

Long Range VGA USB KVM Console Extender over Cat5 UTP - 1000 ft

SV565UTPUL



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This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

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Introduction

Thank you for purchasing a StarTech.com KVM extender. This product allows a computer to control a host system from a remote location at a distance of up to 984 feet (300 meters). For ease of installation, this product uses standard Category 5, 5E, or 6 network cabling that fits easily into almost any existing network infrastructure. For added versatility, the KVM extender supports either PS/2 or USB computer interfaces. Console support is provided using standard USB and VGA connectors.

Features

- Can be used with a single computer or connected to an existing KVM switch
- Easy installation using industry-standard UTP network cable
- Intuitive hotkey commands
- Supports auto-switching between host and remote users or dedicated control
- USB computers are supported at the host and remote locations (USB keyboard and mouse required for remote console)

System Requirements

- 1 x StarTech.com integrated KVM cable for each, the host (included) and remote (optional) computer connections. If necessary, longer cables are available, **StarTech.com ID:** SVECONx (PS/2), SVECONUSx (USB)
- Unshielded Category 5/5e/6 twisted pair (UTP) straight-through network cable terminated at each end with RJ-45 connectors (if using surface cabling)
OR
Unshielded Category 5/5e/6 twisted pair (UTP) straight-through network cable terminated at each end in a wall-mounted outlet, with a standard Category 5/5e/6 patch cable, at both locations (if using premises cabling)

NOTE: The total length of cable between the Host and Remote Units cannot exceed 984 feet (300 meters), including patch cables (if used). Category 5e and 6 cabling is compatible with this product and may improve performance.

NOTE: Long cable lengths between the Host and Remote Units may adversely affect image quality at high resolutions and refresh rates. If you need to run your remote displays at high resolutions and frequencies, use as little cabling between locations as possible and avoid practices such as “coiling” unused cable in a ceiling.

This product will also control a KVM switch, allowing you to manage more than one computer remotely. In this configuration, you can connect the KVM extender's Host Unit to the "console" ports on the KVM. You must use the provided power adapters if using this configuration. You should set the Host Unit to Compatibility Mode before connecting it to a KVM that uses the [Ctrl] key as its hotkey sequence; see page 7 for details.

Package Contents

- 1 x Host Unit
- 1 x Remote Unit
- 1 x Instruction Manual
- 1 x Power adapter
- 2 x 6 ft. 2-in-1 USB VGA KVM cable
- 2 x Set of rubber mounting feet

Connecting Your KVM Extender

Preparing Your Site

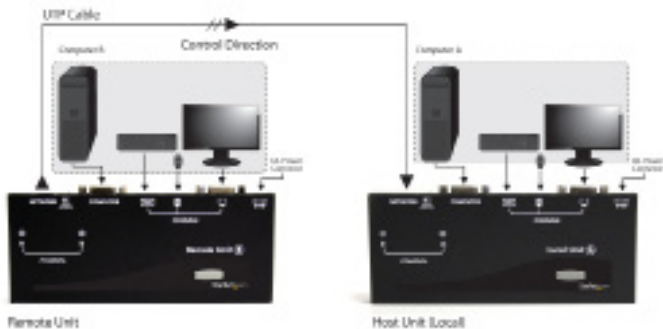
Before you can install the product, you need to prepare your site.

1. Determine where the Host computer will be located and set up the computer.
2. Determine where the console devices (mouse, keyboard, monitor) will be located and place them appropriately.
3. a) If you are using surface cabling, ensure you have enough Category 5 unshielded twisted pair (UTP) network cabling to connect the Host Unit to the Remote Unit's location, and that each end is terminated with a RJ-45 connector. The cabling should not go through any networking equipment (i.e. router, switch).

OR

b) If you are using premises cabling, ensure that the Category 5 unshielded twisted pair (UTP) network cabling between the Host Unit and the Remote Unit has been properly terminated in a wall outlet in each location and there is a patch cable long enough to connect the Remote Unit and the Host Unit to their respective outlets. The cabling should not go through any networking equipment (i.e. router, switch).

Installing the Host Unit



1. Place the Host Unit near the Host computer system.
2. Switch off the computer and disconnect any connected devices.
3. Using the provided StarTech.com integrated KVM cable, connect the end of the cable that has two (USB) or three (PS/2 + VGA) connectors to the VGA Out connector and the USB or mouse and keyboard PS/2 connectors on the Host computer as appropriate. (The PS/2 version of the cable is color-coded). Connect the opposite end of the cable with a single connector to the gray-coded connector marked COMPUTER on the Host Unit of the KVM extender.
4. If you wish to have local console access to the host computer, connect a USB mouse, keyboard, and VGA monitor to the indicators marked as CONSOLE on the Host Unit.
5. Connect the UTP cable connection for the Remote Unit to the NETWORK RJ-45 connector on the Host Unit. Connect the opposite end to a terminated wall outlet (if you are using premises cabling) or run it directly to the Remote Unit.

