

## KM Switch



### **Models:**

SM20N-N – 2-Port KM Switch w/sUSB

SM40NU-N – 4-Port KM Switch w/sUSB

SM80NU-N – 8-port KM Switch w/sUSB

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## INTRODUCTION

### HSL KM Switch

View and work simultaneously with multiple computers connected to multiple displays using one set of USB, audio, keyboard and mouse peripherals.

Keyboard Mouse (KM) switch offered by HSL allows interacting with multiple computers in real-time while maintaining the highest isolation between computers and peripherals. Directly connect separate display(s) to each computer and effortlessly share keyboard, mouse, audio and USB devices through the KM.

Obviate the need for purchasing and installing dedicated, per-computer peripheral sets.

This guide instructs how to install, configure and operate a HSL KM switch.

## INSTALLATION

## Installing the KM

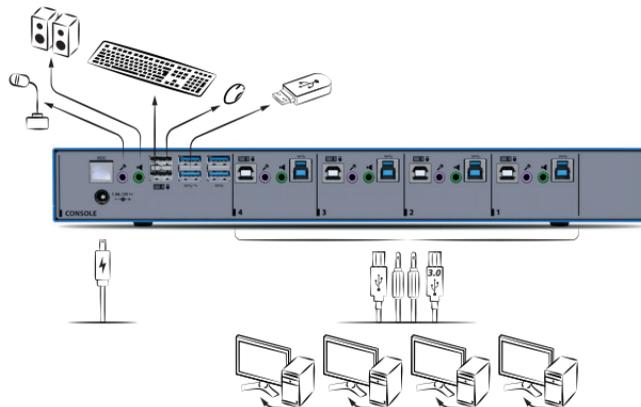
### General

- Verify that all peripherals and computers are turned off prior to connecting them to the product.
- The KM's back panel is divided into Console Ports and Computer Ports sections.
- Connect peripherals which are due to be shared by the KM to the Console ports.
- Connect computers that require access to the shared peripherals to the Computer ports.

### Step 1 – Connect peripherals to the KM Console ports

- **Keyboard:** Connect either a USB or PS/2 keyboard to the corresponding KM console keyboard port.
- **Mouse:** Connect either a USB or PS/2 mouse to the corresponding KM console mouse port.
- **USB peripherals:** Connect USB peripherals to the KM console fUSB port.
- **Audio out peripherals:** Connect headphones / speakers to the KM console audio-out ports (colored green).
- **Audio in peripherals:** Connect a microphone to the KM console audio-in ports (colored pink).

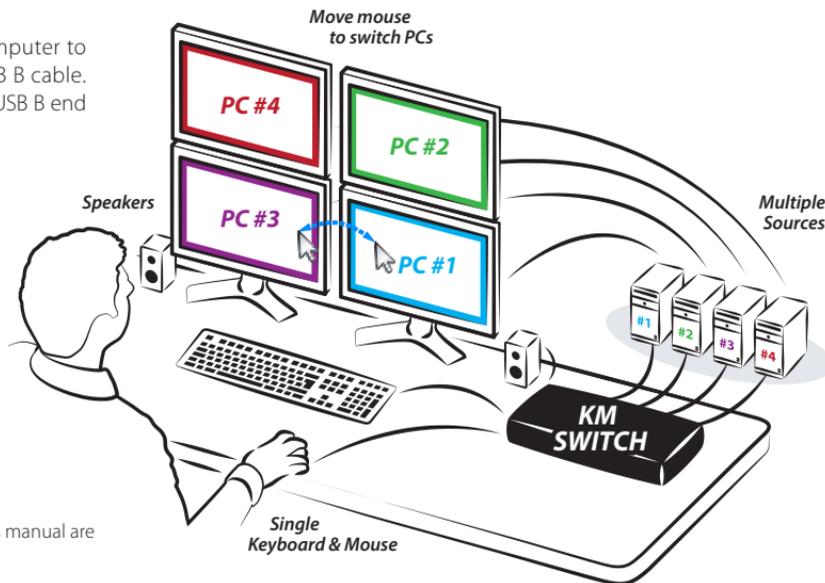
**Note:** 4 channel product illustrations shown throughout this manual are applicable to other KM models.



## INSTALLATION

## Step 2 – Connect computers to the KM Computer ports

- **Computer keyboard & mouse connection:** Connect each computer to the KM keyboard & mouse computer port using a USB A to USB B cable. Connect the USB A end to the computer and the USB B end to KM.
- **Computer USB peripherals:** Connect each computer to the KM fUSB computer port using a USB A to USB B cable. Connect the USB A end to the computer and the USB B end to KM.
- **Computer video connection:** Directly connect a monitor to each computer. Multi-monitor computers require driver installation, currently available only for Windows (<http://highseclabs.com/dl.php?fid=446>).



