



## Product Highlights

- ❏ **Operates between Highest Security Level Gaps**  
Designed for safe isolation between *national security* and the *internet*.
- ❏ **Mouse controlled windowing** • Highly-intuitive and easy operation. Superior to any other switched KVM. Cursor based system mode to navigate between windows and resize windows.
- ❏ **Works simultaneously with 4 isolated networks** • User can work in a single window accessing 4 isolated networks having different security levels.
- ❏ **Peripherals security** • Full USB isolation through multiple isolated host emulators and data diodes. Data leakage protected by hardware. Storage and other unsafe USB products are disabled. Support for specific peripherals and encrypted storage devices.
- ❏ **Modular chassis** • Enables any required combination of input modules or built in computers / thin-clients.
- ❏ **Advanced Thin-clients module** • The industry's fastest and highest security thin-client in module.
- ❏ **Easy customization** • Administrator mode enables easy customization of channels, colours, resolutions, cursors, task-bar, background etc.
- ❏ **Controlled Copy-Paste** • Efficient and highly secured solution for Copy-Paste across different networks [Optional].

## The Ultimate Secure KVM Solution

HSL's KVM Combiner is a unique solution for a common security problem – network isolation. This patented device enables computer users to work simultaneously in up to 4 isolated computer environments. Unidirectional optical links assures that channels will be fully isolated.

## What is a KVM Combiner?

The KVM Combiner is a peripheral device designed to enable users to natively work in windowing environment across different security levels without exposing the organization to the risks of information leakage. The KVM Combiner device uses advanced video processing to draw a high-resolution dynamic “mosaic” of images generated by different computer sources. Built-in video sources isolation forces unidirectional flow of data through the USB and DVI ports. HSL KVM combiners are TEMPEST certified for the highest isolation gaps. Unlike conventional KVMs, the KVM combiner enables simultaneous windowing work in four different computers.

## Why modular?

Modular design enables easy customization for specific user or division use. The capability to host various thin or fat clients makes this solution future proof and extremely flexible.

## Modular KVM Combiner

HSL took the KVM Combiner one step forward developing the K600 - 4 channels Modular KVM Combiner. This new product offer users similar experience with added operational flexibility. Four identical bays enable integration of any combination of the offered modules (called Nano Blades):

- Linux based thin-client Nano-blade with copper LAN,
- Linux based thin-client Nano-blade with fibre LAN
- PC DVI AUX module
- Intel Atom based PC Nano-blade with copper LAN
- Blank Nano-blade

