BLACK BOX®
NETWORK SERVICES

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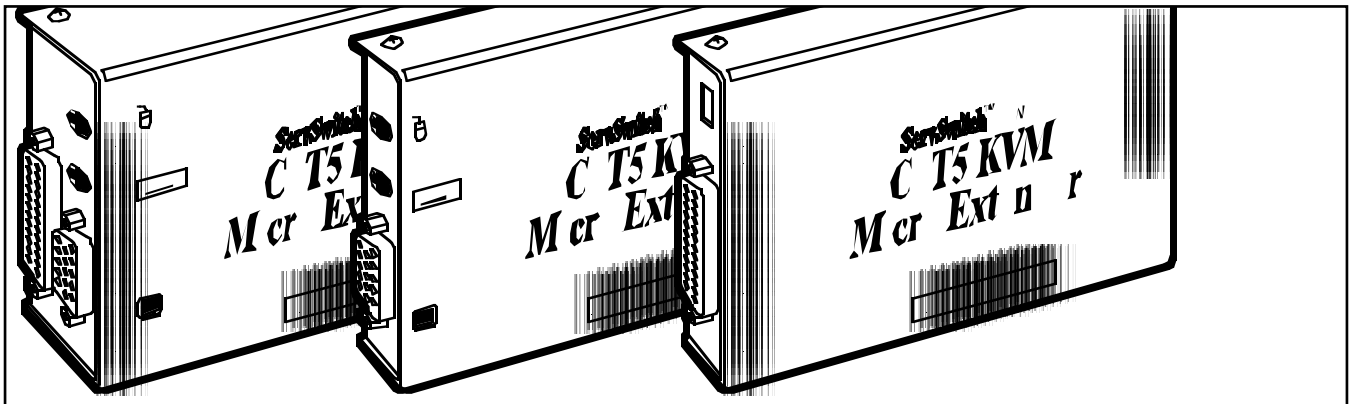
SERVSWITCH™ BRAND CAT5 KVM MICRO EXTENDERS



High-quality keyboard, video, and mouse extension in a tiny package.

Key Features

- ***Full-featured KVM extension with a pair of pocket-sized boxes.***
- ***Cross distances up to 160 ft. (48.8 m).***
- ***Supports resolutions up to 1280 x 1024.***
- ***Adjustable video equalisation compensates for cable losses.***
- ***Fully buffered signals for transparent remote operation.***
- ***Supports IntelliMouse®.***
- ***Dual-access model supports both local and remote user stations.***
- ***Available with audio and serial support.***

You have an IBM PC computer at point A. You'd like to put the keyboard, mouse, and monitor at point B. Points A and B aren't too far apart—maybe only 75, 100, or 150 feet. That calls for KVM extension, because the system almost certainly won't work if you try to run regular keyboard, mouse, and video cables that far. But you don't need a big extender that will cross 1000 feet. So what do you do?

Why not try a **ServSwitch Brand CAT5 KVM Micro Extender Kit (ACU3001A)**? The Micro Extenders have the same central circuitry as many of our more sophisticated KVM extenders—for example, they support video resolutions up to 1280 x 1024—but they're specially designed for basic keyboard/monitor/mouse control across medium distances up to 160 ft. (48.8 m).

The extender consists of a local module to which you'll attach the computer CPU with an included three-to-one cable, plus a remote module that the user-station equipment can plug directly into.

Connect the local module to the remote module with inexpensive Category 5 twisted-pair cable. (You might be able to use CAT5e or CAT6 cable instead; call Technical Support for details.)

Once your extender system is cabled together, just plug your remote unit into AC power. Then set a single DIP switch—to tell the extender whether to equalise for CAT5 cable shorter or longer than 82 ft. (25 m)—and power up your equipment.

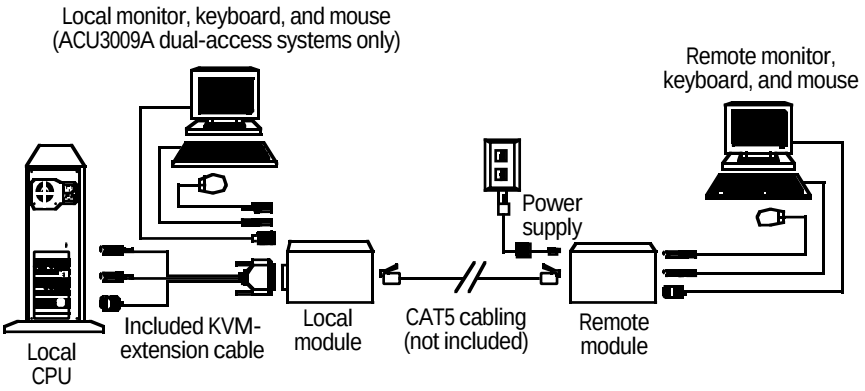
The extender buffers all of the signals that pass between the CPU and the remote user station. This makes the operation at the user station so smooth that it will feel like the computer is right there under your desk.

