



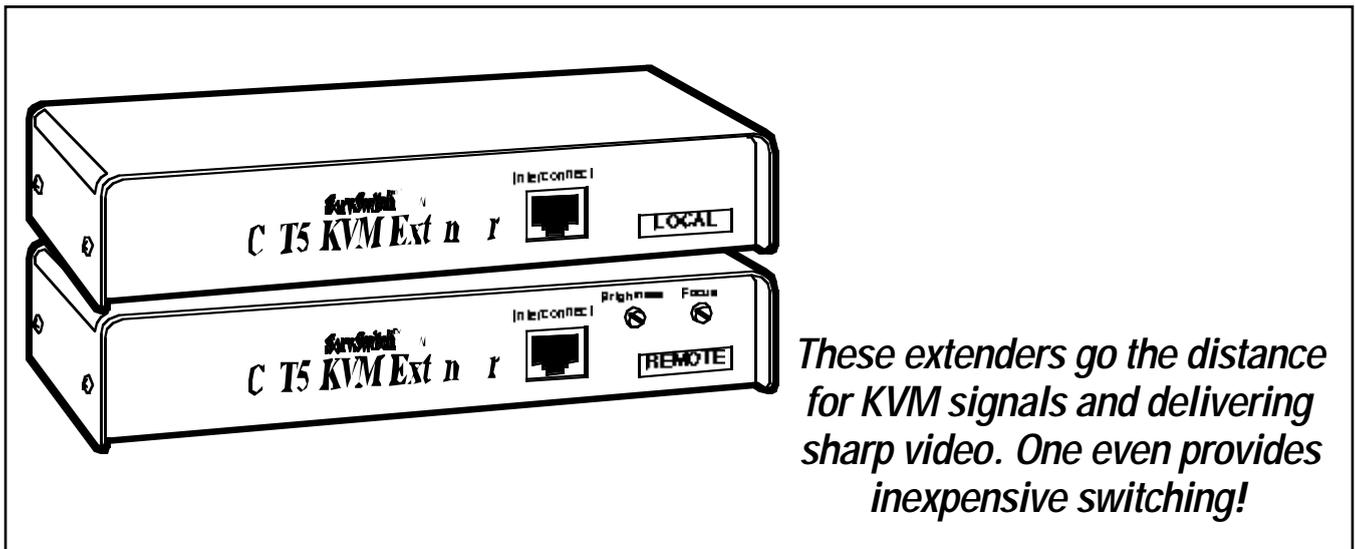
# BLACK BOX<sup>®</sup>

## NETWORK SERVICES

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## SERVSWITCH CAT5 KVM EXTENDERS



*These extenders go the distance for KVM signals and delivering sharp video. One even provides inexpensive switching!*

### Key Features

- ▶ **Place your keyboard, monitor, and mouse—or remote station—nearly 1000 feet (304.8 m) from a CPU, ServSwitch, or local station.**
- ▶ **Fully adjustable video equalization, even at long distances and high resolutions.**
- ▶ **Compatible with most keyboards, monitors, and mice.**
- ▶ **ACU1049A features switching capabilities! A remote station can switch between the local and remote CPUs with a keyboard code.**

It's time you put your servers, CPUs, and ServSwitch™ family KVM switches in safe locations where they can be administered easily and kept secure.

The ServSwitch CAT5 KVM Extenders send keyboard, video, and mouse signals long distances across a single solid-core 4-pair Category 5 UTP or STP cable. (If possible, do *not* use "higher" cables—CAT5e, Category 6, and so on—because the tight wire twists in these cables actually *degrade* video signals.

Plug your monitor, keyboard, and mouse (or a cable running to one of the CPU ports of a KVM switch) into an extender's Remote Unit. Then run CAT5 cable from the Remote Unit to the extender's Local Unit. Use extension cable(s) to connect your CPU or the user port of a KVM switch to the Local

Unit. Plug everything in, turn everything on, and go!

The extenders fully buffer all the signals they carry, so you won't see delays, flickering, and herky-jerky mouse movement.

You can use a Remote Unit's Brightness and Focus dials to adjust the screen image and bring it as close to clarity as it can get.

The extenders require no software and are compatible with all operating systems and a wide variety of hardware, including the Microsoft® IntelliMouse®.

The Local Units perform complete PS/2® keyboard and mouse emulation, so you can unplug or replug your keyboard and monitor without worrying about disrupting the booting or operation of your CPUs.

The Single-Access model (ACU1001A) sends your keyboard,

monitor, and mouse signals nearly 1000 feet (304.8 m) from a local CPU to a remote user station. With the Dual-Access model (ACU1009A), you can also attach a local user station that contends with the remote station for CPU control.

The ServSwitch CAT5 KVM Switching Extender (ACU1049A) is similar to the regular extenders in that you can place your remote workstation nearly 1000 feet (304.8 m) away. It, too, features keyboard and mouse emulation and video equalization.

The ACU1049A is also a switch. It enables the remote station to switch between the local CPU and remote CPU with a simple keyboard code. Its Double Private Mode locks out the second workstation, preventing conflicts.

