

# SECURE ISOLATORS

Secured Unidirectional Data Flow for Video/KVM Solutions



# Isolators Family Overview

HSL SECURE ISOLATORS

## Secure Isolators Device Types:

- Video
- KVM
- Mini-Video

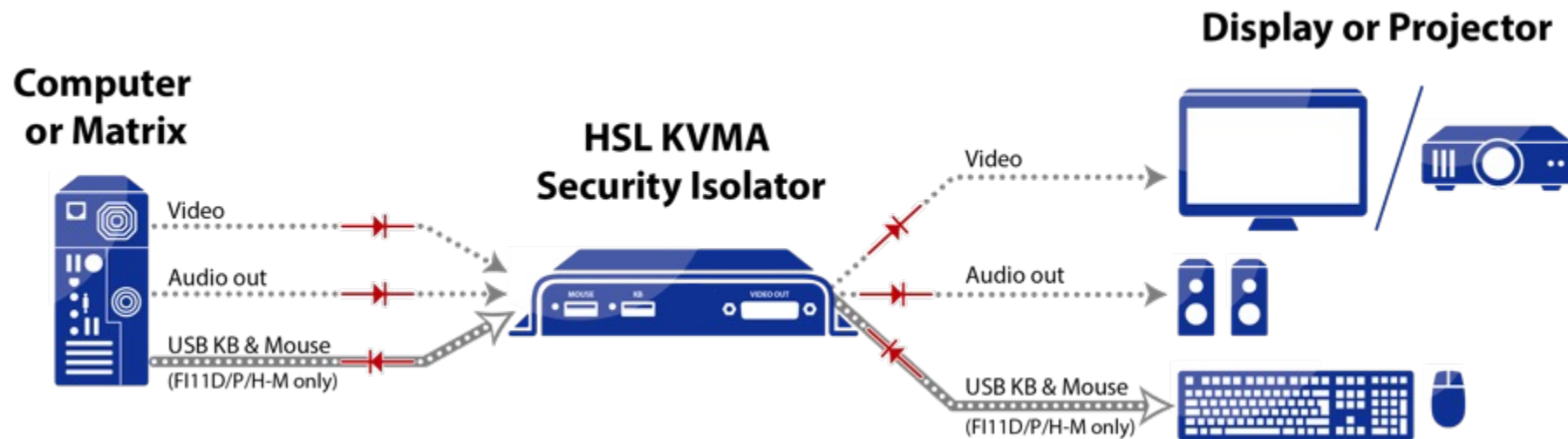
## Accessories:

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



# Secure KVM Isolators

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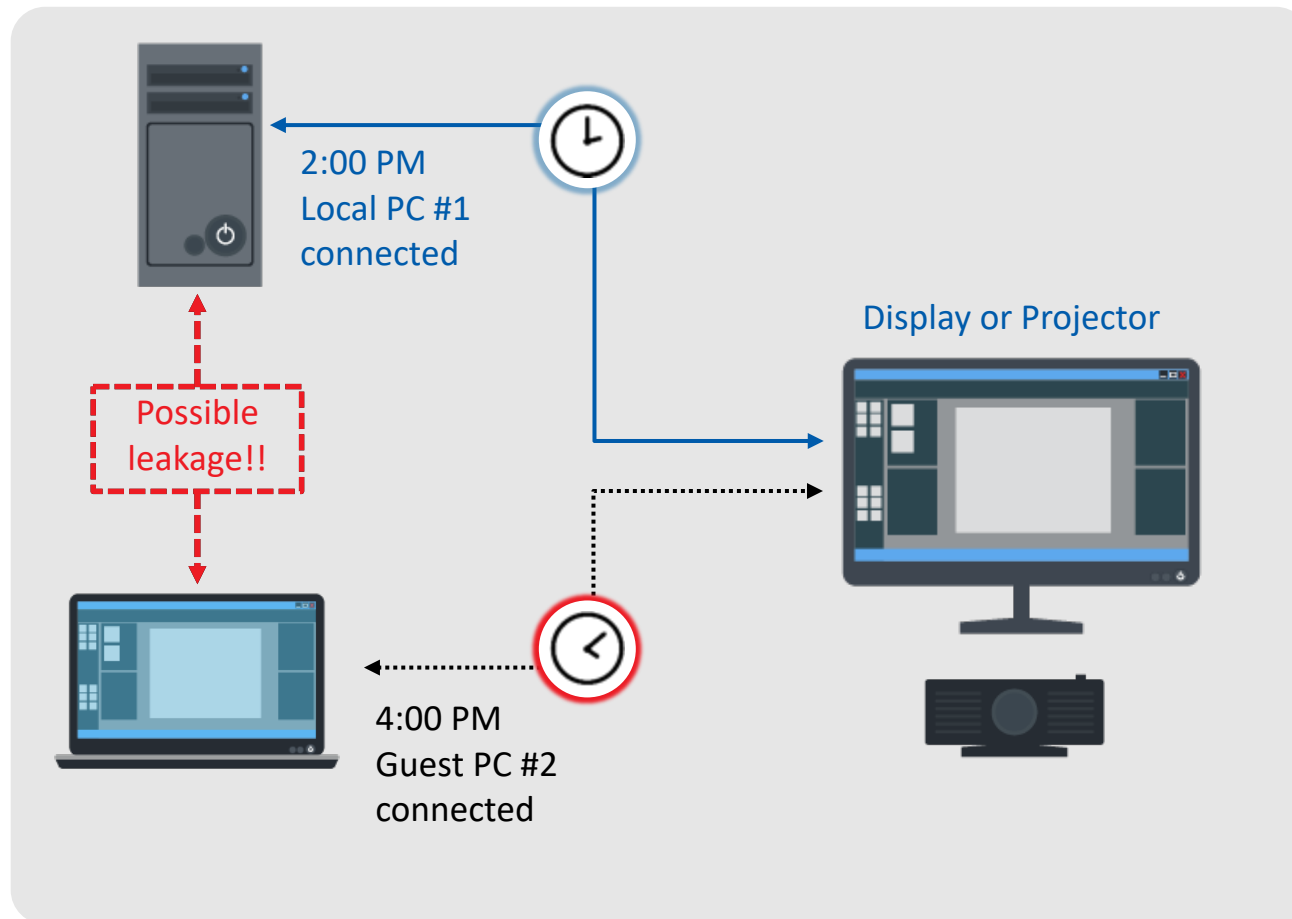


**HSL's Secure, NIAP PP4.0 Certified Isolators** ensure that computer video and USB data flow are filtered and flow unidirectionally. This prevents shared peripheral-threats from compromising network security.