Just as our bigger extenders do, the local unit always emulates a directly attached keyboard and mouse. So you can unplug and replug any keyboard or mouse attached to the extender at any time without disrupting the booting or operation of your CPU.

The **Dual-Access Micro Extender (ACU3009A)** supports a local user station at the CPU's site as well as the remote station. Normally the two stations will contend for access to the CPU. One station will be granted control while the user at that station is typing at their keyboard or moving the mouse. Once this activity stops for two seconds, the user at the other station can take take control.

The **Single-Access Micro Extender with Bidirectional Serial and Audio Support (ACU3022A)** has all of the capabilities of the regular single-access version, and can also support a connection between the PC and a remote microphone and speakers (or other sources of audio input and output). Plus, it offers a serial connection which supports RS-232 devices with speeds up to 19,200 bps.

Except for CAT5 cable, everything you need to operate a PS/2 type local CPU with a remote user station is included—just plug in your equipment and go!



Specifications

Cable Required: CAT5

Compliance: CE Class A;
FCC Part 15 Subpart B Class A,
IC Class/classe A

Compatibility: Video: VGA, SVGA, XGA, XGA-2, or RGsB (sync on green);
Keyboard: IBM PC/AT or PS/2 compatible (PC/AT types require connector adapter);
Mouse: IBM PS/2 compatible two-button, Microsoft® IntelliMouse®, or Logitech® PS/2 compatible 3-button

Interfaces: On all models:
To monitor: VGA;
To keyboard and mouse: IBM PS/2 compatible;
To CPU's video, keyboard, and mouse ports: Proprietary composite of VGA video and IBM PS/2 compatible keyboard and mouse;
Between Units: Proprietary composite of all supported device interfaces;
On KVM/serial/audio model (ACU3022A) only:
To serial device: EIA/TIA RS-232 pinned according to TIA-574, DTE;
To CPU's serial port: EIA/TIA RS-232 pinned according to TIA-574, DCE;
To audio devices and CPU's audio ports: Bidirectional 3.5-mm mini stereo audio

Video Characteristics:
Resolution: Up to 1280 x 1024;
Video I/O signal levels: 0.7 volts peak-to-peak;
Video compensation: For short or long distance (user-switchable);
Synchronisation: H/V or composite, TTL signal levels; sync polarity is preserved;
Video coupling: DC

Serial Characteristics:
KVM/serial/audio model (ACU3022A) only: Data rate: Transparent to data rates up to 19,200 bps;
Data format: Transparent to data format;
Flow control: Transparent to hardware and software flow control (RTS, CTS, DTR, and DSR are all passed through across the link)

Audio Characteristics:
ACU3022A only: Signal format: Digitised at almost CD quality (16-bit sampling at 38.4 kHz);
Signal levels: Line level (5 volts peak-to-peak maximum);
Input impedance: 47 kΩ;
Signal direction: Simultaneous bidirectional;
Extra microphone support at remote unit: Pullup resistor provides bias for condenser microphone; optional amplification to +17 dB for external microphone

Maximum Distance: 16 ft. (4.9 m) from the local unit to the attached local equipment;
16 ft. (4.9 m) from the remote unit to the attached remote equipment;
160 ft. (48.8 m) between local and remote units

User Controls: Keyboard commands;
On remote unit: Bottom-mounted 2-position DIP switch for video distance (cable length) and keyboard-command recognition

Connectors:
On local module:
All models:
(1) RJ-45 female for local/remote interconnection;

Connectors (continued):
(1) DB25 female for video input from, and keyboard and mouse output to, computer;
ACU3009A only:
(1) HD15 female for video output to local monitor;
(2) 6-pin mini-DIN female for input from local keyboard and mouse;
ACU3022A only:
(1) DB9 female for serial I/O to and from local RS-232 device;
(2) 3.5-mm mini stereo jacks for audio I/O to and from local device(s): (1) for speaker/headphone output, (1) for microphone input;
On remote module:
(1) RJ-45 female for local/remote interconnection;
(1) 2.5-mm centre-positive barrel jack for power;
(1) HD15 female for video output to monitor;
(2) 6-pin mini-DIN female for input from keyboard and mouse
ACU3022A only:
(1) DB9 male for serial I/O to and from remote RS-232 device;
(2) 3.5-mm mini stereo jacks for audio I/O to and from remote device(s): (1) for speaker/headphone output, (1) for microphone input