**Note:** 4 channel product illustrations shown throughout this manual are applicable to other KM models.

## INSTALLATION

### Step 3 – Power ON your system

- Connect all peripherals and computers to the KM prior to powering it up. Power ON the KM by plugging it to the AC wall outlet. By default, after product power-up, the active channel will be computer #1, indicated by the applicable front panel push button LED lit.

**Note:** Power ON self-test: As the product powers-up it performs a self-test procedure. In case of self- test failure for any reason, including jammed buttons, the product will be Inoperable. Self-test failure will be indicated by abnormal LED behavior – for further information please refer to the KM setup guide.

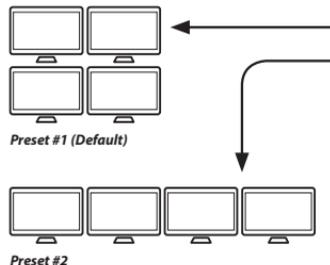
## INSTALLATION

**Step 4 – What are presets?**

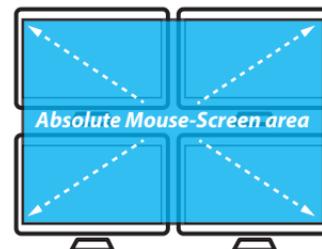
- Presets reflect the layout and borders of computer displays to the KM.

**Presets allow:**

- Support of various display layouts. Align displays vertically (on top) and Horizontally (along side).
- Associate the mouse cursor with each computer based on its respective display position.
- Consider all displays as one absolute screen area to allow VDT.
- Virtual Display Technology (VDT) - Switch control between PCs by moving the mouse cursor across display borders (all over the absolute screen area).



F11   F1   1 2 3 4 5 6 7 8	(Factory Default)	F11   1   1 2 3 4	F11   2   1 2 3 4 5 6 7 8	F11   3   1 2 3 4 5 6 7 8
F11   F2   1 2 3 4 5 6 7 8 9 10		F11   1   2 3 4	F11   2   3 4 5 6 7 8 9 10	F11   3   2 3 4 5 6 7 8 9 10
F11   F3   1 2 3 4 5 6 7 8		F11   1   3 4 5 6	F11   2   3 4 5 6 7 8 9 10	F11   3   4 5 6 7 8 9 10
F11   F4   1 2 3 4 5 6 7 8		F11   1   4 5 6 7	F11   2   4 5 6 7 8 9 10	F11   3   4 5 6 7 8 9 10
F11   F5   1 2 3 4 5 6 7 8 9 10		F11   1   5 6 7 8	F11   2   5 6 7 8 9 10	F11   3   5 6 7 8 9 10
F11   F6   1 2 3 4 5 6 7 8 9 10		F11   1   6 7 8 9	F11   2   6 7 8 9 10	F11   3   6 7 8 9 10
F11   F7   1 2 3 4 5 6 7 8 9 10		F11   1   7 8 9 10	F11   2   7 8 9 10	F11   3   7 8 9 10
F11   F8   1 2 3 4 5 6 7 8 9 10		F11   1   8 9 10	F11   2   8 9 10	F11   3   8 9 10
F11   F9   1 2 3 4 5 6 7 8		F11   1   9 10	F11   2   9 10	F11   3   9 10
F11   F10   1 2 3 4 5 6 7 8		F11   1   10	F11   2   10	F11   3   10



## INSTALLATION

## Table of Presets

F11   F1		(Factory Default)	F11   1   1		F11   2   1		F11   3   1	
F11   F2		F11   1   2		F11   2   2		F11   3   2		
F11   F3		F11   1   3		F11   2   3		F11   3   3		
F11   F4		F11   1   4		F11   2   4		F11   3   4		
F11   F5		F11   1   5		F11   2   5		F11   3   5		
F11   F6		F11   1   6		F11   2   6		F11   3   6		
F11   F7		F11   1   7		F11   2   7		F11   3   7		
F11   F8		F11   1   8		F11   2   8		F11   3   8		
F11   F9		F11   1   9		F11   2   9		F11   3   9		
F11   F10		F11   1   0		F11   2   0		F11   3   0		

**Note:** In the preset configurations, **Gray** indicates a single-display computer and **Blue** indicates a multi-display computer. **P** indicates primary display and **S** indicates secondary display in multi-display configurations.

