BLACK BOX ®

NETWORK SERVICES

SERVSWITCH CATx REMOTE EXTENDER FOR QUAD VIDEO
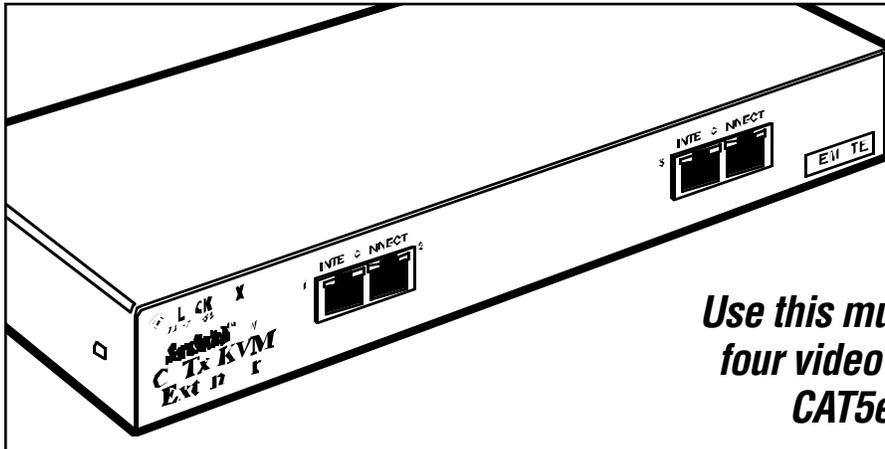
Use this multihead unit to extend four video channels over CAT5, CAT5e, or CAT6 cable.

Key Features

▶ *Place four monitors at a remote location up to 1000 feet (304.8 m) from a CPU.*

▶ *ACURA004A features connections for extending serial and audio, too.*

▶ *Skew compensation and adjustable equalization for the best possible video.*

▶ *Support high resolution at long distances.*

▶ *Rackmount kit available.*

▶ *Surge protection on the RJ-45 ports.*

▶ *Full PS/2 keyboard and mouse emulation.*

▶ *Flash upgradable.*

For optimal video and serial/audio capabilities at the remote end of a copper KVM extension link, order one or more of these ServSwitch™ Brand CATx Remote Extenders for Quad Video from Black Box.

As with many of the other great products in our ServSwitch Extender family, the extenders enable you to put more distance between your PS/2® style server or CPU and your keyboard, monitor, and mouse (KVM) workstation. The ServSwitch Brand CATx Remote Extenders for Quad Video units extend four video channel signals and PS/2 keyboard/mouse signals up to 1000 feet (304.8 m) away from a server or PC's CPU.

You can pair these remote units with local ServSwitch Extender Hubs only (see page 3 for the specific compatible units). But you won't need any special cabling for the remote extender connections—standard solid-core CAT5, CAT5e, and CAT6 twisted-pair cabling will do just fine, hence, the "x" in the product's name. You'll need a CATx cable for each video channel.

All KVM signals—as well as serial and audio signals on the models that support them—are fully buffered on all channels to ensure consistent remote operation of your PC.

The remote extenders support high resolutions over extended distances, and a built-in skew compensator helps to ensure optimal video at the remote end (for details on this, see page 2).

The standard CATx Remote Extender for Quad Video version (ACUR004A) has rear-panel ports for connecting up to four monitors and your PS/2 keyboard and mouse cables.

