2-Port USB DisplayPort KVM Switch

USER MANUAL

CS782DP

EMC Information

FEDERAL COMMUNICATIONS COMMISSION INTERFERENCE STATEMENT: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

The device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

CE Warning: This is a class A product. In a domestic environment this product may cause radio interference in which case the user may be required to take adequate measures.

Warning: This equipment is compliant with Class A of CISPR 32. In a residential environment this equipment may cause radio interference.

Warning: Operation of this equipment in a residential environment could cause radio interference.

KCC Statement

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RoHS

This product is RoHS compliant.

CS782DP User Manual

Online Registration

International	http://eservice.aten.com

Telephone Support

International	886-2-8692-6959
China	86-400-810-0-810
Japan	81-3-5615-5811
Korea	82-2-467-6789
North America	1-888-999-ATEN ext 4988
United Kingdom	44-8-4481-58923

Technical Support

- For international online technical support – including troubleshooting, documentation, and software updates: **http://eservice.aten.com**
- For North American technical support:

Email Support		support@aten-usa.com
Online Technical Support	Troubleshooting Documentation Software Updates	http://support.aten.com
Telephone Support		1-888-999-ATEN ext 4998

Package Contents

The CS782DP 2-Port USB DisplayPort KVM Switch package contains the following items:

- 1 CS782DP 2-Port USB DisplayPort KVM Switch
- 2 DisplayPort Cables
- 2 USB Cables
- 2 Audio Cables
- 1 Remote Port Selector
- 1 User Instructions*

Check to make sure that all the components are present and that nothing got damaged in shipping. If you encounter a problem, contact your dealer.

Read this manual thoroughly and follow the installation and operation procedures carefully to prevent any damage to the unit, and/or any of the devices connected to it.

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* Features may have been added to the CS782DP since this manual was printed. Please visit our website to download the most up-to-date version of the manual.

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Overview

The CS782DP takes a giant step forward from prior digital-interfaced KVM models by offering DisplayPort functionality, USB 2.0 peripheral sharing (via a USB hub attached to the USB mouse port), a rich bass experience for 2.1 surround systems and a firmware upgrade function that allows you to keep up with latest available versions.

Supporting the latest DisplayPort technology, for premium image quality and vivid high-definition sound for music, movies and games.

Another new feature of the CS782DP is the implementation of a remote port selector. This means that you can now control port switching from the desktop while the switch itself can be placed in a convenient, out-of-the-way location. Also, in addition to new hotkeys, the CS782DP offers the latest mouse port-switching function – simply double-click on the scroll wheel of a USB mouse to change ports.

Finally, the CS782DP's new Power on detection feature means that if one of the computers is powered off, the CS782DP will automatically switch to the other computer if powered-on.

Featuring an unbeatable combination of DisplayPort functionality, USB 2.0 peripheral sharing convenience and enhanced user-friendly operations, the CS782DP allows users to keep ahead of the latest innovations in desktop multimedia and productivity.

Features

- One DisplayPort video console controls two USB computers
- Fully DisplayPort 1.2 Compliant
- Computer selection via remote port selector, hotkeys, and USB mouse[1]
- Multiplatform support – Windows, Mac, Sun, Linux
- HDCP Compliant
- Supports MST (Multi-Stream Transport)[2], enabling multiple monitors to be used via a single DisplayPort connector
- Supports DisplayPort Dual Mode (DP++)[3] for directly outputting single-link DVI or HDMI signals via a powered DisplayPort-to-HDMI/DVI DP++ adapter
- Compatible with widescreen LCD monitors
- Power on detection – if either of the computers is powered off, the CS782DP will automatically switch to the other computer
- Audio-enabled – full bass response provides a rich experience for 2.1 channel surround sound systems
- Supports HD Audio[4] through DisplayPort playback
- Independent switching of the KVM and Audio focus[4] allows convenient multi-tasking
- Supports multimedia keyboards
- Supports wireless keyboards and mice
- Console mouse port emulation/bypass feature supports most mouse drivers and multifunction mice
- Mac/Sun keyboard support and emulation[5]
- USB 2.0 mouse port can be used for USB hub and USB peripheral sharing[6]
- Bus-Powered
- Firmware upgradable

Note: 1. Mouse port switching is only supported under mouse emulation mode and by USB 3-key wheel mice.

