



Quick Installation Guide

4/8-Port High Security DP/HDMI KVM Ultra Mini-Matrix Switch

Introduction

Thank you for purchasing this HSL Ultra Secure Mini-Matrix KVM Switch. This Ultra Mini-Matrix Switch is designed for use in secure defense and intelligence environments across wide security gaps.

Unlike a regular secure KVM switch that enables the user to view and interact with only one of the connected computers at a time, this secure Ultra Mini-Matrix enables multi viewing two or all of the connected computers and interacting with them easily and intuitively.

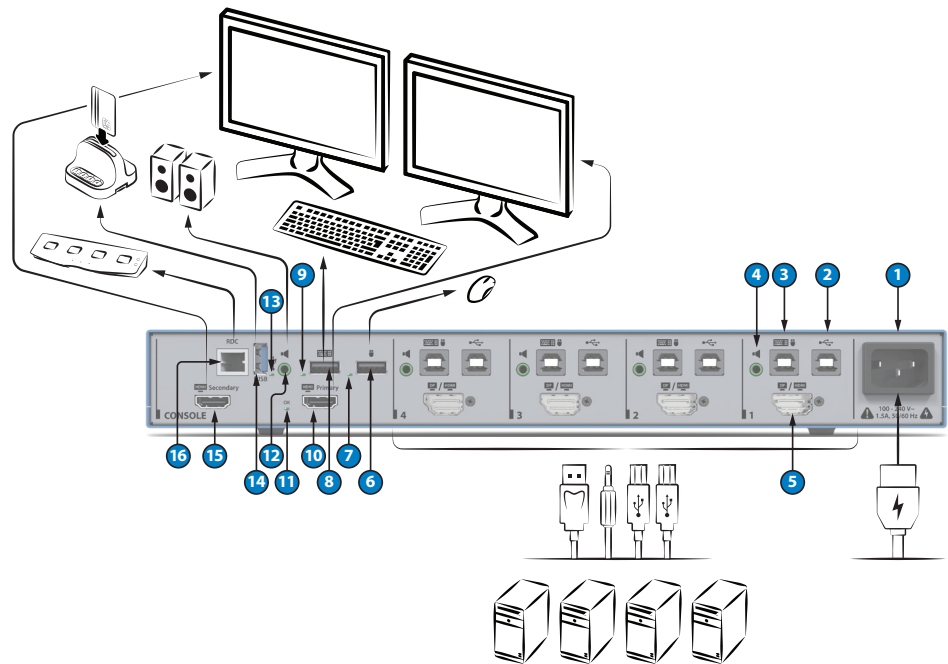
Objectives

This guide includes instructions for installation and basic operation of HSL's DP/HDMI Ultra Mini-Matrix **SX42PHU-4X** and **SX82PHU-4X** devices. For further assistance please refer to HSL website: <http://www.highseclabs.com>

The following diagram references the **SX42PHU-4X** device:

Rear Panel Index:

1. AC in
2. PC fUSB input
3. PC Keyboard/Mouse input
4. Analog audio input
5. DP/HDMI input
6. Console Mouse USB
7. Console Mouse LED
8. Console Keyboard USB
9. Console Keyboard LED
10. Primary Display DP/HDMI Out
11. Primary Display EDID LED
12. Analog audio output
13. fUSB (CAC) LED
14. fUSB (CAC) Out
15. Secondary Display DP/HDMI Out
16. RDC In – Remote AFP Connection



Installation Precautions:

Do not connect this product to computing devices that:

- Are TEMPEST computers.
- Include telecommunication equipment.
- Include frame grabber video cards.
- Include special audio processing cards. .

WARNING: Peripherals' Warning - For security reasons, this product does not support wireless keyboards. It is recommended not to connect a microphone or headset to the audio output port.

NOTE: To comply with the product's Common Criteria evaluation and to prevent unauthorized administrative access to the product, the default administrator username and password must be changed before using the product for the first time.

