



NEOUS SECURE IP MATRIX: FIBER TRANSMITTER/RECEIVER ENDPOINTS FOR VIDEO AND KVM

Transmit and receive KVM or video data over IP with the highest possible security.



The Neous IP Matrix from High Sec Labs is a highly secure, standards-based fiber-optic KVM-over-IP solution for connecting distributed source computers and user workstations across multiple security domains. The computer sources and users connect using dedicated Endpoints—either a Transmitter (Tx) or Receiver (Rx)—paired with a secure hardware Isolator that enforces unidirectional video and/or KVM data flow. While the Tx and Rx devices use encryption to protect data in transit, the NIAP-certified Isolators provide hardware-level enforcement to prevent cross-domain data leakage. Together, these components enable many-to-many connectivity across multiple classification levels with uncompromising, hardware-backed security. Fiber models support extended distances of up to 10 kilometers.

KEY FEATURES

- **KVM Over IP Extension:** Neous Matrix Endpoints operate on a closed network that isolates computers of different security classifications, enabling secure access from the workstation to any permitted source computer.
- **On-Screen Display:** Neous Receiver Endpoints feature an on-screen display that enables users to connect to available sources per the permissions managed by the Neous Controller.
- **Long-Range Connections:** Neous Fiber Endpoints have a range of up to 10km.
- **4K UHD Support:** Neous Endpoints can stream video at 4K resolution up to 30Hz, with zero latency.
- **Secure KVM/Video Isolation:** To ensure the flow of information is always secure, every Neous Endpoint includes a NIAP PP4.0-certified isolator. These Isolators use hardware-based protection measures to filter unnecessary information and enforce unidirectional data flow.
- **Phylax Encryption:** Each Neous Isolator performs FIPS 140-3 compliant encryption on HID traffic, preventing man-in-the-middle hijacking of data and ensuring positive identification between users and sources.
- **Isolator Auto-Detection:** Upon startup, each Neous Endpoint automatically detects whether its Isolator is connected and will not function without one.
- **Dual Combo DisplayPort and HDMI Connectors:** Connect either DisplayPort or HDMI sources into the same port using HSL's dual-source video connector, without any need for adapters or converters.

SECURITY FEATURES

Video Security

- Computer video input interfaces are isolated using different electronic components, power, and ground domains.
- The display is isolated by a dedicated, read-only Extended Display Identification Data (EDID) emulation for each computer.
- Access to the monitor's EDID is blocked.
- Access to the Monitor Control Command Set is blocked.

Data Encryption

- All data is transferred through the Phylax encryption module, which is FIPS 140-3 compliant and uses AES-256 CBC encryption.

System Management

- When integrated into the Neous Matrix, the Neous Controller locks the product with a shared secret, preventing unauthorized management devices from communicating with them.

Hardware Anti-Tampering

- Special holographic tampering evident labels on the product's packaging provide a clear visual indication if the product has been opened or compromised.

Firmware Anti-Tampering

- There is no access to the product's firmware or memory through any port.
- Firmware is permanently stored on a non-reprogrammable Read Only Memory (ROM), preventing modification.
- Firmware integrity is verified through a self-test procedure during power-up. Upon detection of a critical failure, the device disables normal operation and provides a clear visual indication of failure.

SPECIFICATION

MODEL NUMBER	SVFX10PHT-M / SVFX01PHR-M	SKFX10PHT-M / SKFX01PHR-M
Endpoint Pair	Neous Fiber Video Matrix Endpoints	Neous Fiber KVM Matrix Endpoints
No. of Sources	1	
Extension Type	LC Single Mode Fiber	
Link Port	10 Gbps	
Extension Length	10km	
ENCODER UNIT		
Transmitter Model	SVFX10PHT-M	SKFX10PHT-M
Video Port	DP / HDMI	
Max Resolution	UHD 4k up to 3840x2160 30Hz	
Mouse and Keyboard	n/a	USB B
Isolator Model	FV11PH-MT	FI11PHT-ME
Video Input Port	1x DP/HDMI	
Video Output Port	1xDP/HDMI	
Mouse/Keyboard In	n/a	1x USB B
Mouse/Keyboard Out	n/a	2x USB A
DECODER UNIT		
Receiver Model	SVFX01PHR-M	SKFX01PHR-M
Video Port	DP / HDMI	
Max Resolution	UHD 4k up to 3840x2160 30Hz	
Mouse and Keyboard	n/a	2x USB A
Isolator Model	FV11PH-MR	FI11PHR-ME
Video Input Port	1x DP/HDMI	
Video Output Port	1xDP/HDMI	
Mouse/Keyboard In	n/a	1x USB B
Mouse/Keyboard Out	n/a	2x USB A
PHYSICAL		
Dimensions	140x210x28mm / 5.5x8.3x1.1in (Transmitter or Receiver), 145x105x28mm / 5.7x4.1x1.1in (Isolator)	
Weight	0.6kg / 1.2lb (Transmitter or Receiver), 0.3kg / 0.6lb (Isolator)	
POWER		
Power Requirements	12V DC	
AC Input	100V to 240V AC	
Power Supply Type	External or PoE power to Ethernet; Isolator powered independently or via Tx/Rx.	
ENVIRONMENTAL		
Operating Temperature	0°C to 40° C / 32°F to 104° F	
Storage Temperature	-20°C to 60° C / -4°F to 140° F	
Humidity	0%-80% RH, non-condensing	
SOFTWARE		
Supported OS	Windows, MacOS, Linux	
SECURITY		
Compliance	Isolators Compliant to NIAP Common Criteria PP4.0 PSD Protection Profile	
GENERAL INFO		
Manufactured	TAA / BAA Compliant	
Product Lifecycle	10 Years	
Product Warranty	2 Years	

