KVM Extender/Sharer (for VGA)
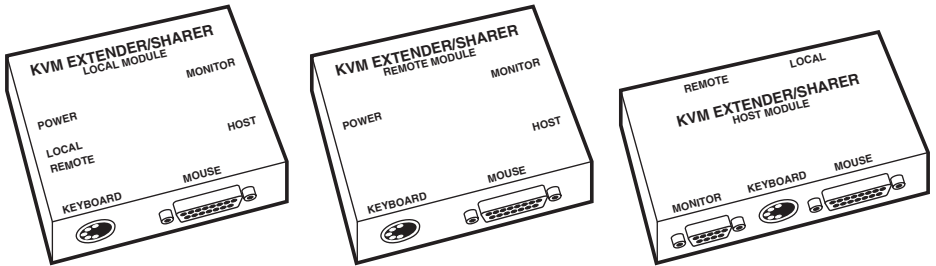
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Contents

1. Specifications

Standards —   VGA

Interfaces —   (4): PC keyboard, VGA video, PC serial
                                  mouse, and proprietary composite

Maximum Distance —   From Local module to Host module: 6 ft. (1.8 m);
                                  From Host module to Remote module: 150 ft.
                                    (45.7 m) with VGA KVM Extension Cable
                                    (EHM027)

User Controls —   Local modules: (1) Left-side-mounted toggle
                                  switch for local vs. remote operation;
                                  KVM Extender/Sharer Plus and Pro Host modules:
                                  (1) Internal 4-position DIP switch for normal vs.
                                  video-splitter operation

Indicator —   Local and Remote modules: (1) Power LED (red)

Connectors —   Communication between modules:
                                  Host modules: (2) Rear-mounted DB15 female;
                                  Local and Remote modules: (1) Right-side-
                                  mounted DB15 male;
                                  Keyboard: All modules: (1) Front-mounted 5-pin
                                  DIN female;
                                  Monitor:
                                  Host modules: (1) Front-mounted DB15HD
                                  male;
                                  Local and Remote modules: (1) Right-side-
                                  mounted DB15HD female;
                                  Mouse: All modules: (1) Front-mounted DB25 male

Power —   5 VDC from the keyboard interface

Size —   Host modules: 3.5"H x 5"W x 1"D
                                  (8.9 x 12.7 x 2.5 cm);
                                  Local and Remote Modules: 3"H x 5"W x 1"D
                                  (7.6 x 12.7 x 2.5 cm)

Weight —   Each Module: 0.6 lb. (0.3 kg)

2. Introduction

2.1 General Overview

The Keyboard/Video/Mouse (KVM) Extender/Sharers let you either control a computer from a remote keyboard, monitor, and mouse, or share a computer between two users (not at the same time). In Shared Mode, local or remote user control is exercised through a switch on the Host Module of the Extender/Sharer, which is connected directly to the computer.

The KVM Extender/Sharers work with IBM® PC/XT™, AT®, or PS/2® computers and 100% compatibles. They support Video Graphics Array (VGA) monitors and graphics, and are compatible with both powered and nonpowered serial mice or any serial-interface device such as a trackball or digitizer pad. They are transparent to application software, so remote displays are updated immediately.

Your remote setup can be located up to 150 feet (45.7 m) away from the computer. Of course, in order to share the computer between a local and remote setup, an additional keyboard, monitor, and mouse (if the application software requires one) must be purchased separately.

With the regular KVM Extender/Sharer, *remote* video is disabled when the unit is switched to *local* operation and vice versa. With the KVM Extender/Sharer Plus, video can be active at both sites, regardless of where the input is coming from. And with the KVM Extender/Sharer Pro, not only can video can be active at both sites, but you can switch control from site to site by pressing any key on an inactive keyboard.

2.2 Important Features

- Can be used in Extension or Shared Mode—either operate your computer solely from a Remote monitor, keyboard, and mouse, or switch control back and forth between a Remote and a Local setup.

- Shared operation—your two sets of keyboard, monitor, and mouse can be in different rooms, in different areas, or even on different floors, up to 150 ft. (45.7 m) away.

