HighSecLabs
Highest Security Solutions

SECURE ULTRA MINI-MATRIX

Multiview and control several computers at the same time while securely sharing keyboard, mouse, audio, and USB devices.

Ultra HD 4K

NIAP PP 4.0 PSD COMPLIANT COMMON CRITERIA

HSL's Ultra Mini-Matrix combines the functionality of a KVM switch with the convenience of a multiviewer. It is the ideal solution for meeting rooms and other environments where users can view and interact with several computers at once using one or two display screens, all while maintaining the highest isolation between computers and peripherals.

ULTRA MINI-MATRIX HIGHLIGHTS

- **NIAP Common Criteria PP4.0 Certified:**

  HSL's Secure Ultra Mini-Matrix is NIAP Common Criteria PP4.0 compliant for Peripheral Sharing Device (PSD).

- **KVM Switching:**

  The Ultra Mini-Matrix can display and control multiple computer sources at the same time on 2 monitors, using a single set of keyboard, mouse, audio, and filtered USB peripherals.

- **Free Flowing Mouse Navigation:**

  With the Ultra Mini-Matrix drag the mouse to switch between computer sources.

- **Dual monitor 4K Support:**

  The Ultra Mini-Matrix can display content in 4K resolutions up to 3840x2160, at 30Hz.

- **Multiview Support:**

  Display multiple sources on a single display screen and interact with each window securely.

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

SECURITY FEATURES

- **USB Security**
  - Block unauthorized USB devices.
  - USB CAC readers 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.
- **Secure Supply Chain**
  - Both Secure Ultra Mini-Matrix models are produced in Huntsville, AL, using a secure supply chain, and are TAA/BAA compliant.

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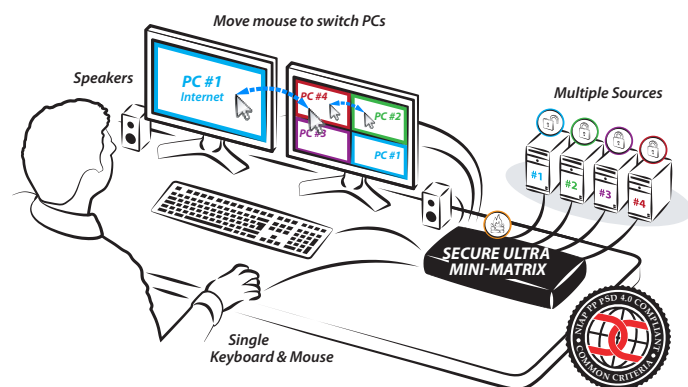
OPERATIONAL HIGHLIGHTS

• **Simultaneous Viewing and Control:**
  Display and interact with multiple computer sources at the same time on 2 monitors, all using a single set of peripherals.

• **Multiple Viewing Modes:**
  Choose from several easily selectable layouts, including Full-screen, Tile View, Scale View, and Picture-in-Picture.

• **Seamless Mouse Switching:**
  Switch between different sources by simply dragging the mouse cursor from channel to channel. The keyboard and USB peripherals will follow the mouse.

• **Keyboard Hotkeys:**
  Quickly switch viewing modes, mouse navigation modes, and other functions using simple, intuitive key combinations.

• **On-Screen Display Configuration:**
  Configure the video, channel, audio, and USB settings at any time using the On-Screen Display.

• **Dual Combo DisplayPort and HDMI Connectors:**
  Connect either DisplayPort or HDMI sources into the same port using HSL's dual-source video connector, without any need for adapters or converters.

SX42PHU-4X

SX82PHU-4X

SPECIFICATION

PART NUMBER	SX42PHU-4X	SX82PHU-4X
No. of Sources	4	8
CONSOLE PORTS		
Displays	2 x HDMI	2 x DP/HDMI
Max Output Resolution	Supporting UHD 4K resolutions up to 3840x2160 @ 30 Hz	
Mouse and Keyboard	USB Type A	USB Type A
Audio Jack	3.5 mm Jack	3.5 mm Jack
fUSB Port	USB Type A	USB Type A
Remote Control Port	RJ14 Female	RJ14 Female
COMPUTER PORTS		
Display Type	DP/HDMI	DP/HDMI
Mouse and Keyboard	USB Type B	USB Type B
Audio Jack	3.5 mm Jack	3.5 mm Jack
fUSB Port	USB Type A	USB Type A
PHYSICAL		
Dimensions	342 x 148 x 42 mm / 13.4 x 5.8 x 1.6 in	439x250x58 mm / 17.3x9.8x2.3 in
Weight	1.61 kg (3.5 lbs)	3.7 kg (8.1 lbs)
POWER		
Power Requirements	35W Max	
AC Input	100 to 240V AC	
Power Type	Internal	
ENVIRONMENTAL		
Operating Temperature	32°F to 104°F (0°C to 40°C)	
Storage Temperature	-4°F to 140°F (-20°C to 60°C)	
Humidity	0%-80% RH, non-condensing	
SOFTWARE		
Supported OS	Windows, Linux, Mac	
CERTIFICATION		
Security Certification	Designed for compliance with NIAP Common Criteria PP4.0 for Peripheral Sharing Devices (PSD)	
Product Certification	CE, RCM, FCC class B, VCCI, TUV US, TUV Canada	
GENERAL INFO		
Product Life-cycle	10 years	
Warranty	2 Years	