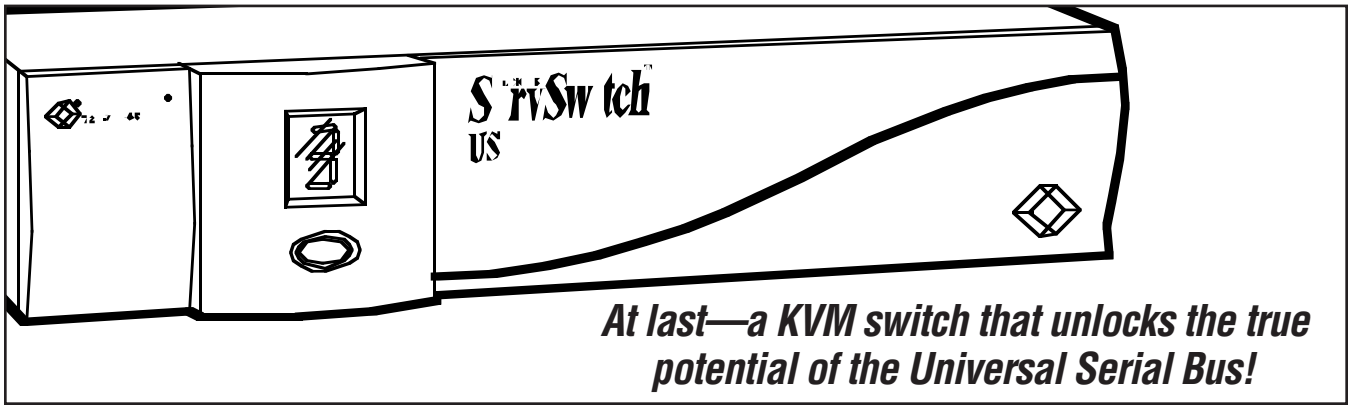
SERVSWITCH™ USB AND USB PLUS



At last—a KVM switch that unlocks the true potential of the Universal Serial Bus!

Key Features

- ***Control two to four USB-enabled CPUs, and switch their access to three or more USB peripherals, with one keyboard, monitor, and mouse.***
- ***Supports VGA at resolutions up to 1600 x 1280, as well as VESA DDC1 and DDC2.***
- ***Self-powered with built-in USB hub functionality.***
- ***Select CPUs with the front-panel button.***

Your computers have Universal Serial Bus (USB) ports. You have USB devices that you'd like them to share. What's the missing piece? Try our ServSwitch™ USB or USB Plus. They are keyboard/video/mouse switches like our other ServSwitch models, but they attach to CPUs' VGA and USB ports.

Plug as many as three USB peripherals into them—or even more, if you add USB hubs. Your USB keyboards, mice, joysticks, microphones, speakers, cameras, printers, scanners, and other devices become resources that all of your CPUs can share. With the proper drivers, you can even hook up non-USB equipment by using USB adapters.

The 2-port Switch models (KV812A and KV822A) can host two fully USB-enabled IBM® PC compatible or Macintosh® G3® or G4® CPUs; the 4-port models (KV814A and KV824A) can host four CPUs. You'll make this connection with special CPU/Server Cables (EHN810) that have a VGA video strand bonded to a USB strand.

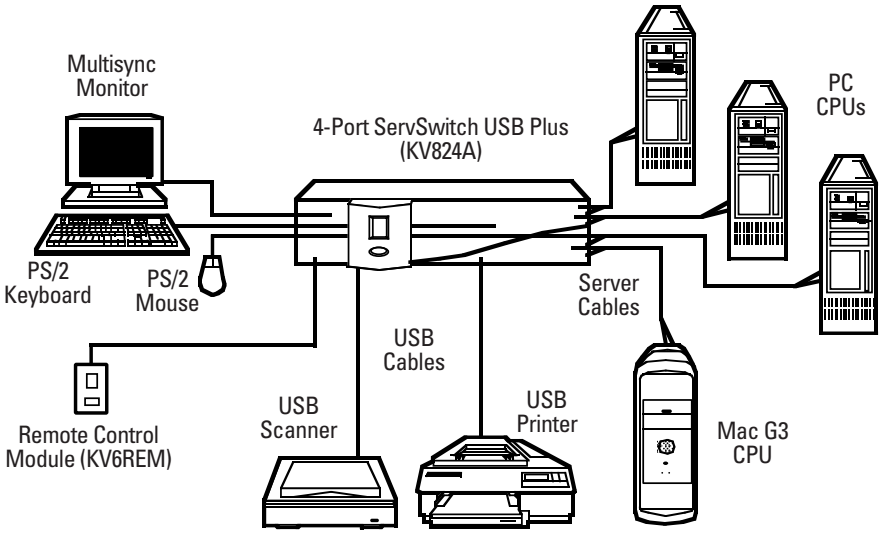
These CPUs need to be running the latest version of Windows® 98 (at least Release 2) or Mac® OS (at least version 8.6) to handle USB switching properly, and they need to have drivers for the USB peripherals you'll be attaching in order to communicate with them. (Unfortunately, earlier versions of Windows, including Windows 3.x, Windows® 95, and Windows® NT, do not support USB at all or do not support it reliably enough to work correctly with the Switch.)

