

UNCLASSIFIED

SECURE ISOLATORS

Secured Unidirectional Data Flow
for Video/KVM Solutions



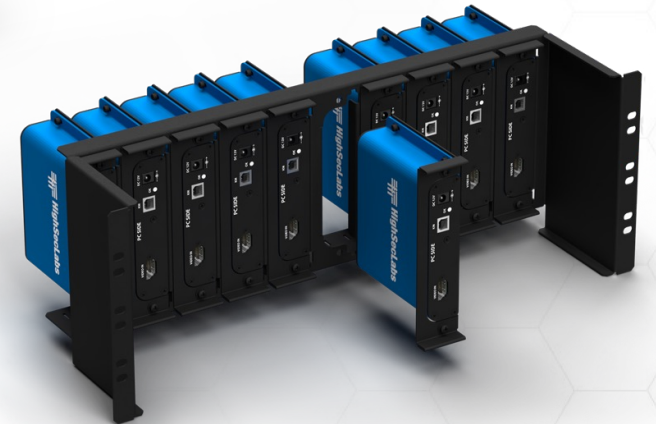
ISOLATORS FAMILY OVERVIEW

Secure Isolators Device Types:

- Video
- KVM
- Mini-Video
- RS-232

Accessories:

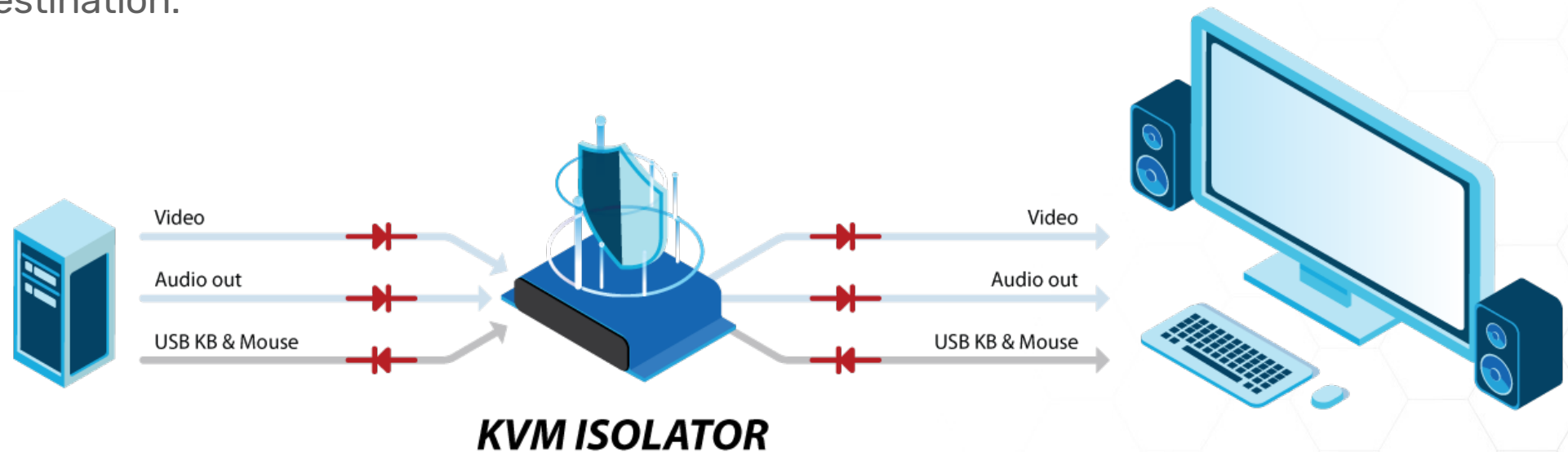
- Rack Mount Kit
- Power Distribution Unit for Isolators and Extenders - PDU



SECURE KVM ISOLATORS

HSL's Secure, NIAP PP4.0 Certified Isolators ensure that computer video and USB data flow are filtered and flow unidirectionally. This prevents shared peripheral vulnerabilities from compromising network security.

