



iPGARD SA-DPN-2S Advanced 2-4-8-Port DisplayPort Secure KVM Switch User Manual

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iPGARD SA-DPN-2S Advanced 2-4-8-Port DisplayPort Secure KVM Switch



Product Information

- Product Name: SA-DPN-4S-P
- Product Type: Advanced 2/4/8-Port DisplayPort Secure KVM Switch
- Manufacturer: iPGARD
- Country of Origin: U.S.A.
- Website: www.iPGARD.com
- Contact Number: 1-800-284-2131

Technical Specifications

- VIDEO Format: DisplayPort
- Host Interface: SA-DPN-2S / SA-DPN-2S-P / SA-DPN-4S / SA-DPN-4S-P / SA-DPN-8S / SA-DPN-8S-P
- User Console Interface: SA-DPN-2D / SA-DPN-2D-P / SA-DPN-4D / SA-DPN-4D-P / SA-DPN-8D / SA-DPN-8D-P
- Max Resolution: 3840×2160 @ 60Hz
- DDC Input Equalization: Automatic
- Input Cable Length: Up to 20 ft.
- Output Cable Length: Up to 20 ft.
- USB Signal Type: USB 1.1 and 1.0 for Keyboard and Mouse, USB 2.0 for CAC connection
- Input Interface: (2) DisplayPort 20-pin (female) for SA-DPN-2S / SA-DPN-2S-P, (4) DisplayPort 20-pin (female) for SA-DPN-4S / SA-DPN-4S-P, (8) DisplayPort 20-pin (female) for SA-DPN-8S / SA-DPN-8S-P
- Output Interface: (2) DisplayPort 20-pin (female) for SA-DPN-2D / SA-DPN-2D-P, (4) DisplayPort 20-pin (female) for SA-DPN-4D / SA-DPN-4D-P, (8) DisplayPort 20-pin (female) for SA-DPN-8D / SA-DPN-8D-P
- Audio Input Interface: (2) Connector Stereo 3.5mm Female for SA-DPN-2S / SA-DPN-2S-P
- Audio Output Interface: (1) Connector Stereo 3.5mm Female for SA-DPN-2D / SA-DPN-2D-P / SA-DPN-4S / SA-DPN-4D
- Power Requirements: 12V DC, 3A (minimum) power adapter with center-pin positive polarity
- Operating Temperature: TBD
- Storage Temperature: TBD
- Humidity: TBD
- Certifications: Common Criteria Validated To NIAP, Protection Profile PSS Ver. 4.0
- Other Features: Emulation Control via USB 1.1 and USB 2.0 Compatible Front Panel Buttons

What's in the Box?

- SA-DPN Unit
- PS12VDC3A Power Adapter
- User Manual

Security Features:

- Anti-Tamper Switches: Equipped with internal switches that detect attempts to open the device enclosure, triggering visual and audible alarms and disabling functionality.
- Tamper-Evident Seal: The enclosure is protected with a seal to provide visual evidence of tampering.
- Protected Firmware: The controller has a protection feature that prevents unauthorized access to firmware.
- High Isolation on USB Channels: Opto-isolators ensure USB data paths are electrically isolated, preventing

data leakage between ports.

- Secure EDID Emulation: Prevents unauthorized and unsecure data transmission through DDC lines using secure EDID learning and emulation.

Advanced 2/4/8-Port DisplayPort Secure KVM Switch

USER MANUAL

SA-DPN-2S	2-Port Secure Single-Head DisplayPort KVM with Audio
SA-DPN-2D	2-Port Secure Dual-Head DisplayPort KVM with Audio
SA-DPN-2S-P	2-Port Secure Single-Head DisplayPort KVM with Audio and CAC Support
SA-DPN-2D-P	2-Port Secure Dual-Head DisplayPort KVM with Audio and CAC Support
SA-DPN-4S	4-Port Secure Single-Head DisplayPort KVM with Audio
SA-DPN-4D	4-Port Secure Dual-Head DisplayPort KVM with Audio
SA-DPN-4S-P	4-Port Secure Single-Head DisplayPort KVM with Audio and CAC Support
SA-DPN-4D-P	4-Port Secure Dual-Head DisplayPort KVM with Audio and CAC Support
SA-DPN-4Q-P	4-Port Secure Quad-Head DisplayPort KVM with Audio and CAC Support

SA-DPN-8S	8-Port Secure Single-Head DisplayPort KVM with Audio
SA-DPN-8D	8-Port Secure Dual-Head DisplayPort KVM with Audio
SA-DPN-8S -P	8-Port Secure Single-Head DisplayPort KVM with Audio and CAC Support
SA-DPN-8D-P	8-Port Secure Dual-Head DisplayPort KVM with Audio and CAC Support