## INSTALLATION

### Step 5 – Select a predefined display layout (Preset)

- Load a preset to adjust the KM settings with the physical layout of your computer displays.
- Changing presets is accomplished by typing the keyboard key sequence **L Ctrl | L Ctrl | F11 | Fx1 | x2 | x3** where x1,x2,x3 values may vary according to the selected preset of your choice.

#### How to change presets:

1. Find the preset that corresponds to your display alignment.
2. Type the keyboard key sequence to activate the preset (a rapid click-sound is played once a new preset is selected).
3. Restart the KM by disconnecting and reconnecting the power.
4. For example, in case all displays are aligned horizontally, type:

**L Ctrl | L Ctrl | F11 | F2**

this will load preset **1 | 2 | 3 | 4**



#### Note:

- Custom presets can be created using the HSL KM Configuration tool (described in detail in the KM Administrator guide).
- Multi-monitor computers require driver installation, currently available only for Windows (<http://highseclabs.com/support/downloads/?rid=19>).

## INSTALLATION

## Step 6 – Reset to Factory Defaults

Reset to factory defaults clears the device settings and restores the device to its original configuration.

- System reset, clears behavioral characteristics such as mouse settings and display presets. Type { **L CTRL | L CTRL | F11| r** } key combination.
- Complete reset: clears all device settings and resets to factory defaults. From the Terminal menu select the "Reset to Factory Defaults" option (refer to terminal mode guide).

### Important Notes:

1. Always use the **left control key (CTRL)** unless otherwise specified.
2. Keyboard shortcut keys are to be pressed sequentially
3. Do not use the numeric keypad for toggling shortcuts unless otherwise specified.
4. ALL KEYBOARD SHORTCUTS REFER TO QWERTY KEYBOARDS. In case a non-qwerty keyboard is in use, keep using the QWERTY layout.



## OPERATION

### Operating the KM

#### Front Panel Push-Buttons

- Following power up, the default channel is #1.
- Select any other channel by pressing the appropriate front panel push button.
- The mouse cursor will be positioned at the center of the selected computer display.
- The currently selected channel is indicated by the illumination of the appropriate push-button.

#### Freeze USB

- Once switching between channels, for example from channel #1 to channel #3, the USB and Audio devices are automatically switched accordingly. This is indicated by channel #3 USB and Audio LEDs turning steady GREEN.
- When switching to a channel that has no USB connection, the USB Port remains mapped to the last channel that had a USB connection.

- Press the freeze USB button on the front panel to assign the USB port to a specific computer. Freeze USB prevents switching the USB port while the keyboard, video, mouse and audio peripherals are switched between computers. Freeze USB is useful for various scenarios, for instance, when a USB disk-on-key must remain mapped to a certain computer.

#### Freeze Audio

- Press the freeze audio button on the front panel to assign the audio port to a specific computer. Freeze audio prevents switching the audio port while the keyboard, video, mouse and USB peripherals are switched between computers. Freeze audio is useful when a user has to listen to audio originating from one computer while working on another computer.

## OPERATION

## Smoothly switch between computers (Virtual Display Technology)

- Automatically switch control from one computer to another by dragging the mouse cursor over the computer's display border.
- Shared peripherals (Keyboard, audio, USB) switch to the next computer without having to press any buttons once the mouse is passing the display border.

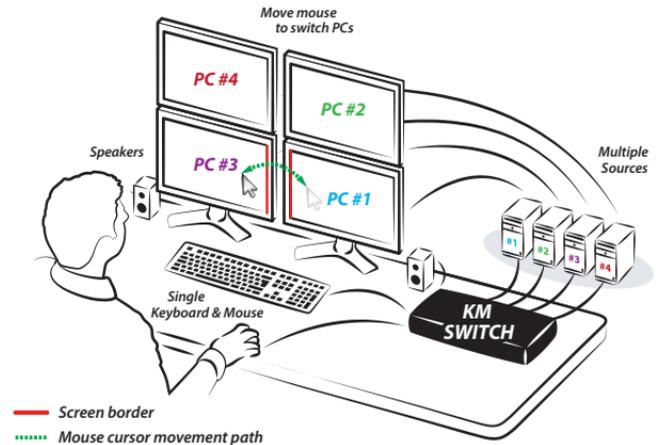
### Switch between computers:

- Press the front panel buttons to manually switch control from one computer to another.
- Use cursor navigation switching (VDT) to automatically switch between computers by dragging the mouse cursor over the computer's display border. Once the mouse is passing the display border, shared peripherals (Keyboard, audio, USB) switch to the next computer without having to press any buttons.