For your monitor, choose a model that would function if connected directly to any of your CPUs. The ServSwitch USB and USB Plus can support VGA, SVGA, XGA, or XGA-2 video at resolutions up to 1600 x 1280 at refresh rates up to 100 Hz. The Switch can also carry the VESA DDC1 and DDC2 signals between the CPUs and the monitor.

Attach standard USB keyboards, mice, and other peripherals to the Switch with regular USB cable (USB01) if it doesn't already have its own attached cable. The maximum distance for such attachments is 5 m If you'd rather go farther than that, you can attach an additional hub (because the Switch is AC-powered), or, on the ServSwitch USB Plus models (KV822A and KV824A), you can attach a regular PS/2® keyboard and mouse with 6-pin mini-DIN connectors—and you can run User-Extension Cable (EHN409) to extend that distance up to 9 m.

You can switch channels on all of the Switch models using a front-panel pushbutton; an LED display will show you which CPU is selected. On the USB Plus models, you can also use the PS/2 keyboard and mouse to select channels. The USB Plus models also have a DB15 option port into which you can plug a Remote Control Module (KV6REM, specify cable length) for channel switching up to 15 metres away.

Now you can control USB CPUs with one keyboard, monitor, and mouse—and share USB peripherals among them.



It's easy to mix Mac and PC computers! In applications like the one above that include both IBM compatible and Mac G3 or G4 type CPUs, a single keyboard—either PS/2 type or PC/Mac/generic USB type—should suffice for most of the activities you'll want to do on either platform; you just have to remember the cross-platform mappings of the keys. Of course, when you use a PC keyboard, the functions of the Mac keyboard's Power key will not be available. Also, even if you use a Mac keyboard, you will have to plug it into the rightmost USB peripheral port (which has special circuitry) in order to use the Power key.

You can use the left mouse button on a PS/2 mouse or PC USB mouse with two or three buttons to perform any Mac mouse-click function. However, you cannot use a single-button Mac mouse to perform the PC mouse-click functions that require the center or right mouse button, so we recommend that you use a PC mouse in a mixed PC/Mac system.

We do not recommend attaching more than one USB video camera at a time to the system. Videocams make heavy demands on USB bandwidth; it can be very difficult for a single bus to properly support two or more of them simultaneously.

If you're running Windows 98 or Mac OS, we highly recommend that you upgrade to the latest version of the operating system, because the USB handling has become more reliable with each new revision. You should upgrade Windows 98 to at least Release 2, and, in particular, you *must* upgrade Mac OS to at least version 8.6; Mac CPUs with earlier OS versions tend to hang following about 50 switch cycles. Other operating systems, such as Windows® 2000, HP-UX®, Linux®, SCO® UNIX®, and Novell® NetWare®, now have USB support or are expected to add it soon. However, DOS, Windows 3.x, Windows 95, and Windows NT either do not support USB or do not support it adequately.

Specifications

Operating System Required — An OS with full USB-switching support, such as Windows 98 Release 2 or later or Mac OS 8.6 or later, complete with USB drivers for all your devices

Hardware Required — Monitor that works when directly attached to each of your CPUs, and a keyboard and mouse that—if they are USB type—work when directly attached to each of your CPUs

Standards — VGA, SVGA, XGA, or XGA-2 video; supports VESA DDC1 and DDC2 monitors

Interfaces — *Video*: VGA; *Keyboard and mouse:* Universal Serial Bus or (USB Plus only) IBM PS/2 compatible; *Other peripherals:* Universal Serial Bus; *Option port:* Proprietary

Resolution — Up to 1600 x 1280 noninterlaced at up to 100 Hz

Video Bandwidth — 200 MHz

Maximum Distance — *From Switch to CPUs or USB peripherals:* 5 m, but this distance can be extended if USB hubs are added; *From Switch Plus (KV822A or KV824A) to PS/2 keyboard or mouse:* 9.1 m