SECURE NEOUS FIBER TX/RX ENDPOINTS


SVFX10PHT-M

 Neous Fiber Video Matrix TX with
Adjunct Isolator

SVFX01PHR-M

 Neous Fiber Video Matrix RX with
Adjunct Isolator

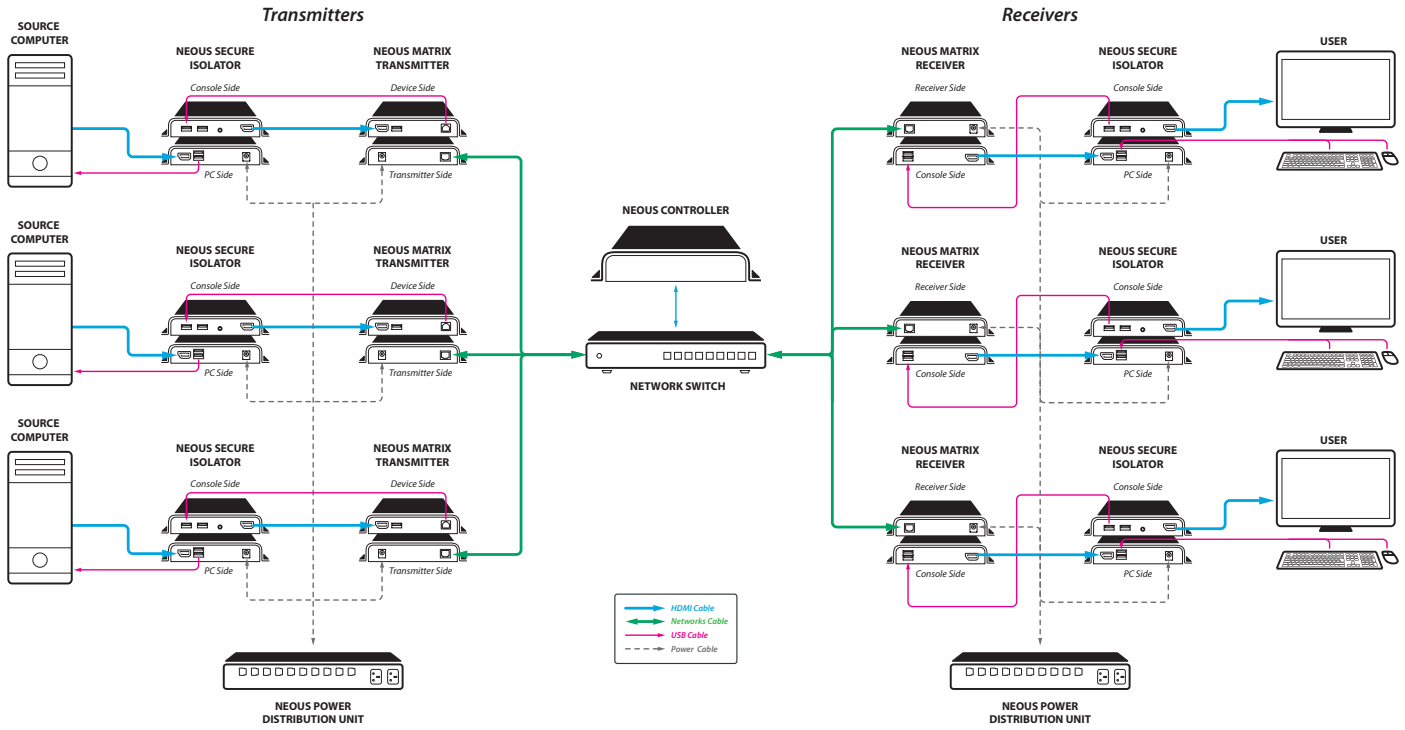
SKFX10PHT-M

 Neous Fiber KVM Matrix TX with
Adjunct Isolator

SKFX01PHR-M

 Neous Fiber KVM Matrix RX
with Adjunct Isolator

NEOUS MULTI-DOMAIN MATRIX SYSTEM DIAGRAM



ORDERING INFORMATION

MODEL NO.	P/N	DESCRIPTION	QTY
SVFX10PHT-M	CPN34272	Neous Fiber Video Transmitter	1
		0.15m HDMI 1.0 Cable	1
		Secure 1-Port Video Isolator Transmitter	1
		Wall-Mounted 12v DC Power Supply	2
SVFX01PHR-M	CPN34277	Neous Fiber Video Receiver	1
		0.15m HDMI 1.0 Cable	1
		Secure 1-Port Video Isolator Receiver	1
		Wall-Mounted 12v DC Power Supply	2
SKFX10PHT-M	CPN34280	Neous Fiber KVM Transmitter	1
		0.15m HDMI 1.0 Cable	1
		Secure 1-Port KVM Isolator Receiver	1
		Wall-Mounted 12v DC Power Supply	2
SKFX01PHR-M	CPN34281	Neous Fiber KVM Receiver	1
		0.15m HDMI 1.0 Cable	1
		Secure 1-Port KVM Isolator Receiver	1
		Wall-Mounted 12v DC Power Supply	2