

UNCLASSIFIED

KVM Extenders



Extended data flow for Video/KVM solutions in both secure and commercial environments.

HLT28285 Rev. H

 **HighSecLabs**
Highest Security Solutions

KVM EXTENDERS HIGHLIGHTS

- **Extra Long Range**

Use either Fiber (10km) or Copper (100m) to connect between source and display.

- **DP/HDMI Combo Connector**

Connect both types of cables – Display Port and HDMI, including format conversion.

- **POE & POC Support**

Power Extender RX via POE using 48V connected to TX unit, or POC using 12V connected to TX or RX unit, depending on the model.

- **High Performance**

Using zero latency HDBaseT and SDVoE technology

- **Made in the USA, BAA and TAA Compliant.**

EXTENDERS FAMILY OVERVIEW

Device Types:

- Secure Extended Isolators
- Commercial Extenders

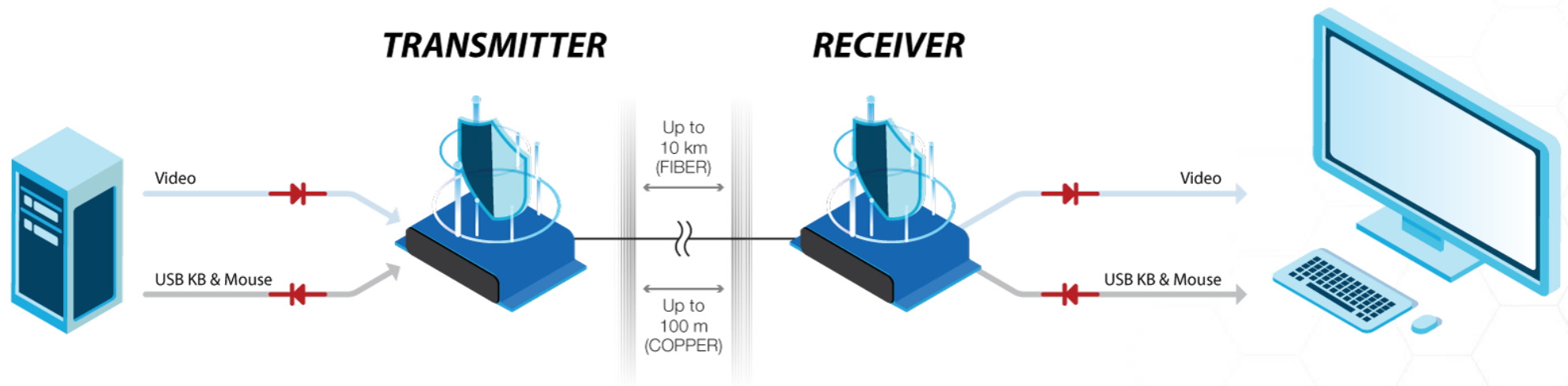
Accessories:

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



SECURE EXTENDED ISOLATOR

HSL's Secure, NIAP PP4.0 Compatible Extended Isolators enable secure unidirectional and filtered long-distance extension of computer video and keyboard/mouse signals, while preventing vulnerable peripherals from compromising network security.

