HighSecLabs
Highest Security Solutions Ltd.

SECURE MINI-MATRIX

Optimize user experience when working with multiple computers. View and control two out-of-four computers at the same time whilst securely sharing keyboard, video, mouse, audio and USB devices.

Ultra HD 4K

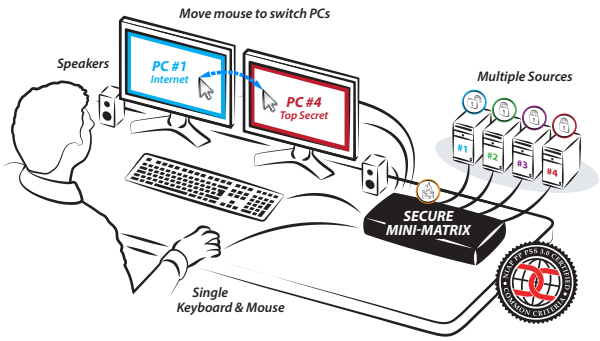
NIAP PP PSS 3.0 CERTIFIED COMMON CRITERIA

The Mini-Matrix KVM switch offered by HSL provides increased productivity in challenging multi-computer environments where users are required to view and interact with several computers while maintaining the highest isolation between computers and peripherals.

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

MINI-MATRIX HIGHLIGHTS

- **NIAP Common Criteria PP3.0 Certification**
  HSL Mini-Matrix KVM switches qualify to the latest NIAP Common Criteria Protection Profile version 3.0 (PP3.0) certification for peripheral Sharing Switch (PSS) devices.
- **Securely share peripherals across different security domains**
  Securely share peripherals between computers that belong to different security classification levels while keeping the highest possible data separation security.
- **Prevent information leaks**
  Obstacle threats derived from sharing and switching of vulnerable, untrusted or unauthorized peripheral devices. Block peripheral exploits, information leaks, eavesdropping, signal transmission, computer malware, hardware and firmware tampering by enforcing multilayered security mechanisms.
- **The ideal KVM switch for meeting rooms and control centers**
  Best suites scenarios where one or more computers have to be presented at the same time on multiple displays. For example:
  - In control centers where information from several sources has to be constantly displayed in real-time.
  - In meeting rooms where both visitor and host computers are to be viewed and controlled simultaneously.
- **Filter USB Peripherals**
  Block unauthorized USB devices while allowing secure switching of smart card and biometric authentication devices between computers. Whitelist and blacklist specific USB devices based on VID/PID characteristics.



HSL 4-Port Secure Mini-Matrix KVM Switch System Diagram

SECURITY FEATURES

- **USB Security**
  - Block unauthorized USB devices.
  - USB authentication devices are authorize by default.
  - Whitelist and blacklist specific USB devices based on VID/PID characteristics.
- **Video Security**
  - Computer video input interfaces are isolated through the use of different electronic components, power and ground domains.
  - The display is isolated by a dedicated, read-only, EDID emulation for each computer.
  - Access to the monitor's Extended Display Identification Data (EDID) is blocked.
  - Access to the Monitor Control Command Set (MCCS commands) is blocked.
- **Keyboard & Mouse Security**
  - The keyboard and mouse are isolated by a dedicated, USB device emulation for each computer.
  - One-way, peripheral-to-computer data flow is enforced through unidirectional optical data diodes.
  - Communication from computer-to-keyboard/mouse is blocked.
  - Non HID (Human Interface Device) data transaction is blocked.
- **Audio Security**
  - Enforce computer-to-speaker, one-way flow of sound through unidirectional optical data diodes.
  - Prevent eavesdropping and line-in re-tasking by blocking speaker-to-computer communication.
- **Hardware Anti-Tampering**
  - Any attempt to open the product enclosure will activate an anti-tamper system making the product inoperable.
  - Blinking LEDs provide a clear indication of a tampering event.
  - Special holographic tampering evident labels on the product's enclosure provide a clear visual indication if the product has been opened or compromised.
- **Firmware Anti-Tampering**
  - There is no access to the product's firmware or memory through any port.
  - Firmware is permanently stored on a non-reprogrammable Read Only Memory (ROM) to prevent any modification.
  - Firmware integrity is verified through a self-test procedure during power-up. Upon detection of a critical failure the device disables normal operation and provides the user with a clear visual indication of failure.