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

# Attack Scenario #1 – Meeting Room

## Delayed Data Leakage



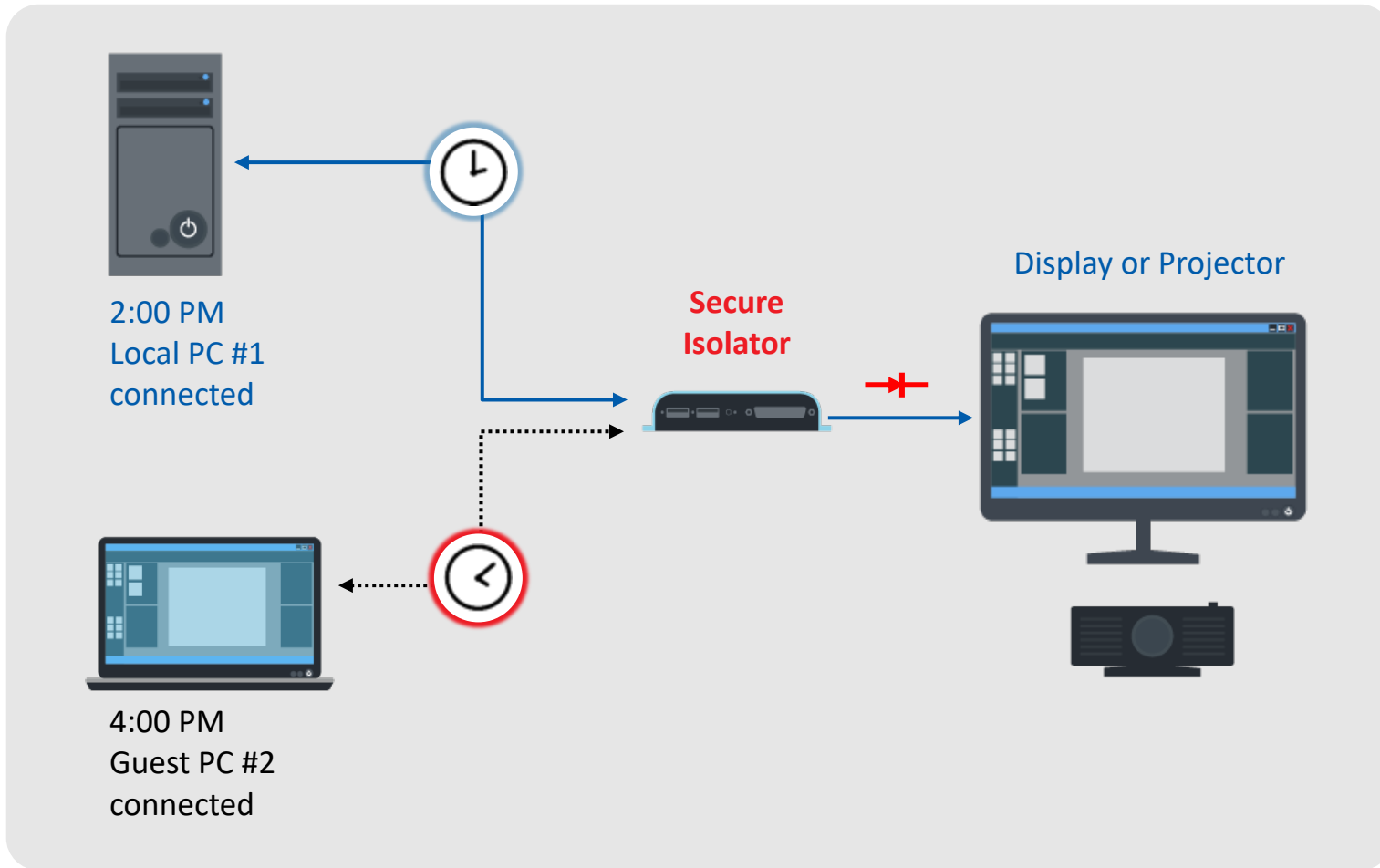
Several data leakage scenarios, in which different computers are connected at different times, can be demonstrated:

- EDID attacks
- Fake control setting attacks (VESA MCCA)
- 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.**