TECHNICAL SPECIFICATIONS

VIDEO		
Format	DisplayPort	
	SA-DPN-2S / SA-DPN-2S-P	(2) DisplayPort 20-pin (female)
	SA-DPN-2D / SA-DPN-2D-P / SA-DPN-4S / SA-DPN-4S-P	(4) DisplayPort 20-pin (female)

Host Interface	SA-DPN-4D / SA-DPN-4D-P / SA-DPN-8S / SA-DPN-8S-P	(8) DisplayPort 20-pin (female)
	SA-DPN-4Q-P / SA-DPN-8D / SA-DPN-8D-P	(16) DisplayPort 20-pin (female)
User Console Interface	SA-DPN-2S / SA-DPN-2S-P / SA-DPN-4S / SA-DPN-4S-P / SA-DPN-8S / SA-DPN-8S-P	(1) DisplayPort 20-pin (female)
	SA-DPN-2D / SA-DPN-2D-P / SA-DPN-4D / SA-DPN-4D-P / SA-DPN-8D / SA-DPN-8D-P	(2) DisplayPort 20-pin (female)
	SA-DPN-4Q-P	(4) DisplayPort 20-pin (female)
Max Resolution	3840×2160 @ 60Hz	
DDC	5 volts p-p (TTL)	
Input Equalization	Automatic	
Input Cable Length	Up to 20 ft.	
Output Cable Length	Up to 20 ft.	
USB		
Signal Type	USB 1.1 and 1.0 Keyboard and Mouse only. USB 2.0 for CAC connection.	
Input Interface	SA-DPN-2S / SA-DPN-2D	(2)
	SA-DPN-2S-P / SA-DPN-2D-P / SA-DPN-4S / SA-DPN-4D	(4)
	SA-DPN-4S-P / SA-DPN-4D-P / SA-DPN-4Q-P / SA-DPN-8S / SA-DPN-8D	(8)
	SA-DPN-8S-P / SA-DPN-8D-P	(16)
Output Interface	(2) USB Type-A for keyboard and mouse connection only	
	(1) USB Type-A for CAC connection (P models only)	

AUDIO	
Input Interface	(2)/(4)/(8) Connector Stereo 3.5mm Female
Output Interface	(1) Connector Stereo 3.5mm Female
POWER	
Power Requirements	12V DC, 3A (minimum) power adapter with center-pin positive polarity.
ENVIRONMENT	
Operating Temp	32° to 104° F (0° to 40° C)
Storage Temp	-4° to 140° F (-20° to 60° C)
Humidity	0-80% RH, non-condensing
CERTIFICATIONS	
Security Accreditation	Common Criteria Validated To NIAP, Protection Profile PSS Ver. 4.0
OTHER	
Emulation	USB 1.1 and USB 2.0 Compatible
Control	Front Panel Buttons

WHAT'S IN THE BOX?

SA-DPN Unit	2/4/8-port Secure DisplayPort KVM Switch
PS12VDC3A	12V DC, 3A (minimum) power adapter with center-pin positive polarity.
User Manual	

SECURITY FEATURES

Anti-Tamper Switches

Each model is equipped with internal Anti-Tamper switches, which sense attempts to open the device enclosure. Once the system identifies such an attempt, all the front panel LED's will flash rapidly, the internal buzzers will beep, and the unit will become useless by shutting off connection with all attached PCs and peripherals disabling any functionality.

Tamper-Evident Seal

The enclosure of the unit is protected with a tamper-evident seal to provide a visual evidence if the unit has been opened.

Protected Firmware

The controller of the unit has a special protection feature that prevents reprogramming or reading the firmware.

High Isolation on USB Channels

Opto-isolators are used in the unit to keep USB data paths electrically isolated from each other, providing high isolation and preventing data leakage between ports.

Secure EDID Emulation

The unit prevents unwanted and unsecure data to be transmitted through the DDC lines by means of secure EDID learning and emulation.

Self-Test

A self-test is performed each times the KVM is powered on as part of its boot-up sequence. If the KVM starts up correctly and is functional, the self-test has passed. However, if all Front Panel LED's are on and not flashing, the power up self-test has failed and all functions are disabled. Check if any of the front panel port selection buttons are jammed. In this case, release the jammed button and recycle the power.