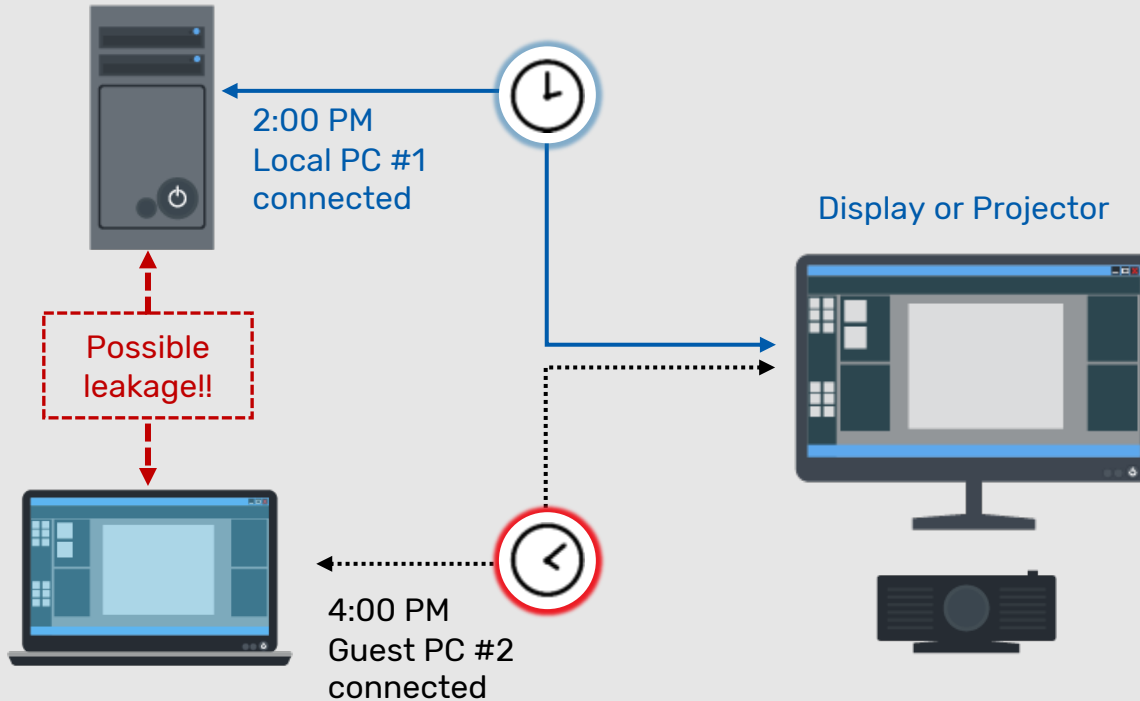
The Isolator ensures that only the necessary data is transferred from the source to the destination.



MEETING ROOM

ATTACK SCENARIO #1

Delayed Data Leakage



Several data leakage scenarios, in which different computers are connected at different times, can be demonstrated:

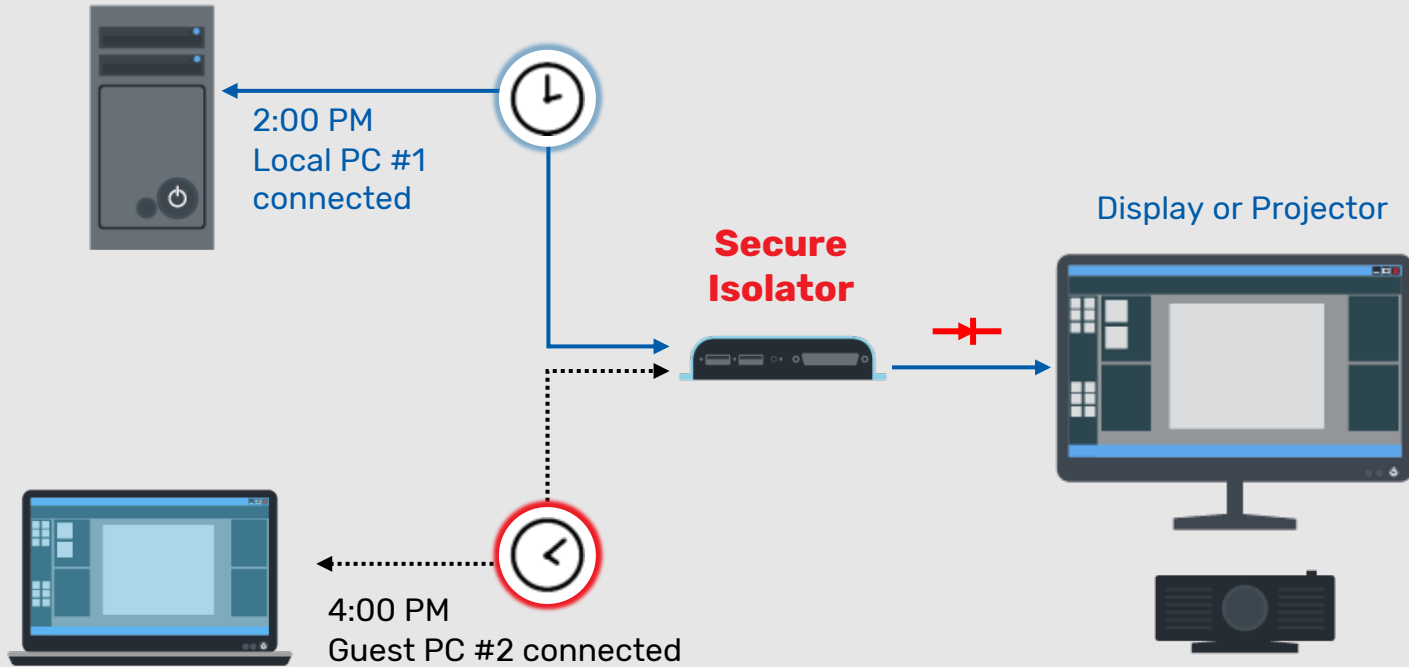
- EDID attacks
- Fake control setting attacks (VESA MCCS)
- Image upgrade attacks
- Asset management attacks

Data can leak between systems even when not connected at the same time by using the display or projector as an intermediary storage device.