- Remote lockout ability—prevents two users who are sharing a computer from different locations from entering information at the same time.

- Transparent to all software and graphics—what you see on the local monitor is what appears on the remote monitor.

- Supports a serial input in addition to the keyboard at the remote site—you can remotely use not only the keyboard but also any serial mouse, trackball, light pen, or digitizer pad that complies with the Microsoft Mouse standard.

- VGA Extender/Sharer Plus and Pro: Both monitors can display the same screen simultaneously.

2.3 What You Should Have Received

AC230A (Complete VGA KVM Extender/Sharer system):

- (1) Host Module
- (1) Remote Module
- (1) Local Module
- (1) Cable to run from the PC's keyboard port to the Host Module (5-pin DIN male connectors on either end)

AC231A:

- (1) Host Module
- (1) Cable to run from the PC's keyboard port to the Host Module (5-pin DIN male connectors on either end)

AC232A:

- (1) Local Module

AC233A:

- (1) Remote Module

AC234A:

- (1) Host Module Plus
- (1) Cable to run from the PC's keyboard port to the Host Module Plus (5-pin DIN male connectors on either end)

AC235A (Complete VGA KVM Extender/Sharer Plus system):

- (1) Host Module Plus
- (1) Remote Module
- (1) Local Module
- (1) Cable to run from the PC's keyboard port to the Host Module Plus (5-pin DIN male connectors on either end)

AC236A (Complete VGA KVM Extender/Sharer Pro system):

- (1) Host Module Pro
- (1) Remote Module
- (1) Local Module
- (1) Cable to run from the PC's keyboard port to the Host Module Pro (5-pin DIN male connectors on either end)

AC237A:

- (1) Host Module Pro
- (1) Cable to run from the PC's keyboard port to the Host Module Pro (5-pin DIN male connectors on either end)

NOTE

All Host Modules and Systems also come with a copy of this manual.

2.4 Other Items You Might Need

You might need extra cabling and/or adapters to complete your Extender/Sharer setup. See Figure 3-1 for where these components might fit into your scheme.

- FA212: PS/2 Keyboard Adapter, 6-pin mini-DIN female to 5-pin DIN male; allows you to plug PS/2 keyboards into Local or Remote Modules or plug included keyboard cable from Host Modules into PS/2 CPU.

- EVNPS05-0005: VGA Video Extension Cable, 5 feet (1.5 m), to connect Host Module or Host Module Plus to CPU's VGA port.

- EHM027: VGA KVM Extension Cable (Host-to-Local-Modules and Host-to-Remote-Modules Cable), up to 150 feet (45.7 m).

3. Installation

The KVM Extender/Sharer modules are simple to install; Figure 3-1 below and Figure 3-2 on the next page show typical setups.

1. Connect the video, mouse, and keyboard cables from the computer to the appropriately labeled connectors on the Host unit.

2. Run an appropriate extension cable (see Figure 3-1 or 3-2) from the connector on the Host module labeled "Remote" to the connector on the Remote module labeled "HOST." Then run the cables from the remote monitor, keyboard, and mouse to the appropriately labeled connectors on the Remote Module.
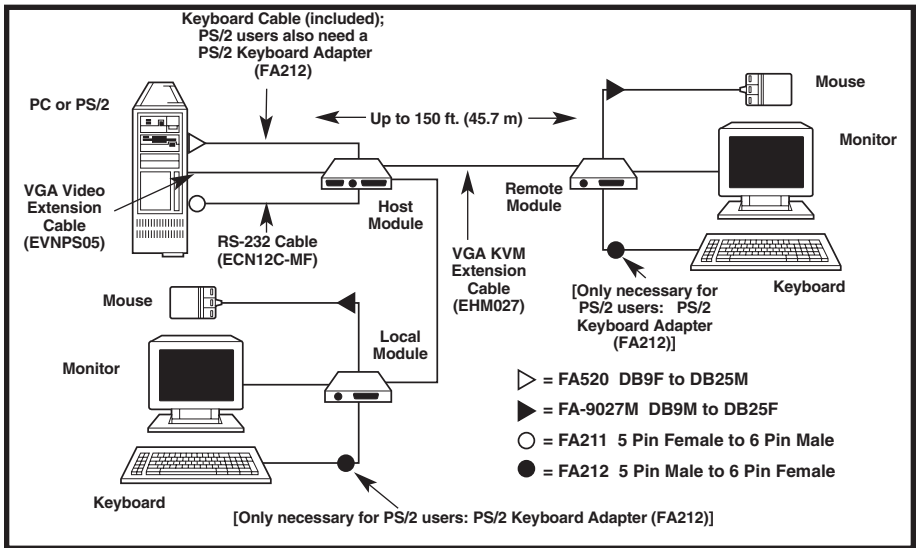