The ACURA004A has the same KVM inputs as the ACUR004A plus a DB9 port for connecting a serial device and audio jacks for plugging in speakers and a microphone. The serial/audio version contains daughterboards that allow bidirectional stereo audio and a full-duplex serial data to be sent across the CATx
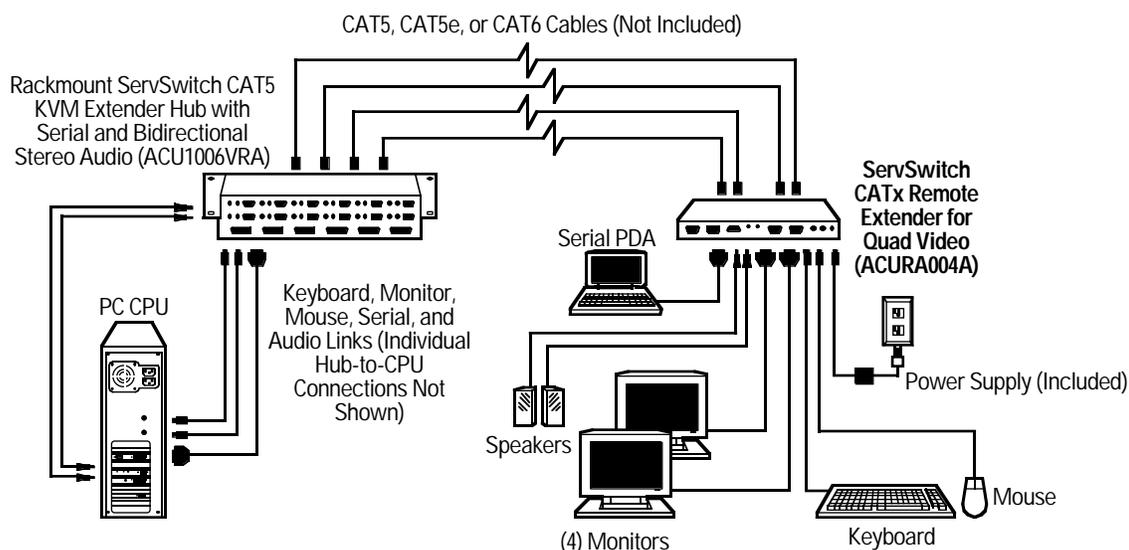
interconnection cable along with the video and PS/2 keyboard and mouse signals. (NOTE: For serial and audio at the remote end, you must use a ServSwitch extender component with serial and audio capabilities at the local end, too.)

For the serial interface, there's no setup or adjustments required. It transmits six signals (three in each direction). You can attach a serial touchscreen directly into the remote unit. To connect a serial printer or other DTE-wired device to the unit, just add a null-modem crossover cable between the unit and the device.

The ACURA004A's audio interface is designed for receiving output from a sound card or other line-level source and to connect to a set of speakers at the other end of the link. Stereo audio may be transmitted either way across the link—simultaneously. You can also plug a microphone into the remote unit's Line In connector and, if required, set its amplification to +17 dB.

CATx cables plug into the units on the front panel via four

Connect four monitors at the remote end of a CAT5, CAT5e, or CAT6 cable link with the ServSwitch Brand CATx Remote Extenders for Quad Video. With the ACURA004A, you can extend serial and audio connections, too.

CAT5, CAT5e, or CAT6 Cables (Not Included)

Rackmount ServSwitch CAT5 KVM Extender Hub with Serial and Bidirectional Stereo Audio (ACU1006VRA)

ServSwitch CATx Remote Extender for Quad Video (ACURA004A)

Serial PDA

PC CPU

Keyboard, Monitor, Mouse, Serial, and Audio Links (Individual Hub-to-CPU Connections Not Shown)

Power Supply (Included)

Speakers

Mouse

(4) Monitors

Keyboard

interconnect ports. The first port carries primary video and data signals, and the other ports carry additional video signals. What's more, the ServSwitch Brand CATx Remote Extenders for Quad Video also feature surge protection on each RJ-45 port.

Yellow and green LEDs located next to the RJ-45 ports inform you of operation status and aid you in troubleshooting. They indicate, for instance, whether the remote unit is powered and has detected a video signal and when there's a data transfer with the local unit.

To update firmware, order our Flash Cable (ACUFLH). It links the remote unit's mouse port with a PC's serial port and, along with a small software utility, enables you to perform flash upgrades when Black Box makes them available for download.