2. MST (Multi-Stream Transport) requires either monitors capable of DisplayPort 1.2 daisy-chaining, or use of a powered DisplayPort MST Hub. A DisplayPort v1.1a display can be the last display in a DisplayPort v1.2 chain. The PC source must be DisplayPort 1.2 compliant.
3. DisplayPort Dual Mode (DP++) requires the use of a powered DP++ adapter. The graphics source must be DP++ compliant.
4. HD audio through DisplayPort cannot be switched independently.
5. 1. PC keyboard combinations emulate Mac/Sun keyboards. 2. Mac/Sun keyboards work only with their own computers.
6. This feature may require an extra power adapter to be connected to the USB hub and that the CS782DP's Mouse Emulation Mode be disabled.

System Requirements

Console

- A DisplayPort monitor capable of the highest resolution that you will be using on any computer in the installation
- A USB Keyboard and a USB Mouse
- Speakers (optional)

Computers

The following equipment must be installed on each computer that is to be connected to the system:

- A DisplayPort video port
- USB Type A port
- Speaker port (optional)

Cables

Two DisplayPort cables, two USB 2.0 cables and two 3.5mm Audio Jack cables included with the CS782DP package

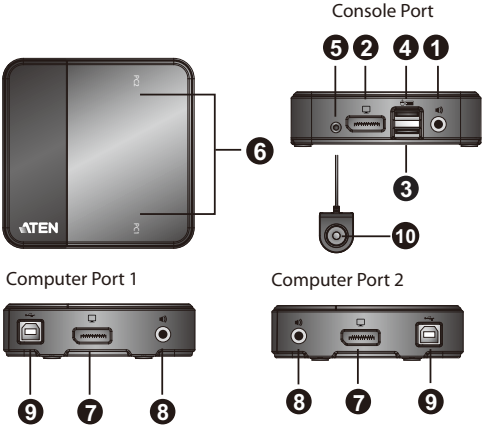
Operating Systems

Supported operating systems are shown in the table, below:

OS		Version
Windows		2000 / XP / Vista / 7 / 8 / 8.1 / 10
Linux	RedHat	6.0 and higher
	SuSE	8.2 and higher
	Mandriva (Mandrake)	9.0 and higher
UNIX	AIX	4.3 and higher
	FreeBSD	3.51 and higher
	Sun	Solaris 9 and higher
Novell	Netware	5.0 and higher
Mac		OS 9 and higher
DOS		6.2 and higher

Components

CS782DP



No.	Component	Description
1	Console Audio Port	Your console speakers plug in here.
2	Console Monitor Port	Your console DisplayPort monitor plugs in here.
3	Console Keyboard Port	Your console USB keyboard plugs in here.
4	Console Mouse Port	Your console USB mouse plugs in here.
5	Remote Port Selector Jack	The Remote Port Selector plugs in here.
6	Port LEDs	The Port LEDs indicate status. The LED lights **on** to indicate that the computer attached to the corresponding port is selected and has the KVM focus. The LED **flashes** to indicate that the computer attached to its corresponding port is being scanned by the Auto Scan function. The LED is **off** to indicate the port is not selected.
7	Computer Monitor Port	Your computer DisplayPort output plugs in here.
8	Computer Audio Ports	Your computer audio output plugs in here.
9	Computer USB Keyboard / Mouse Port	Your computer USB cable plugs in here.
10	Port Selection Pushbutton	Press the Port Selection Pushbutton to toggle the KVM and Audio focus between the two computers.

Installation

1. Make sure that the power to any device that you connect to the installation has been turned off. You must unplug the power cords of any computers that have the *Keyboard Power On* function.
2. Make sure that all devices you will be installing are properly grounded.

1. Plug your keyboard and mouse into the console Keyboard/ Mouse ports located on the front side of the CS782DP. The ports are labeled with icons with the mouse port on the top and the keyboard port on the bottom.

Note: The console mouse connector is a USB 2.0 port and so can accept any USB compatible peripheral. You can even connect a hub to install multiple USB devices (this feature may require an extra power adapter to be connected to the USB hub and that the CS782DP's Mouse Emulation Mode be disabled). See *Hotkey Summary Table*, page 14 for information.