# Attack Scenario #1 – Meeting Room

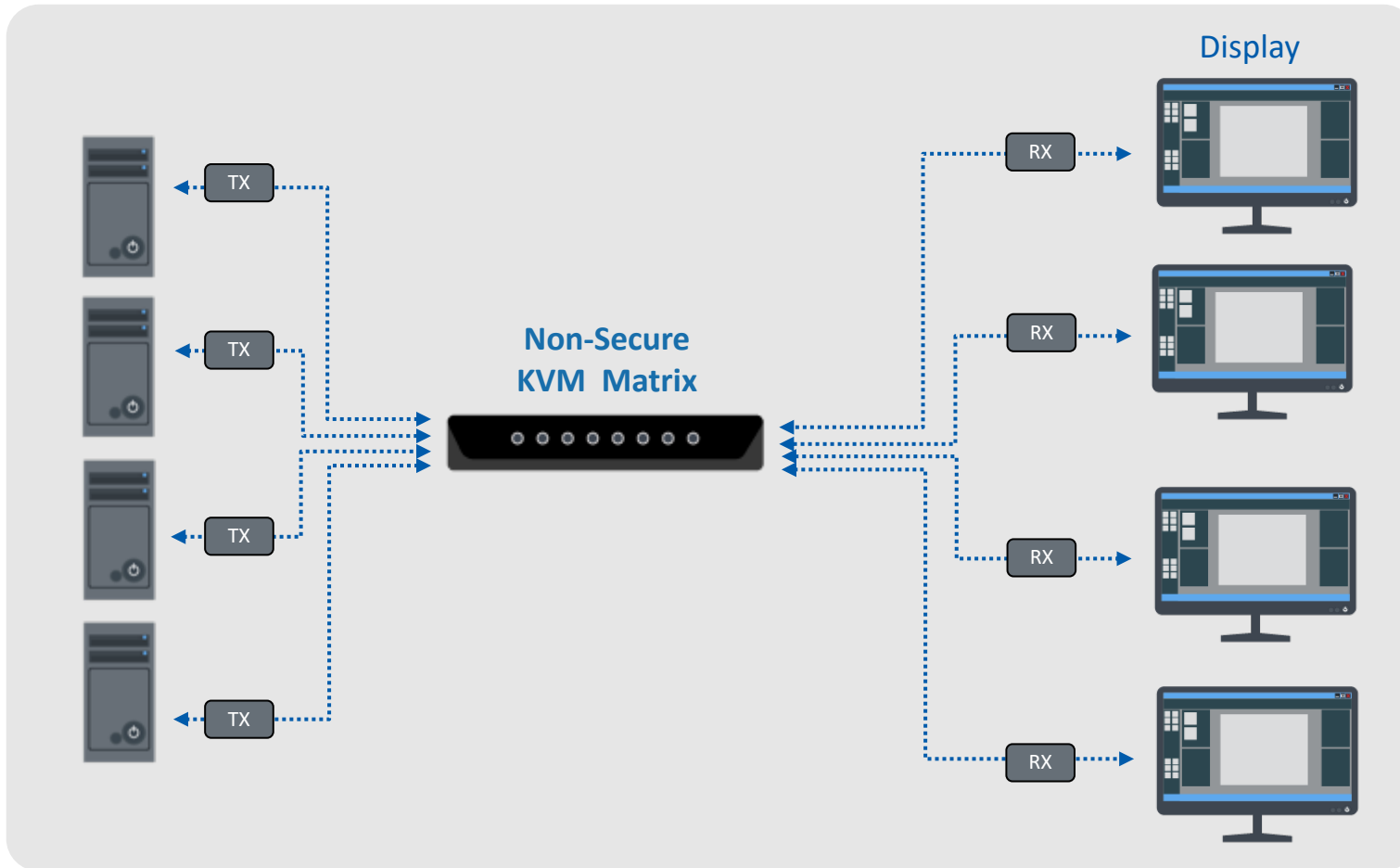
## Solution



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.

