



Quick Installation Guide

4/8-Port Secure Rugged KVM Combiner Switch

Introduction

High Sec Labs' 4-Port and 8-Port DP/HDMI Rugged Secure KVM Combiners enable simultaneous viewing and interacting with multiple computers presented on the same display, using a single set of keyboard, video, mouse, and USB peripherals. They combine the functionality of a KVM switch, a multi-viewer, and a video scaler into a single product, enhancing situational awareness and workflow in the most challenging environments, while mitigating the threat of data leaks through shared peripheral vulnerabilities.

The SC42PHU-4TR and SC82PHU-4TR are the only rugged KVM Combiners in the world that are NIAP PP 4.0 certified. They are suitable for installation on military vehicles, marine vessels, and airborne platforms.

This guide instructs how to install and configure an HSL Rugged Secure KVM Combiner.

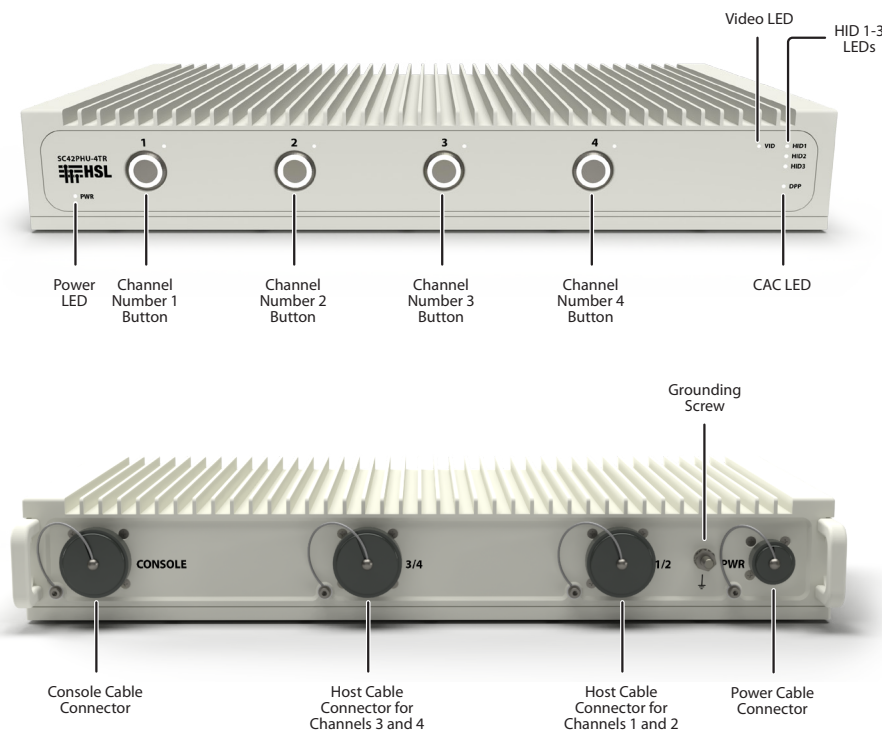


Fig 1: Front and back of a 4-Port Rugged Combiner

LED Indicators:

VID LED:

- Off: no video display EDID received
- On: EDID received

HID (Keyboard, Mouse) LEDs:

- Off: no device detected
- Red: device rejected
- On: device approved

Power ON Self-Test Procedure: As the product powers on, it performs a self-test procedure. If this self-test fails for any reason, including jammed buttons, the product is inoperable and will indicate a self-test failure by displaying abnormal LED behavior. If this occurs, contact HSL Technical Support and refrain from using the product.

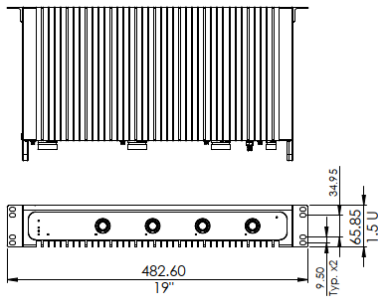
Installation

Mounting Options

The Combiner is equipped with a pair of mounting ears that can be attached to fit into a 19" rack or onto a desktop or other flat surface.