MEETING ROOM

ATTACK SCENARIO #1

SOLUTION

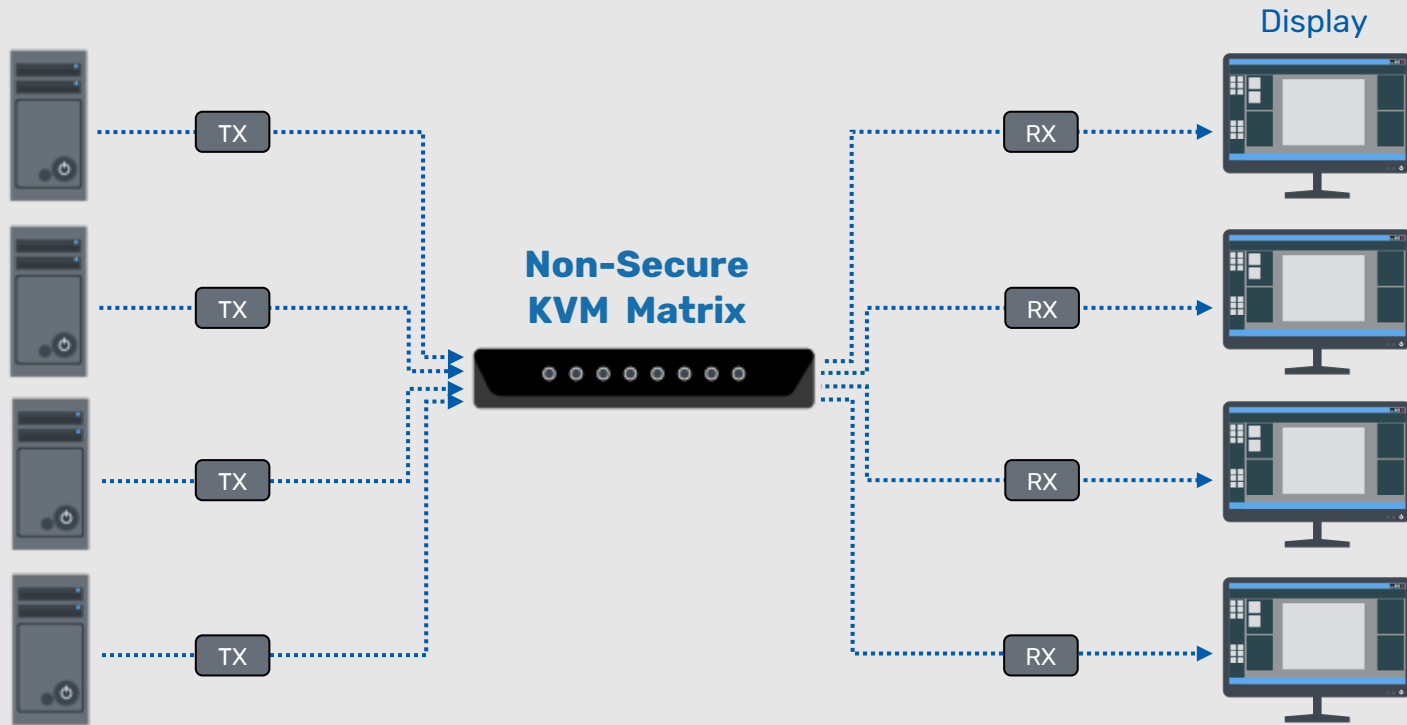


Problem solved by connecting an Isolator on the cable between the computer and the display, preventing data transfer from the display to the guest computer.

COMMAND AND CONTROL

ATTACK SCENARIO #2

KVM Matrix



Possible switched data leakage scenarios:

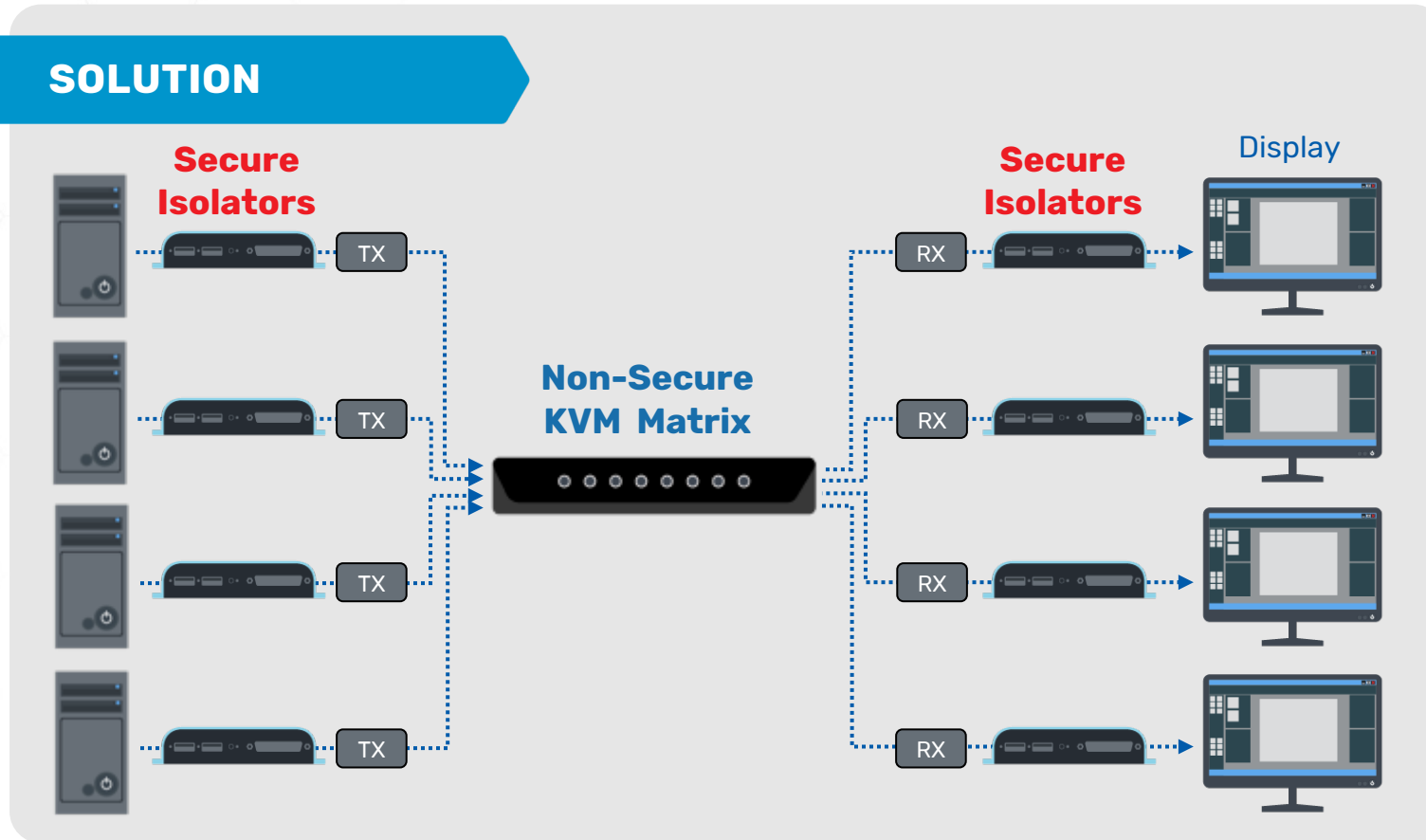
- Plug & Play attacks (VESA EDID)
- Fake control setting attacks (VESA MCCS)
- Signaling attack while switching over (slow leakage)