# Attack Scenario #2 – Command and Control

## KVM Matrix



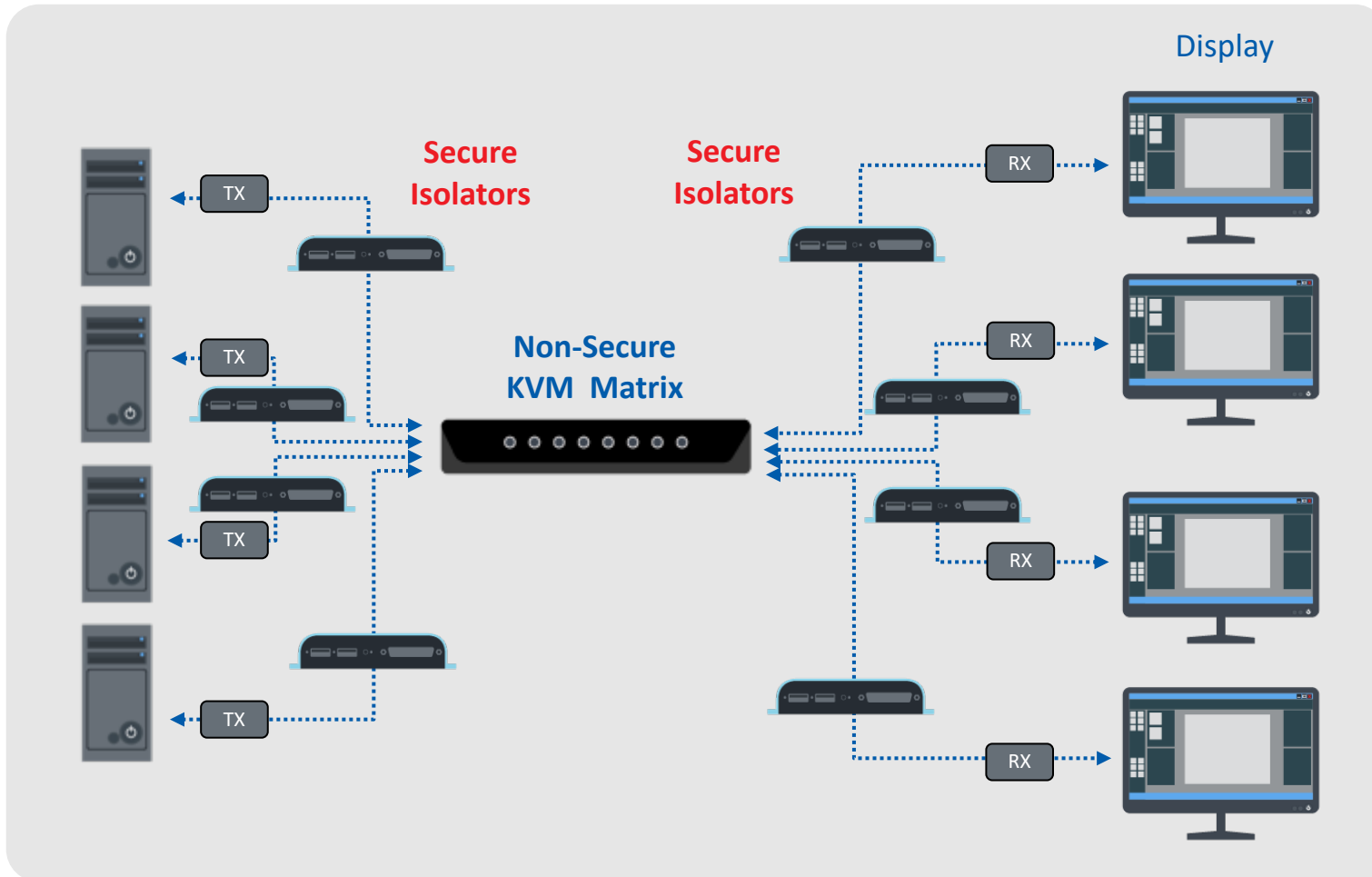
Possible switched data leakage scenarios:

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

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

# Attack Scenario #2 - Command and Control

## Solution



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

# New Secure Isolator Security Highlights

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- 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 combined connector
- New type of connector DP/HDMI combined connector on models FV11PH-M, FI11PH-M:  
Connect either type of cable – Display Port or HDMI
- Compatible with NIAP PP4.0 for PSD