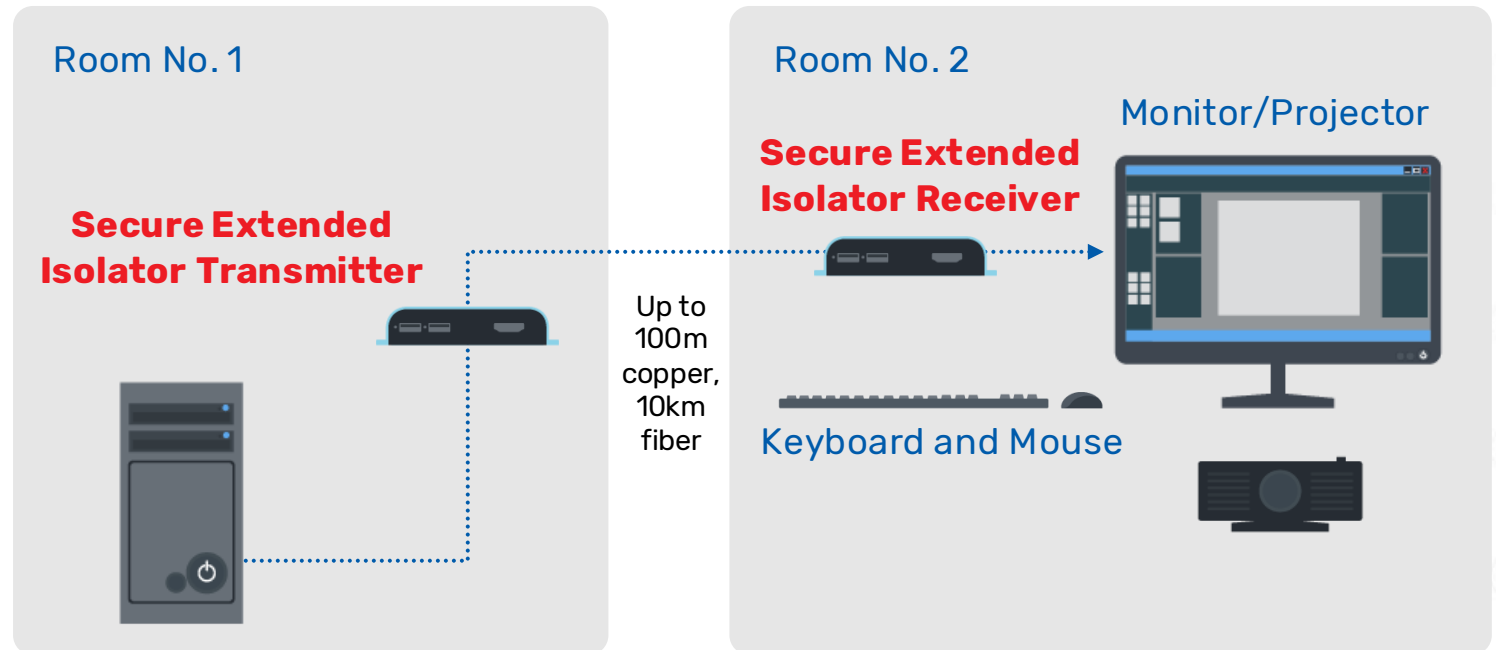


HSL SECURE EXTENDED ISOLATOR USE CASES

Use Case #1 – Remote PC

Remotely project to monitor or projector: The protected PC projects video to a remotely located room via an Extender.

HSL's Secure Isolated Extender ensures the security and protection of the connected PC.



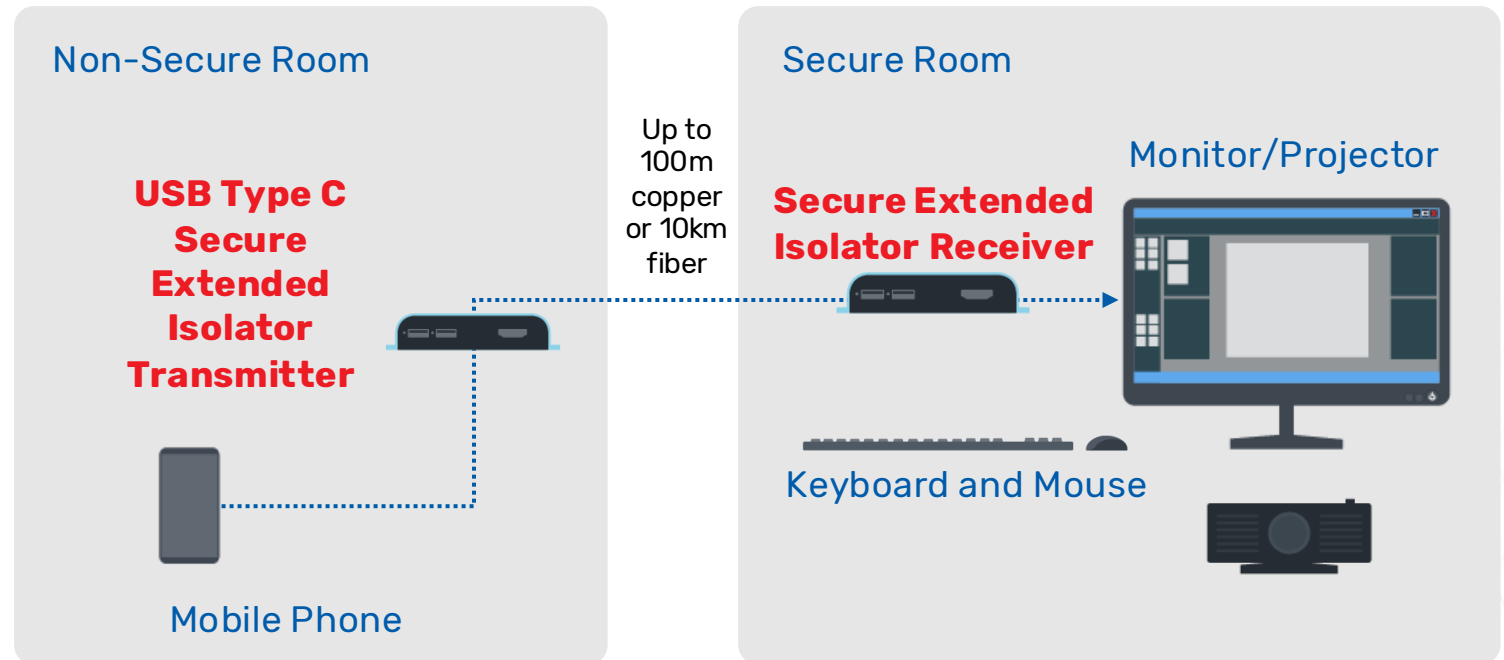
The HSL Secure Extended Isolators remotely transfer not only video and audio, but also the keyboard and mouse. The remote PC can be securely operated from the monitor/projector side. The Keyboard/Mouse USBs are unidirectional, filtered and secure.

HSL SECURE EXTENDED USB TYPE-C ISOLATOR USE CASES

Use Case #2 – Remote Mobile Devices

Remotely use a smartphone through the Extended Isolator.

Often in secure environments mobile devices are not allowed inside the facility.