Figure 4-1: SA-DPN-4S-P Front panel



Figure 4-2: SA-DPN-4S-P Rear panel

INSTALLATION

SYSTEM REQUIREMENTS

- 1. regard Secure PSS is compatible with standard personal/portable computers, servers or thin-clients, running operating systems such as Windows or
- 2. The peripheral devices that are supported by the KVM are listed in the following table:

Console Port	Authorized Devices
Keyboard	Wired keyboard and keypad without internal USB hub or composite device functions, unless the connected device has at least one endpoint which is a keyboard or mouse HID class.
Display	Display device (e.g. monitor, projector) that uses an interface that is physically and logically compatible with the TOE ports (DisplayPort).
Audio out	Analog amplified speakers, Analog headphones.
Mouse/Pointing Device	Any wired mouse or trackball without internal USB hub or composite device functions.
User Authentication Device	USB devices identified as user authentication (base class 0Bh, e.g. Smart-card reader, PIV/CAC reader, Token, or Biometric reader)*

Single-Head Units:

1. Ensure that power is turned off or disconnected from the unit and the
2. Use a DisplayPort cable to connect the DisplayPort output port from each computer to the corresponding DisplayPort IN ports of the unit.
3. Use a USB cable (Type-A to Type-B) to connect a USB port on each computer to the respective USB ports of the unit.
4. Optionally connect a stereo audio cable (3.5mm to 5mm) to connect the audio output of the computers to the AUDIO IN ports of the unit.
5. Connect a monitor to the DisplayPort OUT console port of the unit using a DisplayPort
6. Connect a USB keyboard and mouse to the two USB console
7. Optionally connect stereo speakers to the AUDIO OUT port of the
8. Optionally connect CAC (COMMON ACCESS CARD, SMART CARD READER) to the CAC port in the user console interface. For -P
9. Finally, power on the KVM by connecting a 12VDC power supply to the power connector, and then turn on all the

Note: The computer connected to port 1 will always be selected by default after power up.

Note: You can connect up to 2 computers to the 2 port KVM, up to 4 computers to the 4 port KVM and 8 computers to the 8 port KVM

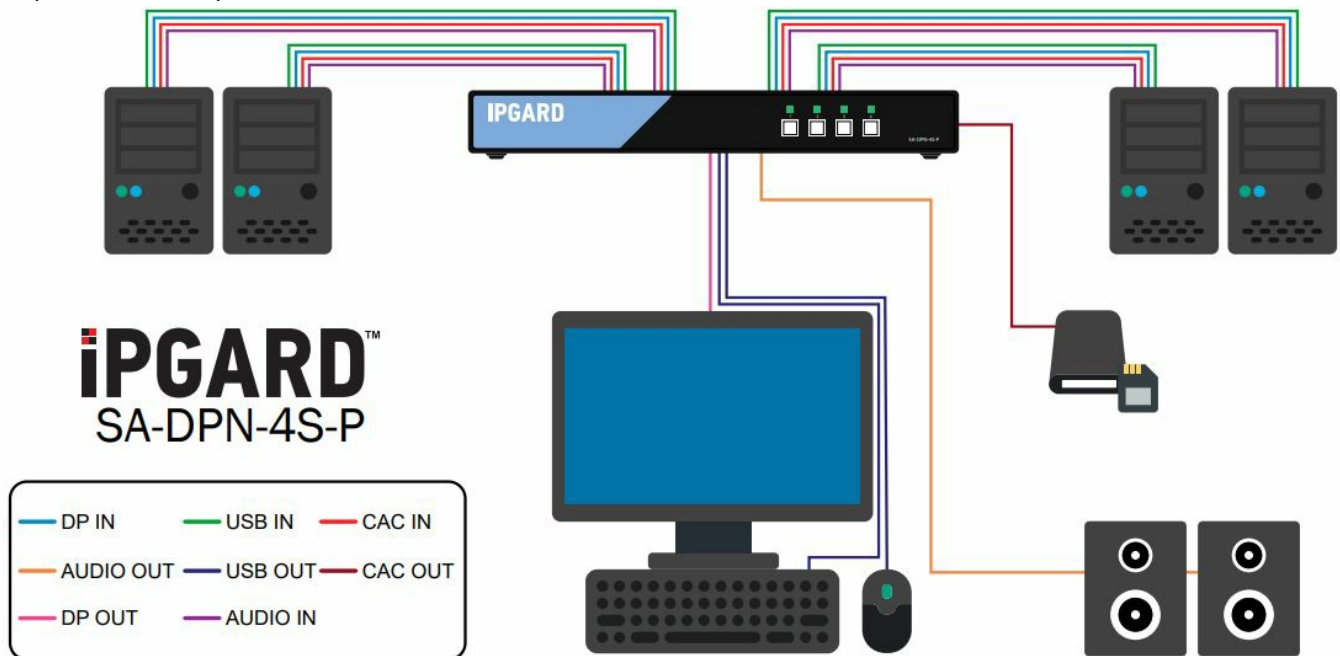


Figure 6-1: SA-DPN-4S-P

IMPORTANT WARNINGS – For security reasons:

- This product does not support wireless. Do not attempt to use a wireless keyboard or a wireless mouse with this product.
- This product does not support keyboards with integrated USB hubs or USB ports. Only use standard (HID) USB keyboards with this

- This product does not support microphone audio input or line input. Do not connect any microphones or headsets with microphones to this
- The connection of authentication devices (CAC) with external power sources is