Information leakage can occur through the non-secure KVM Matrix or the connected peripherals.

COMMAND AND CONTROL

ATTACK SCENARIO #2

SOLUTION



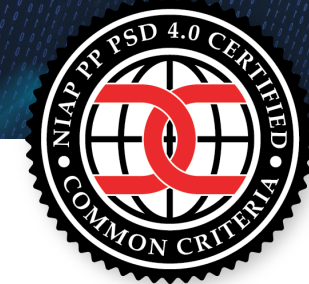
Problem solved by connecting Isolators between each computer and the non-secure KVM Matrix.

NEW SECURE ISOLATOR SECURITY HIGHLIGHTS

- The ultimate solution for securing and presenting sources of different classification level on the same display.
- Supports isolation of large KVM Matrices and conference room equipment
- EDID protection for the display using a one-time EDID capture push button
- Hardware based HID peripherals protection/isolation on models with KM support: FI11D-M, FI11PH-M, FI11H-M
- Variety of supported video input/output interfaces: DVI, HDMI, and the new DP/HDMI combo connector on models FV11PH-M, FI11PH-M for connecting either type of cable - DisplayPort or HDMI.
- Compatible with NIAP PP4.0 for PSD



HSL SECURE ISOLATOR MODELS – VIDEO AND KM ISOLATION



FI11PH-M

Isolation of:

Video - DP/HDMI
USB (Keyboard/Mouse)



FI11H-M

Isolation of:

Video - HDMI
USB (Keyboard/Mouse)



On all models:

- Single PC source , single output display
- Resolutions - Up to 4K-2K Ultra HD resolutions (3840 X 2160 pixels)
- NIAP PP4.0 PSD certified

HSL SECURE ISOLATOR MODELS – VIDEO ONLY ISOLATION

FV11PH-M

Isolation of:
Video - DP/HDMI



FV11H-M

Isolation of:
Video - HDMI



On all models:

- Single PC source , single output display
- Resolutions - Up to 4K-2K Ultra HD resolutions (3840 X 2160 pixels)
- NIAP PP4.0 PSD Compliant

HSL SECURE GALVANIC ISOLATOR

FI11H-MG

Isolation of:

Video - HDMI

USB (Keyboard/Mouse)



Model

Description

FV11H-MG	HDMI 1 Port Secure Galvanic Isolator 4K30
FV11H-MGH	Medical Grade* HDMI 1 Port Galvanic Isolator 4K30
FI11H-MG	KVM 1 Port Secure Galvanic Isolator 4K30
FI11H-MGH	Medical Grade* KVM 1 Port Galvanic Isolator 4K30

* Medical Grade Certification: IEC60601-1, IEC 60601-1-2

The galvanic Isolators product family adds another layer of security through complete galvanic isolation of DC and ground currents between two pieces of equipment.

The galvanic isolation and the use of a medical grade PSU makes the product compliant with different medical standards making it applicable for a wide set of medical applications.