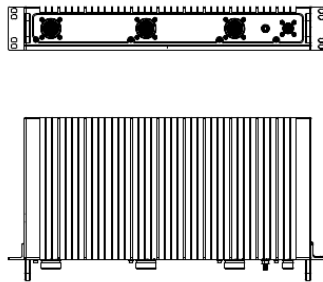
Installation option 1

19" Rack Mount
mounting ears in front side



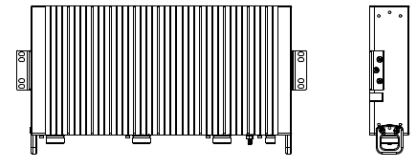
Installation option 2

19" Rack Mount
mounting ears in rear side



Installation option 3

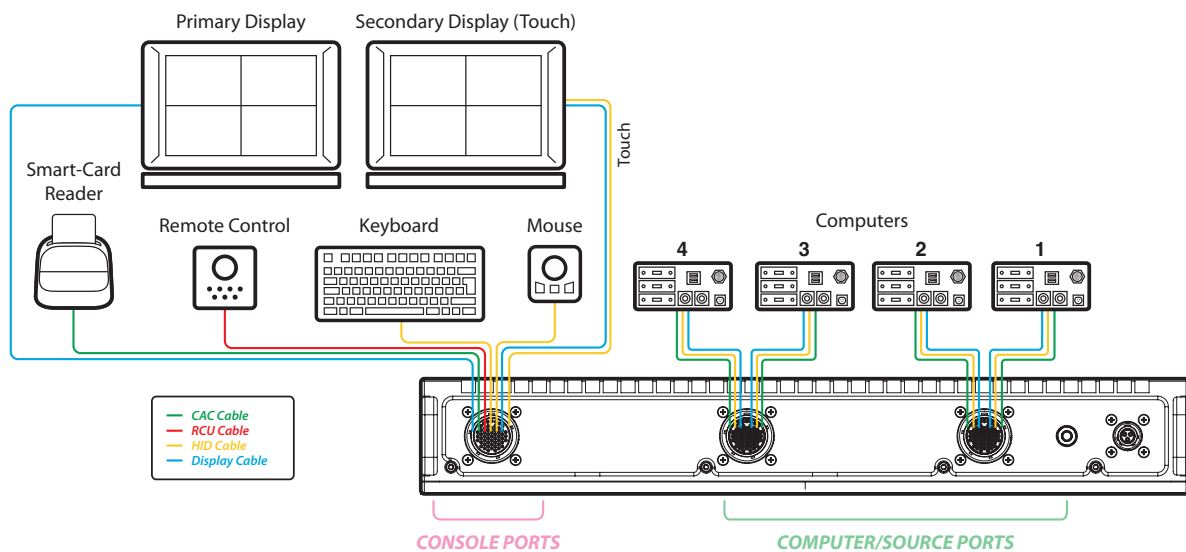
Desk Mount



Measurements are in mm unless otherwise indicated

Fig 2: Mounting options for a 4-Port Rugged Combiner

Cable Installation



Connect the Console Peripherals

- Connect the primary and secondary video displays to the Combiner's console port connector.

Note: It is highly recommended to use identical primary and secondary display models. EDID information is taken from the primary console display port and sent to all connected computers. When using non-identical displays, connect the lower resolution display to the primary console display port.

- Connect the keyboard and mouse peripherals to the Combiner's console port connector. These are shared securely between all sources.

Note: The Combiner supports USB Human Interface Devices (HID) such as keyboards, mice, trackballs, and touchscreens, only if they do not have USB hubs. It will not support non-standard keyboards, keyboards with USB hubs or other USB-integrated devices, or other non-HID USB devices.

- Connect a remote-control unit (RCU) to the Combiner's console port connector (optional).
- To support user authentication across multiple isolated sources, connect a smartcard/CAC reader such as HSL's Multi-Domain Reader to the Combiner's console port connector (optional).

The video displays, keyboard, mouse, CAC, and remote-control peripherals connect to the console port connector with a cable that is custom-made to fit the port. For instructions on how to make this cable, consult the Combiner's Interface Control Document.

Connect the Source Computers

- Connect the video, keyboard, mouse, and peripheral cables of Source Computers 1 and 2 to the Combiner's Source Port Connector 1.
- Connect the video, keyboard, mouse, and peripheral cables of Source Computers 3 and 4 to the Combiner's Source Port Connector 2.

8-Port Combiner Only

- Connect the video, keyboard, mouse, and peripheral cables of Source Computers 5 and 6 to the Combiner's Source Port Connector 3.

- Connect the video, keyboard, mouse, and peripheral cables of Source Computers 7 and 8 to the Combiner's Source Port Connector 4.

The video displays, keyboard, mouse, and CAC peripherals connect to the source port connectors with a cable that is custom-made to fit the port. For instructions on how to make this cable, consult the Combiner's Interface Control Document.

Initial Setup

Upon booting up for the first time, the KVM Combiner is configured by default to a single display at 4K 30HZ and presents all input channels in Tile Mode.

Note: If the display used does not support 4K, a message may appear saying the image cannot be displayed.

