

UNCLASSIFIED

SECURE ISOLATORS

Secured Unidirectional Data Flow
for Video/KVM Solutions

HDC27326 Rev. N



 **HighSecLabs**
Highest Security Solutions

ISOLATORS FAMILY OVERVIEW

Secure Isolators Device Types:

- Video
- KVM
- Mini-Video

Accessories:

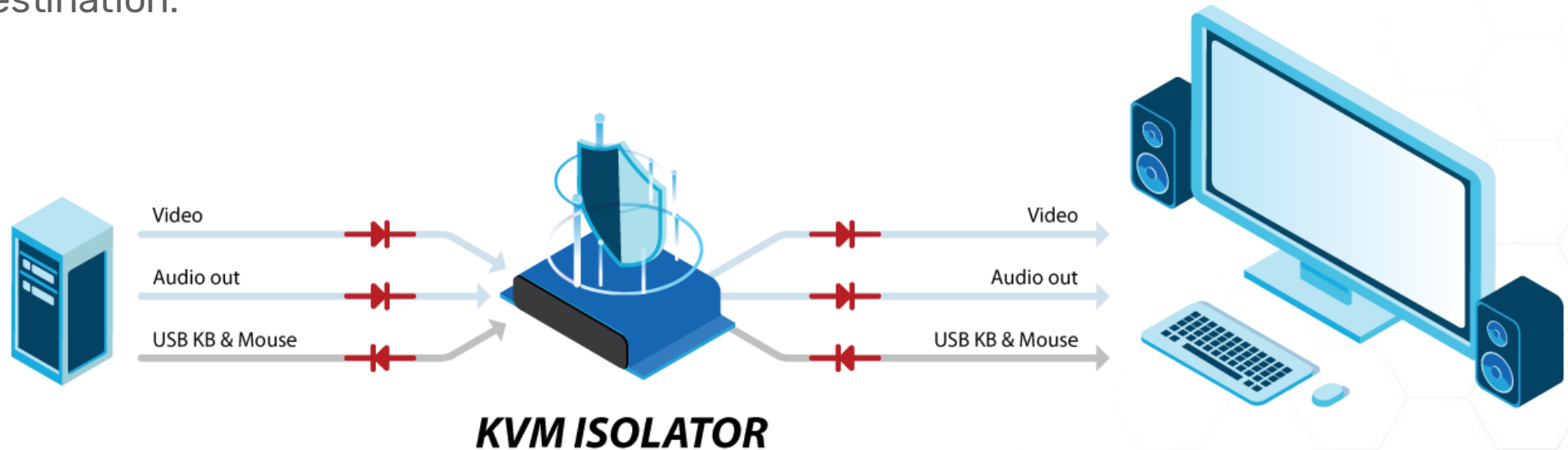
- Rack Mount Kit
- Power Distribution Unit for Isolators and Extenders - PDU



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.

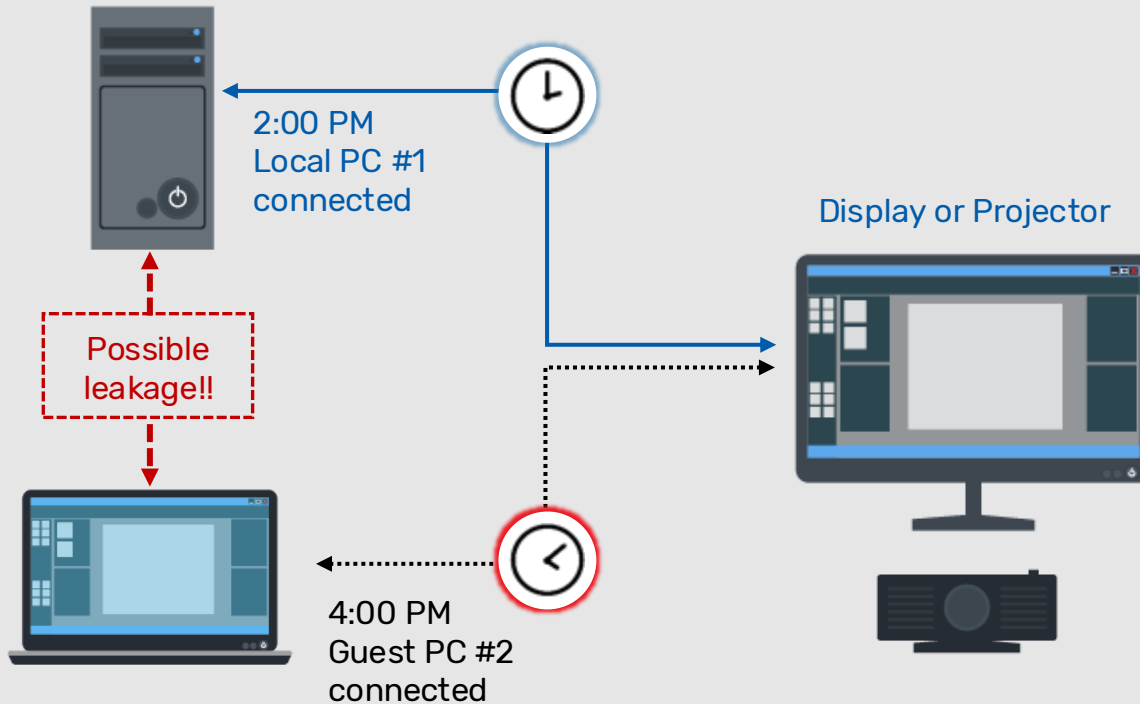
The Isolator ensures that only the necessary data is transferred from the source to the destination.



