



VKMA Switch

Video Keyboard Mouse Audio automatic Switch

CAS-241, CAS-441, CAS-441-PM



USER MANUAL

Please read this manual and follow the installation procedure carefully to prevent any damage to the VKMA switch and/or to the connected devices.



Disclaimer

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1. Features

1. Features

1. PS/2 and AT keyboard and mouse emulation.
2. Stereo audio channels switching.
3. Sound event notification and translation.
4. Plug and Play keyboard and mouse.
5. Hot plugging of computers without need to reboot.
6. Standard PS/2 mouse, 3 buttons, Scrolling Wheel, Microsoft®, Logitech®, A4Tech®, Genius® 4,5 buttons mice support.
7. Keyboard LEDs status saving and restoring.
8. Mode and event LED indication.
9. PC switching via front panel pushbuttons or keyboard Hot Keys.
10. AutoScan mode with intervals 4,10,30 secs.
11. Computer suspend mode blockage in AutoScan.
12. Video resolution is up to 2048x1536, video bandwidth 250 MHz, DDC, DDC2, DDC2B.
13. No software required.
- 14.* Control sockets through the PM interface, turning On or Off server etc.
- 15.* Indicate status of the socket with sound event.

Note: * For CAS-441-PM only



2. Hardware requirements

Console:

VGA, SVGA, or Multi sync monitor capable of the highest resolution that you will be using on any PC in the installation.

PS/2 Mouse.

PS/2 Keyboard.

Computers:

VGA, SVGA or Multisync video card.

6 pin mini-DIN (PS/2 Style) mouse port.

6 pin mini-DIN (PS/2 Style) keyboard port.

Cables:

Male-to-male VGA cables.

Male-to-male Mini-DIN 6 pin cables.

Male-to-male 3.5 mm stereo plug audio cables.

Cat-5 cable¹ with straight-through cable pin out (T568B or T568A)

Note: ¹ for connecting CAS-441-PM to SiS-PM-841



3. Specifications

MODEL	CAS-241	CAS-441	CAS-441-PM
Number of Switching Computers	2	4	4
Mouse and Keyboard Protocol Emulation	PS/2 keyboard, PS/2 mouse, PC/AT ¹ keyboard		
Case Design	Desktop		
Case Housing	Metal, Plastic		
Computer Selection	Pushbutton switches or Hot Keys		
Computer side connectors	HD 15Mx2 MD 6F x4 3.5 mm stereo audio jack x 2	HD 15Mx4 MD 6F x8 3.5mm stereo audio jack x 4	HD 15Mx4 MD 6F x8 3.5mm stereo audio jack x 4 RJ45 x 1
Console side connectors	HD-15Mx1	MD-6Fx2	3.5 mm stereo audio jack x 1
Front panel LEDs per channel	"Link/Event" "Active/Scan"		
Audio Channels Type	Stereo		
Audio Frequency Bandwidth	20 Hz - 20 kHz		
Minimal PS/2 and audio transmission distance ²	15 m		
Video Resolution up to	2048 x 1536 pixels		



Video Protocol	DDC, DDC2, DDC2B		
Video Bandwidth	250 MHz		
Power Consumption	From PS/2 PC ports, Spare AC-DC adapter +9V, 300mA ³		
Dimensions (LxWxH), mm	146x35x45	245x135x45	245x135x45
Weight up to, Kg	0.65	1.3	1.3

Notes:

- ¹ Connect PC/AT keyboard is possible through a PC/AT-PS/2 adapter (not enclosed).
- ² Depends on quality of audio cables.
- ³ AC-DC adapter is not enclosed, it may be necessary if PS/2 ports supply other devices (external hard drives, etc) in addition.