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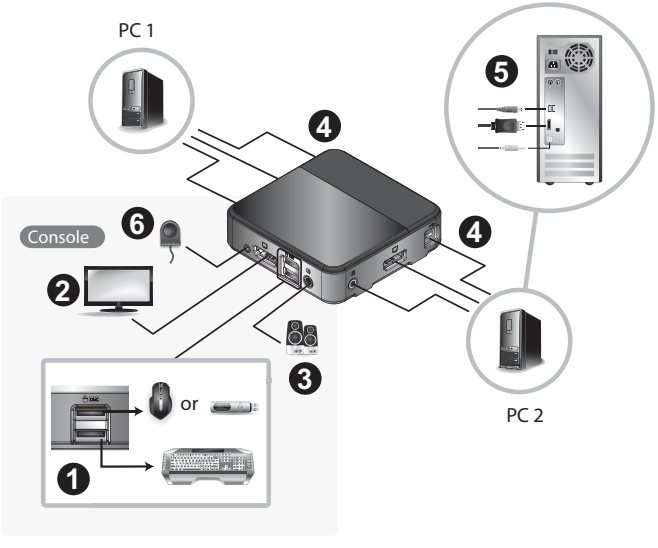
2. Plug your monitor into the DisplayPort port, located on the front of the CS782DP. Power on the monitor.
3. Plug your speakers into the console audio port, located on the front of the CS782DP (Optional).
4. Plug the USB, video and audio connectors of the KVM cables into their respective PC ports on the CS782DP.
5. Plug the USB, video and audio connectors of the KVM cables into their respective ports on the computers you are installing.
6. If you choose to use the remote port selector, plug its cable into the remote port selector female jack, located on the front of the unit.
7. Power on the computers.

Note:

- By default, the switch links to the first computer that is powered on.
- The total cable length from the PC to monitor (including KVM) cannot exceed 3 meters.
- Choosing high quality cables helps to ensure that 4K resolutions can be reached.

Installation Diagram



Operation

The CS782DP provides three convenient methods of selecting computers: Manual – click the pushbutton on the Remote Port Selector; Mouse – click the mouse's scroll wheel; and Hotkey – enter combinations from the keyboard.

Note: Wait a few seconds for the output device to stabilize and display the input source's video content before switching to another one.

Manual Port Selection

Press the port selection pushbutton on the Remote Port Selector to toggle the KVM and Audio focus between the two computers. The Port LED lights to indicate that the computer attached to its corresponding port has the focus.

Note: Do not switch ports while a USB peripheral device is in operation.

Mouse Port Selection

Simply double-click the scroll wheel on your USB mouse to switch between ports. The mouse port-switching function allows you to toggle back and forth between the ports.

Note:

1. This feature is only supported by USB 3-key scroll wheel mice.
2. The default setting is OFF.
3. This feature is only supported when mouse emulation is also enabled. See *Hotkey Summary Table*, page 14 for further details.

Hotkey Port Selection

All hotkey operations begin by tapping the **Scroll Lock** key twice. To toggle the KVM and Audio focus between the two ports, tap **Scroll Lock** twice and then press **Enter**. See the *Hotkey Summary Table*, page 14, for full details.

Note: If using [Scroll Lock] conflicts with other programs, [Ctrl] can be used instead.

Alternate Entering Hotkey Mode

- Press [Scroll Lock] [Scroll Lock] [x] [Enter]. The entering hotkey mode hotkey is now [Ctrl].

or

- Press and hold the remote port selector switch for three seconds. The entering hotkey mode hotkey is now [Ctrl].

Note: These procedures toggle between the two methods.