Advanced 2/4/8-Port DisplayPort Secure KVM Switch

Multi-Head Units:

1. Ensure that power is turned off or disconnected from the unit and the
2. Use DisplayPort cables to connect the DisplayPort output ports of each computer to the corresponding DisplayPort IN ports of the unit. For example, if using SA-DPN-4Q, the four DisplayPort ports of one computer must all be connected to one

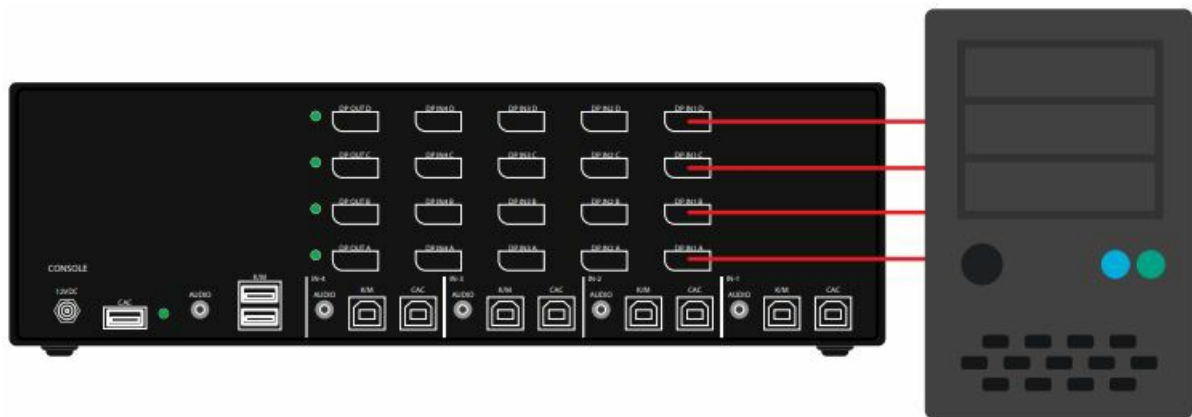


Figure 7-1: SA-DPN-4Q-P

- The DisplayPort IN connectors that belong to the same channel are arranged vertically.
3. Use a USB cable (Type-A to Type-B) to connect a USB port on each computer to the respective USB ports of the
 4. Optionally connect a stereo audio cable (3.5mm on both ends) to connect the audio output of the computer to the AUDIO IN ports of the
 5. Connect the monitors to the DisplayPort OUT console ports of the unit using DisplayPort
 - The DisplayPort IN ports on one row will be switched to the DisplayPort OUT of the same row.
 6. Connect a USB keyboard and mouse in the two USB console
 7. Optionally connect stereo speakers to the AUDIO OUT port of the
 8. Optionally connect CAC (smart card reader) to the CAC port in the user console
 9. Power on the KVM by connecting a 12VDC power supply to the power connector, and then turn on all the computers.

Note: The computer connected to port 1 will always be selected by default after power up.