NOTE: The Host Unit can draw power from the Host computer system. If it cannot draw sufficient power from the Host computer, however, a power adapter (not included) may be required.

Installing the Remote Unit

1. Place the Remote Unit near the remote keyboard/mouse/monitor setup.
2. Connect the USB mouse, keyboard, and a VGA monitor to the indicators marked as CONSOLE on the Remote Unit.

OPTIONAL: If connecting a computer system directly to the Remote Unit, switch off the computer and disconnect any existing VGA and input connections. Using a StarTech.com integrated KVM cable, connect the end of the cable that has two (USB) or three (PS/2) connectors to the VGA Out connector and the USB or mouse and keyboard PS/2 connectors on the computer as appropriate. (The PS/2 version of the cable is color-coded.) Connect the opposite end of the cable with a single connector to the gray-coded connector marked COMPUTER on the Remote Unit of the KVM extender.

3. Connect the UTP cable connection for Remote Unit to the NETWORK RJ-45 connector on the Remote Unit. Connect the opposite end to a terminated wall outlet (if using premises cabling).
4. Connect the power adapter from an electrical outlet to the Remote Unit.

WARNING! The UTP network cables that connect the Host and Remote Units carry electrical current and should not be plugged in to other devices, as they may cause damage. We strongly recommend marking the cables you are using with this product at both locations for easy identification.

Mask Hotkey Switch

The Mask Hotkey switch on the rear panel of both the Host and Remote Units is a feature for use when a KVM switch is being used. Setting the switch to ON or OFF will Mask (disable) the units built in hotkey detection, allowing the controls keys to be sent directly to the KVM switch.



Video Calibration (Remote Unit only)

Video Calibration allows the user to adjust the equalization, gain and RGB skew on the Remote Unit to optimize video performance based on the length of the UTP cable being used, as well as other factors that may affect the signal.

There are 16 levels of coarse tuning and up to 128/256 scales of fine tuning available for adjustment of the equalizer and gain. Skew adjustment for red, green and blue colour channels come in 8 levels of coarse adjustment and 16/32 scales of fine adjustment.

NOTE: Video Calibration is only available when the UTP cable is connected and the Remote unit has control of the Host computer system.

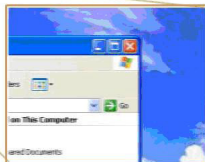
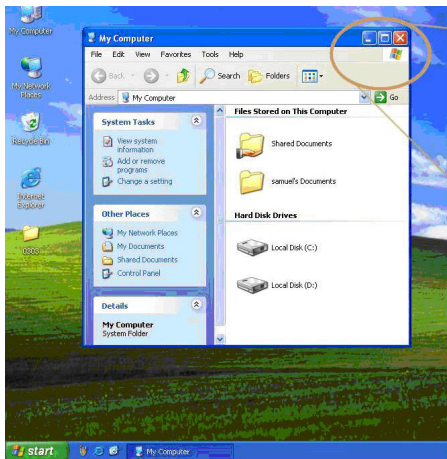
To enter Video Calibration Mode:

left [CTRL] - left [CTRL] - [F11]

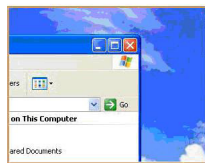
To enter Video Calibration Mode while in Compatibility Mode:

left [CTRL] - left [CTRL] - [E] - [F11]

When in Video Calibration mode, the Num Lock and Scroll Lock LEDs on the keyboard will flash simultaneously. Video calibration can now be performed. Refer to the table for the different adjustment options.



Before Video Calibration



After Video Calibration

| Hotkey | Description |
|--------|---|
| [E] | <p>Equalizer Adjustment (Sharpness): Num Lock and Caps Lock LEDs will flash. Press the left or right arrow keys for coarse tuning. Press and hold [SHIFT] and use the left and right arrow keys for fine tuning.</p> <p>Gain Adjustment (Brightness): Caps Lock and Scroll Lock LEDs will flash. Press the up or down arrow keys for coarse tuning. Press and hold [SHIFT] and use the up or down arrow keys for fine tuning.</p> |
| [R] | <p>Red Skew Adjustment: Num Lock LED will flash. Press the left or right arrow keys for coarse tuning. Press and hold [SHIFT] and use the left and right arrow keys for fine tuning.</p> |
| [G] | <p>Green Skew Adjustment: Caps Lock LED will flash. Press the left and right arrow keys for coarse tuning. Press and hold [SHIFT] and use the left and right arrow keys for fine tuning.</p> |
| [B] | <p>Blue Skew Adjustment: Scroll Lock LED will flash. Press the left and right arrow keys for coarse tuning. Press and hold [SHIFT] and use the left and right arrow keys for fine tuning.</p> |
| [ESC] | <p>Exit Video Calibration mode. There is also a 30 sec. timeout based on keyboard input.</p> |

Using the KVM Extender

This section details how to use your KVM extender at both the host and remote locations.