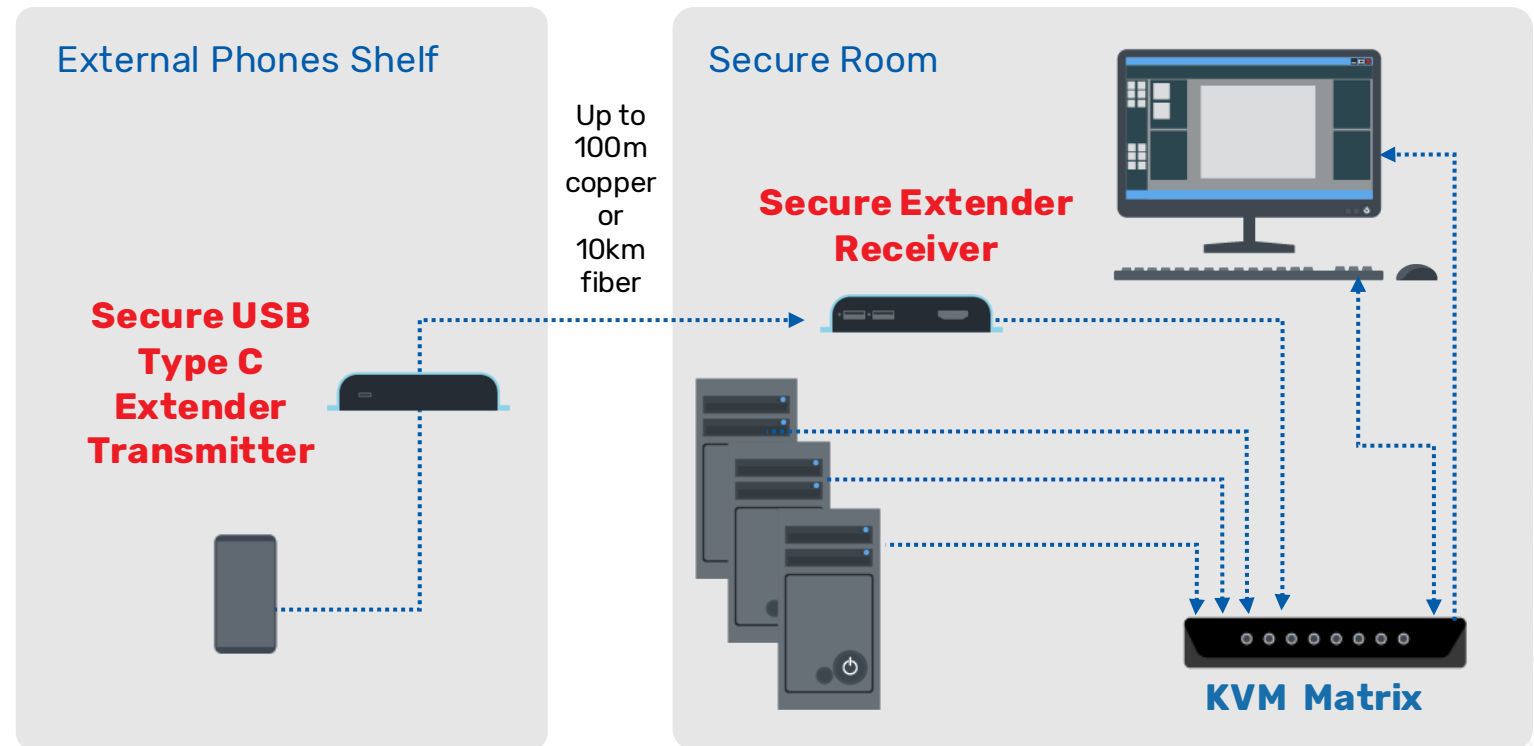


The Secure Extended Isolator with a USB Type-C port provides a secure connection to the phone that is left outside the secure room, without compromising the security of other devices in the secure room.

HSL SECURE EXTENDED ISOLATOR USE CASES

Use Case #3 – Remote Mobile to a Secure Room with KVM Matrix

The mobile phone can also be connected through the Secure Extender to the KVM Matrix in the secure room and be operated from there with the same set of display, KB & mouse. The devices and computers in the room will be fully isolated from the smartphone that is connected to a non-secure network.