MEETING ROOM

ATTACK SCENARIO #1

Delayed Data Leakage



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

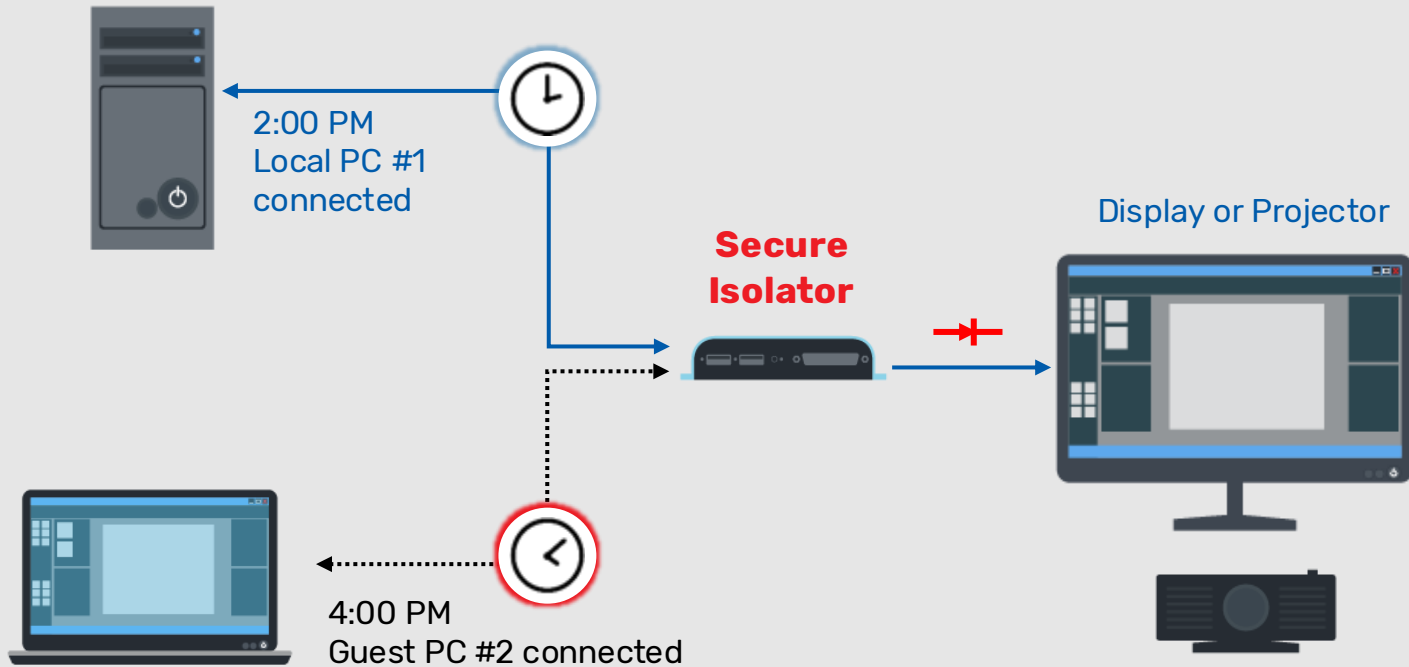
- EDID attacks
- Fake control setting attacks (VESA MDCS)
- Image upgrade attacks
- Asset management attacks