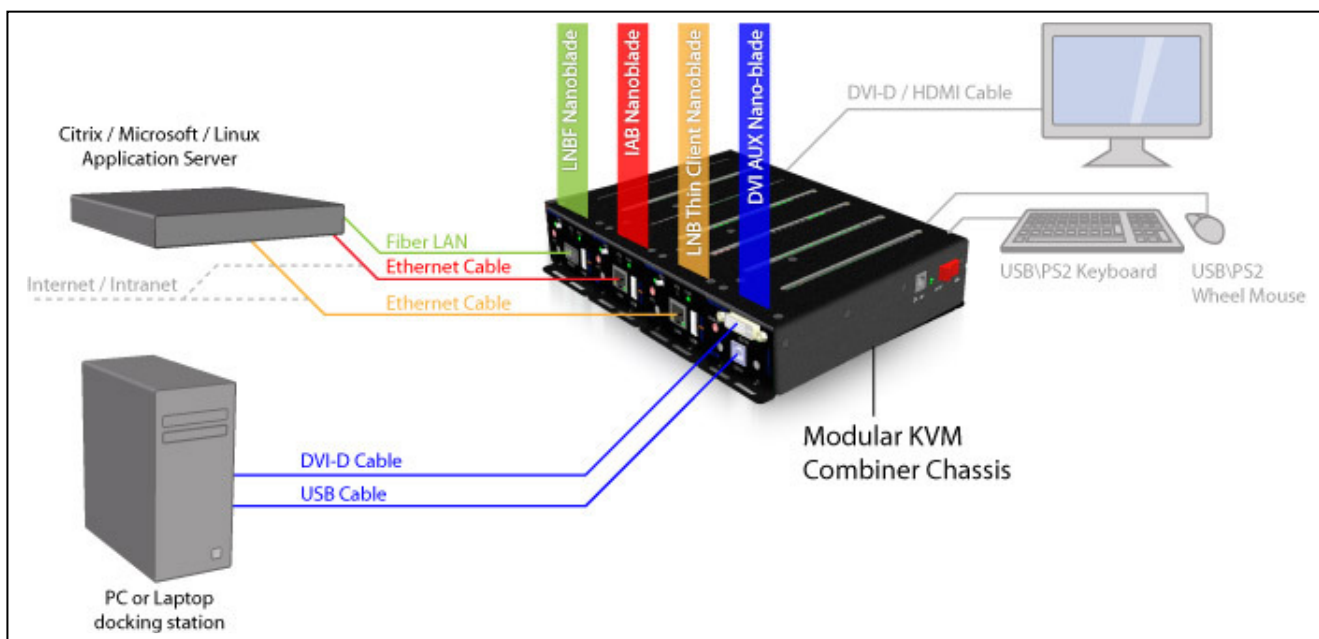
### K600 Modular KVM Combiner Specification

<b>General</b>	<ul style="list-style-type: none"> <li>▪ 4 x Nano-blade Bays KVM Combiner</li> <li>▪ Each bay support 1 Digital video channel, 1 USB channel and isolated power output</li> <li>▪ KVM Combiner support one digital user display (DVI-D)</li> <li>▪ Tools required to change module: Phillips screwdriver (not included)</li> </ul>
<b>Chassis ports</b>	<ul style="list-style-type: none"> <li>▪ 1 x Display output DVI-D Female connector</li> <li>▪ 1 x USB Type-A jack compatible only with USB mouse</li> <li>▪ 1 x USB Type-A jack compatible only with USB keyboard</li> <li>▪ 1 x PS/2 legacy keyboard jack (Mini DIN-5 pin)</li> <li>▪ 1 x PS/2 legacy mouse jack (Mini DIN-5 pin)</li> <li>▪ 1 x Audio out 3.5 mm stereo jack supports headset or amplified speakers</li> <li>▪ 1 x DC Power input jack (5.5 mm OD, 2.5 mm ID, + in center). 12VDC 5A brick power supply included.</li> </ul>
<b>Other chassis feature</b>	<ul style="list-style-type: none"> <li>▪ 4 x Green LEDs indicating active channel</li> <li>▪ Power switch rocker type</li> <li>▪ 1 x Power green LED</li> <li>▪ 1 x Restore Factory Defaults push-button</li> <li>▪ Key-lock to enable access to administrator mode</li> <li>▪ Low radiated emissions (TEMPEST) stainless steel chassis</li> </ul>
<b>Output video modes supported</b>	<ul style="list-style-type: none"> <li>▪ 1024 x 768 (4:3)</li> <li>▪ 1280 x 1024 (4:3)</li> <li>▪ 1680 x 1050 (16:10)</li> <li>▪ 1920 x 1080 (16:9)</li> <li>▪ 1920 x 1200 (16:10)</li> <li>▪ HDMI or DVI interfaces supported</li> <li>▪ Output resolution selectable in administrator mode</li> </ul>
<b>User Functions</b>	<ul style="list-style-type: none"> <li>▪ Windows can be moved and resized</li> </ul>