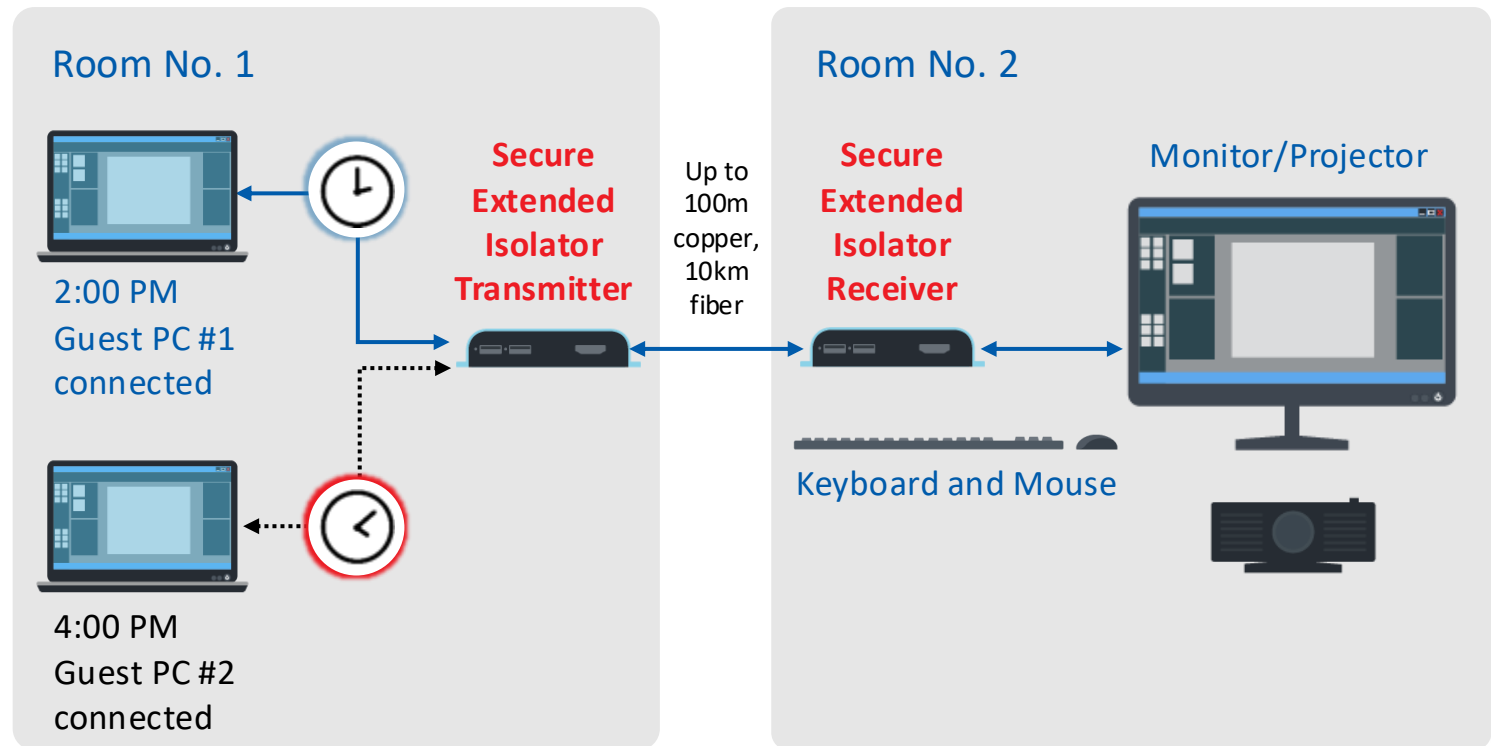
HSL SECURE EXTENDED ISOLATOR USE CASES

Use Case #4 – Meeting Room

PCs being connected at different times are vulnerable to different attacks, using the peripheral as an intermediary:

- EDID
- Fake control (VESA MCCA)
- Image upgrade
- Asset Management

Data can leak between the PCs even when not connected simultaneously



Problem solved (above) by connecting an isolator between the computer and the display/KBD/mouse, preventing data leakage between the computers.

SECURE EXTENDED ISOLATOR – DEVICE FEATURES

- Fiber or copper cable connecting options, enable a connection of up to 10km between the source and the console
- Uses high performance HDBaseT technology for zero-latency between transmitter and receiver units
- High quality video support @ 4K 30Hz resolution
- DP/HDMI combo connector
Connect both type of cables – Display Port and HDMI with auto-format conversion as required.

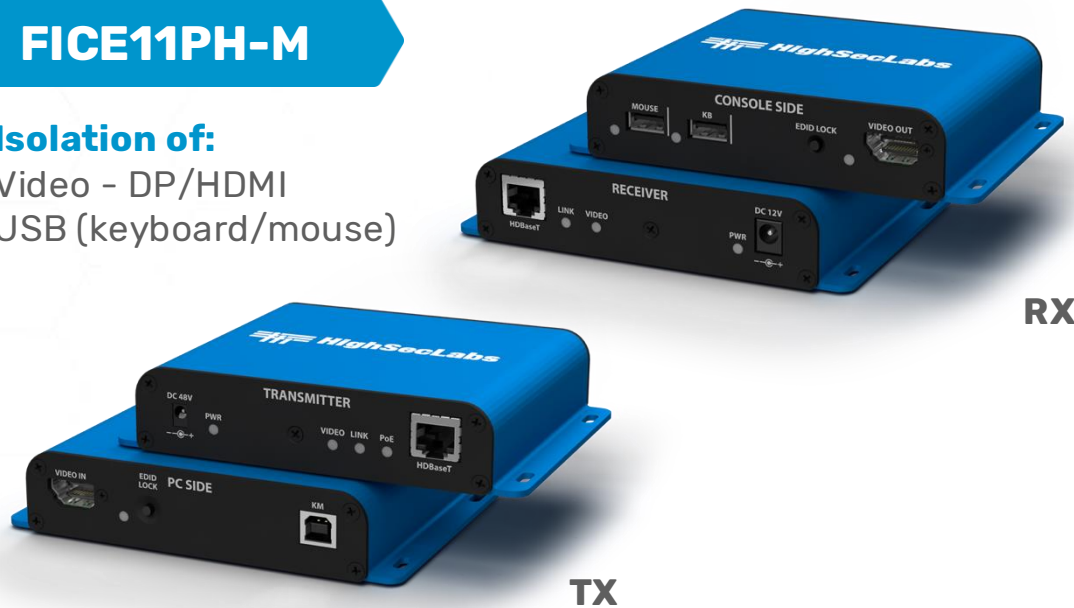


SECURE EXTENDED ISOLATOR - **COPPER** MODELS

FICE11PH-M

Isolation of:

Video - DP/HDMI
USB (keyboard/mouse)



FVCE11PH-M

Isolation of:

Video - DP/HDMI



- Single PC source, single output display
- Resolutions - Up to 4K Ultra HD resolutions (3840 X 2160 pixels) @30Hz.