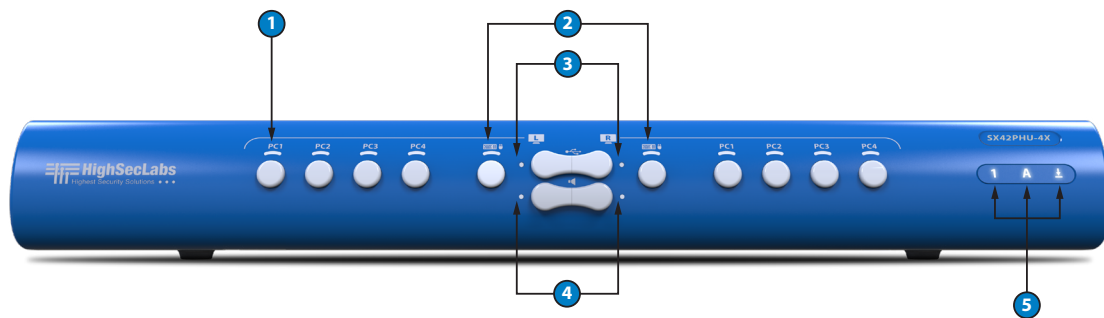
Installation:

- Verify that all peripherals and computers are turned OFF prior to connecting them to the product.
- Connect the computers and peripherals to the HSL Ultra Mini-Matrix as shown in the above diagram.
- It is possible to connect an HSL AFP (remote control) to the RDC port of these devices. Please refer to the AFP datasheet for details on how to connect it.

- **Power ON the monitors and the PCs:** Make sure that the monitors are turned ON before powering ON the Ultra Mini-Matrix.
- **Power ON the system:** Power ON the Ultra Mini-Matrix by plugging it into the AC wall outlet. By default, after product power-up, the active channel will be Computer #1.

NOTE: HSL devices covered by this manual include a special DP/HDMI connector, enabling the user to use the product with both video formats as input and output.

NOTE: In models supporting fUSB, it is possible to connect additional USB devices and use them on the host PCs. By default, authentication devices such as CAC readers, smart card readers, and biometric readers are enabled. Please refer to HSL's administrator manual on how to enable additional USB devices.



Front Panel LEDs Index:

1. Active PC Channel LED
2. Left/Right Keyboard/Mouse Control LEDs
3. Left/Right fUSB freeze LED
4. Left/Right audio freeze LED
5. Keyboard LEDs for Num/Caps/Scroll Lock

Ultra Mini-Matrix Front Panel/Rear Panel LED Indications:

The HSL Ultra Mini-Matrix has several indications on its front and rear panels:

EDID LED (rear panel):

- Off: no EDID detected
- Flicker: EDID read in progress
- On: EDID received

NOTE: EDID is only read in the first few seconds of the device booting up. The secure switch does not support connecting new displays while the device is working. It is recommended to restart the device every time a new video display is connected.

fUSB LED:

- Off: no device detected
- Red: device rejected
- Green: device approved

HID LED:

- Off: no device detected
- Red: device rejected
- On: device approved

Using the HSL Ultra Mini-Matrix:

HSL's 4-Port KVM Ultra Mini-Matrix has multiple layouts for presenting the 4 sources on the screen:

- **Full-screen View** – One of the four source PCs is displayed in full screen. To enable this mode, enter the keyboard shortcut **LCtrl | LCtrl | f**.
- **Matrix View** – Two of the four source PCs are displayed side-by-side and can be switched independently. To enable this mode, enter the keyboard shortcut **LCtrl | LCtrl | x**.
- **Tile View** – All channels are shown on the connected display. To enable this mode, enter the keyboard shortcut **LCtrl | LCtrl | q**.
- **Scale View** – One channel is presented on two-thirds of the screen, with the other 3 channels on the remaining space on the right. To enable this mode, enter the keyboard shortcut **LCtrl | LCtrl | s**.

- **Picture-in-Picture View** – One channel is presented in full-screen, with a second channel shown in a small picture-in-picture window in the corner. Both channels can be switched independently. To enable this mode, enter the keyboard shortcut **LCtrl | LCtrl | F11 | x**.

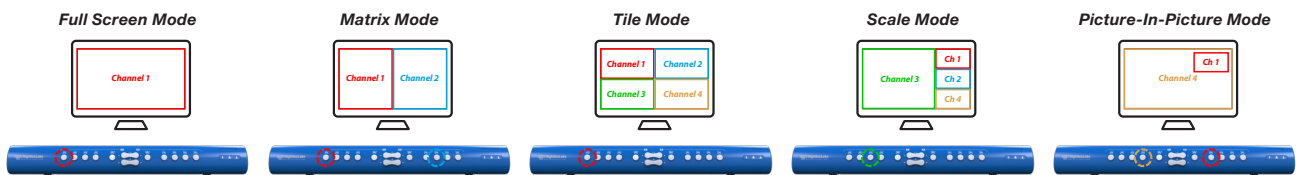
The HSL KVM Ultra Mini-Matrix also supports a second display that can be used in Duplicate or Extended Mode.