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SX42DU-3

SX42PU-3

SX42HU-3

OPERATIONAL HIGHLIGHTS

- **Independently switch the Video/USB/Audio/Keyboard & Mouse ports between computers**
  Use the front-panel push buttons to independently switch the Video/USB/Audio/Keyboard & Mouse ports between the primary and secondary computers.

  Useful for various scenarios, for instance:
  - When a USB smart card reader must remain mapped to a certain computer while the keyboard, video, mouse and audio are switched to another computer.
  - When a user has to listen to audio originating from one computer while working on another computer.
- **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. Peripherals switch to the next computer without having to press any buttons once the mouse is passing the display border.
- **View applications in Ultra High Definition (UHD) 4K video quality.**
  Never compromise on video quality. Run graphic-intensive, ultrahigh definition applications on all Mini-Matrix models.
- **Avoid typing mistakes**
  Since two-way communication is blocked by the Mini-Matrix security, keyboard lock LEDs do not function. Help users avoid typing mistakes by visually indicating the status of keyboard locks (CAPS-LOCK | NUM LOCK | SCROLL LOCK) on the product's front facing panel.
- **Work simultaneously on two computers, view the screens of four computers**:
  Connect up to four computers and two displays to the Mini-Matrix. Select which computer to present on each of the two attached displays. Displays can be positioned in various layouts (Horizontal / Vertical / Custom). Duplicate the screen of any computer by presenting it on both Mini-Matrix displays at the same time. Extend the screen of any computer to an additional 3rd and 4th external displays.

SPECIFICATION

PART NUMBER	SX42DU-3	SX42PU-3	SX42HU-3
No. of Sources	4	4	4
CONSOLE PORTS			
Displays	2 x DVI-I, single-link/ dual-link	2 x HDMI 1.4	2 x HDMI 1.4
Max Resolution (Input & Output)	**UHD 4K -** 3840X2160 @ 30 Hz (via DVI to HDMI cable) **DVI dual-link -** 2560X1600 @ 60 Hz (via DVI cable)	Supporting UHD 4K resolutions up to 3840x2160 @ 30 Hz	Supporting UHD 4K resolutions up to 3840x2160
Mouse and Keyboard	USB Type A, PS/2	USB Type A, PS/2	USB Type A, PS/2
Audio Jack	3.5 mm Jack	3.5 mm Jack	3.5 mm Jack
fUSB Port	USB Type A	USB Type A	USB Type A
SOURCE/COMPUTER PORTS			
Display Type	1 x DVI-I, single-link/ dual-link	1 x DisplayPort 1.2	1 x HDMI 1.4
Mouse and Keyboard	USB Type B	USB Type B	USB Type B
Audio Jack	3.5 mm Jack	3.5 mm Jack	3.5 mm Jack
fUSB Ports	USB Type B	USB Type B	USB Type B
PHYSICAL			
Dimensions	342 x 148 x 42 mm / 13.4 x 5.8 x 1.6 inches		
Weight	1.6 kg (3.5 lbs)		
POWER			
Power Requirements	35W Max		
AC Input	100 to 240V AC		
Power Type	Internal		
ENVIRONMENTAL			
Operating Temperature	32° to 104° F (0° to 40° C)		
Storage Temperature	-4° to 140° F (-20° to 60° C)		
Humidity	0-80% RH, non-condensing		
SOFTWARE			
Supported OS	Windows, Linux, Mac		
CERTIFICATION			
Security Certification	NIAP Common Criteria PP3.0 for Peripheral Sharing Switch (PSS) devices		
Product Certification	CE, RCM, FCC class B, VCCI, TUV US, TUV Canada		
GENERAL INFO			
Made In	USA		
Product life-cycle	10 years		
Warranty	2 Years		

Ultra HD 4K

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