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

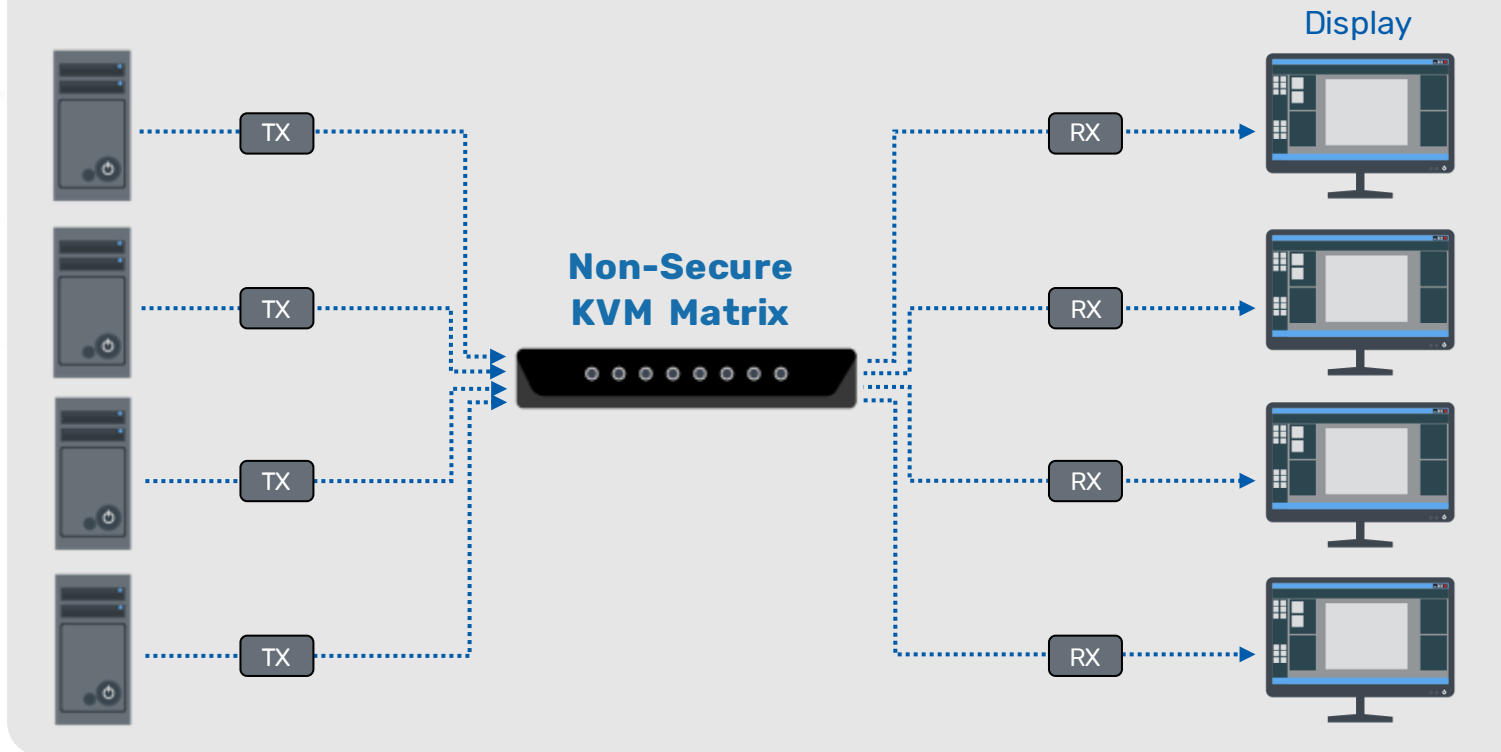


Problem solved by connecting an Isolator on the cable between the computer and the display, preventing data transfer from the display to the guest computer.

COMMAND AND CONTROL

ATTACK SCENARIO #2

KVM Matrix



Possible switched data leakage scenarios:

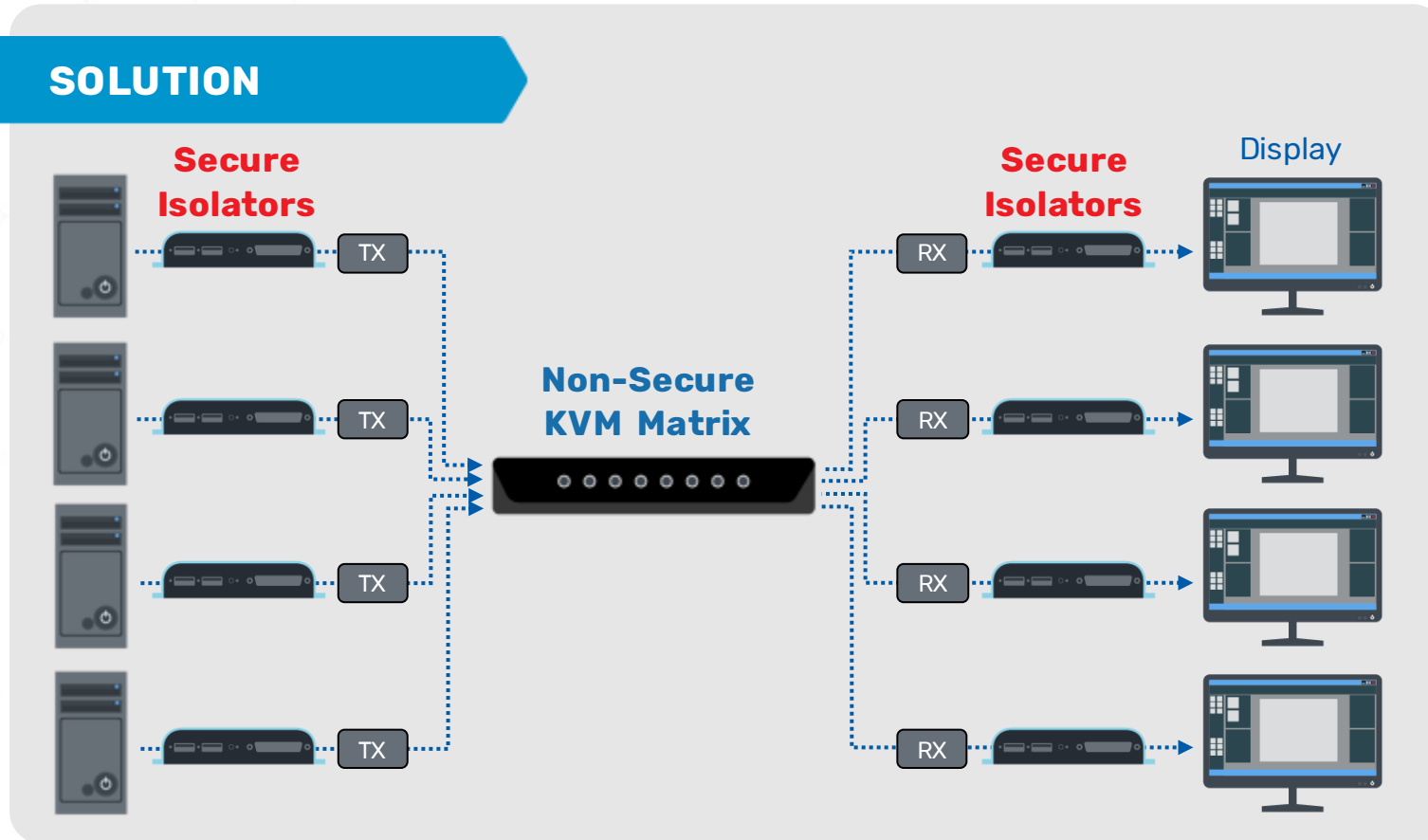
- Plug & Play attacks (VESA EDID)
- Fake control setting attacks (VESA MCCS)
- Signaling attack while switching over (slow leakage)

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

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border: 0;
outline: 0;
font-size: 100%;
vertical-align: baseline;
background: transparent;
margin: 0;
padding: 0;
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FI11PHT-ME & FI11PHR-ME

Isolation of:

Video - DP/HDMI

HID - USB

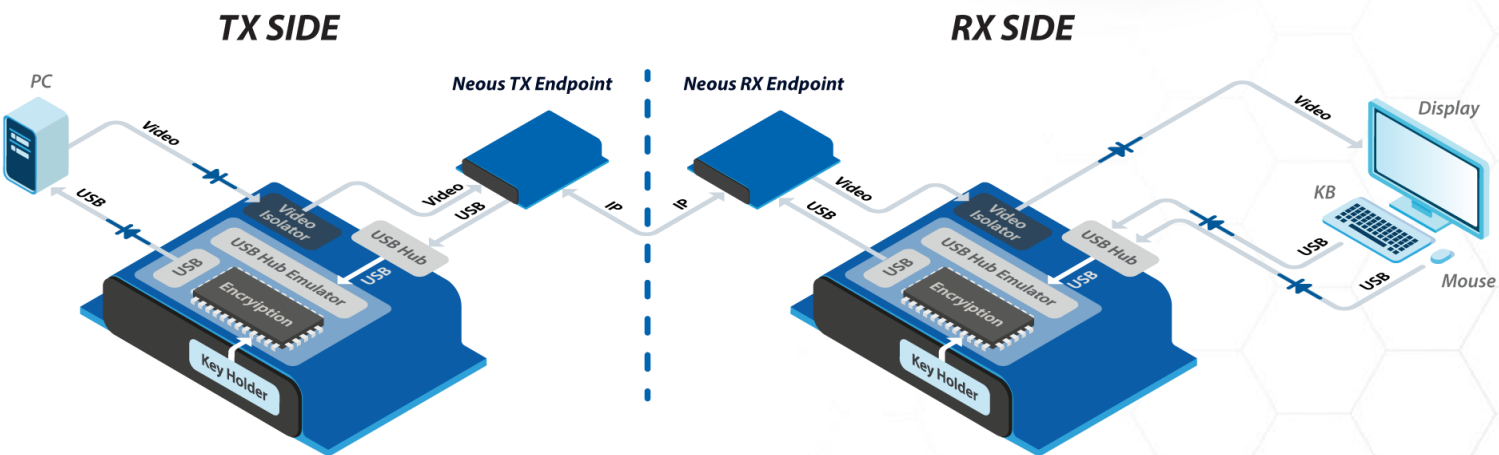
Encryption:

HID - AES-256 GCM



Application:

- Harden any KVM Extension
- Harden KVM over IP matrixes.
- NIAP PP4.0 PSD Certified
- FIPS 140-3 Compliant Encryption



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

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):

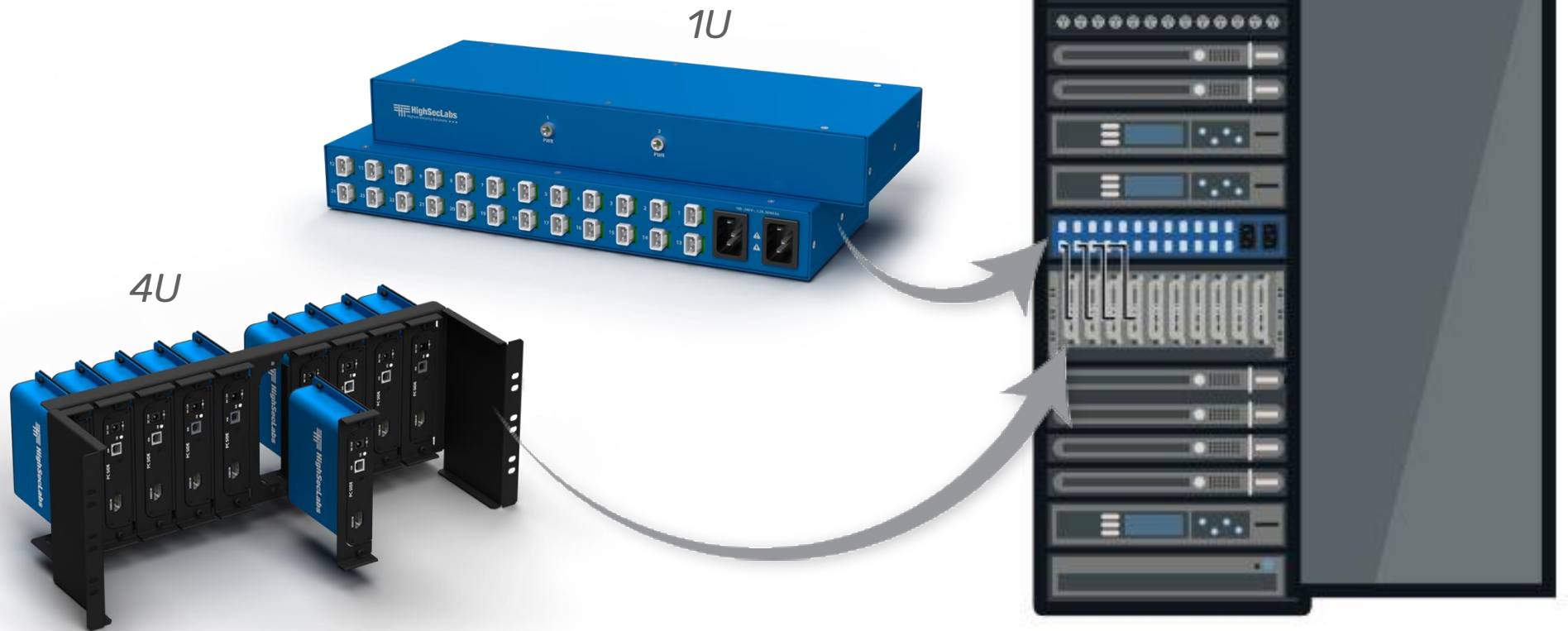
- Only one connection to an external power source; no need for a dedicated supply outlet for each adaptor
- A 12/24 outlet hub with built-in transformer instead of a separate power adaptor for each Isolator