Using the Host Unit

The Host Unit allows users connected to the Host and Remote units to share control of devices (hosts, computers, KVM Switches) connected to it.

The Host Unit has three modes that control which user may access the system at a given time: Auto (the KVM extender looks for keyboard or mouse activity from both A and B and automatically accepts input from the active console), Local (only the user seated at the Host unit can access the system), and Remote (only the user at the Remote station can access the system).

You can use either keyboard shortcuts (if there is a keyboard and mouse attached) or the mode switch on the top of the Host Unit to control which user has access to devices connected to the Host unit, by pressing the button in sequence.

By default, the Host Unit operates in Auto mode, and switches to the next mode in the sequence each time the switch is pressed as follows:



Having a keyboard and mouse attached to the console ports on the Host Unit is recommended, since it offers access to a number of extended features.

LED Indicators

| Mode | A Indicator | B Indicator |
|---|-------------|-------------|
| Auto (Auto senses activity) | Flashing | Flashing |
| Local (User at Local Unit has exclusive control) | On (solid) | Off |
| Remote (User at Remote Unit has exclusive control) | Off | On (solid) |

Keyboard Shortcut Command Sequences

| Standard Command | With Compatibility Mode Enabled | Description |
|-----------------------------|---------------------------------|--|
| [Ctrl] - [Ctrl] - [T] | [Ctrl] - [Ctrl] - [T] | Toggles control of Computer A between Auto, Local, and Remote modes |
| [Ctrl] - [Ctrl] - [Esc] | [Ctrl] - [Ctrl] - [Esc] | Cancels the hotkey sequence |
| [Ctrl] - [Ctrl] - [Alt]+[E] | [Ctrl] - [Ctrl] - [Alt]+[E] | Enables (2 beeps) or disables (1 beep) Compatibility Mode so that the KVM extender will work with a KVM switch that also uses a [Ctrl] hotkey sequence |
| [Ctrl] - [Ctrl] - [Alt]+[S] | [Ctrl] - [Ctrl] - [Alt]+[S] | Reset Host Unit to the factory default |
| [Ctrl] - [Ctrl] - [1] | [Ctrl] - [Ctrl] - [E] - [1] | Local Mode: Allows the user at Host Unit exclusive access to Computer A; remote access from Remote Unit is disabled |
| [Ctrl] - [Ctrl] - [2] | [Ctrl] - [Ctrl] - [E] - [2] | Remote Mode: Allows the console at Remote Unit exclusive access to Computer A; access to the computer from the Host Unit is disabled |
| [Ctrl] - [Ctrl] - [3] | [Ctrl] - [Ctrl] - [E] - [3] | Auto Mode: Wait for keyboard console activity |
| [Ctrl] - [Ctrl] - [F3] | [Ctrl] - [Ctrl] - [E] - [F3] | Sets the interval of inactivity in seconds that the Host Unit will wait before returning to Auto Mode |

| Standard Command | With Compatibility Mode Enabled | Description |
|---|--|--|
| [Ctrl] - [Ctrl] - [F6] | [Ctrl] - [Ctrl] - [E] - [F6] | <p>Privacy Setting:</p> <p>A. Host Unit in Local mode (LED B: Off, LED A: On) 1 beep: Reset to Factory Default. 2/3 beeps: Disable the Local Unit output video signal.</p> <p>B. Host Unit in Auto mode (LED A&B flashes alternately) 1 beep: Reset to Factory Default. 2 beeps: Upon keyboard/mouse activation, disables the Local Unit video output temporarily. (Set for 5,15,30 or 60 second interval) 3 beeps: Upon keyboard/mouse activation the Remote Unit or Local Unit users can disable the output video signal temporarily. (The user can protect their privacy for 5,15,30,60 seconds)</p> |
| [Ctrl] - [Ctrl] - [V] - 4 digit code | [Ctrl] - [Ctrl] - [E] - [V] - 4 digit code | <p>Set the maximum video resolution (requires computer restart) for both Remote and Host units. See page 11 for codes.</p> |

Beep Codes

Some of the keyboard command sequences you issue to the Host Unit have multiple possible settings. The unit will beep to indicate what setting you have selected for the command you issued. (A short beep followed by a long beep indicates an invalid command.)