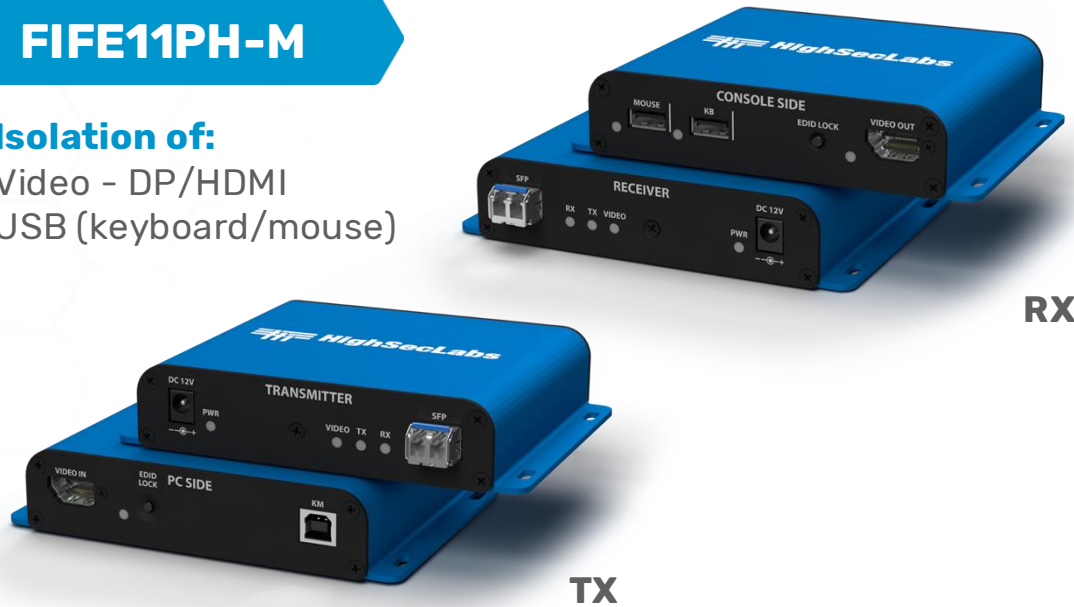
SECURE EXTENDED ISOLATOR

FIBER MODELS

FIFE11PH-M

Isolation of:

Video - DP/HDMI
USB (keyboard/mouse)



FVFE11PH-M

Isolation of:

Video - DP/HDMI



All Fiber Extender models:

- Single PC source, single output display
- Resolutions - Up to 4K Ultra HD resolutions (3840 X 2160 pixels) @30Hz, up to 10km (depending on GBIC type)

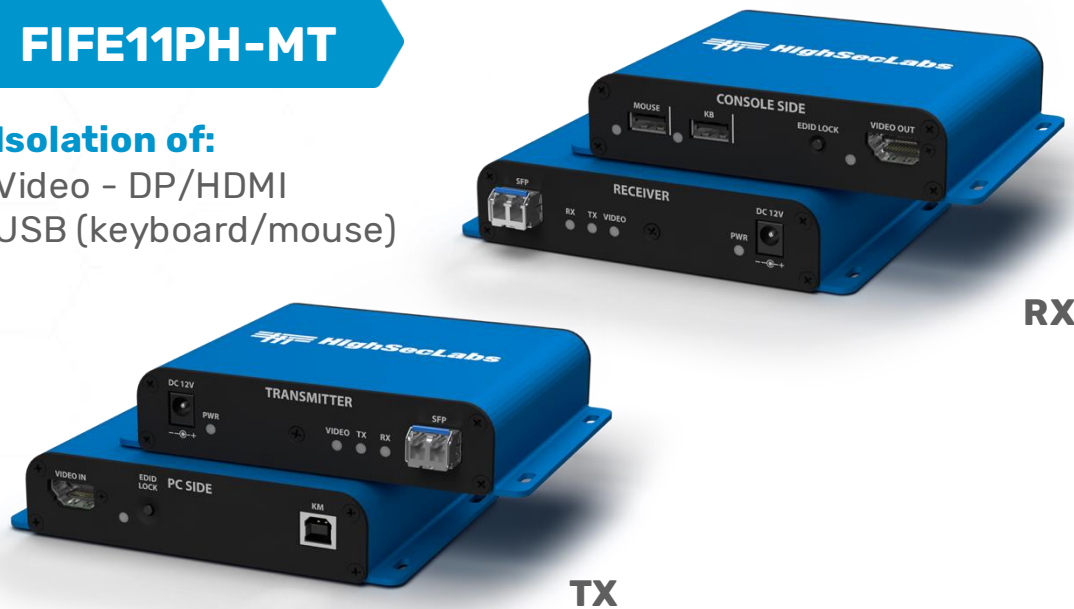
SECURE EXTENDED ISOLATOR

TEMPEST MODELS

FIFE11PH-MT

Isolation of:

Video - DP/HDMI
USB (keyboard/mouse)



FVFE11PH-MT

Isolation of:

Video - DP/HDMI



TEMPEST Extender models:

- Single PC source, single output display
- Resolutions - Up to 4K Ultra HD resolutions (3840 X 2160 pixels) 30Hz, up to 10km (depending on GBIC type)

- TEMPEST Level B Compliant
- NIAP PP4.0 PSD Compliant

EXTENDERS – COPPER & FIBER

RUGGED MODELS

FKFE11PH60-NTR

Extension of:

Video, KBD/Mouse
Fiber – 10Km range



FKCE11PH60-NTR

Extension of:

Video, KBD/Mouse
Copper – 100m range

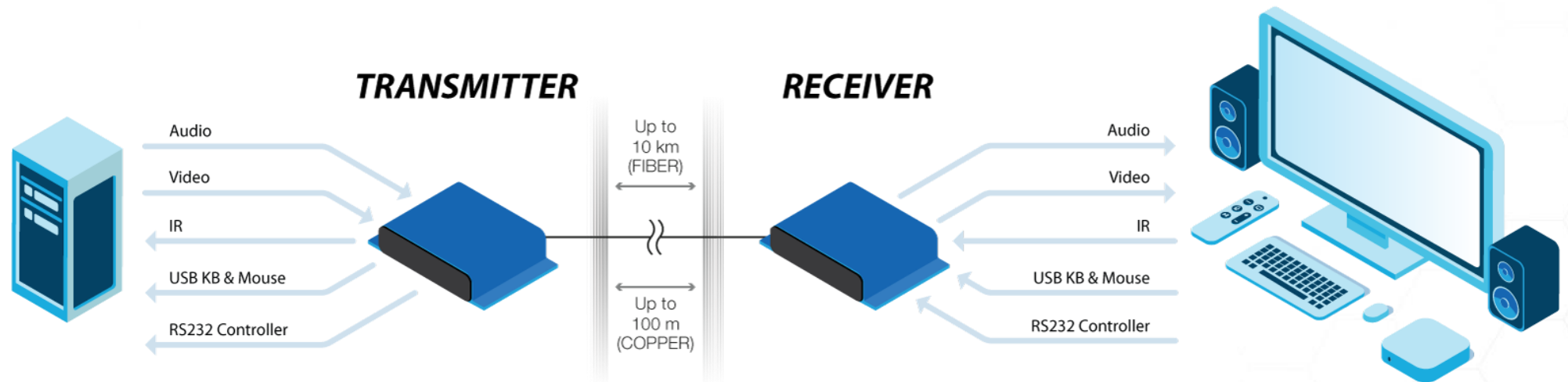


Rugged Extender models:

- 1 X DP/HDMI signal extension
- Up to 4K Ultra HD resolutions (3840 X 2160 pixels) @60Hz
- TEMPEST Level A Compliant
- 2 x HID USB; 1 x USB 2.0
- Audio
- IR Remote
- RS-232
- NIAP PP4.0 PSD Compliant
- MIL Spec: 810G, 461, 1275 and more

COMMERCIAL EXTENDERS

HSL's Commercial Extenders enable long-distance extension of computer video, audio, keyboard/mouse, and IR remote signals, using high performance HDBaseT technology.



The commercial Extender units support:

- Analog audio
- IR remote port
- Up to 4K, 60Hz video resolution

COMMERCIAL EXTENDER MODELS (1)

Fiber KVM Extender

FKFE11P-N

Extension: Fiber (Up to 10km)

Interfaces: Video - DP, Analog
Audio, USB, IR remote, RS-232,
PoE support



Fiber KVM Extender

FKFE11PH-N

Extension: Fiber (SFP module, up to 10km)

Interfaces: Video -
DP/HDMI, Analog
Audio, USB, IR remote,
RS-232



COMMERCIAL EXTENDER MODELS (2)

Copper KVM Extender

FKCE11PH60-N

Extension: Copper (100m)

Interfaces: Video - DP/HDMI, Analog Audio, USB, IR remote, RS-232
PoE support, 4K@60Hz



TX



RX

Copper KVM Economy Extender

FKCE11PHEC-N

Extension: Copper (70m)

Interfaces: Video - DP/HDMI, USB, IR remote, RS-232, PoC support, 4K@30Hz



TX



RX

COMMERCIAL EXTENDER MODELS (3)

Copper USB Extender

UMCE10N-N

Extension: Copper (up to 100m)

Interfaces: USB 2.0

Features: Single PC source, single output



USB 3.2 Extension with USB-C and USB-A Interfaces

UMCE10C-N

Extension: Copper (Up to 90m)

Interfaces: USB 3.2/2.0, 4 x Type A (RX) & 1 x Type C (TX), RS-232, PoC



COMMERCIAL EXTENDER MODELS (5)

Fiber High Performance SDVoE KVM Extender

FKFE11PHU60-N

Extension: Fiber (SFP module, up to 10km)

Interfaces: Video - DP/HDMI, Analog Audio, USB, IR remote, RS-232, 4K@60Hz, zero-latency



RX



TX

Copper High Performance KVM Extender

FKCE11PHU60-N

Extension: Copper (Up to 100m)

Interfaces: Video - DP/HDMI, Analog Audio, USB, IR remote, RS-232, 4K@60Hz, zero-latency



RX



TX

POWER DISTRIBUTION UNIT FOR ISOLATORS AND EXTENDERS - PDUI

Connect multiple Isolators and Extenders to computers in a rack.