MINI VIDEO ISOLATORS



On all models:

- **Max Resolution (Input & Output)**
1920X1080 @ 60Hz / 1920X1200 @ 60Hz / 3840X2160 @ 30Hz / 3440X1440 @ 30Hz
(Selected by DIP Switch) DP/HDMI conversion performed automatically, when required
- **Power Requirements**
Powered by HDMI or DisplayPort
- NIAP PP4.0 PSD Compliant

SECURE RS-232 ISOLATORS

The FF11N-4, FT11N-4, and FXJ11N-4 are especially suited to protect against data leakage in any scenario where command and monitoring information are sent between two otherwise separated networks. SCADA, System synchronization, control commands, and information sharing can all be done securely via the Secure RS-232 Isolator family.

The CP11N-4 is designed explicitly for user-prompted copy-and-paste commands that transfer the selected text unidirectionally to a destination device.



POWER DISTRIBUTION UNIT FOR ISOLATORS AND EXTENDERS- PDUI

Connecting multiple Isolators and Extenders to computers in a rack.

Saves space and power outlets on a network cabinet by using an external central redundant Power Distribution Unit for Isolators (PDUI):

- Only one connection to an external power source; no need for a dedicated supply outlet for each adaptor
- A 12/24 outlet hub with built-in transformer instead of a separate power adaptor for each Isolator

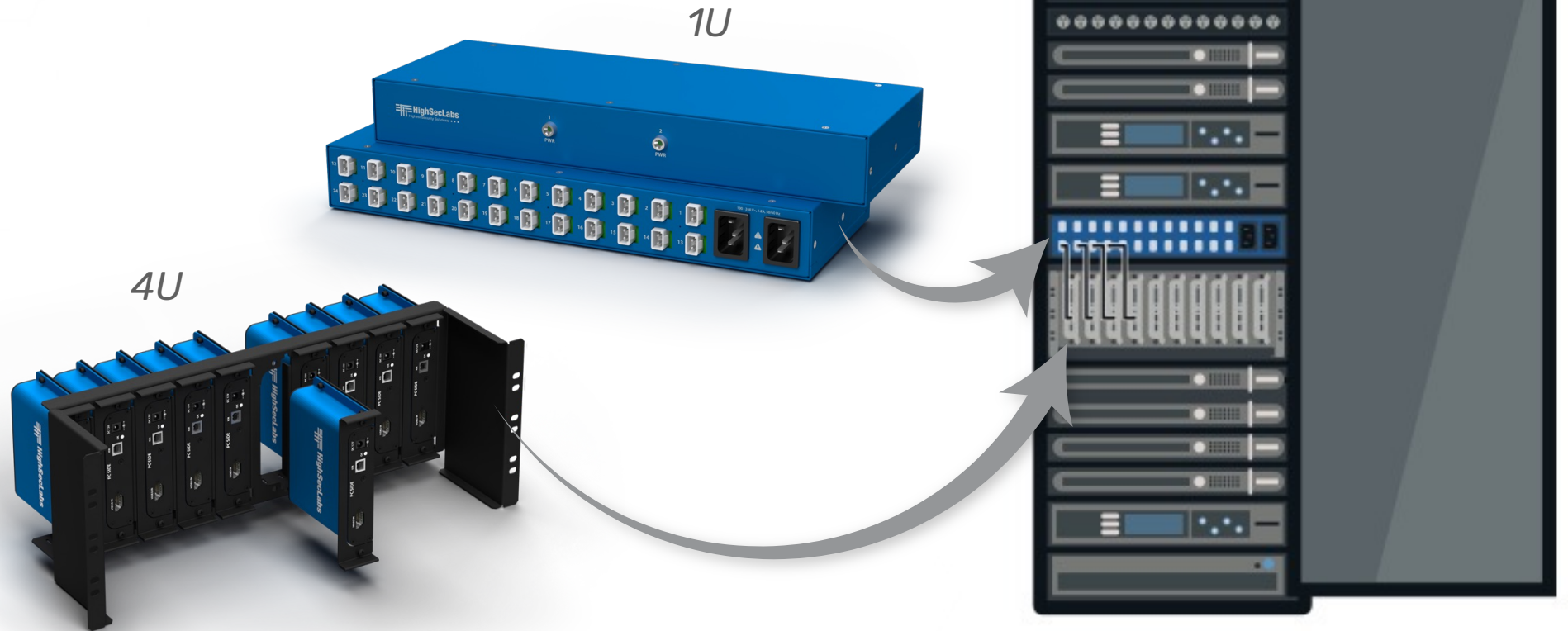
Optional models:

- 12/24 outlets, 12V hub
- 12 outlets, 48V hub – specially for PoE copper extenders
- 1U Size



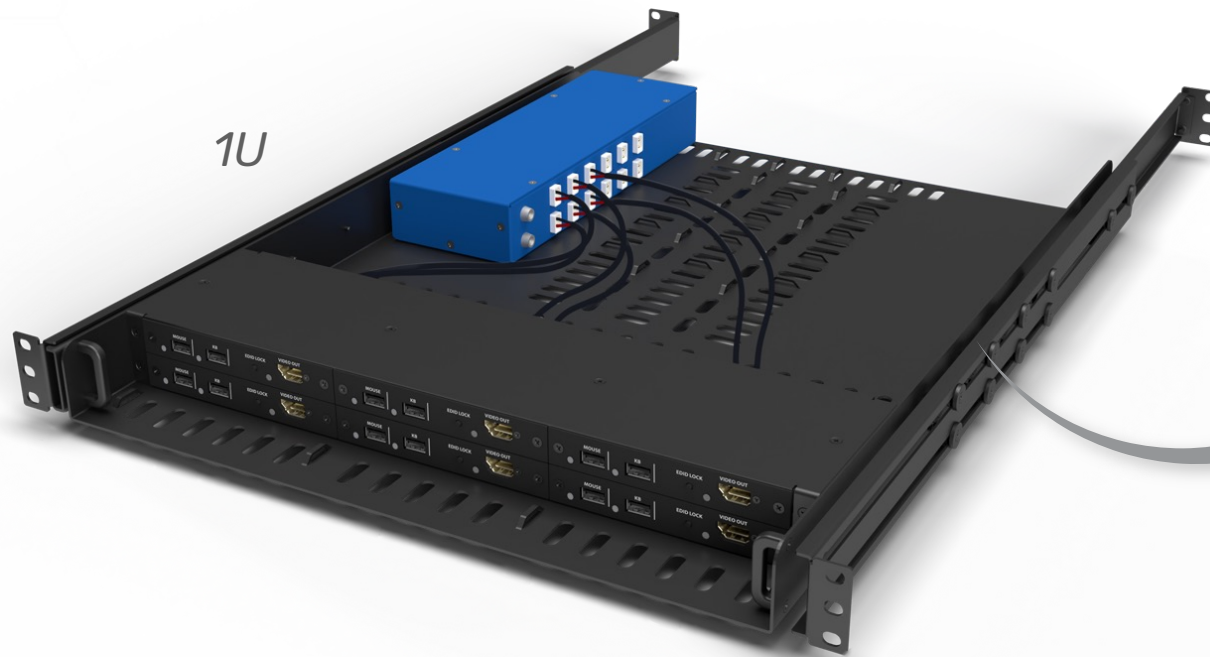
ACCESSORIES – RACK MOUNT KIT

Mount up to 10 FV11X/FI11X Isolators
in a 19" 4U rack space.



ACCESSORIES – RACK MOUNT KIT

Mount up to 6 FI11X/FV11X Isolators
in a 19" 1U rack space.



HSL ISOLATOR MODELS SUMMARY

Model	Description
Secure Isolators	
FI11H-M	HDMI Secure KVM Isolator
FI11D-M	DVI Secure KVM Isolator
FI11PH-M	DP/HDMI Secure KVM Isolator
FV11H-M	HDMI Secure Video Isolator
FV11D-M	DVI Secure Video Isolator
FV11PH-M	DP/HDMI Secure Video Isolator
FF11N-4	RS-232 Configurable Filter
FT11N-4	RS-232 Isolator Diode
FXJ11N-4	RS-232 Configurable XML and JSON filter
CP11N-4	RS-232 Configurable Copy-and-paste filter
Accessories	
PDUI24/12	PDUI24 - 24 Port 12v DC Junction box/PDUI12 - 12 Port 12v DC Junction box
RK-4U-HKS-10	Rack Mount KIT 4U
RK-1U6-FI11X-M	6 Isolators Metal Chassis Tray Packing Kit

Thank You

For more info:



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