	<ul style="list-style-type: none"> <li>▪ Toggling between normal mode and system modes by mouse side keys click (5 keys mouse)</li> <li>▪ Toggling between normal mode and system modes by mouse side keys click (5 keys mouse)</li> <li>▪ Cascading key arranges all 4 windows one on top of the other</li> <li>▪ Tile key arranges all 4 windows in a mosaic</li> <li>▪ Help key presents basic usage guidance</li> <li>▪ Vertical and horizontal scroll bars</li> <li>▪ Minimize window to task-bar</li> <li>▪ Colored Task-bar and window border indicating channel</li> <li>▪ Mouse wheel cyclic toggling between active windows in system mode</li> <li>▪ Double click to maximize window</li> <li>▪ Legacy mode – toggling between windows by Control + Func. keys [Optional]</li> <li>▪ 3 User defined preset keys to save or load user settings</li> </ul>
<b>Administrator settings</b>	<ul style="list-style-type: none"> <li>▪ Access secured by a key-lock</li> <li>▪ 4 Selectable system cursor pointers</li> <li>▪ 6 Selectable window border widths</li> <li>▪ 16 Selectable window border colors</li> <li>▪ 2 Selectable title-bar sizes</li> <li>▪ 6 Selectable video output resolutions</li> <li>▪ Customer defined background bitmap [Optional]</li> </ul>
<b>Physical Characteristics</b>	<ul style="list-style-type: none"> <li>▪ Dimensions: 80(W )x158(D)x34(H) mm / 3.15(W )x6.22(D)x1.34(H) inch</li> <li>▪ Device weight: 2 Kg. (4.4 lbs.)</li> <li>▪ Shipping Weight: 5.85 Kg. (12.9 lbs.)</li> </ul>
<b>Power</b>	<ul style="list-style-type: none"> <li>▪ DC input 12VDC / 5A maximum</li> <li>▪ Brick power supply included. Power input 90-240V AC</li> <li>▪ 28VDC aircraft power input option available</li> </ul>
<b>Security Functions</b>	<ul style="list-style-type: none"> <li>▪ USB ports supporting only keyboard and mouse through host emulation and strong filtering.</li> <li>▪ Optical Data Diode assures unidirectional flow from devices to computers.</li> <li>▪ Firmware change can not cause leakage between channels or data export.</li> <li>▪ Isolated power supplies for each device emulator.</li> <li>▪ Firmware resides on ROM.</li> <li>▪ Special holographic Temper Evident Labels.</li> </ul>
<b>Security Accreditations</b>	<ul style="list-style-type: none"> <li>▪ TEMPEST Level 1 [Optional]</li> </ul>
<b>Environmental</b>	<ul style="list-style-type: none"> <li>▪ Temperature range: Operating - 0°C to 40°C (32°F to 104°F); Storage - -20°C to 60°C (-4°F to 140°F)</li> <li>▪ Humidity: Operating - 20 to 80% non condensing; Storage – 10 to 90% non condensing</li> <li>▪ Altitude: 0 to 20,000 ft</li> <li>▪ MIL-STD-810 / 461 models available</li> <li>▪ RTCA-DO-160D models available</li> </ul>
<b>Regulatory Compliance</b>	<ul style="list-style-type: none"> <li>▪ Safety: UL/cUL60950,EN60 950</li> </ul>