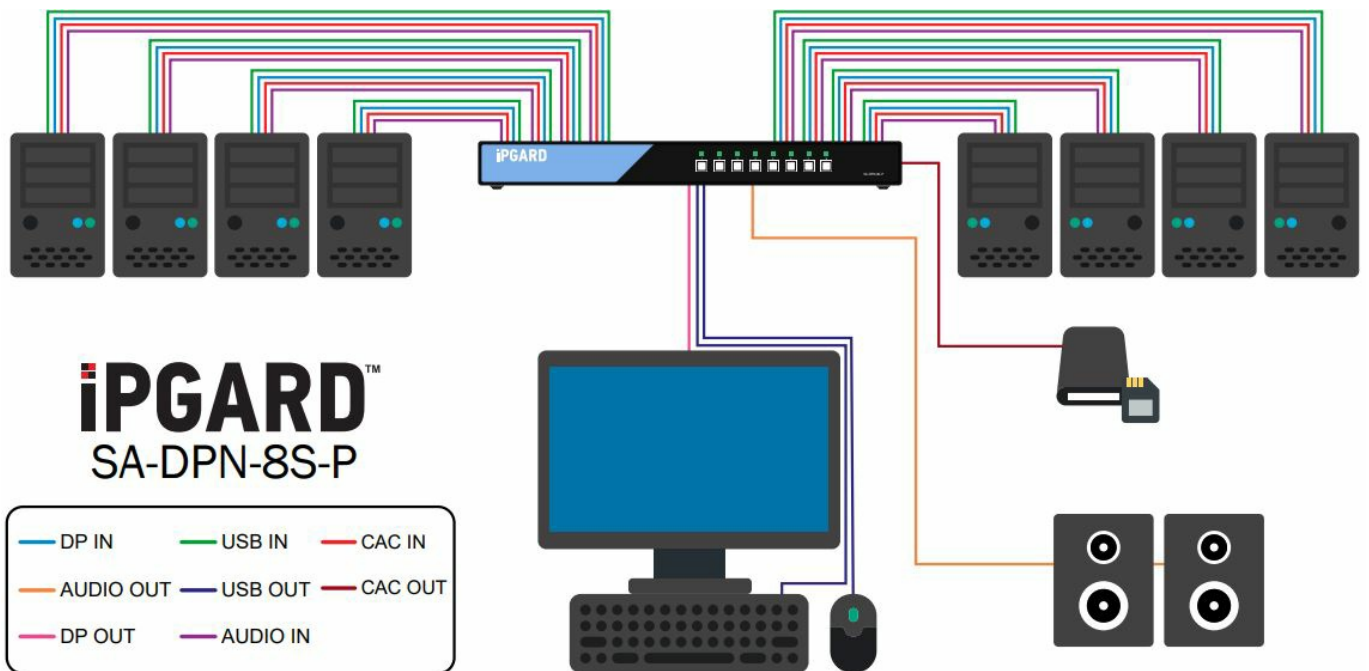


Figure 8-1: SA-DPN-8S-P

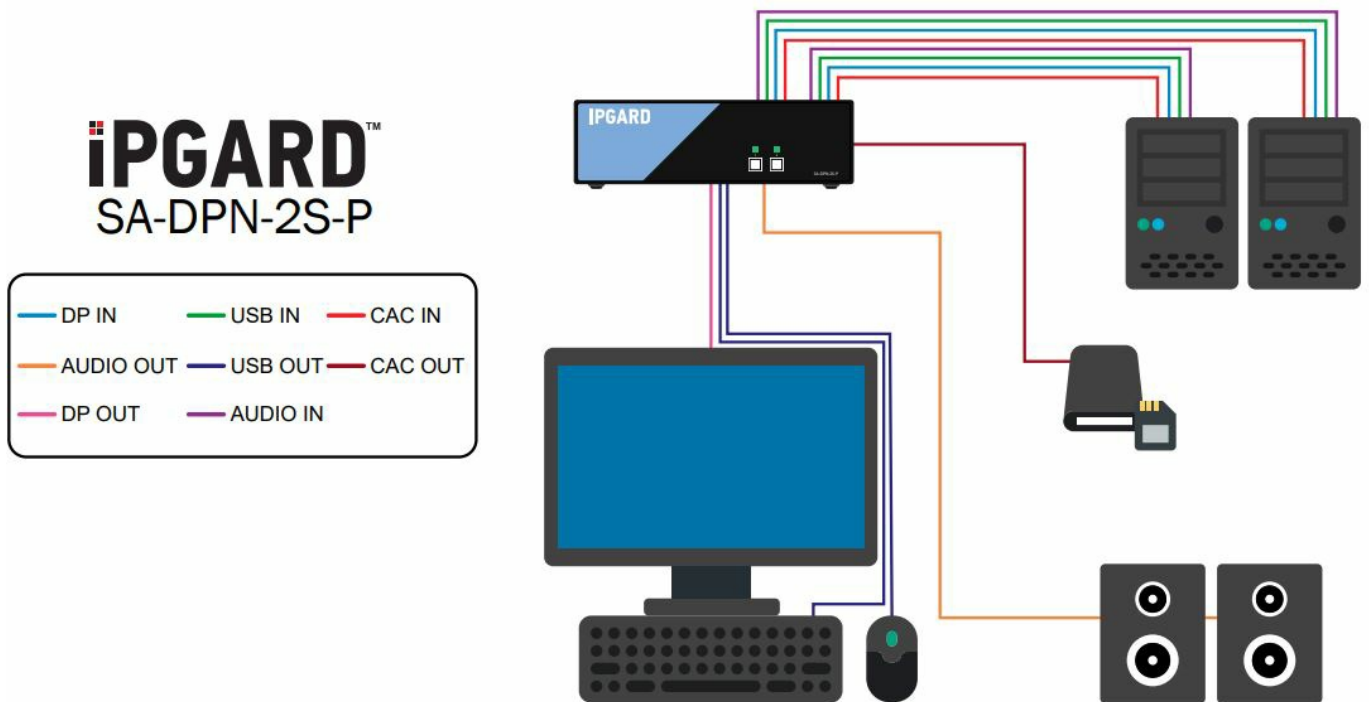


Figure 8-2: SA-DPN-2S-P

EDID Learn:

Factory default video EDID is set to HP (1080P max resolution) to allow initial operation with most of the DP display brands. For security reasons, EDID learn of most DP displays' brands can be achieved only by Authenticated Administrator.