To change the output resolution, enter the key combination **Ctrl | Ctrl | F11 | d | [1...8]**, where the resolutions are:

- | | |
|--------------|--------------|
| 1. 3840x2160 | 5. 2560x1600 |
| 2. 3440x1440 | 6. 2560x1440 |
| 3. 1920x1200 | 7. 3840x1080 |
| 4. 1920x1080 | 8. 2048x2048 |

Once the setup is complete, the Combiner is ready to operate.

Operation

Channel Buttons

The Rugged Combiner has four LED illuminated buttons on its front panel. Pressing these buttons will switch channels to the corresponding button.

Keyboard Hotkeys

The interface to operate the Rugged Combiner uses keyboard hotkeys that can be entered at any time. These hotkeys are based on a QWERTY keyboard layout.

View Modes

The Rugged Combiner has multiple viewing modes to display the source computers:

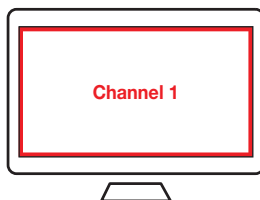
- **Full-Screen View:** Displays the active channel in a single full-screen window. To activate Full-Screen View, enter **LCtrl | LCtrl | f**.
- **Quad View:** Displays all four channels in four equally sized windows. To activate Quad View, enter **LCtrl | LCtrl | q**.
- **Scale View:** Displays the active channel in a window two-thirds the size of the screen, with the other three channels displayed as thumbnails on the right side of the screen. To activate Scale View, enter **LCtrl | LCtrl | s**.
- **Duplicate Mode:** The secondary display shows a duplicate of the primary display. To activate Duplicate Mode, enter **LCtrl | LCtrl | F11 | s | 1**.
- **Extended Mode:** The primary and secondary displays function as a single display. To activate Extended Mode, enter **LCtrl | LCtrl | F11 | s | 2**.
- **Single Display (default):** The secondary display is disabled; only the primary display is active. To activate Single Display Mode, enter **LCtrl | LCtrl | F11 | s | 0**.

Duplicate and Extended View Modes

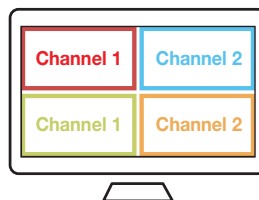
The Rugged Combiner has three modes to support a second display:

1 Display

Full Screen View



Tile View

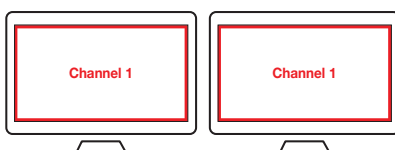


Scale View

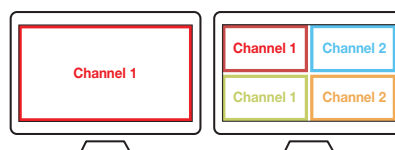


2 Displays

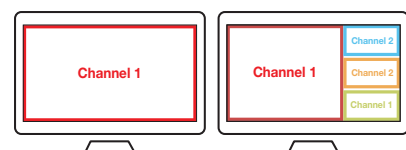
Full Screen View



Tile View



Scale View



Note: For complete details on operation, consult the KVM Combiner User Manual:
https://highseclabs.com/wp-content/uploads/2023/10/HDC17272_HSL_UM_4_8_16P-Combiner-Rev-2.1.pdf

Safety and Regulatory Statements

Safety Symbols

One or more of the following symbols may be included in the product documentation and/or on the product.



Instructions: This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the product user manual.



Dangerous Voltage: This symbol is intended to alert the user to the presence of uninsulated dangerous voltage within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



Power On: This symbol indicates the principal on/off switch is in the ON position.



Power Off: This symbol indicates the principal on/off switch is in the OFF position.



Protective Grounding Terminal: This symbol indicates a terminal that must be connected to earth ground before making any other connections to the equipment.

Safety Precautions

WARNING: Please observe the following precautions.

- Do not disable the power grounding plug. The grounding plug is an important safety feature.
- Plug the power cord into a grounded (earthed) outlet that is easily accessible at all times.
- Disconnect the power from the product by unplugging the power cord from either the electrical outlet or the product.
- This product has no serviceable parts inside the product enclosure. Do not open or remove the product cover.

This product is for use with other products that are Listed or Certified by a Nationally Recognized Testing Laboratory (NRTL).

NIAP Protection Profile

This product is certified to the NIAP Protection Profile PSD version 4.0 certification for peripheral sharing switch devices.

Security Vulnerability

If you are aware of a potential security vulnerability while installing this product, contact Technical Support immediately by:

- Web form: www.highseclabs.com/support/case/
- Email: security@highseclabs.com
- Tel: (256)-203-3036

WARNING: Unit Enclosure Warning - If the unit's enclosure appears disrupted or if all LEDs flash continuously, remove the product from service immediately and contact Technical Support.