Hotkey Summary Table

Combination		Function
[Scroll Lock] [Scroll Lock] +	[Enter]	Toggles the KVM and Audio focus between the two ports. If the KVM and Audio focus are on different ports, only the KVM focus switches.
	[k] [Enter]	Only toggles the KVM focus.
	[s] [Enter]	Only toggles the Audio focus.
	[a] [Enter] [n]	Starts Auto Scan. The KVM focus cycles from port to port at **n** second intervals. **Note:** Replace **n** with a number between 1 and 4 (see *Scan Interval Table* below). To exit Auto Scan, press [Esc] or [Spacebar]. Auto Scanning stops when you exit Auto Scan mode.
	[Q] [n] [Enter]	Enables/Disables the monitor re-detection. (Default: off) **Note**: 1. Replace n with a number between 1 and 2. n = port # 2. If you enable the monitor re-detection and the unselected computer uses a Mac OS, it will enter sleep mode.
	[x] [Enter]	Toggles the hotkey invocation key between [Scroll Lock] and [Ctrl].
	[m] [Enter]	Enables/disables mouse emulation function. (Default: On)
	[w] [Enter]	Enables/disables mouse port-switching function. (Default: Off)
	[F2] [Enter]	Activates Mac keyboard mapping.
	[F3] [Enter]	Activates Sun keyboard mapping.
	[F10] [Enter]	Auto detects keyboard operating platform.
	[F4] [Enter]	Lists current switch settings. To see a list of the current switch settings, do the following: 1. Open a text editor or word processor and place the cursor in the page window. 2. Invoke hotkey. 3. Press [F4] and [Enter] to display the settings in the text editor or word processor.
	[F5] [Enter]	Performs a USB keyboard and mouse reset.
	[e] [Enter]	Enables/Disables the Power on Detection feature. (Default: On)
	[r] [Enter]	Resets hotkeys to the default setting.
	[u][p][g][r][a][d] [e] [Enter]	Invokes the Firmware Upgrade mode.
	[F6], [nn], [Enter]	Sets the keyboard language layout where “nn” is the two digit number that represents the desired keyboard language code- U.S. English: 33 (Default); Japanese: 15; French: 08; German: 09.
[wheel] [wheel]		When the Mouse Switch function is activated, switches to the next PC.

Scan Interval Table

n	Scan Interval	n	Scan Interval
1	3 secs.	3	10 secs.

n	Scan Interval	n	Scan Interval
2	5 secs. (default)	4	20 secs.

Keyboard Emulation

PC Keyboard	Mac Keyboard	PC Keyboard	Sun Keyboard
[Shift]	Shift	[Ctrl] [T]	Stop
[Ctrl]	Ctrl	[Ctrl] [F2]	Again
	⌘	[Ctrl] [F3]	Props
[Ctrl] [1]		[Ctrl] [F4]	Undo
[Ctrl] [2]		[Ctrl] [F5]	Front
[Ctrl] [3]		[Ctrl] [F6]	Copy
[Ctrl] [4]		[Ctrl] [F7]	Open
[Alt]	Alt	[Ctrl] [F8]	Paste
[Print Screen]	F13	[Ctrl] [F9]	Find
[Scroll Lock]	F14	[Ctrl] [F10]	Cut
	=	[Ctrl] [1]	
[Enter]	Return	[Ctrl] [2]	-
[Backspace]	Delete	[Ctrl] [3]	+
[Insert]	Help	[Ctrl] [4]	
[Ctrl]	F15	[Ctrl] [H]	Help
	Compose		◆

Note: When using key combinations, press and release the first key (Ctrl), then press and release the activation key.

The Firmware Upgrade Utility

To upgrade the CS782DP's firmware, do the following:

1. From a computer that is not part of your KVM installation, download the latest Firmware Upgrade package for the CS782DP from our Internet support site (`www.aten.com`).
2. There are two ways to complete this step
   - Disconnect the CS782DP from your KVM installation. Press and hold the Remote Port Selector's pushbutton. While you are still holding the pushbutton, connect the KVM cable's Type-A USB connector to a USB port on the computer you have downloaded the Firmware Upgrade package to.
   - First, connect one of the KVM cable's Type-A USB connector to a USB port on the computer you have downloaded the Firmware Upgrade package to. Then, use the keyboard connected to the CS782DP to key in the following hotkeys: "u""p""g""r""a""d""e".
3. The CS782DP now enters Firmware Upgrade Mode. The two Ports LEDs flash together to indicate that the unit is in Firmware Upgrade Mode.

Note: While the CS782DP is in Firmware Upgrade Mode, normal keyboard and mouse functions are suspended. You must complete the firmware upgrade or exit Firmware Upgrade Mode to regain normal control of the console.

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4. Run the Firmware Upgrade Package file. The *Firmware Upgrade Utility* Welcome screen appears.
5. Read the License Agreement and enable to *I Agree* button.
6. Click **Next** to continue. The Firmware Upgrade Utility main screen appears. All the devices capable of being upgraded by the package are listed in the *Devices List* panel.
7. Select your device. Its description appears in the Device Description panel. Click **Next** to perform the upgrade.

