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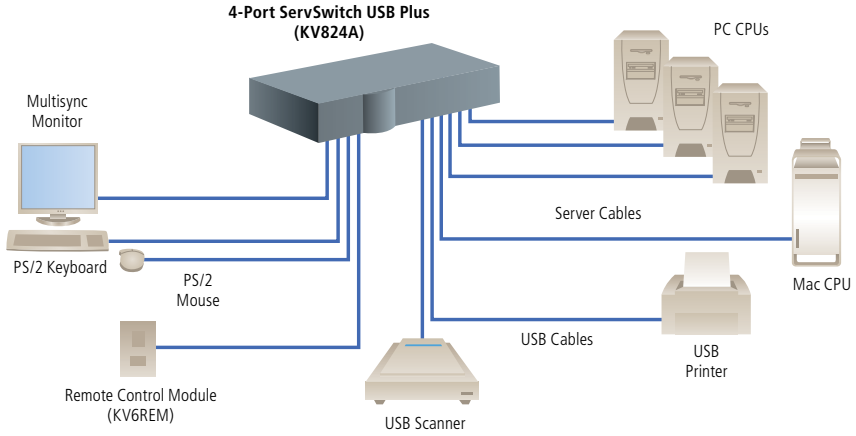
ServSwitch™ USB and USB Plus

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

## 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.

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




## OVERVIEW

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 model (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 16.4 ft. (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 30 ft. (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 50 ft.away.

It's easy to mix Mac and PC computers!

In applications like the one on page 2 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.

## TECH SPECS

**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
**Compliance** — CE (EN55022 Class B), FCC Part 15 Subpart B Class A, IC Class/classe A
**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: 16.4 ft. (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: 30 ft. (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: KV822A: (2); KV814A and KV824A: (4);
USB Type B female connectors for other I/O to/from CPU: 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** — 10,000 ft. (3048 m)
**Temperature Tolerance** — 32 to 104°F (0 to 40°C)
**Humidity Tolerance** — 5 to 60% noncondensing
**Enclosure** — Steel, aluminum, and plastic
**Size** — 1.8" H (1U) x 10.3"W x 5.9"D (4.6 x 26.1 x 15 cm)
**Weight** — 2.2 lb. (1 kg)

*Top: KV814A: rear view;*
*Bottom: KV822A: rear view*

The complete package:

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

You will also 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.

You may also need:

- ServSwitch USB Plus models only: The KV6REM Remote Control Module for manual port switching at distances up to 10 ft. (3 m) from the unit.
- A replacement power supply (use our product code PS649-R3).
- IC138A-R3 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.)

| Item | Code |
|---|---|
| ServSwitch USB | |
| 4-Port | **KV814A** |
| ServSwitch USB Plus | |
| 2-Port | **KV822A** |
| 4-Port | **KV824A** |
| **To attach each CPU to the Switch…** | |
| CPU/Server Cable | |
| 4-ft. (1.2-m) | **EHN810-0004** |
| 8-ft. (2.4-m) | **EHN810-0008** |
| 12-ft. (3.6-m) | **EHN810-0012** |
| 16-ft. (4.8-m) | **EHN810-0016** |
| **To attach USB peripherals to the Switch…** | |
| USB Cable | |
| 3-ft. (0.9-m) | **USB01-0003** |
| 6-ft. (1.8-m) | **USB01-0006** |
| 10-ft. (3-m) | **USB01-0010** |
| 15-ft. (4.5-m) | **USB01-0015** |
| **To extend distance from ServSwitch USB Plus to monitor and PS/2 keyboard and mouse…** | |
| User Extension Cable | |
| 10-ft. (3-m) | **EHN409-0010** |
| 30-ft. (9.1-m) | **EHN409-0030** |
| Remote Control Module | |
| with 10-ft. (3-m) cord | **KV6REM** |
| with 25-ft. (7.6-m) cord | **KV6REM-25** |
| with 50-ft. (15.2-m) cord | **KV6REM-50** |
| Replacement Power Supply | **PS649-R3** |
| **To attach RS-232 serial peripherals, order…** | |
| USB Solo (USB→Serial) USB-to-RS-232 Adapter | **IC138A-R3** |
| ✦ Includes driver software. | |
| **To attach printers with Centronics parallel ports, order…** | |
| USB to Centronics Parallel Adapter | |
| (Type A Female to 36-pin Centronics Male) | **EQN500-0006-R2** |

## Why Buy From Black Box? Exceptional Value. Exceptional Tech Support. Period.

Recognize any of these situations?

- You wait more than 30 minutes to get through to a vendor's tech support.
- The so-called "tech" can't help you or gives you the wrong answer.
- You don't have a purchase order number and the tech refuses to help you.
- It's 9 p.m. and you need help, but your vendor's tech support line is closed.

According to a survey by *Data Communications* magazine, 90% of network managers surveyed say that getting the technical support they need is extremely important when choosing a vendor. But even though network managers pay anywhere from 10 to 20% of their overall purchase price for a basic service and support contract, the technical support and service they receive falls far short of their expectations—and certainly isn't worth what they paid.

At Black Box, we guarantee the best value and the best support. You can even consult our Technical Support Experts before you buy if you need help selecting just the right component for your application.

Don't waste time and money—call Black Box today.