For rack or cabinet installation, order the 19" Rackmount Kit (RMK19U-X3), which contains one rack plate and M3 countersunk mounting screws. The extender unit's base fastens to the plate with the hardware supplied.

Pleasing to the eye.

What's most unique about these extenders is that they bring greater clarity to what you see on your monitors. That's because the ServSwitch Brand CATx Remote Extenders for Quad Video feature deskewing technology, which equalises video colours so you get crisp and clear video at the remote end.

The technology does this by addressing a problem frequently seen with higher grades of twisted-pair cable, on longer cable runs, and on high-resolution monitors: colour drift or colour split. Colour drift shows up as that annoying coloured shadow you occasionally see around objects on a video screen. It sometimes happens with twisted-pair cable because the pairs of wire in the cable are twisted at slightly different rates to reduce crosstalk between pairs. Because of these differences between wire pairs, video signals for different colours often travel different distances before they reach the remote receiver. When one colour signal arrives behind the others because its wire is longer, you get that red, blue, or green shadow around the objects on your video screen.

ServSwitch Brand CATx Remote Extenders for Quad Video remove colour drift by delaying some colour signals to compensate for differences in wire pairs. This skew compensation works with all colours

transmitted. Such clarity means you can run multimedia presentations over greater distances without having to settle for less-than-optimal viewing.

Easy to configure and adjust.

The ServSwitch Brand CATx Remote Extenders for Quad Video are easy to operate and require no software. Video tuning and configuration can be done by entering simple commands on a keyboard that's attached to the unit.

All it takes is a hot-key sequence and you're in Command Mode, where you can configure modes of operation and adjust video for any or all video channels. The ability to tune adjustments on all video channels simultaneously is especially helpful when setting up a multihead unit such as the CATx Remote Extender for Quad Video.

The extenders feature independent low-frequency (LF) and high-frequency (HF) equalisation (EQ) adjustment so you can fine-tune the video to match your cable type. In addition to correcting the skew so the "faster" colours arrive at the same time as the slowest colours, you can tweak the LF EQ to remove video "smear" and adjust the HF EQ to sharpen the image.

The remote units have built-in features that can save you time during the video-tuning process and make it nearly automatic. Assisted EQ steps through a table of preset LF and HF EQ values for different cable lengths in 25-metre increments, quickly setting the approximate EQ for a selected video channel. Use the Channel 0 feature to compensate for cable skew on all channels simultaneously. Quick Skew is a one-step skew-elimination function that sets the colour delay to the value that most installations typically require. Once it's set, you can fine-tune the delay further to your liking. And, often, all it takes is to use Quick Skew on green.

All settings for the ServSwitch Brand CATx Remote Extenders for Quad Video can be stored in EEPROM memory, so you need to set the system up only once, and the settings are automatically restored at power up.

Because the extender remote units perform full PS/2 keyboard and mouse emulation, you can boot the PC without having a keyboard or mouse attached to it. The extenders are also compatible with Microsoft® IntelliMouse® and other wheel mice.

Specifications

Construction: Fully shielded chassis with black painted steel

Keyboard Compatibility: PC/AT®, PS/2

Mouse Compatibility: Standard PS/2 two- or three-button mice; standard wheel mice; Logitech 3-button PS/2

Video Compatibility: VGA to UXGA, RGB

Video Compensation: 2-stage; separate LF and HF equalisers

Video Coupling: DC

Video Resolution (Maximum): 1600 x 1200 at 60 Hz over 650 ft. (198.1 m), 1280 x 1024 @ 75 Hz over 1000 ft. (304.8 m); operation at higher resolutions/refresh rates may be possible at shorter distances

Video Skew Compensation: 15-stage; 42 nanoseconds maximum; 2.8 nanoseconds per step; compensation available on each colour