# Specifications

## Cable Required:

Between local and remote units:  
Category 5 solid UTP or STP  
wired to the TIA/EIA-568A  
or -568B (preferred) standard,  
terminated with RJ-45 M  
connectors

## Compatibility:

Video: VGA, SVGA, XGA, XGA-2,  
or RGB (sync on green);  
Keyboard: IBM® PC/AT® or PS/2  
compatible (PC/AT types  
require a connector adapter);  
Mouse: IBM PS/2 compatible  
two-button, Microsoft  
IntelliMouse, or Logitech™  
PS/2 three-button

## Distance (Maximum):

16.4 ft. (5 m) from the local unit  
to the attached CPU or KVM-  
switch user port;  
16.4 ft. (5 m) from the remote unit  
to the attached monitor,  
keyboard, and mouse or  
KVM-switch CPU port;  
984.3 ft. (300 m) between the  
local and remote units;  
ACU1009A only:  
16.4 ft. (5 m) from the local  
unit to the attached keyboard  
and mouse or KVM-switch  
CPU port; 98.4 ft. (30 m) to the  
attached monitor;

## ACU1049A only:

16.4 ft. (5 m) from the remote  
unit to the attached CPU or  
KVM-switch user port

## Resolution:

Up to 1600 x 1280 noninterlaced  
at up to 196.9 ft. (60 m);  
Up to 1280 x 1024 noninterlaced  
at up to 393.7 ft. (120 m);  
Up to 1024 x 768 noninterlaced at  
up to 984.3 ft. (300 m)

**Synchronisation:** H/V or composite,  
TTL signal levels; sync polarity is  
preserved

## User Controls:

Remote Unit:  
(1) Internal 4-position DIP  
switch for various options;  
(2) Front-mounted dials for  
brightness and focus;  
(3) Internal video-distance  
(cable-length) jumpers

## Video Bandwidth (to -3 dB):

Local unit: 150 MHz;  
Remote unit: 350 MHz;  
Across 328 ft. (100 m) of UTP:  
95 MHz (with equalization)

**Video Compensation:** 3-stage  
continuously variable

**Video Coupling:** DC

**Video I/O Signal Levels:** 0.7 volts  
peak-to-peak

## Interface: Video: VGA;

Keyboard and mouse: IBM PS/2  
compatible;  
Between units and (on ACU1049A)  
to remote CPU: Proprietary  
composite

## Connectors:

### On local unit:

#### Front-mounted:

(1) RJ-45 for local/remote  
interconnection;

#### Rear-mounted:

(1) HD15 M for video input  
from local computer;  
(2) 6-pin mini-DIN F for  
keyboard and mouse  
output to local computer;

### ACU1009A only:

(1) HD15 F for video  
output to local  
monitor;  
(2) 6-pin mini-DIN F for  
input from local  
keyboard and mouse;

### On remote unit:

#### Front-mounted:

(1) RJ-45 for local/remote  
interconnection;

#### Rear-mounted:

(1) 2.5-mm center-positive  
barrel jack for power;  
(2) 6-pin mini-DIN F for input  
from keyboard and  
mouse;

## ACU1049A only:

(1) DB25 F for composite  
I/O to/from the  
keyboard, mouse, and  
video ports of the  
remote CPU

## Power:

Local unit: 5 VDC at up to 120 mA  
from CPU's keyboard port;

Remote unit: From desktop  
power supply, PSU1002E  
(certified to the relevant  
international safety  
standards);

Input: 100–240 VAC at  
47–63 Hz from utility-  
power outlet, through  
detachable power cord  
and IEC 320 M inlet, to  
external transformer;  
Output (isolated from mains  
ground): 9 VDC regulated,  
at up to 1 amp, from  
transformer to extender

## Size: ACU1001A, ACU1009A:

1.4"H x 7.8"W x 3.9"D  
(3.6 x 19.8 x 9.9 cm);  
ACU1049A: 1.4"H x 8.4"W x 3.9"D  
(3.6 x 21.3 x 9.9 cm)

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

Recognise 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.

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.

## Technically Speaking

In data communications applications, using products that exceed required capacities is usually not a problem. For example, if a 28.8-kbps modem is required, a 33.6-kbps or 56-kbps modem will work just fine.

But sometimes more isn't better. For instance, KVM extenders are designed to expect CAT5 and only CAT5 cable. You'd probably guess that Category 3 cable wouldn't be effective with these products, and you'd be right. But you may also assume that if Category 5 cable works just fine, Category 5e, Category 6, and other higher-capacity cables would work even better. This isn't the case.

KVM extenders from many manufacturers, including our ServSwitch CAT5 KVM Extenders, are designed specifically for the Category 5 specs defined by the TIA/EIA standard. Higher-level cables, such as CAT5e, have different characteristics and specs. Although differences like twist ratios might seem small, they can have a negative impact on these extenders, which are expecting a true Category 5 transmission.

However, if you already have CAT5e or CAT6 cable installed, you can work around this problem by installing a delay line module or skew compensator. Call Tech Support for details.

## Ordering Information

ITEM	CODE
ServSwitch Brand CAT5 KVM Extenders	
Single-Access Kit.....	ACU1001A
Dual-Access Kit.....	ACU1009A
ServSwitch CAT5 KVM	
Switching Extender .....	ACU1049A
<i><u>To connect Local and Remote units...</u></i>	
Category 5 Unshielded Bulk Cable, 100-MHz, Solid, 4-Pair, Beige, PVC, 1000-ft. (304.8-m), Spool .....	
	EYN840A-1000
Category 5 Unshielded Bulk Cable, 100-MHz, Solid, 4-Pair, Beige, Plenum, 1000-ft. (304.8-m), Spool .....	
	EYN860A-1000
<i><u>If you want to use CAT5e or CAT6 cable, order...</u></i>	
ServSwitch Brand CAT5 Extender	
Delay Line Module .....	ACUDLY
<i><u>For better twisted-pair performance, choose...</u></i>	
ServSwitch Wizard Skew Compensator.....	ACU5100A