As the upgrade proceeds, status messages appear in the Status Messages panel, and the progress towards completion is shown in the *Progress* bar.

8. After the upgrade has completed, a screen appears to inform you that procedure was successful. Click **Finish** to close the Firmware Upgrade Utility.
9. Set up your KVM installation again. See *Installation*, page 10.

Upgrade Failed

If the Upgrade Succeeded screen doesn't appear, it means that the upgrade failed to complete successfully, in which case you should do the following:

1. Disconnect the USB connectors on the KVM cables from the computer.
2. Press and hold the Remote Port Selector's pushbutton. While you are still holding the pushbutton, reconnect the KVM cable's USB connectors to the computer.
3. Power on the CS782DP. Follow steps 3 to 9 on pages 16-17 again.

Troubleshooting

Symptom	Possible Cause	Action
Monitor does not display after the KVM cable set is hot-plugged.	DisplayPort graphics card is not compatible with cable set hot-plugging.	Power off all devices on the installation; power off the CS782DP; confirm all KVM cables are properly connected; power on the CS782DP; power on the computers.
	Graphics card driver is not up-to-date.	Upgrade to the latest graphics card driver.
Mouse and/or keyboard is not responding.	Switch needs to be reset.	Power off all devices on the installation; power off the CS782DP; wait five seconds; power on the CS782DP again.
Mouse port-switching function is not responding.	Mouse does not support this function.	This feature is only supported by USB 3-key scroll wheel mice.
	Mouse emulation is disabled.	Enable mouse emulation. See *Hotkey Summary Table*, page 14, for details.
Cannot switch ports by pressing [Scroll Lock] twice.	Keyboard is incompatible with [Scroll Lock] invocation.	Switch to the alternate hotkey invocation keys. See *Alternate Entering Hotkey Mode*, page 13, for details.

Specifications

Function		CS782DP
Computer Connections		2
Port Selection		Hotkey, Mouse, Remote Port Selector
Connectors	Console Ports	2 x USB Type A Female (Black)
		1 x DisplayPort Female (Black)
		1 x 3.5mm Audio Jack Female (Green)
	KVM Ports	2 x USB Type B Female (White)
		2 x DisplayPort Female (Black)
		2 x 3.5mm Audio Jack Female (Green)
	Remote Port Selector	1 x Mini Stereo Jack
Cable Length	KVM	2 x 1.8 m USB Cable
		2 x 1.8 m Audio Cable
		2 x 1.5 m DisplayPort Cable
	Remote Port Selector	1.8 m
LEDs	KVM	2 (White)
Emulation	Keyboard / Mouse	USB
Video		4K (4096 x 2160 @ 60 Hz)
Scan Interval		3, 5, 10, 20 seconds (Default: 5 secs.)
Power Consumption		DC 5V, 4W
Environmental	Operating Temperature	0–50ºC
	Storage Temperature	-20–60ºC
	Humidity	0–80% RH, Non-condensing
Physical Properties	Housing	Plastic
	Weight	0.12 kg
	Dimensions (L x W x H)	9.37 x 9.30 x 2.68 cm

Factory Default Hotkey Settings

Setting	Default
Port Switching	[Scroll Lock] [Scroll Lock]
Auto Scan Interval	5 seconds
Keyboard Operating Platform	PC Compatible
Mouse Emulation	On
Mouse Port-Switching	Off
Power on Detection	Enabled

Limited Hardware Warranty

ATEN warrants its hardware in the country of purchase against flaws in materials and workmanship for a Warranty Period of two [2] years (warranty period may vary in certain regions/countries) commencing on the date of original purchase. This warranty period includes the LCD panel of ATEN LCD KVM switches. Select products are warranted for an additional year (see A+ Warranty for further details). Cables and accessories are not covered by the Standard Warranty.

What is covered by the Limited Hardware Warranty

ATEN will provide a repair service, without charge, during the Warranty Period. If a product is defective, ATEN will, at its discretion, have the option to (1) repair said product with new or repaired components, or (2) replace the entire product with an identical product or with a similar product which fulfills the same function as the defective product. Replaced products assume the warranty of the original product for the remaining period or a period of 90 days, whichever is longer. When the products or components are replaced, the replacing articles shall become customer property and the replaced articles shall become the property of ATEN.

To learn more about our warranty policies, please visit our website:

http://www.aten.com/global/en/legal/policies/warranty-policy/