Indicator: On local unit: Right-side-mounted LED for power and link integrity

Temperature Tolerance:
32 to 104˚F (0 to 40˚C)

Humidity Tolerance:
5 to 90% noncondensing

Enclosure: Steel

Power:
Local module: 5 VDC at up to 120 mA from CPU's keyboard port;
Remote module: From desktop power supply, PSU1002E (certified to the relevant international safety standards):
Input: 100 to 240 VAC at 47 to 63 Hz from utility-power (mains) outlet, through detachable power cord and IEC 320 male inlet, to external transformer;
Output (isolated from mains ground): 9 VDC regulated, at up to 1 amp, from transformer to remote unit

Size: Each Unit:
Height:
ACU3001A units, ACU3009A remote module: 1" (2.5 cm);
ACU3022A units, ACU3009A local unit: 1.7" (4.3 cm);
Feet protrude an additional 0.1" (0.3 cm) from bottom;
Width: 4.3" (10.9 cm); D-shell connectors protrude an additional 0.1" (0.3 cm) from left side;
Depth: 3.2" (8.1 cm); additionally, screws protrude less than 0.1" (0.3 cm) from both the front and the back

Weight: ACU3001A units,
ACU3009A remote module: 8.3 oz. (235 g);
ACU3009A local unit: 13.5 oz. (382 g);
ACU3022A units: 18 oz. (510 g)

What's Included

- (1) local module.
- (1) remote module.
- (1) 3-ft. (0.9-m) coax CPU cable.
- *ACU3022A only:* (1) 3-ft. (0.9-m) serial cable.
- *ACU3022A only:* (1) 3-ft. (0.9-m) audio cable.
- (1) power supply (PSU1002E).
- (1) users' manual.

What else you might need

- Solid-core 4-pair Category 5 UTP or STP, pinned and paired according to EIA/TIA-568A or (preferably) EIA/TIA-568B, to run from your local module to your remote module. (Bulk CAT5 cable should be terminated with high-quality RJ-45 plugs.) If possible, do not use cable such as Category 5e, "Level 6," etc. If such cable is already installed at your site, you will need to install either a Delay Line Module or a Skew Compensator. See the **Ordering Information** and call Black Box for technical support.
- A monitor for each user station (each monitor must work when attached directly to any of the CPUs connected to the extender).
- A standard IBM® PC/AT® or PS/2® keyboard for each user station where users will need keyboard control.
- A standard PS/2 compatible mouse for each user station where users will need mouse control.
- An AC power surge protector.
- *If you're attaching ServSwitch family KVM switches:* Compatible user cables and/or CPU cables.

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 kbps modem is required, a 33.6 kbps or 56 kbps model will work just fine.

But sometimes, more isn't better. Take KVM extenders designed to expect CAT5 and only CAT5 cable. You'd expect that CAT3 cable wouldn't be effective with these products. But you may also assume that if CAT5 cable works fine, CAT5e, CAT6, and other higher capacity cables would work even better. Unfortunately, this isn't the case, and here's why.

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

So with ServSwitch CAT5 KVM Extenders, you can think big with CAT5—just don't think bigger.

Ordering Information

ITEM	CODE
ServSwitch Brand CAT5 KVM Micro Extender Kits	
Single-Access	ACU3001A
Single-Access with Bidirectional Serial and Audio	ACU3022A
Dual-Access	ACU3009A
You might also need…	
Solid 4-Pair CAT5 UTP Cable	
Preterminated Patch Cable (specify length)	EYN737MS
Unterminated Bulk Cable, 1000-ft. (304.8-m)	
PVC	
Spool	EYN840A-1000
Box	EYN840A-B
Plenum-rated	
Spool	EYN860A-1000
Box	EYN860A-B
Pack of 10 RJ-45 Plugs for CAT5 Bulk Cable	FM732
For longer distances between your CPU and local module, order…	
Coax CPU Cables for CAT5 KVM Extenders	
10-ft. (3-m)	EHN230-0010
15-ft. (4.6-m)	EHN230-0015
To connect remote modules, order…	
CAT5 Unshielded 100-MHz Bulk Cables, Solid, Beige, PVC, 1000-ft. (304.8-m) Spool	EYN840A-1000
CAT5 Patch Cable, 100-MHz, 4-Pair, Straight-Pinned, PVC, Beige, 10-ft. (3-m)	EVNSL25-0010
If you want to use CAT5e or CAT6 cable, order…	
ServSwitch Brand CAT5 Extender Delay Line Module	ACUDLY
For better twisted-pair performance, choose…	
ServSwitch Wizard Skew Compensator	ACU5100A

Call Black Box Tech Support for help determining your best options for AC-power and data-line protection.