



Quick Installation Guide

4/8 Ports High Security Modular Matrix KVM Switches

Introduction

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

HSL's Modular Matrix allows the user to view and interact with 2 of the 4 or 8 connected computers easily and intuitively. Switching between the two presented computers is done by moving the mouse cursor essentially creating a virtual desktop across multiple computers. The Modular matrix supports different video format while the conversion is done in the cables making it a flexible solution across different computer connections.

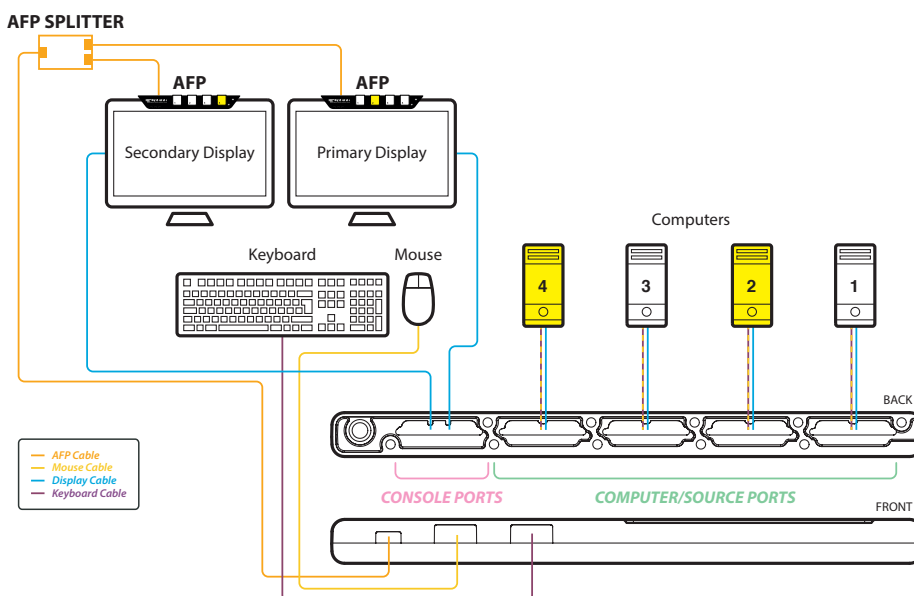
Objectives

- This guide includes instructions for installing HSL's following devices:

PN	Model	Model Description
CGA19461	SMX42D-M	4 ports Secure DVI-D Modular KVM mini-matrix
CGA19462	SMX42H-M	4 ports Secure HDMI Modular KVM mini-matrix
CGA19465	SMX42P-M	4 ports Secure Display Port Modular KVM mini-matrix
CGA19466	SMX82D-M	8 ports Secure DVI-D Modular KVM mini-matrix
CGA19469	SMX82H-M	8 ports Secure HDMI Modular KVM mini-matrix
CGA19470	SMX82P-M	8 ports Secure Display Port Modular KVM mini-matrix

- For further assistance please refer to HSL website: <http://www.highseclabs.com>
- The following diagram references the **SMX42H-M** device but it is applicable to all devices covered in this manual.

SMX42H-M Model is shown:



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.

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 Modular-Matrix as shown in the above diagram.
- Power ON the monitors and the PCs: Make sure that the monitors are turned ON prior to powering ON the Mini-Matrix
- Power ON the system: Power ON the HSL Modular - Matrix by plugging it to the AC wall outlet. By default, after product power-up, the active channel will be computer #1

- The PC cables have a single PCI-E connector on the KVM side and on the PC side a video (DP/HDMI/DVI) and one USB (KB/Mouse) connectors. Note: For mixed DP/HDMI/DVI PCs, it possible to use different cables for each type.
- The Console cable has a PCI-E connector on the KVM side and two video (DP/HDMI/DVI) connectors on the Display side.

- The Appropriate LED on the top of the AFPs will show the active associated display (1,2).
- The HID devices: Mouse and Keyboard will follow the display association.
- **Cursor Navigation:** The second mode of operation is by using CNS (cursor navigation switching) in which users can move their HID devices between the left and right display, using mouse movement. This function is enabled by default and requires the user to press and hold the Left CTRL key, while dragging the mouse between the left and right display (changing control between the left and right projected PC).

Modular Matrix Cables

- The Modular Matrix Kit includes 4 (for 4-ports) or 8 (for 8-ports)
- appropriate PC cables and one Console cable.

Cable changes

The cables can be changed or preordered on demand according to the needed Video connectors on the connected computers and displays.

Using the HSL Modular-Matrix:

Channel switching on the secure modular matrix is done via two AFPs (4P or 8P) which are linked together via an AFP splitter.

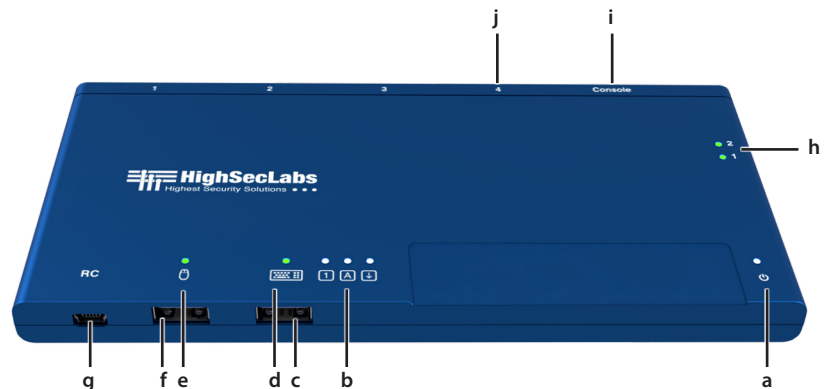
One AFP controls channel switching on the left display and the second one controls the right display channel switching.

EDID Acquisition

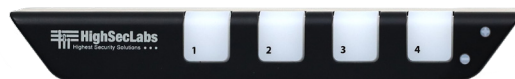
When using the HSL Mini-Matrix, it is assumed that both connected displays are the same or use the same native resolution. EDID is acquired from the left display only and duplicated to all channels. If the two displays are not the same, place the display with the lower native resolution on the left display console port.

Ports and LEDs Index:

- Power LED
- Keyboard LEDs
- Keyboard USB input
- Keyboard LED
- Mouse USB Input
- Mouse LED
- RC input (for AFP splitter out)
- Active Display Indication LED
- Console PCI-E Cable Input
- 1-4 PC PCI-E Cables In



AFP Splitter WX12N-4



AFP remote control WR40-3

Modular-Matrix Front LED Indications:

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

EDID LEDs:

- Off – no EDID
- Flicker – EDID read in progress
- On – EDID received

Note: EDID is only read in the first few seconds of device boot. The secure switch does not support hot plug or swap of display while working. In every swap of display it is recommended to restart the KVM.

HID (Keyboard, Mouse) LEDs:

- Off – no device detected
- Flicker – device rejected
- On- device approved

Important Notes:

Power ON Self-Test Procedure: 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 is inoperable and self-test failure is indicated by abnormal LED behavior.

In the above-mentioned cases, please call Technical Support and avoid using the product.

Safety and Regulatory Statements

Safety Symbols

This 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.

- **Instructions:** 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.

Installation Precautions

Note: HSL Secure Modular Matrix Switches are protected with Holographic Tamper-Evident Labels on the product's enclosure to provide a visual indication in case the enclosure has been opened or compromised.

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

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.