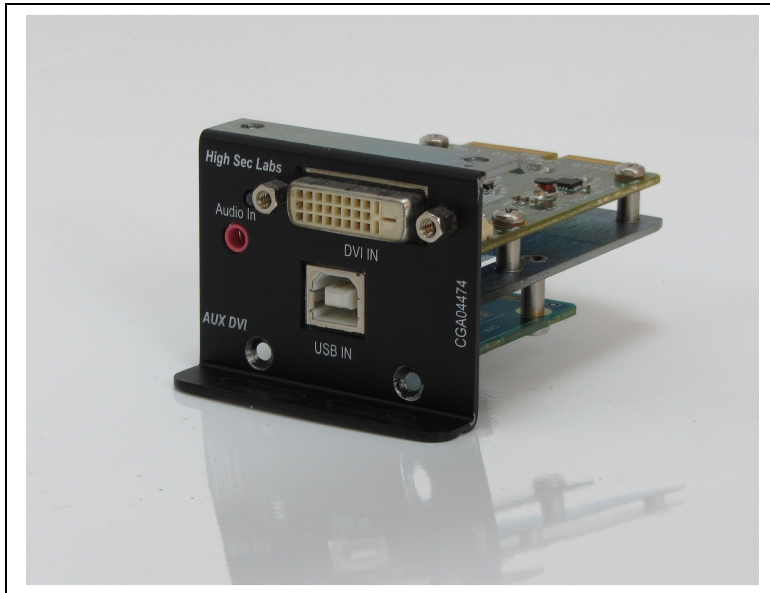
	<ul style="list-style-type: none"> <li>EMI/EMC: FCC Class B, CE Mark, EN55022B, VCCI</li> <li>UL, cUL, TUV</li> </ul>
<b>Warranty</b>	<ul style="list-style-type: none"> <li>2 years limited warranty. This limited warranty covers 100% of parts and workmanship on any required repairs. For details see HSL web-site: <a href="http://www.highseclabs.com/warranty/">www.highseclabs.com/warranty/</a></li> <li>Optional extended warranty for up to 5 additional years</li> <li>Product design life-cycle 10 years per MIL-HDBK-217E</li> </ul>

- Specifications are subjected to change without prior notice
- See HSL web-site for updated list of supported peripherals
- Multiple patents pending



## AUX DVI input Nano-blade

This Nano-blade designed to interface external sources such as desktop PC or laptop with the Modular KVM Combiner through DVI-D, USB and Audio interfaces. Cables are sold separately.



### AUX DVI Nano-blade Specification

<b>Input ports</b>	<ul style="list-style-type: none"> <li>1 x Video input DVI-D Female connector to connect host video</li> <li>1 x USB Type-B receptacle to connect host computer</li> <li>1 x Audio input 3.5 mm stereo jack to connect host computer audio output</li> </ul>
<b>Other features</b>	<ul style="list-style-type: none"> <li>Channel selected green LED</li> <li>Full galvanic optical isolation [Optional]</li> <li>Isolated power supply [Optional]</li> <li>Programmable isolated Plug and Play (DDC) EEPROM</li> </ul>
<b>Host video modes supported</b>	<ul style="list-style-type: none"> <li>800 x 600</li> <li>1024 x 768</li> <li>1280 x 1024</li> </ul>

## Thin-client Nano-blade (Copper / Fiber LAN)

This Nano-blade is a self-contained high performance thin-client running Linux or Windows CE operating system to enable connection to remote servers through local browser, Microsoft RDP client or Citrix ICA client. LAN interface is 10/100 Base T Ethernet jack (or 100 Base-FL SC fibre interface in LNBF120 module). The LNB Nano-blade is by far the fastest thin-client in the market today with highly optimized ICA client and near HD video player capabilities.



LNB120

### LNB / LNBF Nano-blade Specification

<b>Input ports</b>	<ul style="list-style-type: none"> <li>1 x USB Type-A receptacle to connect peripherals directly to thin-client</li> <li>1 x Microphone input 3.5 mm stereo jack to connect a microphone or headset to the thin-client</li> <li>1 x RJ-45 jack for LAN connectivity supporting 10 / 100 Base-T Ethernet (LNB120)</li> <li>Wake on LAN support</li> <li>1 x SC Fibre LAN interface supporting 100 Base-FL (LNBF120)</li> </ul>
<b>Other panel features</b>	<ul style="list-style-type: none"> <li>Channel selected green LED</li> <li>Power / Fail green / red LED</li> <li>Restore Factory defaults push-button switch (recessed)</li> <li>Reset push-button switch</li> </ul>
<b>Core</b>	<ul style="list-style-type: none"> <li>CPU - RMI Au 1250, 600 MHz RISC, equivalent to x86 1.8 GHz</li> </ul>

