote module before, followed the local module, and then switch on the computer.
3.2.2 Connections at the remote module

3.2.2.1 Video connection
1. Connect the DVI/D lead from the video monitor to the DVI output socket of the remote module as shown in Figure 3-7:

![Figure 3-7. Attaching the DVI/D video monitor cable](image)

3.2.2.2 USB connection
1. Connect the leads from the keyboard and mouse to two of the USB sockets on the remote module as shown in Figure 3-8:

![Figure 3-8. Attaching the keyboard and mouse USB cables](image)

Note: It is not important which of the four sockets are used.
2. Where other USB peripherals are also required, connect up to two other leads to the remaining USB sockets.
3.2.2.3 Link connection
1 Connect the link cable (see Overview page for cable advice) to the remote module socket labeled TO LOCAL as shown in Figure 3-9:

![Figure 3-9. Attaching the CATx link cable](image)

3.2.2.4 Power connection
1 Connect the output lead of the supplied power adapter to the socket labeled ‘POWER’ on the remote module as shown in Figure 3-10:

![Figure 3-10. Attaching the power adapter connection](image)

2 Insert the IEC connector of the separate power cord into the corresponding socket of the power adapter. Connect the other end of the power cord to a nearby mains socket.
3 After all connections are made, power up the monitor and remote module and then switch on the computer.
4. Operation

4.1 General use
In use, the ServSwitch Wizard DVI/USB SRX modules should be transparent - the system and its peripherals should operate exactly as normal, the only difference being that they are now up to 60 metres apart.

4.2 Video display (EDID) information
Extended Display Identification Data (or EDID) is an industry standard scheme which allows video monitors to declare their capabilities to the computer’s video adapter circuitry, allowing the latter to optimise their outputs accordingly. Since the widespread adoption of the scheme, video adapters have become increasingly dependent on receiving relevant EDID information during startup, before they will output anything more than a rudimentary video signal.

Each time that the remote module is powered on, it attempts to read the EDID information from the connected DVI video monitor. If the attempt is successful, the information is transferred to the local module and stored within non-volatile memory. This information is then made available to the computer’s video adapter when required.

4.3 Power and activity indicators
Each module provides two indicators to confirm power status and also feedback about the various input signals:

Local module

Green:
• On when power is present.

Yellow:
• On when a valid DVI video input signal is being received from the computer.
• Off when the CATx link cable is disconnected.

Remote module

Green:
• On when power is present.

Yellow:
• On when a valid DVI video input signal is being received from the local module.
Flashes regularly (twice per second) when no valid DVI video signal is being received from the local module.
Appendix A. Troubleshooting

A.1 No video image is displayed on the remote monitor

- Check the yellow indicators on the local and remote modules while no keys are pressed on the keyboard and no mouse movements are being made - both indicators should be continually on when a valid video signal is present.

  LOCAL: If the yellow indicator is giving a regular flash (twice per second), then the video feed to the local module is not valid. Try connecting a DVI monitor (preferably using the same DVI link cable as used with the local module) directly to the computer and check for a correct image.

  REMOTE: If the yellow indicator is giving a regular flash (twice per second), then the video feed via the link cable is not valid. If the link cable is long, try using a short link cable temporarily to check for basic operation.

If the yellow indicators are off, then the link cable is not properly connected.
Appendix B. Safety Information

• For use in dry, oil free indoor environments only.
• Do not use to link between buildings.
• Ensure that the twisted pair interconnect cable is installed in compliance with all applicable wiring regulations.
• Do not connect the CATx link interface (RJ45 style connector) to any other equipment, particularly network or telecommunications equipment.
• Warning – the power adapter contains live parts.
• No user serviceable parts are contained within the power adapter - do not dismantle.
• Plug the power adapter into a grounded socket outlet close to the unit that it is powering.
• Replace the power adapter with a manufacturer approved type only.
• Do not use the power adapter if the power adapter case becomes damaged, cracked or broken or if you suspect that it is not operating properly.
• If you use a power extension cord with the units, make sure the total ampere rating of the devices plugged into the extension cord do not exceed the cord’s ampere rating. Also, make sure that the total ampere rating of all the devices plugged into the wall outlet does not exceed the wall outlet’s ampere rating.
• Do not attempt to service the units yourself.
• The units and power supplies can get warm in operation – do not situate them in an enclosed space without any ventilation.
• The units do not provide ground isolation and should not be used for any applications that require ground isolation or galvanic isolation.
About Black Box

Black Box Network Services is your source for more than 118,000 networking and infrastructure products. You’ll find everything from cabinets and racks and power and surge protection products to media converters and Ethernet switches all supported by free, live 24/7 Tech support available in 30 seconds or less.

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