To change between display modes, use the following keyboard shortcuts:

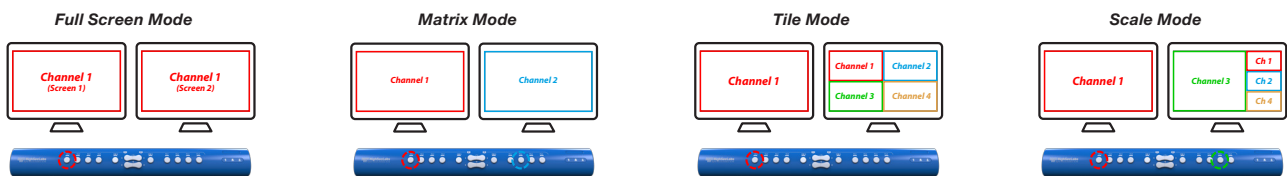
- **LCtrl | LCtrl | F11 | s | 0** – Single Display (default)
- **LCtrl | LCtrl | F11 | s | 1** – Duplicate Display
- **LCtrl | LCtrl | F11 | s | 2** – Extended Display (Horizontal)
- **LCtrl | LCtrl | F11 | s | 3** – Extended Display (Vertical)

Please see below a diagram of each mode of operation on one and two displays:

Single / Duplicate Display



Extended Display



- Each channel shown has a frame around it to distinguish between them.
- To select a channel (map the mouse and keyboard to it), use the KVM Ultra Mini-Matrix's front panel push buttons.
- As a secondary switching method, the user can use Absolute Mouse Navigation. Absolute Mouse switching is enabled by default and requires the user to drag the mouse while pressing and holding the left **LCtrl** key.

Important Note

Power ON Self-Test Procedure: As the product powers up, it performs a self-test procedure. In the event of a self-test failure for any reason, including jammed buttons, the product is inoperable, and the self-test failure is indicated by abnormal LED behavior.

In the above-mentioned cases, please call Technical Support and avoid using the product. For further information, please refer to the product administrator and setup guides.

Safety and Regulatory Statements

Safety Symbols

One or more of the following symbols may be included in your product documentation and/or on the product.



Instructions: This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the product user manual.



Dangerous Voltage: This symbol is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



Power On: This symbol indicates the principal on/off switch is in the ON position.



Power Off: This symbol indicates the principal on/off switch is in the OFF position.



Protective Grounding Terminal: This symbol indicates a terminal which must be connected to earth ground prior to making any other connections to the equipment.

Safety Precautions

WARNING: To avoid a potentially fatal shock hazard and possible damage to equipment, please observe the following precautions.

- Do not disable the power grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) outlet that is easily accessible at all times.
- Disconnect the power from the product by unplugging the power cord from either the electrical outlet or the product. The AC inlet is the main disconnect for removing power to this product. For products that have more than one AC inlet, to remove power completely, all AC line cords must be disconnected.
- This product has no serviceable parts inside the product enclosure. Do not open or remove product cover.

CAUTION: Some HSL products contain a lithium battery. This battery is not a field replaceable item, and replacement should not be attempted by a user. If errors occur when using the product and the battery is suspected, contact HSL Technical Support.

WARNING: For Service Personnel Only - There is a risk of explosion if the battery is replaced with an incorrect type. Dispose of used batteries according to the manufacturer's instructions.

This product is for use with other products that are Listed or Certified by a Nationally Recognized Testing Laboratory (NRTL).

NIAP Protection Profile

This product is compliant with the NIAP Protection Profile PSD version 4.0 certification for peripheral sharing switch devices.

Security Vulnerability

If you are aware of a potential security vulnerability while installing this product, contact Technical Support immediately by:

- Web form: www.highseclabs.com/support/case/
- Email: security@highseclabs.com
- Tel: +972-4-9591191/2

CAUTION: Anti-tamper Caution - This product is equipped with an always-on, active anti-tampering system. Any attempt to open the product enclosure will activate the anti-tamper triggers, rendering the unit inoperable and voiding its warranty.

WARNING: Unit Enclosure Warning - If the unit's enclosure appears disrupted or if all LEDs flash continuously, remove the product from service immediately and contact Technical Support.

Change Management

For change management tracking, perform a quarterly log check to verify that the RFD was not improperly used to override the current device policy by an unauthorized person.