

UNCLASSIFIED

# SECURE ISOLATORS



Secured Unidirectional Data Flow  
for Video/KVM Solutions

HLT27326 Rev. D

 **HighSecLabs**  
Highest Security Solutions ●●●

# ISOLATORS FAMILY OVERVIEW

## Secure Isolators Device Types:

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

## Accessories:

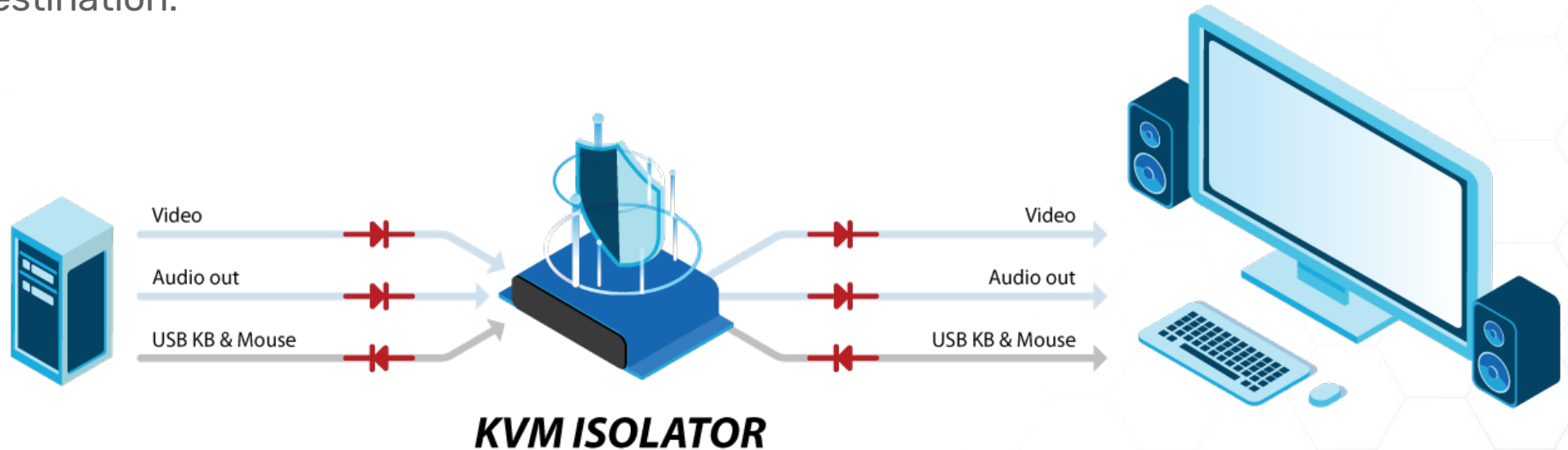
- Rack Mount Kit
- Power Distribution Unit for Isolators and Extenders - PDU