	<ul style="list-style-type: none"> <li>Memory - 256 MB DDR2 [512 MB optional]</li> <li>Storage - 256 MB Disk-On-Chip with FFS. 10 Years data retention</li> <li>Crypto accelerator, AES128</li> </ul>
<b>Video</b>	<ul style="list-style-type: none"> <li>Maximum resolution supported: Up to 1920x1200 Pixels @ 64k (16 bit)</li> <li>Local Video Player</li> <li>DivX HD CODEC (hardware accelerated)</li> <li>MPEG4</li> </ul>
<b>Operating system and firmware</b>	<ul style="list-style-type: none"> <li>Security enhanced Linux based kernel</li> <li>ICA 10 client</li> <li>RDP (RDesktop 1.6)</li> <li>MPlayer</li> <li>X-Windows 7.2 server</li> <li>Secured Copy-Paste support [Optional]</li> <li>Anti-tampering support [Optional]</li> </ul>
<b>Power</b>	<ul style="list-style-type: none"> <li>Isolated power supply (internal)</li> <li>6W power consumption maximum</li> </ul>
<b>Management solution</b>	<ul style="list-style-type: none"> <li>Chip PC Xcalibur Global</li> <li>Policy based management using Microsoft AD</li> <li>Secured software deployment</li> <li>Pass through user authentication</li> <li>Smart-card and biometric reader support [Optional]</li> <li>VMware VDI support</li> <li>Secured protocols with selectable encryption</li> </ul>

## Blank Nano-Blade

This Nano-blade is a plug for unused Nano-blade bays. Model number is BLK160.  
Note: for normal operation do not leave open Nano-blade bays.



## How to Order

### KVM Chassis

Description	Part Number
K600 - 4 Ports Modular High Security KVM Combiner chassis only, DVI-D display, USB and PS/2 keyboard and mouse, Audio out, Laser mouse included	CPN04999 [Europe] CPN04878 [UK] CPN04964 [US, Canada]

### Nano-blades

Description	Part Number
K600 - Modular KVM Combiner - LNB Nano-Blade, Processor Au1250 600MHz, 256 MB DDR, 256 MB Flash, RJ-45 10/100 Base T LAN, Aux USB port, Linux based OS	CPN04874
K600 - Modular KVM Combiner - LNB Nano-Blade, Processor Au1250 600MHz, 256 MB DDR, 256 MB Flash, RJ-45 10/100 Base T LAN, Aux USB port, Windows CE 6.0 OS	CPN05475
K600 - LNBF Thin-client Nano-Blade, Linux OS, SFP Giga fiber LAN	CPN04875
K600 - LNBF Thin-client Nano-Blade, Windows CE 6.0 OS, SFP Giga fiber LAN	CPN05476
K600 - AUX DVI Nano-Blade, DVI-D display, USB keyboard and mouse	CPN04876
K600 - Blank Nano-Blade	CPN04877

### Cables

Description	Part Number
KVM Cable short (1.8 m), DVI-D to DVI-D Single-Link, USB, Black	CPN05485
KVM Cable short (1.8 m), Audio out, CAC, Black	CPN05490
KVM Smart-Cable VGA PC to DVI KVM converter cable with USB type A to USB type B, 6ft (1.8 m), black	CPN06011

### Accessories and spare parts

Description	Part Number
SCM Smart-card reader, USB, SCR-3311	CPN05498
Laser Mouse 5 buttons USB and PS/2 compatible for KVM Combiner	CPN05497
Spare Power supply, wall-mounted, K200, K300, 12V, 1.5A, US	CPN05501

**Services**

Description	Part Number
K6xx 1 Year Standard warranty and support extension (3rd to 7th year) per S/N	HSV06020
K6xx 1 Year Premium warranty and 24/7 support per S/N	HSV06021