

M-LINE SECURE KVM COMBINER SWITCHES

Interact with multiple computers on one or two displays - simultaneously - using a single keyboard and mouse set.

When users need to interact with several computers at the same time, typical KVM switches are limiting. Why? Because they only enable viewing and controlling a single computer at a time.

HSL's Combiner switch provides the flexibility to interact with multiple computers - while enabling the user to:

- View all computers on one or two displays. The Combiner functions as a KVM switch, a scaler, and a multi-viewer – all in one.

KVM COMBINER HIGHLIGHTS

• Secure by Design

HSL KVM Combiner switches are designed to meet with the security requirements demanded by government agencies, military installations, financial institutions, and similar security-sensitive customers.

• Securely share peripherals across different security domains

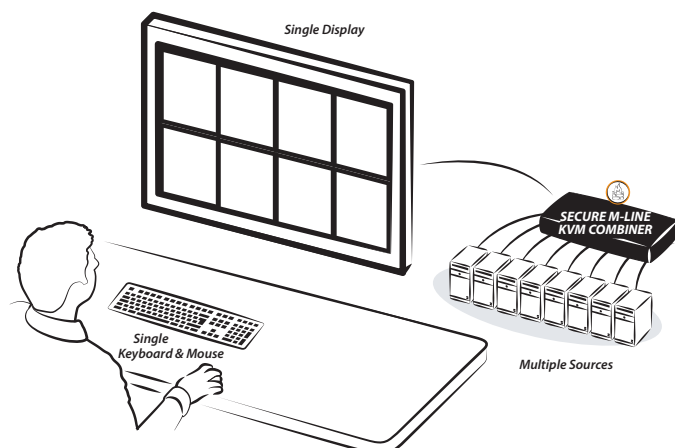
Securely share peripherals between computers that belong to different security-classification levels, while keeping the highest possible data-separation security.

• Prevent information leaks

Block threats derived from sharing and switching of vulnerable, untrusted, or unauthorized peripheral devices. The Combiner blocks peripheral exploits, information leaks, eavesdropping, signal transmission, computer malware, hardware, and firmware tampering, by enforcing multilayered security mechanisms.

• View and control multiple computers simultaneously

With a single Combiner, you can view and control up to 16 computers at the same time.



HSL 8-Port Secure Combiner KVM Switch System Diagram

- Switch the mouse and keyboard control freely between all computers.

The Combiner also saves money, by eliminating the need to purchase and install dedicated, per-computer peripheral sets.

SECURITY FEATURES

• Video Security

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

• Keyboard and Mouse Security

- The keyboard and mouse are isolated by a dedicated, USB device emulation for each computer.
- One-way, peripheral-to-computer data flow is enforced through unidirectional optical data diodes.
- Communication from computer-to-keyboard/mouse is blocked.
- Non HID (Human Interface Device) data transaction is blocked.

• Audio Security

- Enforce computer-to-speaker, one-way flow of sound through unidirectional optical data diodes.
- Prevent eavesdropping and line-in re-tasking by blocking speaker-to-computer communication.

• Hardware Anti-Tampering

- Any attempt to open the product enclosure activates an anti-tamper system, making the product inoperable.
- Blinking LEDs provide a clear indication of a tampering event.
- Special holographic tampering-evident labels on the product's enclosure 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) to prevent any 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 the user with a clear visual indication of failure.

OPERATIONAL HIGHLIGHTS

- Smoothly switch between computers (Virtual Display Technology)**
 Automatically switch control from one computer to another by dragging the mouse cursor over the computer's display border. The peripherals then switch to the next computer – without the need to press any buttons.
- View applications in Ultra-High Definition (UHD) 4K video quality**
 Never compromise on video quality. Run graphic-intensive, ultra-high definition applications on all single- and dual-monitor KVM models.
- Native touch-screen support**
 Interact with all the computers connected to a KVM Combiner, using touch-screen gestures. No need to install drivers or software.
- Flexible screen layout**
 Resize source scaling and aspect ratio, to create tile, scale, and custom display layouts that fit the user's needs. Supports screen-duplication and extended screen-view modes.
- Dual DisplayPort and HDMI connector**
 Connect either DisplayPort or HDMI sources into the same port, with the new dual-source video connector. Eliminates the need for adapters and converters.
- State-of-the-art conversion scaler**
 Rapidly convert any input and output resolution (up to 4K) to optimal quality display, on a 4K screen, using the built-in scaler.
- Extremely low latency viewing**
 View the input channel with extra low latency – below 10ms – using the direct mode feature.

SPECIFICATION

PART NUMBER	TC82PHG-M	TC162PHG-M
No. of Sources	8	16
CONSOLE PORTS		
Displays	2 x HDMI 1.4	2 x HDMI 1.4
Mouse and Keyboard	USB Type A	USB Type A
COMPUTER PORTS		
Display Type	DP / HDMI 2.0	DP / HDMI 2.0
Max Resolution	Supporting UHD 4K resolutions up to 3840x2160	Supporting UHD 4K resolutions up to 3840x2160
Mouse and Keyboard	USB Type B	USB Type B
PHYSICAL		
Dimensions	442.5 x 299.7 x 43.6 mm	442.5 x 299.7 x 77 mm
Weight	3.73 kg	7.00 kg
POWER		
Power Requirements	35W Max	35W Max
AC Input	100 to 240V AC	100 to 240V AC
Power Type	Internal	2 x Internal (Redundant)
ENVIRONMENTAL		
Shock	MIL-STD-810C Meth. 516.2; 30g – 12.5 ms Half sine – X,Y,Z axis	
Vibrations	MIL-STD-167-1 Type 1	
Operating Temperature	MIL-STD-810E Meth. 501.3; Meth 502.3 Proc. II: 0°C +55°C	
Storage Temperature	MIL-STD-810E Meth. 501.3; Meth 502.3 Proc. II: -40°C +70°	
Humidity	MIL-STD-810E Meth. 507.3; cycle	
EMI/EMC	MIL-STD-810E Meth. 507.3; cycle 1: max 95 % @ 40° C not condensing	
IP Grade	IP44	
SOFTWARE		
Supported OS	Windows, Linux, Mac	
CERTIFICATION		
Product Certification	EAL 4+, CE, RoHS/WEEE, RCM, FCC class B, VCCI, TUV US, TUV Canada	
MIL-STD-461D	CE101 (30Hz –10KHz); CE102 (10 KHz –10MHz); CS101 (100Hz – 50KHz); CS114 (10KHz –30MHz); CS116 (10KHz –100MHz); RE101 (30Hz –100KHz); RE102 (10KHz –1.5GHz); RS101 (30Hz –100KHz); RS103 (2MHz –1.5GHz).	
GENERAL INFO		
Made In	ISRAEL	
Product Life-cycle	10 years	
Warranty	2 Years	

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