Saves space and power outlets in 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 10 outlet hub with built-in transformer capability – instead of a separate power adaptor for each Extender.

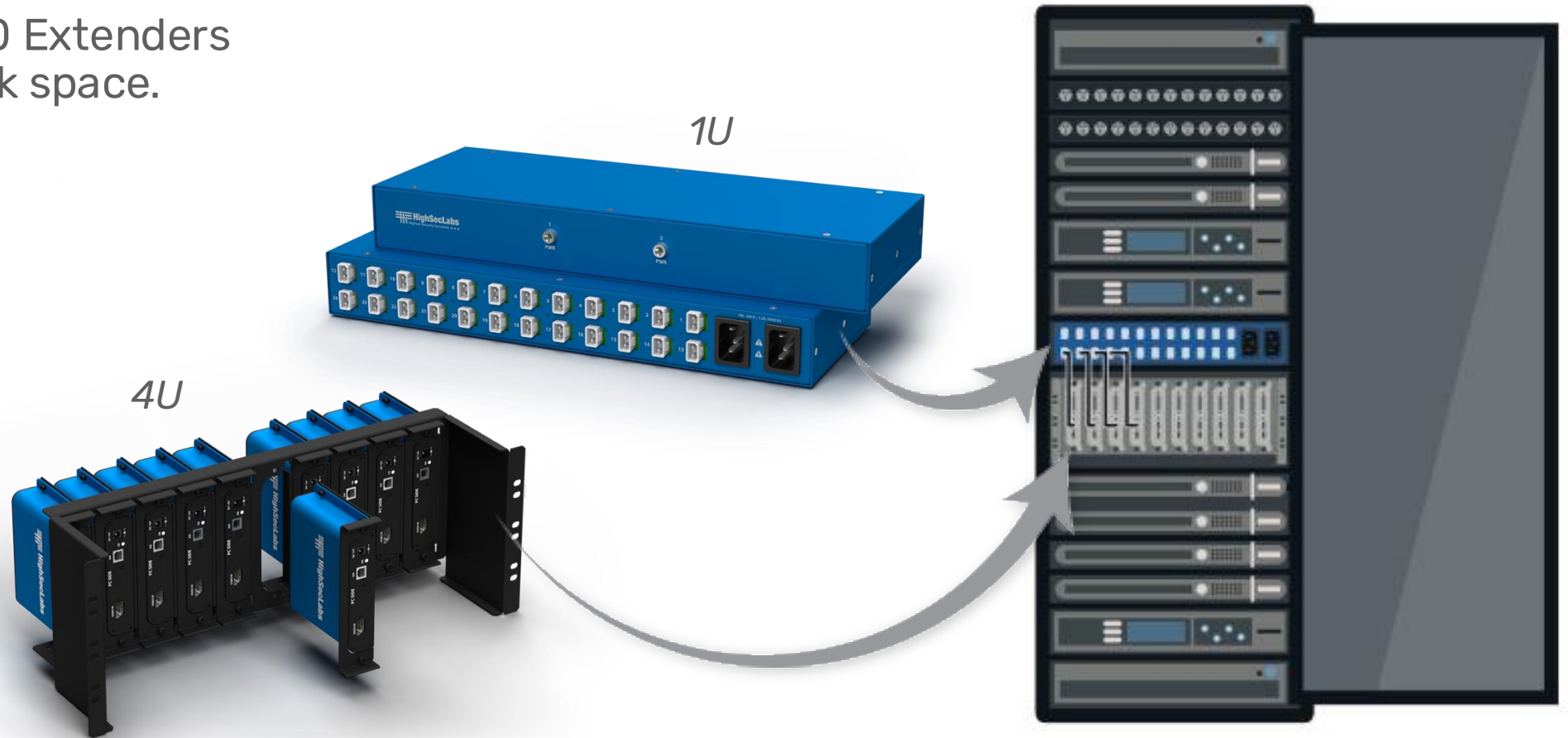
Optional models:

- 10/12/24 outlets, 12V hub
- 10 outlets, 48V hub – specially for PoE copper extenders.
- 1U Size