Use the following steps to properly set up your EDID learning:

1. Ensure power is disconnected or turned off from both the unit and the
2. Using a USB cable (Type-A to Type-B), connect the PC to the KVM host's K/M Port
3. Connect a USB keyboard & mouse to the two USB console
4. Connect a DP video cable between the PC and the KVM host's DP video Port

5. Connect a DP display to the KVM console's DP output
6. Power up the PC and the KVM
7. Download the Administration and Security Management Tool to your PC from this link:<https://ipgard.com/tools-software/>
8. Run the Administration and Security Management Tool executable file

Initiate the session using the following steps in the Administration and Security Management Tool:

<https://ipgard.com/tools-software/>

1. Type "alt c n f g" on your keyboard
2. The mouse connected to the KVM will stop functioning and you will be prompted to "Enter credential id"
3. Login in as the administrator by entering the default username "admin", and pressing
4. Enter the default password "1 2 3 4 5" and press
5. Seven options will appear in a numerical menu: select option 6 and press
6. A menu will appear prompting you to Select Mode; instead, type "local" and press

The Administration and Security Management Tool will now automatically learn and store the display's EDID, then the device will reset and reboot. At the end of the boot-up, ensure all computers are connected to the KVM switch through each port to verify that all are properly presenting video on the connected display.

For additional assistance or information, please refer to the IPGard Secure KVM EDID Configuration Guide available at www.ipgard.com/documentation.

CAC (COMMON ACCESS CARD, SMART CARD READER) INSTALLATION

The following steps are intended for the system administrator or IT manager only.

If you have the optional CAC ports there will be 4 ports on a 4 host ports KVM.

CAC connection to the computer requires a USB cable connection separate from the keyboard and mouse. This allows the CAC to be connected independently from the keyboard and mouse. It also allows the user to select whether CAC for a certain computer is supported or not.

1. Ensure that power is turned off or disconnected from the unit and the
2. Use a USB cable (Type-A to Type-B) to connect a USB port on a computer to its respective CAC USB ports on the KVM. Do not connect the USB cable if CAC functionality is not needed for that computer.
3. Connect a CAC (smart card reader) to the CAC port in the user console
4. Power on the KVM by connecting a 12VDC power supply to the power connector, and then turn on all the
5. To disable CAC for any channel (all CAC ports are enabled as default), use the front panel buttons to switch the KVM to the channel whose CAC mode you wish to change. Once the channel is selected, the button LED for this specific channel should be on (CAC port enabled). Press and hold the button for 3 seconds until the button LED turns off. The CAC port is now disabled for this
6. To enable CAC for any channel, use the front panel buttons to switch the KVM to the channel whose CAC mode you wish to change. Once the channel is selected, the button LED for this specific channel should be off (CAC port disabled). Press and hold the button for 3 seconds until the button LED turns on. The CAC port is now enabled for this channel. An active session on a computer is terminated upon removal of the CAC

Note: The open session will be immediately terminated upon the removal of the registered CAC device.

CAC PORT CONFIGURATION

The following steps are intended for the system administrator and operators (users). Note: Only one computer connected to port 1 is required for this operation CAC port Configuration is an optional feature, allowing registration of any USB peripheral to operate with the KVM. Only one peripheral can be registered and only the registered peripheral will operate with the KVM. By default, when no peripheral is registered, the KVM will operate with any Smart Card Reader.

Configure the CAC Port via User Menu Options

1. Open the Administration and Security Management
2. Using the keyboard, press the Alt key twice and type "cnfg".
3. At this stage, the mouse connected to the KVM will stop
4. Enter the default username "user" and press
5. Enter the default password "12345" and press
6. Select option 2 from the menu on your screen and press
7. Connect the peripheral device to be registered to the CAC USB port in the console side of the KVM and wait until the KVM is reading the new peripheral information.
8. The KVM will list the information of the connected peripheral on the screen and buzz 3 times when registration is completed