**To deactivate VDT mode:** Change the mouse mode to Relative by typing L CTRL | L CTRL | F11 | b

**To re-activate VDT mode:** Change the mouse mode to Absolute by typing L CTRL | L CTRL | F11 | c

**Note:** VDT is enabled by default.



## OPERATION

## Keyboard shortcut options

#	Action Description	Keyboard
1	Toggle between mouse modes	(Absolute) - <b>L CTRL   L CTRL   F11   c</b> (Relative) - <b>L CTRL   L CTRL   F11   b</b>
2	Increase / Decrease mouse speed	(Increase) - <b>L CTRL   L CTRL   F11   +</b> (Decrease) - <b>L CTRL   L CTRL   F11   -</b>
3	Change presets (Example)	<b>L CTRL   L CTRL   F11   F1 – F6</b>
4	System Reset to factory defaults	<b>L CTRL   L CTRL   F11   r</b>
5	Enter Terminal-Mode	<b>L CTRL   R CTRL   t</b>

## OPERATION

### Copy & Paste

Transfer text and files between all the computers that are connected to the KVM through the KVM (no network connection is needed between parties). Use standard copy and paste keyboard key combinations (CTRL+C / CTRL+V) or mouse context-menu commands to transfer data between computers that are connected to the KVM.

#### Copy & Paste operational modes:

Operational modes determine where copied data is buffered (KVM model dependent).

#### USB Device mode:

- Applicable only to 4 port KVM models that include USB 3.0 ports with external USB storage device support.
- Copied data is stored on an external USB storage device, connected to the KVM's USB port.
- Both text and file copy & paste operations are supported.
- Fast data transfer rates are achievable through USB 3.0 SuperSpeed technology.
- Copied data size is determined by the amount of available free space on the USB storage device.
- Requires installing the HSL Virtual Clipboard Agent application on each computer.

#### COM Device Mode

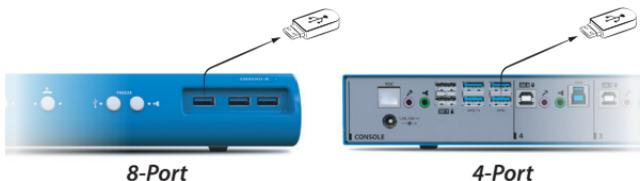
- Copied data is stored on the KVM's internal memory.
- 2 port models support copying only text.
- 4 port models support copying text and files.
- Copied data size is limited to 12KB.
- Requires installing the HSL Virtual Clipboard Agent application on each computer.

## OPERATION

## Copy & Paste Setup

**Note:** For COM port setup skip to step 3.

1. Connect a USB storage device to one of the USB 3.0 ports situated on the product's front facing panel.
2. Connect each computer to the KVM USB computer port using a USB A to USB B cable. Connect the USB A end to the computer and the USB B end to KVM.
3. Download the Virtual Clipboard Agent application setup file from HSL website (<URL>). (Currently available only for Windows).
4. Run the setup file and follow the on-screen instructions to install the Virtual Clipboard Agent on each computer that requires Copy & Paste access. Click INSTALL when prompted by the Windows Security pop-up window during the driver installation.



## Copy & Paste Configuration

Once the installation is complete, right click the system tray Clipboard Manger icon and select Setting to open the Clipboard Manager setting window.



### HSL Clipboard Manager setting

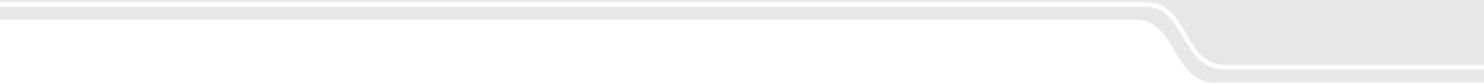
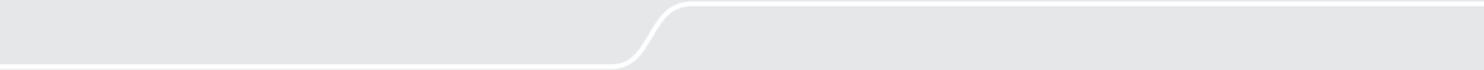
- **Operational mode:** select where copied data is stored (USB/COM).
- **System tray notifications:** select when to display notifications.
- **Copy/Paste settings:** limit file size and type.
- **COM/USB settings:** setup advanced port settings.

### Working with Copy & Paste

To copy text or files from one computer to another, use standard copy keyboard key combination or mouse gestures.

For example:

1. On the source computer (where the data that you want to copy resides) use (CTRL+C) to copy the data into the KVM buffer (USB/COM).
2. Press the corresponding KVM button to switch to the target computer (where you want to copy the data to).
3. Use standard paste keyboard key combination (CTRL+V) or mouse gesture to paste the data to the the destination computer.



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