DP\HDMI Connector





# HSL Secure Isolator Models – Video and KM Isolation



**Isolation of:**  
Video - DVI  
USB (Keyboard/Mouse)

**FI11D-M**



**Isolation of:**  
Video - DP/HDMI  
USB (Keyboard/Mouse)

**FI11PH-M**



**Isolation of:**  
Video - HDMI  
USB (Keyboard/Mouse)

**FI11H-M**

## On all models:

- Single PC source , single output display
- Resolutions - Up to 4K-2K Ultra HD resolutions (3840 X 2160 pixels)

# HSL Secure Isolator Models – Video only Isolation

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Isolation of:  
Video - DVI

FV11D-M



Isolation of:  
Video - DP/HDMI

FV11PH-M



Isolation of:  
Video - HDMI

FV11H-M

## On all models:

- Single PC source , single output display
- Resolutions - Up to 4K-2K Ultra HD resolutions (3840 X 2160 pixels)



**Isolation of:**  
Video - HDMI  
USB (Keyboard/Mouse)

**FI11H-MG**

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.

HDMI-HDMI



HDMI-DP



DP-DP



DP-HDMI



## 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 Display Port.

## 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:

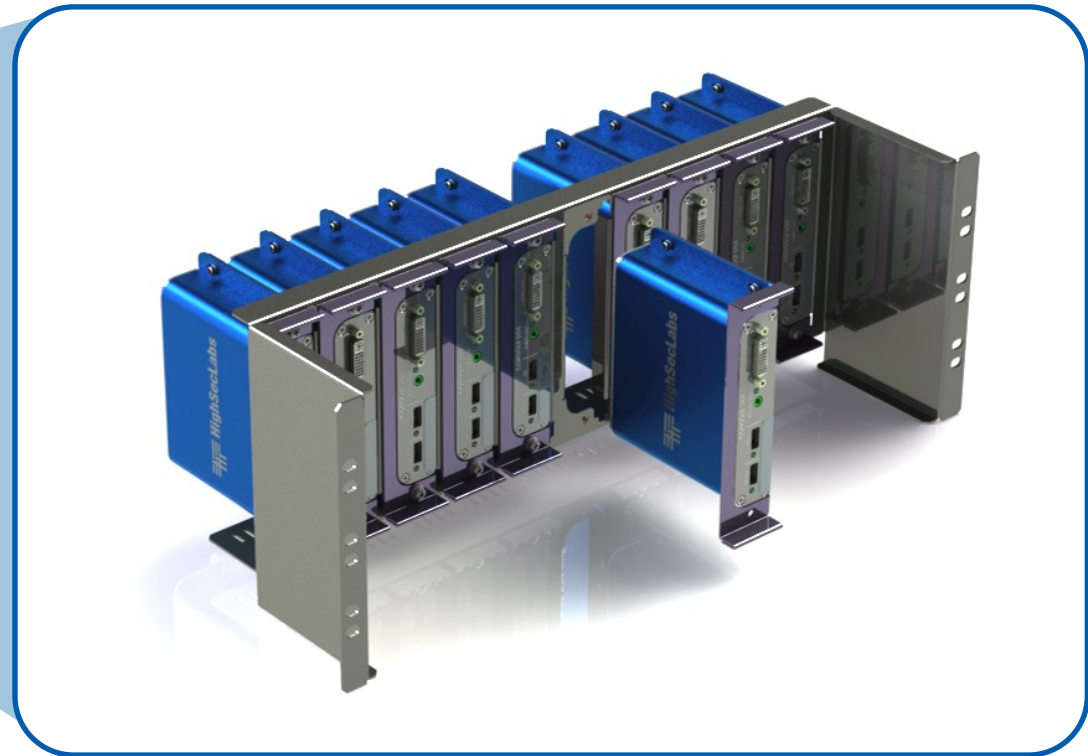
- 12/24 outlets, 12V hub
- 12 outlets, 48V hub – specially for PoE copper extenders
- 1U Size



# Accessories - Rack Mount Kit

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



# Accessories - Rack Mount Kit

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



# HSL Isolators and Extenders Models Summary

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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
<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