Fig. 3-1. Typical application.

If you're going to use the Extender/Sharers in Shared Mode, run an extension cable from the Host Module to the Local Module connector labeled "HOST." Then run the cables from your local monitor, keyboard, and mouse (or other serial device) to the appropriately labeled connectors on the Local Module.

NOTE

The Local Module should be placed no farther than 6 feet (1.8 m) from the Host Module.

With all your cabling finished, you're ready to start using your Extender/Sharer equipment.

NOTE

You might need specialty cables for your Extender/Sharer application. For example, in applications with PS/2 keyboards, you'll need three PS/2 Keyboard Adapters (FA212). And to extend the distance between your host and remote modules to 150 feet (45.7 m) for VGA, you'll need an extension cable. Refer to Section 2.4 **for a complete list of cables and adapters, and to Figure 3-1 for an illustration of where they fit in a typical Extender/Sharer application.**

4. Operation

Once the computer system is booted, if you're in the Extended Mode, you're ready to begin working.

NOTE

In Shared Mode, always cold-boot the system from the Local setup. If you boot from the Remote Module, the results are unpredictable.

When the computer system is booted in the Shared Mode, the local user has the option of remaining connected to the PC or switching control to the remote keyboard, monitor, and mouse. There's no need to go to the Remote Module to power up, because both the Local and the Remote Modules are powered from the computer.

To remain connected at the local setup, you don't have to do anything. Just type in commands or click on icons; control remains with the local display, keyboard, and mouse.

To switch the connection to the remote location, the local user must flip a switch on the Local module. With the switch in the "Remote" position, "autosensing" is enabled. This means that the local keyboard can still be used, but when a key is pressed on the remote keyboard, the remote site is activated and the local keyboard is locked out. Connection can be returned to the local user at any time by simply switching the "Local-Remote" switch to the "Local" position.

Exit all applications before you switch control between Local and Remote setups. This is because when you switch between Local and Remote operation while running an application, no reset or initialize commands are sent to the new setup (the application is already running—it doesn't know about your second keyboard, monitor, and mouse setup). Many keyboards and mice cannot reset or initialize themselves; they require commands from the computer. Without those commands, the keyboard and mouse at the location you've just switched to might not work. If this happens, the application will have to be rebooted once the second setup is connected to the computer.

4.1 Plus Version Only: Setting Switch W4

There is a second four-position DIP switch, labeled W4, inside the Host Module of the KVM Extender/Sharer Plus. The W4 switch is located in front of the left corner of the "Local" connector labeled J3.

Set positions 1 through 3 of S1 to OFF and position 4 to ON (the factory-default setting) if you want the *remote* screen to be disabled when the *local* keyboard and mouse are active and the *local* screen screen to be disabled when the *remote* keyboard and mouse are active. Set positions 1 through 3 to ON and position 4 to OFF if you want *both* screens to display simultaneously no matter which site is active.

4.2 Pro Version Only

The Host Module Pro works with the Local Module (AC232A) and the Remote Module (AC233A). It contains additional circuitry to allow you to switch active stations by simply pressing any key of the non-active keyboard. To implement this feature, follow these steps:

1. Boot your computer with the Local/Remote switch (found on the Local Module AC232A) set to the Local position.

2. Move the Local/Remote switch to the Remote position (the Local user will still be actively connected).

3. Transfer activity to the Remote user by pressing any key on the remote keyboard (this keystroke is not seen by the computer).