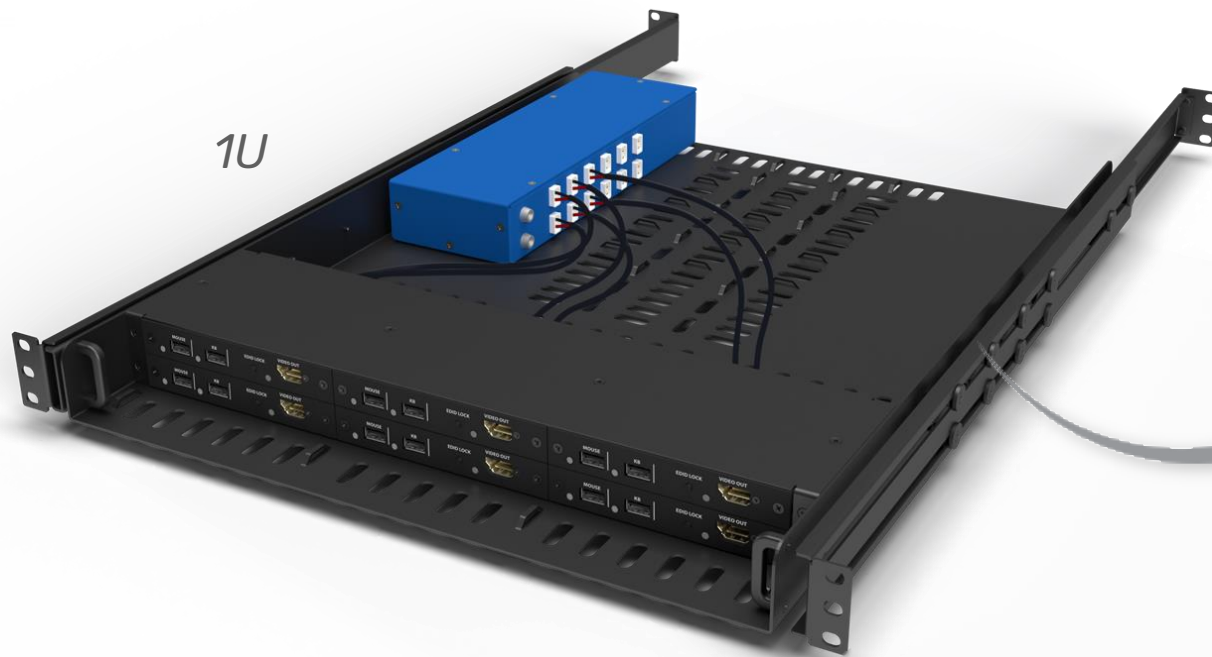
ACCESSORIES – RACK MOUNT KIT

Mount up to 10 Extenders in a 19" 4U rack space.



ACCESSORIES – RACK MOUNT KIT

Mount up to 6 Extenders, with redundant power supplies, all in a 19" 1U tray.



HSL EXTENDERS MODELS SUMMARY

MODEL	DESCRIPTION
SECURE EXTENDER ISOLATORS	
FICE11PH-M	DP/HDMI Secure Copper Extended KVM Isolator up to 100 meters 4K 30Hz
FVCE11PH-M	DP/HDMI Secure Copper Extended Video Isolator up to 100 meters 4K 30Hz
FICE11CH-M	USB C to HDMI Secure Copper extended KVM isolator up to 100 meters 4K 30Hz
FIFE11PH-M	DP/HDMI Secure Fiber Extended KVM Isolator up to 10km 4K 30Hz
FVFE11PH-M	DP/HDMI Secure Fiber Extended Video Isolator up to 10km 4K 30Hz
FIFE11PH-MT	DP/HDMI Secure TEMPEST Level B Fiber Extended KVM Isolator up to 10km 4K 30Hz
FVFE11PH-MT	DP/HDMI Secure TEMPEST Level B Fiber Extended Video Isolator up to 10km 4K 30Hz
RUGGED EXTENDERS	
FKFE11PH60-NTR	DP/HDMI Signal Rugged TEMPEST Level A Compliant Fiber KVM Extender up to 10Km, 4K 60Hz
FKCE11PH60-NTR	DP/HDMI Signal Rugged TEMPEST Level A Compliant Fiber KVM Extender up to 100m, 4K 60Hz
COMMERCIAL EXTENDERS	
FKCE11PH-N	DP/HDMI Copper Extender KVM up to 100 meters 4K 30Hz
FKFE11PH-N	DP/HDMI Fiber Extender KVM up to 10km 4K 30Hz
FKFE11P-N	DP Fiber Extender KVM up to 10km, 4K 30Hz
FKCE11PHEC-N	DP/HDMI Copper Extender KVM up to 100m, 4K 30Hz, Economy model
SKFE11PH60-N	DP/HDMI Fiber Extender KVM up to 10km, 4K 60Hz, Zero Latency
FKCE11PHU60-N	DP/HDMI Copper Extender, up to 100m, USB 2.0, IR, RS-232, 4K 60Hz
FKFE11PHU60-N	DP/HDMI Copper Extender, up to 100m, USB 2.0, IR, RS-232, 4K 60Hz
UMCE10N-N	USB 2.0 Copper Extender up to 100m

MODEL	DESCRIPTION
ACCESSORIES	
PDU12M	12-Port 12V DC Junction Box (Small Form Factor), Up to 40W
PDU12	12-Port 12V DC Junction Box, Up to 84W
PDU124	24-Port 12V DC Junction Box, Up to 250W
PDU10SR	10-Port 12V DC Junction Box, Up to 250W
PDU10-48V	10-Port 48V DC Junction Box, Up to 260W
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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