[Ctrl] - [Ctrl] - [Alt]+[E] (Compatibility Mode)

1 beep: disabled

2 beeps: enabled

[Ctrl] - [Ctrl] - [F3] (Inactivity Interval for Auto Mode)

1 beep: 5 seconds

2 beeps: 15 seconds

3 beeps: 30 seconds

4 beeps: 60 seconds

NOTE: Commands described in the [Key] - [Key] format are keys that must be pressed in order on the keyboard. Commands described in the [Key]+[Key] format must be pressed simultaneously.

NOTE: If the Num Lock, Caps Lock, and Scroll Lock lights are flashing in unison on the keyboard, the other Unit has control of Computer A. You will not be able to use the computer or issue commands until the other unit has finished using the computer.

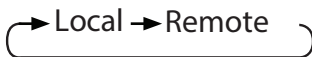
As EDID display information is not passed through the extender to the computer, manually setting the maximum display resolution on the extender may be necessary for content to display correctly on the connected monitors.

| 4-Digit Code | Resolution | 4-Digit Code | Resolution |
|--------------|------------|--------------|------------|
| 1007 | 1024x768 | 1612 | 1600x1200 |
| 1208 | 1280x800 | 1610 | 1680x1050 |
| 1210 | 1280x1024 | 1910 | 1920x1080 |
| 1307 | 1360x768 | 1912 | 1920x1200 |
| 1409 | 1440x900 | 1914 | 1920x1440 |
| 1410 | 1440x1050 | 2011 | 2048x1152 |
| 1609 | 1600x900 | | |

Using the Remote Unit

The Remote Unit allows a user at the Remote Unit to assume control of devices connected to the Host Unit, if the Host Unit is set to Auto or Remote mode, and it also permits the user seated at the Remote Unit to use any connected system as though the KVM Extender was transparent.

You can use either keyboard shortcuts or the mode switch on the top of the Remote Unit to alternate control between A and B. Unlike the Host Unit, however, the switch on top of the Remote unit only offers two selectable modes:



LED Indicators

| Mode | A Indicator | B Indicator |
|-----------------------------------|-------------|-------------|
| Remote Access (Computer A) | On (solid) | Off |
| Local Access (Computer B) | Off | On (solid) |

Keyboard Shortcut Command Sequences

| Standard Command | With Compatibility Mode Enabled | Description |
|------------------------------------|---------------------------------|--|
| [Ctrl] - [Ctrl] - [T] | [Ctrl] - [Ctrl] - [T] | Toggles console control between Computer A and Computer B |
| [Ctrl] - [Ctrl] - [Esc] | [Ctrl] - [Ctrl] - [Esc] | Cancels the hotkey sequence |
| [Ctrl] - [Ctrl] - [Alt]+[E] | [Ctrl] - [Ctrl] - [Alt]+[E] | Enables (2 beeps) or disables (1 beep) Compatibility Mode so that the KVM extender will work with a KVM switch that also uses a [Ctrl] hotkey sequence |
| [Ctrl] - [Ctrl] - [Alt]+[S] | [Ctrl] - [Ctrl] - [Alt]+[S] | Reset Remote Unit to the factory default |
| [Ctrl] - [Ctrl] - [1] | [Ctrl] - [Ctrl] - [E] - [1] | Switches control to Computer B |

| Standard Command | With Compatibility Mode Enabled | Description |
|--------------------------------------|--|---|
| [Ctrl] - [Ctrl] - [2] | [Ctrl] - [Ctrl] - [E] - [2] | Switches control to Computer A (input allowed only if the Host Unit is in Remote or Auto mode) |
| [Ctrl] - [Ctrl] - [F2] | [Ctrl] - [Ctrl] - [E] - [F2] | Toggles console control between Computer A and Computer B |
| [Ctrl] - [Ctrl] - [F11] | [Ctrl] - [Ctrl] - [E] - [F11] | Video Calibration Entrance See more on Video Calibration section |
| [Ctrl] - [Ctrl] - [V] - 4 digit code | [Ctrl] - [Ctrl] - [E] - [V] - 4 digit code | Set the maximum video resolution (requires computer restart) for both Remote and Host units. See page 11 for codes. |

Beep Codes

Some of the keyboard command sequences you issue to the Remote Unit have multiple possible settings. The Unit will beep to indicate what setting you have selected for the command you issued. (A short beep followed by a long beep indicates an invalid command.)