4. Installation

1. Connect the console monitor to the switch first and power it on.
2. Connect the mouse and keyboard to the switch.
3. Connect the audio speakers to console audio out on the front panel.
4. Connect the AC-DC adaptor (9V 300mA) to the switch power jack and insert adaptor to the AC mains, if necessary¹.
5. Connect the computers (keyboard, mouse, VGA, audio connectors) to the switch by cables and turn them on.
6. Connect CAS-441-PM to SiS-PM-841 with Cat5 cable with straight-through pinout.

Notes:

1. See Note 3 of the Specifications section.
2. After installing the VKMA switch the settings are set as defaults.

The default settings are shown in the Table 1.

Table 1. Default VKMA switch settings after reset.

Setting option	Default value
Beep	On
Sound event latching	On
Sound event translation	On
AutoScan mode	ON
AutoScan mode scan interval	4 sec
Suspend mode blockage	On

5. Operation

Computer booting up

Before booting up the computer keyboard and mouse must be connected to the VKMA switch. When computer is connected to the VKMA switch, the "Link/Event" LED of the corresponding channel lights. Note, that at some non-ATX computers this LED will not light until the computer is powered on. On boot up stage the VKMA switch emulates the keyboard and the mouse, so at the same time you can work on the another channel, which is selected as an active. On this stage "Active/Scan" red LED on the emulated channel may blink fast, meaning that the computer initializes PS/2 keyboard and mouse.

Computer selection

Only after computer has booted up, you can select the corresponding channel as an active channel. You can do it as by pushing:

- the channel pushbutton on the front panel of the VKMA switch.
- using Hot Key combination (see the appendix 2). The "Active/Scan" red LED indicates which channel is an active. On selection a short beep sounds, if turned on. Beep can be turned on/off by Hot Key combination.

Computer and console equipment replacement¹

If computers have already been booted up with mouse and keyboard connected, you can connect and disconnect computers to the VKMA switch while the switch operates with other computers. It does not interrupt their work. When mouse jumps on the screen after selecting a computer, unplug the mouse and plug it back. You can plug and unplug mouse



and keyboard without need to reset the VKMA switch and reboot computers connected.

Note: 1. For full support of computer Hot Plugging, keyboard and mouse Plug'n'Play features use latest mouse drivers or Microsoft mouse drivers.

AutoScan mode

In AutoScan mode the VKMA switch will reselect channels in loop automatically without sound beep. Only channels with computers connected are scanned. During this process "Active/Scan" red LED blinks slowly on current channel selected. You can activate this mode by pushing:

- any two channel pushbuttons on the front panel simultaneously.
- Hot Key combination (see the Appendix 2). Scan time interval between selections can be set as 4, 10 or 30 sec, and equals 4 sec by default. To toggle between intervals in loop you have to repeat Hot Key combination or hold pushbuttons pressed on the front panel. Blinking LEDs on the keyboard will indicate scan interval in this mode (see the Appendix 1). To leave AutoScan mode it is sufficiently to press "Esc" key on the keyboard or any pushbutton on the VKMA switch front panel. When the switch is in the AutoScan mode, computers may go to the suspend mode if suspend mode blockage option is turned off. When suspend mode blockage option is turned on, then the VKMA switch prevents computers from going to suspend mode and to start screensavers. This option is turned on by default.

Sound event notification and translation

You can be informed about and hear sound events, which appear on non-active channels. It can be useful for various purposes, such as working at one computer and listening audio applications, running on another computer simultaneously, or notification about process competition on non-active computer: software errors, e-mail arriving, etc.

When sound event on non-active channel will occur, "Link/Event" LED will blink for 5 seconds if the sound event latching option is on. If the sound event latching option is on, then "Link/Event" LED will blink after event till this channel will have been selected as an active. The sound event latching option is on by default. To toggle on/off sound event latching press Hot Key (see the Appendix 2).

You can also listen sounds on non-active channels, setting on the sound event translation option. The sound event translation is on by default, so you can hear only the sound of the active channel. To toggle on/off sound event translation from all computers to console speakers press Hot Key (see the Appendix 2).