# 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.

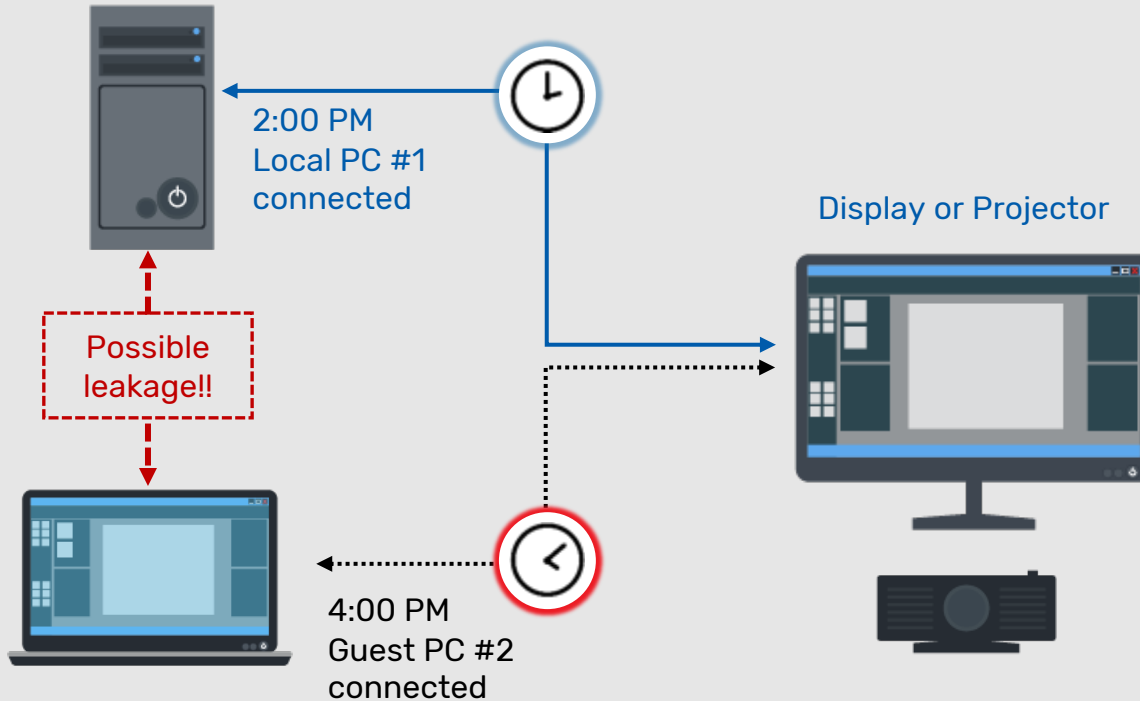
The Isolator ensures that only the necessary data is transferred from the source to the destination.



# MEETING ROOM

## ATTACK SCENARIO #1

### Delayed Data Leakage



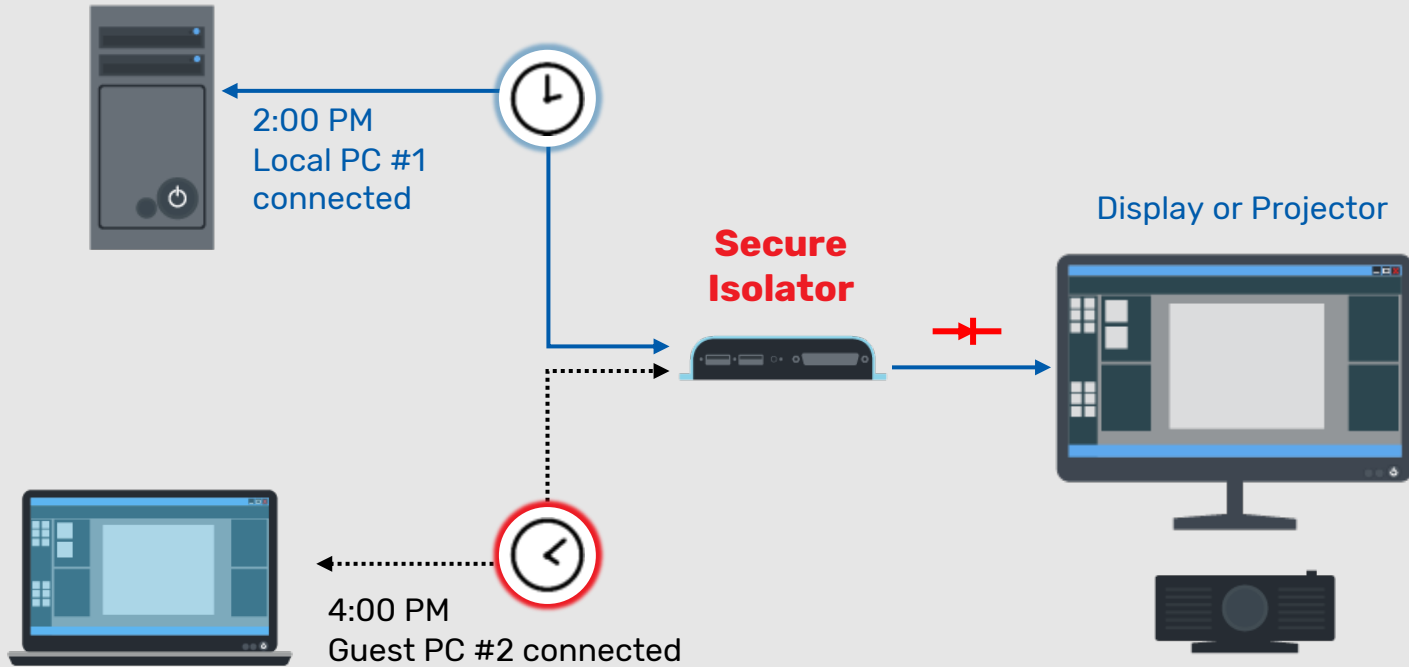
Several data leakage scenarios, in which different computers are connected at different times, can be demonstrated:

- 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

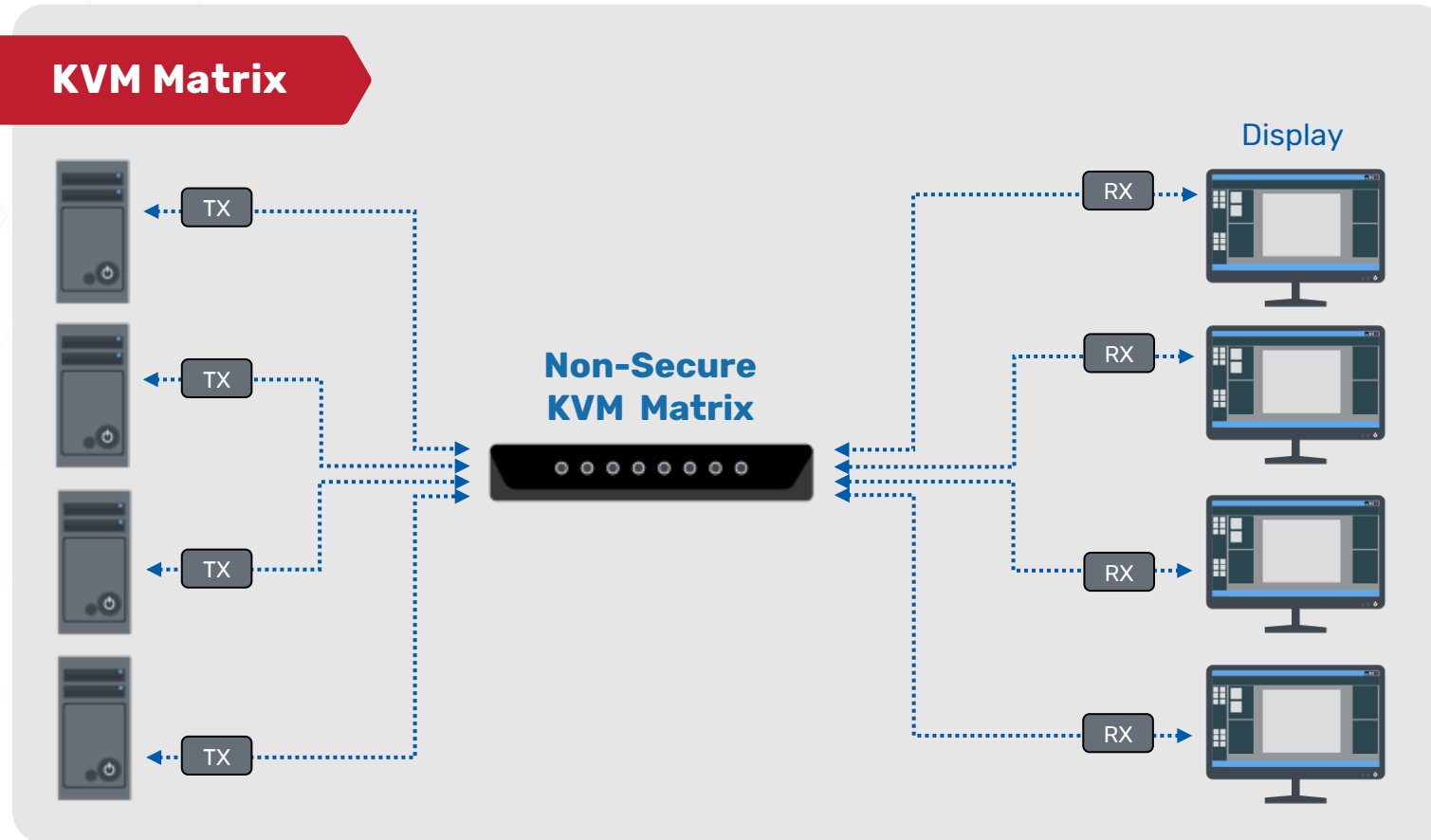


Problem solved by connecting an Isolator on the cable between the computer and the display, preventing data transfer from the display to the guest computer.