[Ctrl] - [Ctrl] - [Alt]+[E] (Compatibility Mode)

1 beep: disabled

2 beeps: enabled

Note: Commands described in the [Key] - [Key] format are keys that must be pressed in order on the keyboard. Commands described in the [Key]+[Key] format must be pressed simultaneously.

Note: If the Num Lock, Caps Lock, and Scroll Lock lights are flashing in unison on the keyboard, the other Unit has control of Computer A. You will not be able to use A until the other Unit releases access to that computer.

Alternative Hot-Key Control

Instead of using the keyboard leading hot-key sequence, [Ctrl] - [Ctrl], the "Selection" button on the Host or Remote units can be used. These commands can be used regardless if the "Mask Hotkey" feature is enabled.

Command Sequence - Host Unit

| Hot-Key | Description |
|--|---|
| [press + hold Selection button for 2 sec] - [F3] | Sets the interval of inactivity in seconds that the Host Unit will wait before returning to Auto Mode |
| [press + hold Selection button for 2 sec] - [F6] | Change video Privacy Settings. |
| [press + hold Selection button for 2 sec] - [V] - 4 digit code | Set maximum video resolution for both Remote/Host units. |

Command Sequence - Remote Unit

| Hot-Key | Description |
|--|--|
| [press + hold Selection button for 2 sec] - [F11] | Enter Video Calibration mode. |
| [press + hold Selection button for 2 sec] - [V] - 4 digit code | Set maximum video resolution for both Remote/Host units. |

NOTE: Before entering Video Calibration mode, please make sure that the Host and Remote Units are properly connected using Cat5/5e/6 UTP cabling and the Remote Unit is in Remote mode ('Remote' LED flashing, 'Local' LED off).

Troubleshooting

How do the A and B modes work for the local and remote units?

In order to properly control the local computer at the remote end, it is useful to understand the different possible states the two units can be in.

Note: In the following descriptions, “console” refers to the mouse, keyboard, and monitor plugged into the local or remote units.

Local unit is set to A + remote unit is set to A

- The local console has control over the local computer.
- The remote console can see what is happening on the local computer. This functionality can be changed so that when the local unit has control over the local computer, the remote console sees a black screen, and vice versa.

Local unit is set to A + remote unit is set to B

- The local console has control over the local computer.
- The remote console has control over the remote computer.

Local unit is set to B + remote unit is set to A

- The local console can see what is happening on the local computer. This functionality can be changed so that when the local unit has control over the local computer, the remote console sees a black screen, and vice versa.
- The remote console has control over the local computer.

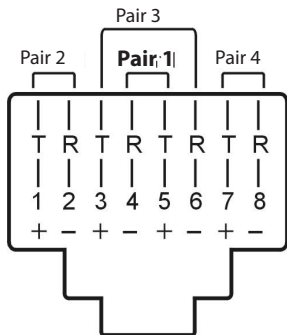
Local unit is set to B + remote unit is set to B

- The local console can see what is happening on the local computer. This functionality can be changed so that when the local unit has control over the local computer, the remote console sees a black screen, and vice versa.
- The remote console has control over the remote computer.

Specifications

| | |
|----------------------|---|
| Maximum Resolution | 1600x1200/1920x1200 (at maximum UTP cable length) |
| Maximum Range | 948 feet (300 meters) |
| Network Cabling Type | Straight-through Unshielded Twisted Pair (UTP) Cat. 5/5e/6 |
| Connectors | Each, Host and Remote Unit 1 x DE-15 VGA female 1 x DE-15 "Computer" female 1 x RJ-45 Ethernet female 2 x USB type A female (for keyboard/mouse only) 1 x DC Power |
| Power Adapter | 9~12VDC, 600mA, center positive |

RJ-45 Connector Pinout



| Pin | Wire Color | Pair | Function |
|-----|--------------|------|----------|
| 1 | White/Orange | 2 | T |
| 2 | Orange | 2 | R |
| 3 | White/Green | 3 | T |
| 4 | Blue | 1 | R |
| 5 | White/Blue | 1 | T |
| 6 | Green | 3 | R |
| 7 | White/Brown | 4 | T |
| 8 | Brown | 4 | R |

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For the latest drivers/software, please visit www.startech.com/downloads

Warranty Information

This product is backed by a three year warranty.

In addition, StarTech.com warrants its products against defects in materials and workmanship for the periods noted, following the initial date of purchase. During this period, the products may be returned for repair, or replacement with equivalent products at our discretion. The warranty covers parts and labor costs only. StarTech.com does not warrant its products from defects or damages arising from misuse, abuse, alteration, or normal wear and tear.

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