The sound event latches and translates when the sound reaches a definite volume level. This level must be tuned at volume control panel on each computer individually.

Controlling power sockets (CAS-441-PM only)

Four sockets of SiS-PM-841 can be controlled by using hotkeys of CAS-441-PM. User can read the status (voltage present) of each controlled socket. This feature lets control power supply of connected equipment (computers, servers, monitors, lamps, etc.) through the KVM switch. CAS-441-PM should be connected to SiS-PM-841 with Cat-5 cable (maximum length of Cat-5 cable should be no more than 15m).

Hotkey assignment is shown in Hotkey combination table. Status of the socket



(voltage present) is indicated by beep when the needed hotkey is pressed. Long beep means "voltage present", short beep means "voltage absent".

WARNINGS:

1. Make sure all the computers which were turned on have completed their boot up before switching between them.
2. If the computer is switched off wait for 5 seconds before turning it on again.
3. It might be possible that the 4-5 button mice would not work properly under Windows® 95 and NT® 4.0. In this case you should install the latest versions of the mouse drivers.
4. For best video quality at distances more than 5 feet long using of high quality video cables is strongly recommended.

TROUBLESHOOTING: Appendix 2. Hot Key combinations table

Problem description	Suggested solution
Mouse or\and keyboard does not respond	<ul style="list-style-type: none"> • Check whether the device is plugged into the correct PS/2 connector • Unplug the device from the switch and plug it in again • Restart PC • Change the device to the known good one • Connect the device to PC directly and check PC
Hotkeys does not work	<ul style="list-style-type: none"> • Reboot or disconnect the PC at the active channel

**Appendix 1. LED state meaning table**

LED State	Meaning
"Active/Scan" lights	Channel is active
"Active/Scan" blinks fast	Computer is booting up, initializing PS/2 devices
"Active/Scan" blinks slowly	AutoScan mode, channel is selected
"Link/Event" lights	Computer is connected
"Link/Event" blinks	Audio Event on the channel occurred
"Num Lock" blinks only	AutoScan mode, 4 sec scan interval
"Num Lock" and "Caps Lock" blinks only	AutoScan mode, 10 sec scan interval
"Num Lock", "Caps Lock", "Scroll Lock" blinks	AutoScan mode, 30 sec scan interval

Hot Key combination	Meaning
Ctrl + [Num1, Num2, ...]	Select channel [1, 2, ...]
Ctrl + Num+	Set AutoScan mode, toggle between 4, 10, 30 sec scan intervals in AutoScan
Ctrl + Num	Turn beep on/off
Ctrl + Num Del	Turn Sound Event translation on/off
Ctrl + Num*	Turn Sound Event latching on/off
Ctrl+ Num Lock	Turn Suspend mode blockage on/off

**For CAS-441-PM only**

Press and hold 'Ctrl' then press and release [Ch N] then press ' * '	Switch on the socket with [Ch N] number
Press and hold 'Ctrl' then press and release [Ch N] then press ' - '	Switch off the socket with [Ch N] number
Press and hold 'Ctrl' then press and release [Ch N] then press ' . '	Beep indicates the voltage state on the socket with [Ch N] number

Note: 1. When option is toggled on a short beep sounds, and when option is toggled off a long beep sounds.

2. While sound event indicates the status of the socket: long beep means "Switched On", short beep means "Switched Off".

3. When beep is disabled by Ctrl+'-', only "Switched On" long beep can be heard.



6. Preventing Radio and TV Interference

WARNING!!! This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions from this MANUAL, may cause interference to radio communications. It has been tested and found to comply with the limits for a Class A computing device pursuant to Subpart J of part 15 of FCC Rules, which are designed to provide reasonable protection against such interference when operated in a commercial environment. Operation of this equipment in a residential area is likely to cause interference in which case the user at his own expense will be required to take whatever measures may be required to correct the interference.