



## SECURE MIL-STD TEMPEST 4-PORT HDMI KVM SWITCH

The SK41D-4TR, HSL's 4-Port HDMI Ruggedized secure KVM Switch, is designed to provide military users with superior security in the most challenging environmental conditions. The SK41D-4TR is the only KVM switch in the world that is both **NIAP PP 4.0 certified** and is **Tempest level I** compliant. It designed to be installed on a military vehicle, submarines and airborne platforms.



For easier mounting and better situational awareness, the SK41D-4TR is optionally equipped with a remote control that can be mounted on the operator dashboard.

### Highly Ruggedized

The SK41D-4TR device designed for MIL-STD harsh environmental requirements. It features robust sealed aluminum enclosure, all metallic MIL-DTL-38999 connectors and sealed front panel illuminated push-buttons. The KVM Switch was designed to meet harsh MIL-STD environmental conditions including temperature, solar radiation, humidity and altitude. Product is compliant with IP 67 and being submerge or withstand.

### Versatile Interfaces

Product supports up to four computers/video sources with HDMI or DVI interfaces. Video sources supported ranging from 480p legacy to 1920x 1200@60Hz, 2560x1600@60Hz and 3840x2160@30Hz (4K30) resolutions.

### Unidirectional optical data diodes

HSL products provides the highest level of isolation between connected computers or sources. The SK41D-4TR KVM is equipped with four patented Unidirectional optical data diodes to prevent potential APT on the KVM from the host and from connected peripherals. No reverse data flow possible by design. Designed to support isolation between national security networks and internet.

### Always-on Active Anti-tampering

Enclosure tampering attempt can be sensed by multiple sensors. Battery powered anti-tampering circuitry prevents normal KVM operation.

### Hardware Based peripheral protection/isolation

The SK41D-4TR security functions depend on physics. Absolutely no dependency on firmware or software. All firmware is in protected ROM (Read Only Memory). No keyboard buffering or memory. Peripheral devices can be defined through configurable white-list and black-list.

### Display Plug & Play (DDC) protection

HSL patented EDID protection is the most secure video protection method in the market today. Leakage prevention through emulation technology. Signaling attacks prevented by design.

### Protected Power Input

The KVM is powered directly from 12-28VDC power vehicle bus and is fully compliant with MIL STD-1275E. Product is optionally protected from High Radiation Nuclear events.

### Extensive BIT (Built-In self-Test) Functionality

Receive status and diagnostics via RS232 regarding the unit status and operational readiness. Status will be reported upon at startup, upon demand or every 5 minutes continuously.

HSL Secure SK41D-4TR Rear View



## SPECIFICATION

MODEL NUMBER	SK41D-4TR
<b>MAIN FEATURES</b>	
<b>Dimensions</b>	D 141 x W 330 x H 50 mm [5.5 x 13.0 x 1.9 Inch]
<b>Weight (no blades)</b>	2.2 Kg [4.8 lbs] without cables
<b>Host Input Ports</b>	4 x HDMI (DVI-D compatible) and two USB 2.0 interfaces based on a single female D38999/24WD35PN. Optional Composite video or VGA inputs available.
<b>Console ports</b>	HDMI (DVI-D compatible), 2 USB device and optional Remote control via a single male D38999/24WD35SN.
<b>Channel Switching</b>	<ul style="list-style-type: none"> <li>IP 67 compliant green LED illuminated front Panel push Buttons.</li> <li>NVG and dimming options available.</li> <li>Remote control connected via Console port</li> </ul>
<b>Video modes supported</b>	HDMI supported up to 4K@30Hz or 2600x1600@60Hz DVI-D 1920x1200@60Hz Support for other video formats available.
<b>ENVIRONMENTAL</b>	
<b>Shock</b>	MIL-STD-810G, Method 516.7 Procedure I with a peak amplitude of 40 ± 4.0g
<b>Vibration</b>	MIL-STD-810G, Method 514.7 Procedure I for operational use of a Category 20 wheeled Ground Vehicles
<b>Humidity</b>	MIL-STD-810G, Method 507.6, Procedure I based upon Table 507.6-1
<b>Temperature</b>	Operating - 46 °C to 52 °C (-51 °F to 125 °F); Storage ° -51 °C to 71 °C (-60 °F to 160 °F)
<b>Altitude</b>	MIL-STD-810G, Method 500.6 Procedure I
<b>Immersion</b>	MIL-STD-810G, Method 512.6 Procedure I to a depth of 3 meters in fresh water
<b>Salt Fog</b>	MIL-STD-810G, Method 509.6.
<b>Blowing Sand</b>	MIL-STD-810G, Method 510.6 Procedure II with 10.6 to 17.7 grams per cubic meter (g/m <sup>3</sup> )

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<b>Blowing Dust</b>	MIL-STD-810G, Method 510.6 Procedure I with 0.006 g/m <sup>3</sup> silica flour dust from 0.0001mm to 0.01mm in diameter blowing at a velocity of 1.5 ± 0.2 m/s
<b>POWER</b>	
<b>DC Input</b>	Nominal Power Input 28VDC (18V-36V)
<b>Power Compliant</b>	MIL-STD-1275E Compliant Designed to operate with a steady-state supply voltage per fault free conditions as specified in MIL-STD-1275E
<b>Power Requirements</b>	Max Power Consumption 40W
<b>REGULATORY COMPLIANCE</b>	
<b>Safety</b>	UL/cUL60950, EN60 950.
<b>EMI/EMC</b>	FCC Class B, CE Mark, EN55022B, VCCI
<b>Tests</b>	CE102, CS101, CS114, CS115, CS116, RE102, RE103, CE101.
<b>Security</b>	<ul style="list-style-type: none"> <li>Compliant with NIAP PP4 for PSD (Peripheral Sharing Device)</li> <li>Design to be Tempest Level 1 compliant</li> </ul>
<b>RELIABILITY</b>	
<b>Standard</b>	MIL-HDBK-216.
<b>MTBF</b>	65,000 hours of operation in 40 degrees.
<b>HOW TO ORDER</b>	
<b>SK41D-4TR 4P MIL-STD Secure KVM</b>	CPN21854
<b>Remote Controller for SK41D-TR</b>	CPN22654
<b>Test cables kit for SK41D-TR</b>	CPN20162

HSL Secure SK41D-4TR System Diagram