Model	Outlets	Voltage	Watt	Size
PDUI24	24	12V	250W	1U
PDUI12M	12	12V	40W	1U
PDUI12	12	12V	84W	1U
PDUI10SR	10	12V	250W	1U
PDUI10-48V	10	48V	260W	1U



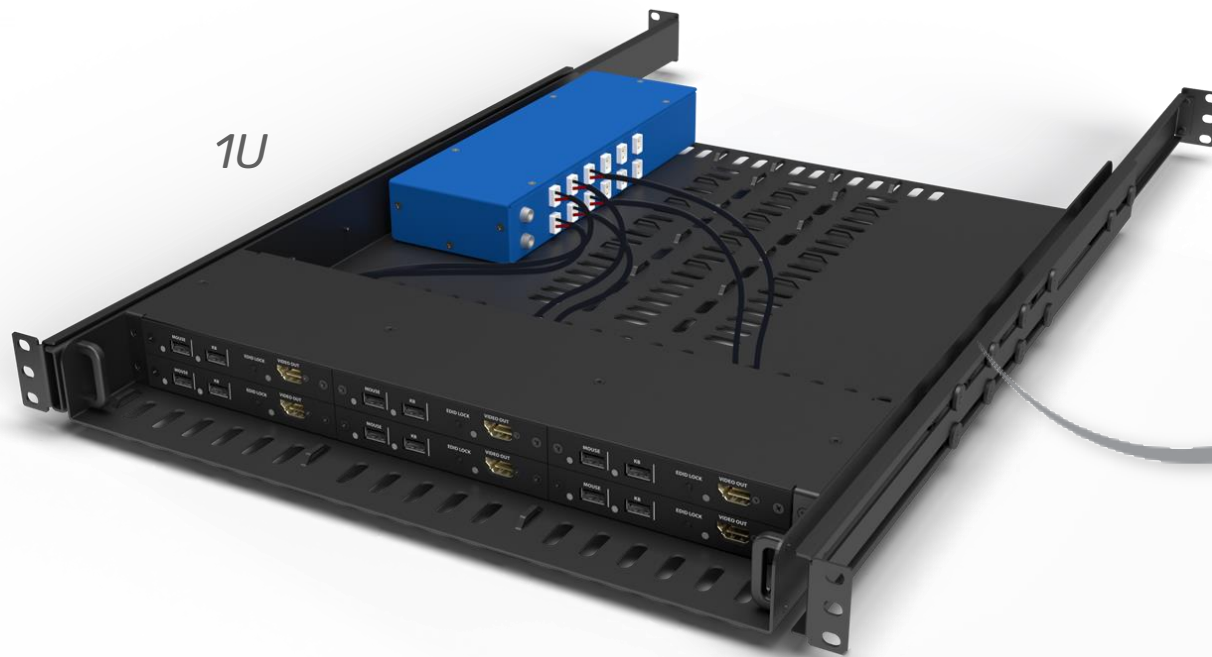
ACCESSORIES – RACK MOUNT KIT

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
FV11HH-MM	HDMI/HDMI Secure Mini Video Isolator
FV11HH-MMF	HDMI/HDMI (Female-Female) Secure Mini Video Isolator
FV11PH-MM	DP/HDMI Secure Mini Video Isolator
FV11HP-MM	HDMI/DP Secure Mini Video Isolator
FV11PP-MM	DP/DP Secure Mini Video Isolator

Model	Description
Accessories	
PDUI10SR	10 Ports 12V DC Junction Box for Neous™
PDUI10-48V	10 Port 48V DC Junction Box
PDUI12	12 Port 12V DC Junction Box
PDUI12M	12-Port 12V DC Junction Box (Small Form Factor)
PDUI24	24 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:



www.highseclabs.com | info@highseclabs.com