# COMMAND AND CONTROL

## ATTACK SCENARIO #2

### KVM Matrix



Possible switched data leakage scenarios:

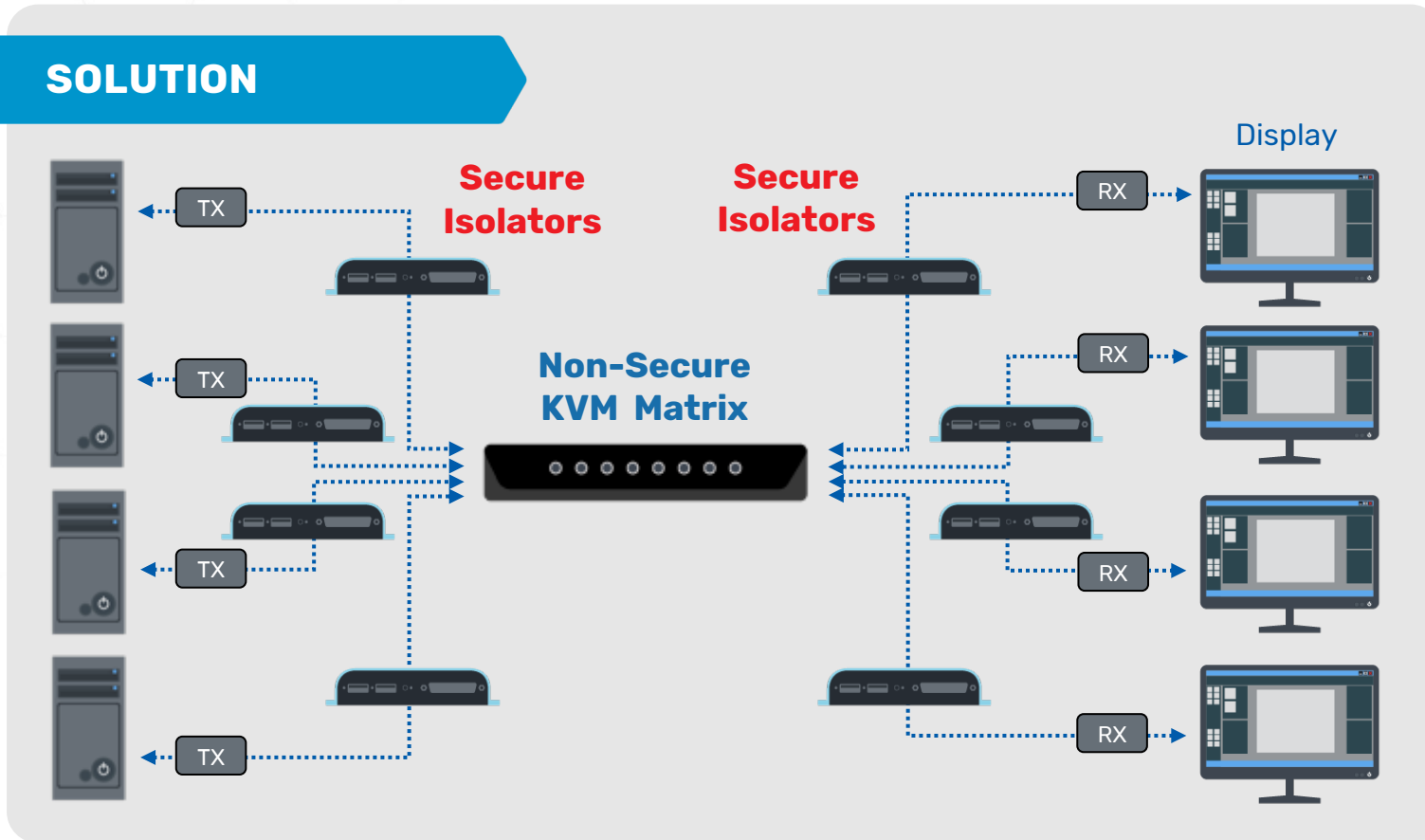
- Plug & Play attacks (VESA EDID)
- Fake control setting attacks (VESA MCCS)
- Signaling attack while switching over (slow leakage)