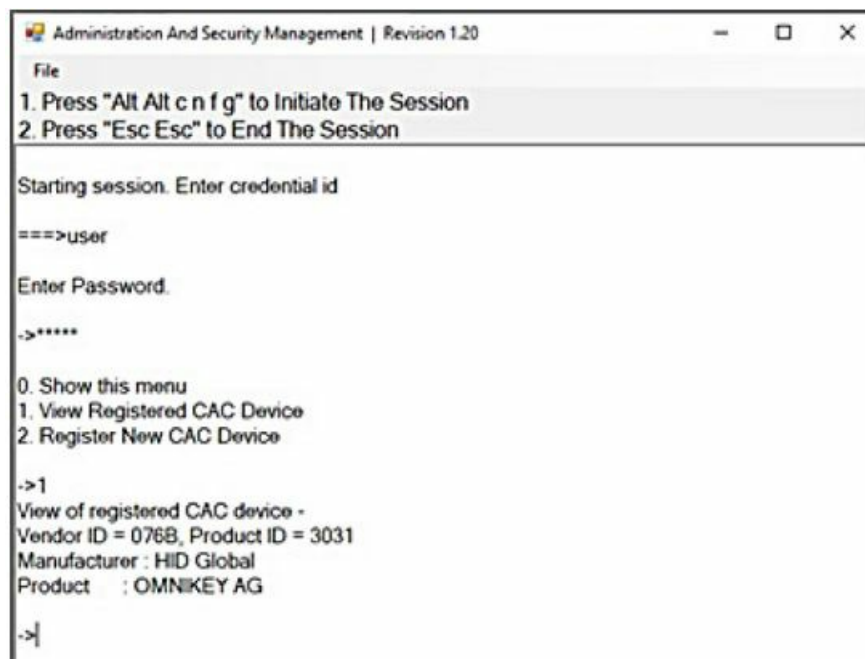


Figure 10-1 User Menu

AUDITING: Dumping the Event Log via User Menu Options

The following steps are intended for the system administrator.

Note: Only one computer connected to port 1 is required for this operation

The Event Log is a detailed report of critical activities stored in the KVM memory. A comprehensive feature list and guidance for Administration and Security Management Tools can be found in the Administrator's Guide

available for download from: <http://ipgard.com/documentation/>

To view or dump the Event Log:

1. Open the Administration and Security Management Program
2. Using the keyboard, press the Alt key twice and type “cnfg”.
3. Enter the default admin name “admin” and press
4. Enter the default password “12345” and press
5. Request a Log Dump by selecting option 5 in the menu. (Shown in Figure 11-1)

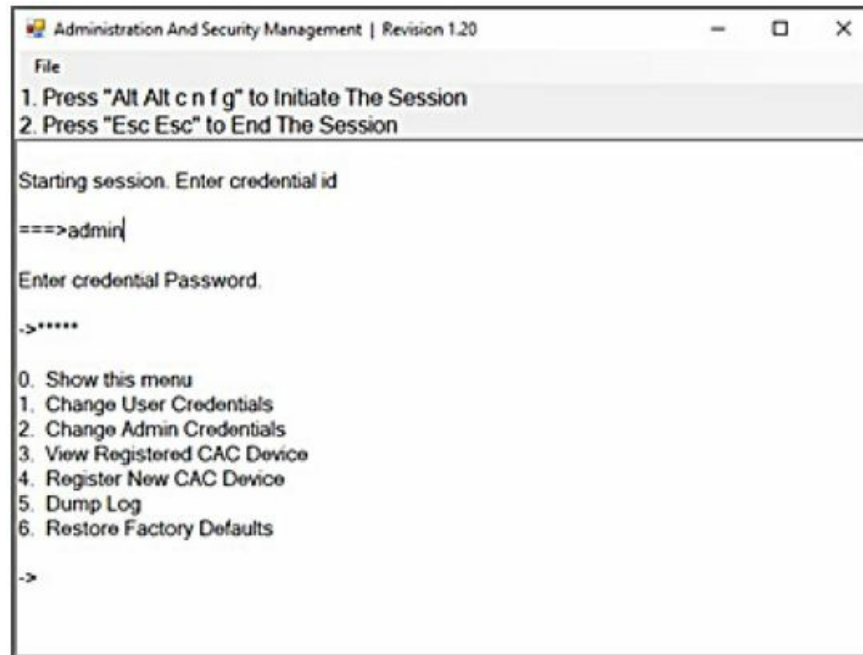


Figure 11-1

See Administration and Security Management Tool Guidance for detailed information

RESET: Restore Factory Defaults

The following steps are intended for the system administrator.

Note: Only one computer connected to port 1 is required for this operation. Restore Factory Defaults will reset all settings on the KVM to their original state. CAC port registration will be removed. KVM settings will be reset to factory defaults.

To Restore Factory Defaults via User Menu Options:

1. Open the Administration and Security Management Program
2. Using the keyboard, press the Alt key twice and type “cnfg”
3. Enter the default admin name “admin” and press
4. Enter the default password “12345” and press
5. Select option 7 from the menu on your screen and press (Menu shown in Figure 12-1)

See Administration and Security Management Tool Guidance for detailed information

LED's BEHAVIOR

User Console Interface – Display LED:

#	Status	Description
1	Off	Monitor is not connected
2	On	Monitor is connected
3	Flashing	EDID problem – Learn EDID to fix the problem

User Console Interface – CAC LED:

#	Status	Description
1	Off	CAC is not connected
2	On	Authorized and functional CAC is connected
3	Flashing	Non-CAC peripheral is connected

Front Panel – Port Selection LED's:

#	Status	Description
1	Off	Non-selected port
2	On	Selected port
3	Flashing	EDID learn in process

Front Panel – CAC Selection LED's:

#	Status	Description
1	Off	CAC port is disabled or non-selected port
2	On	CAC port is enabled
3	Flashing	EDID learn in process

Front Panel – Port and CAC Selection LED's:

#	Status	Description
1	All Flashing	Connected peripheral to keyboard or mouse console ports is rejected

IMPORTANT!

