



SECURE KVM COMBINER SWITCHES

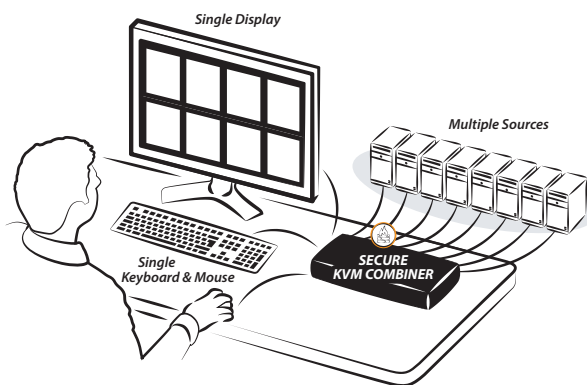
Interact with multiple computers presented on the same display at the same time using a single set of USB, audio, keyboard, video and mouse peripherals.

The KVM Combiner switch offered by HSL provides increased productivity in challenging multi-computer environments where users are required to view and interact with several computers at the same time.

Optimize user experience while maintaining the highest isolation between computers and peripherals. Obviate the need for purchasing and installing dedicated, per-computer peripheral sets.

KVM COMBINER HIGHLIGHTS

- Secure by Design**
 HSL KVM Combiner switches are designed to meet with the security requirements demanded by government agencies, military, 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**
 Obstacle threats derived from sharing and switching of vulnerable, untrusted or unauthorized peripheral devices. Block peripheral exploits, information leaks, eavesdropping, signal transmission, computer malware, hardware and firmware tampering by enforcing multilayered security mechanisms.
- View and control multiple computers simultaneously**
 Present and work with up to 4 computers at the same time. Cascade combiners to view and control up to 16 (4x4) computers on a single or dual displays.
- Filter USB Peripherals**
 Block unauthorized USB devices while allowing secure switching of smart card and biometric authentication devices between computers. Whitelist and blacklist specific USB devices based on VID/PID characteristics.



HSL 8-Port Secure Combiner KVM Switch System Diagram

SECURITY FEATURES

- USB Security**
 - Block unauthorized USB devices.
 - USB authentication devices are authorize by default.
 - Whitelist and blacklist specific USB devices based on VID/PID characteristics.
- 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 & 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 will activate 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

- Freeze USB**
 Assign the USB port to a specific computer while switching the keyboard, video, mouse and audio between other computers. Useful for various scenarios, for instance, when a USB smart card reader must remain mapped to a certain computer.
- 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. Peripherals switch to the next computer without having to press any buttons once the mouse is passing the display border.
- View applications in Ultra High Definition (UHD) 4K video quality**
 Never compromise on video quality. Run graphic-intensive, ultrahigh definition applications on all single and dual monitor KVM models.
- Avoid typing mistakes**
 Since two-way communication is blocked by the KVM security, keyboard lock LEDs do not function. Help users avoid typing mistakes by visually indicating the status of keyboard locks (CAPS-LOCK | NUM LOCK | SCROLL LOCK) on the product's front facing panel.
- Native touch screen support**
 Interact with all the computers that are connected to the KVM Combiner using touch screen gestures. No need to install any driver or software.
- Flexible screen layout**
 Resize source scaling and aspect ratio to create Tile, Scale and Custom display layouts that fit user needs. Support screen duplication & extended screen view modes.

SPECIFICATION

PART NUMBER	TC82PHG-3T	TC162PHG-3T
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		
POWER		
Power Requirements	35W Max	Redundant 35W Max
AC Input	100 to 240V AC	100 to 240V AC
Power Type	Internal	Internal
ENVIRONMENTAL		
Operating Temperature	32° to 104° F (0° to 40° C)	
Storage Temperature	-4° to 140° F (-20° to 60° C)	
Humidity	0-80% RH, non-condensing	
SOFTWARE		
Supported OS	Windows, Linux, Mac	
CERTIFICATION		
Product Certification	CE, RCM, FCC class B, VCCI, TUV US, TUV Canada	
GENERAL INFO		
Made In	ISRAEL	
Product life-cycle	10 years	
Warranty	2 Years	

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