**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 and FT11N-4 are especially suited to protect in any scenario where command and monitoring information is sent between two otherwise separated networks.

SCADA, System synchronization, control commands and information sharing can all be securely done via the Secure RS-232 Isolator family.



# 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

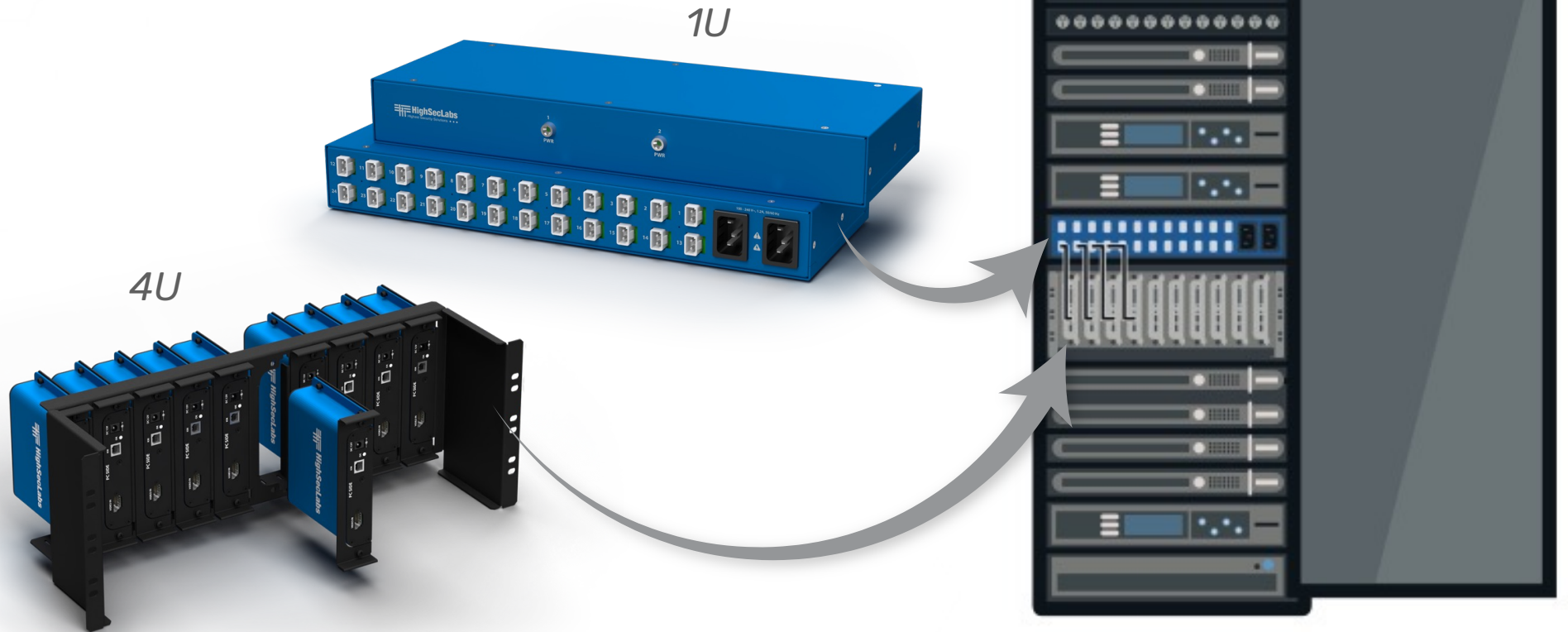
Optional models:

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



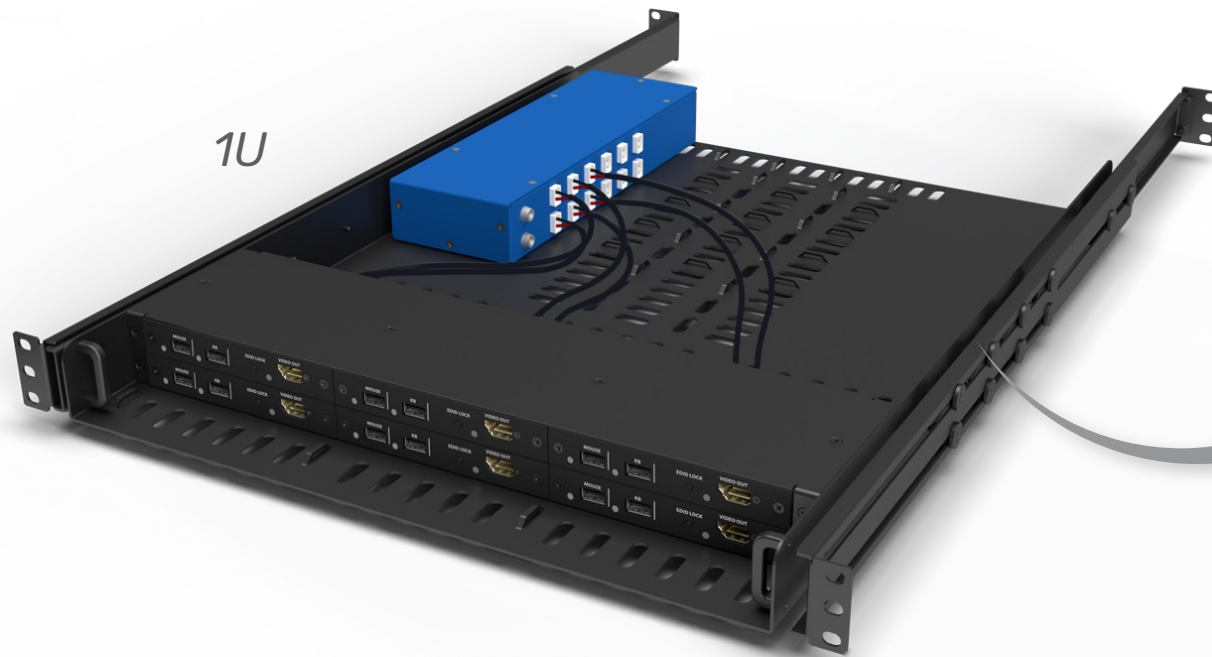
# ACCESSORIES – RACK MOUNT KIT

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
<b>Secure Isolators</b>	
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
<b>Accessories</b>	
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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