Video Sync In/Out: Separate/Composite TTL level; sync on green; sync polarity is preserved

Audio Interface Characteristics (ACURA004A Only): Type: Bidirectional stereo audio; Transmission method: Digitised near-CD-quality audio (16-bit, 38.4-kHz); Input impedance: 47 kΩ; Microphone support: Yes; pullup resistor provides bias for condenser microphone; amplification can be set to +17 dB (optional)

Serial Interface Characteristics (ACURA004A Only): Baud rate (maximum): 19.2 kbps; Serial data format: Transparent; Signals transferred: TX, RX, RTS, CTS, DTR, DSR

Connectors: Both: Interconnect: (4) RJ-45; Monitors: (4) HD15 F; Keyboard and mouse: (2) 6-pin mini-DIN F; ACURA004A also has (1) DB9 M (serial DTE) and (2) 3.5-mm stereo audio jacks (line in/mic in and line out))

Indicators: (4) green LEDs ([1] per each Interconnect RJ-45 port): OFF: Remote unit is not powered; ON: Remote unit is powered, but no video signal is found; Flashing: Remote unit is powered and video sync is found; (1) yellow LED on Interconnect 1: OFF: No data transfer from local unit; ON: Remote unit is in Command Mode; Flashing: Data transfer with local unit

Temperature Tolerance: Operating: 32 to 104ºF (0 to 40ºC); Storage: -22 to +149ºF (-30 to +65ºC)

Humidity Tolerance: 5 to 90%, noncondensing

Power: 100–240 VAC, 50–60 Hz, external, autosensing, with universal IEC 320 connector

Size: 5.7"H x 10.8"W x 1.1"D (14.5 x 27.4 x 2.8 cm)

Weight: 3.8 lb. (1.7 kg)

What the package includes

- Extender unit
- Power supply
- Power cord
- Users' manual

Compatible Local Hub Units:

The standard ServSwitch Brand CATx Remote Extender for Quad Video (ACUR004A) can be used with the following Rackmount ServSwitch Brand CAT5 KVM Extender Hubs:

- 6-Port Standard (ACU1006RA);
- 6-Port Dual-Access (ACU1012RA);
- 12-Port Standard (ACU1006DRA).

The ServSwitch Brand CATx Remote Extender for Quad Video with Serial and Audio (ACURA004A) can be used with the following Rackmount ServSwitch Brand CAT5 KVM Extender Hubs with Serial and Bidirectional Stereo Audio:

- 6-Port (ACU1006VRA);
- 6-Port Dual-Access (ACU1006DVRA).

For more information on all models above, request **FaxBack 24985**, go to **www.blackbox.co.uk**, or call our FREE Tech Support.

NOTE: This list of compatible products is subject to change depending on additions and deletions in the ServSwitch Extender line. For the most up-to-date information, call Tech Support.

Ordering Information

ITEM	CODE
ServSwitch Brand CATx Remote Extenders for Quad Video	
with (4) HD15 Video	ACUR004A
with (4) HD15 Video plus (1) DB9 Serial and (2) Audio Jacks	ACURA004A
To rackmount your extender, order…	
19" Rackmount Kit	RMK19U-X3
For firmware upgrades, order…	
Flash Cable for CATx Extenders	ACUFLH
To connect an AT style computer, order…	
AT→PS/2 Mouse GHOST	AC244A
6-Pin Mini-DIN Female to 5-Pin DIN Male Keyboard Adapter	FA212
For your local-to-remote interconnections, order…	
CAT5 Unshielded Bulk Cables, 100-MHz, Solid, 4-Pair, Beige, 1000-ft. (304.8-m)	
PVC Spool	EYN840A-1000
Box	EYN840A-B
Plenum Spool	EYN860A-1000
Box	EYN860A-B
To terminate your bulk CAT5 cable, order…	
High-Performance Category 5 Modular Plugs, Solid-Conductor, Unshielded, 25-Pack	FM732