User Controls — (1) Front-mounted selector pushbutton; (1) Bottom-mounted 8-position DIP switch for various options; *USB Plus models only:* Keyboard commands (from PS/2 keyboard only); Mouse-click functions (from PS/2 mouse only)

Indicator — (1) Front-mounted 7-segment status display

Connectors — All rear-mounted: *All models:* (1) HD15 female for attaching monitor; (3) USB Type A female for USB peripherals; *HD15 female connectors for video from CPU:* KV812A and KV822A: (2); KV814A and KV824A: (4); *USB Type B female connectors for other I/O to/from CPU:* KV812A and KV822A: (2); KV814A and KV824A: (4); *KV822A and KV824A also have:* (2) 6-pin mini-DIN female for attaching PS/2 type keyboard and mouse; (1) DB15 female for attaching Remote-Control Module

Power — From the included power supply: *Input:* 100 to 240 VAC, 50 to 60 Hz, from utility-power outlet, through detachable power cord and IEC 320 male inlet, to external transformer; *Output:* 5 VDC at at least 2 amps from transformer to Switch; *Consumption:* 10 watts maximum

MTBF — 500,000 hours (based on the historical reliability of similarly designed and manufactured products)

Maximum Altitude — 3048 m

Temperature Tolerance — 0 to 40˚C

Humidity Tolerance — 5 to 60% noncondensing

Enclosure — Steel, aluminum, and plastic

Size — 4.6H x 26.1W x 15D cm (1.8" H (1U) x 10.3"W x 5.9"D)

Weight — 1 kg

The complete package:

- The ServSwitch USB itself.
- Its power supply.
- A users' manual.

Additional equipment you will need:

- Cables to connect the ServSwitch USB to your CPUs and peripherals.
- A monitor with a standard VGA-type (HD15) connector that will work when directly connected to each of your CPUs. This can be a low- or high-resolution monitor. It can also use VESA DDC signaling (the Switch supports DDC1 and DDC2).
- A USB keyboard and mouse that will work when directly connected to each of your CPUs, or (ServSwitch USB Plus models only) a standard PS/2 keyboard and mouse.
- An operating system that supports USB, complete with USB drivers for all your devices.

Additional equipment you might need:

- ServSwitch USB Plus models only: The KV6REM Remote Control Module for manual port switching at distances up to 3 m from the unit.
- A replacement power supply (use our product code PS649).
- IC138A USB-to-serial adapters for RS-232 serial peripherals.
- EQN500 USB-to-parallel adapters for parallel printers with 36-pin Centronics parallel ports.
- A USB hub for attaching more than three USB peripherals to the Switch.
- An AC surge protector or UPS for the Switch, the monitor, and all CPUs. (Call Black Box Tech Support to determine which surge protectors or uninterruptible power supply you'll need for your application.)

Ordering Information

ITEM	CODE
ServSwitch USB:	
2-Port	KV812A
4-Port	KV814A
ServSwitch USB Plus:	
2-Port	KV822A
4-Port	KV824A
CPU/Server Cable (to attach each CPU to the Switch):	
1.2-m (4-ft.)	EHN810-0004
2.4-m (8-ft.)	EHN810-0008
3.6-m (12-ft.)	EHN810-0012
4.8m (16-ft)	EHN810-0016
USB Cable (to attach USB peripherals to the Switch):	
0.9-m (3-ft.)	USB01-0003
1.8-m (6-ft.)	USB01-0006
3-m (10-ft)	USB01-0010
4.5-m (15-ft)	USB01-0015
User Extension Cable (to extend distance from ServSwitch USB Plus to monitor and PS/2 keyboard and mouse):	
3-m (10-ft)	EHN409-0010
9.1-m (30-ft)	EHN409-0030

Ordering Information (continued)

ITEM	CODE
Remote Control Module:	
With 3-m(10-ft) cord	KV6REM
Replacement Power Supply	PS649
USB Solo (USB→Serial) USB-to-RS-232 adapter (for attaching RS-232 serial peripherals, comes with driver software)	IC138A
USB to Centronics Parallel Adapter (Type A female to 36-pin Centronics male, for attaching printers with Centronics parallel ports)	EQN500-0006
USB Director (functions as a USB hub):	
4-Port	IC165AE

Refer to the BLACK BOX Catalogue or visit our Web site (or just call us!) for all the latest in USB hubs, converters, communication peripherals, and other exciting USB technology!