4. Transfer activity back to the Local user by pressing any key on the local keyboard (this keystroke is not seen by the computer).

You can now switch users simply by leaving the Local/Remote switch in the Remote position and pressing a key on the inactive keyboard.

4.3 Types of Equipment Supported

4.3.1 KEYBOARDS

The Extender/Sharers support all original-equipment keyboards when (1) you operate the Extender/Sharer in Extended Mode (where you control the computer solely from the remote location), or (2) you operate the Extender/Sharer in Shared Mode and use the original keyboard as the *local* keyboard. In Shared Mode, the *remote* keyboard should be an auto-resetting keyboard that doesn't need to be reset by the computer.

4.3.2 MONITORS

The KVM Extender/Sharer supports VGA-monochrome and VGA-color monitors. Monitors may be single-mode or multisync types.

NOTE

When you use the KVM Extender/Sharer in the Shared Mode, both monitors should be of the same type (that is, monochrome with monochrome or color with color).

Some adjustment of the brightness and contrast controls may be necessary during installation. Adjust the controls to suit your preferences. Once you've set these controls, you'll probably never have to set them again.

4.3.3 MICE

The KVM Extender/Sharers work with serial mice only.

The Extender/Sharers support, for either mode of use and at either location in Shared Mode, both (1) serial-port-powered mice that are not software-configurable and (2) externally powered mice. Software-configurable mice require a setup signal from the computer when mouse-driven applications are loaded, and only the software-configurable mouse that is connected to the computer when the application is loaded will receive configuration data from the computer. Again, switching between local and remote setups should be done when no applications are running.

NOTE

Mouse drivers for software-configurable mice are specialized and might not support other serial mice. So it's best to use the same type of software-configurable mouse at both locations in Shared Mode. However, many types of nonconfigurable mice are supported by popular mouse drivers, so you might be able to mix a software-configurable mouse with a mouse that doesn't require configuring.

Other serial devices such as trackballs may be connected to the computer through the mouse port, provided they conform to the mouse-port interface specifications given in the Appendix of this manual and are Microsoft mouse compliant.

5. Troubleshooting

5.1 Calling Black Box

If you determine that your KVM Extender/Sharer system is malfunctioning, *do not attempt to alter or repair any of the units.* Contact Black Box. The problem might be solvable over the phone.

Before you do, make a record of the history of the problem. We will be able to provide more efficient and accurate assistance if you have a complete description, including:

- The nature and duration of the problem.

- When the problem occurs.

- The components involved in the problem.

- Any particular application that, when used, appears to create the problem or make it worse.

5.2 Shipping and Packaging

If you need to transport or ship a KVM Extender/Sharer unit:

- Package it carefully. We recommend that you use the original container.

- Before you ship a unit for repair or return, contact Black Box to get a Return Materials Authorization (RMA) number. If you are returning the unit, make sure you include everything you received with it.

Appendix: Pinouts

This appendix lists the pinouts of the ports used on the Local, Remote, and Host Modules of the Extender/Sharers.

Keyboard

Pin #	Signal
1	Clock
2	Data
3	Not used
4	Ground
5	+5 Volts DC

VGA Monitor
(Local and Remote Modules)

Pin #	Signal
1	Red video
2	Green video
3	Blue video
4	Not used
5	Ground
6	Red return
7	Green return
8	Blue return
9	Not used
10	Sync return
11	Not used
12	Not used
13	Horizontal sync
14	Vertical sync
15*	Not used

* You can connect Pin 15 to ground by installing a hard-wired jumper at position W5.

Mouse

Pin #	Signal
1	Frame Ground (can be jumpered to Signal Gnd. in Host Module)
2	Transmit Data (from computer to mouse)
3	Receive Data (from mouse to computer)
4	Host Module: may be tied to Pin 2 Local and Remote Modules: tied to +5 Volts
7	Signal Ground
8	Host Module: may be tied to Pin 2 Local and Remote Modules: not connected
20	Host Module: may be tied to Pin 2 Local and Remote Modules: tied to +5 Volts

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