If all the Front Panel LED's are flashing and the buzzer is beeping, the KVM has been **TAMPERED** with and all functions are permanently disabled. Please contact iPGARD technical support at

support@iPGARD.com.

If all Front Panel LED's are on and not flashing, the POWER UP SELF TEST has failed and all functions are disabled.

Check if any of the front panel port selection buttons are jammed. In this case, release the jammed button and recycle the power. If power up self test is still

failing, please contact iPGARD technical support at

support@iPGARD.com.

EDID Learn – Front Panel LED's:

All LED's are turned on for 1 second. Then:

- Port 1 LEDs will flash until the end of the
- Port 2 LEDs will flash until the end of the process if a second video board exists (Dual-head KVM)
- Port 3 LEDs will flash until the end of the process if a third video board exists (Quad-head KVM)
- Port 4 LEDs will flash until the end of the process if a fourth video board exists (Quad-head KVM)

Front Panel Control

To switch to an input port, simply push the desired input button on the front-panel of the KVM. If an input port is selected, the LED of that port will turn on. An open session is terminated upon switching to a different computer.

TROUBLESHOOTING

No Power

- Make sure that the power adapter is securely connected to the power connector of the
- Check the output voltage of the power supply and make sure that the voltage value is around 12VDC.
- Replace the power

No Video

- Check if all the video cables are connected

- Connect the computer directly to the monitor to verify that your monitor and computer are functioning
- Restart the

The keyboard is not working

- Check if the keyboard is properly connected to the
- Check if the USB cables connecting the unit and the computers are properly
- Try connecting the USB on the computer to a different
- Make sure that the keyboard works when directly connected to the
- Replace the keyboard.

Note: The NUM, CAPS, and SCROLL Lock LED indicators on the keyboard are not supposed to light up if connected to the KVM.

The mouse is not working

- Check if the mouse is properly connected to the
- Try connecting the USB on the computer to a different
- Make sure that the mouse works when directly connected to the
- Replace the mouse.

No Audio

- Check if all the audio cables are connected
- Connect the speakers directly to the computer to verify that the speakers and the computer audio are functioning
- Check the audio settings of the computer and verify that the audio output is through the speakers.

No CAC (COMMON ACCESS CARD, SMART CARD READER)

- Check if the USB cables connecting the unit and the computers are properly
- Make sure the CAC port is

TECHNICAL SUPPORT

For product inquiries, warranty questions, or technical questions, please contact info@iPGARD.com.

The extent of limited warranty

iPGARD, Inc. warrants to the end-user customers that the iPGARD product specified above will be free from defects in materials and workmanship for the duration of 1 year, which duration begins on the date of purchase by the customer. Customer is responsible for maintaining proof of date of purchase.

regard limited warranty covers only those defects which arise as a result of normal use of the product, and do not apply to any:

1. Improper or inadequate maintenance or modifications
2. Operations outside product specifications
3. Mechanical abuse and exposure to severe conditions

If iPGARD receives, during applicable warranty period, a notice of defect, iPGARD will at its discretion replace or repair defective product. If iPGARD is unable to replace or repair defective product covered by the iPGARD warranty within reasonable period of time, iPGARD shall refund the cost of the product. iPGARD shall have no obligation to repair, replace or refund unit until customer returns the defective product to iPGARD. Any replacement product could be new or like new, provided that it has functionality at least equal to that of the product being replaced. iPGARD limited warranty is valid in any country where the covered product is distributed by iPGARD.

Limitations of warranty

To the extent allowed by local law, neither iPGARD nor its third party suppliers make any other warranty or condition of any kind whether expressed or implied with respect to the iPGARD product, and specifically disclaim implied warranties or conditions of merchantability, satisfactory quality, and fitness for a particular purpose.

Limitations of liability

To the extent allowed by local law the remedies provided in this warranty statement are the customers sole and exclusive remedies. To the extent allowed by local law, except for the obligations specifically set forth in this warranty statement, in no event will iPGARD or its third party suppliers be liable for direct, indirect, special, incidental, or consequential damages whether based on contract, tort or any other legal theory and whether advised of the possibility of such damages.

Local law

To the extent that this warranty statement is inconsistent with local law, this warranty statement shall be considered modified to be consistent with such law

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Documents / Resources



[iPGARD SA-DPN-2S Advanced 2-4-8-Port DisplayPort Secure KVM Switch](#) [pdf] User Manual
SA-DPN-2S Advanced 2-4-8-Port DisplayPort Secure KVM Switch, SA-DPN-2S, Advanced 2-4-8-Port DisplayPort Secure KVM Switch, 2-4-8-Port DisplayPort Secure KVM Switch, DisplayPort Secure KVM Switch, Secure KVM Switch, KVM Switch, Switch

References

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