

SKM-04

User Manual

4-Port Keyboard, Mouse and Audio Switch
with USB 2.0 Sharing



Manage keyboard & mouse operations
on four computers over multiple displays

Smart-AM
SMART AUDIO VIDEO INNOVATION

TABLE OF CONTENTS	
WHAT'S IN THE BOX?	2
INTRODUCTION	3
FEATURES	3
APPLICATIONS	3
TECHNICAL SPECIFICATIONS	4
HARDWARE INSTALLATION	5
DISPLAY TOPOLOGY CONFIGURATION	6
SINGLE-HEAD MODE KM SWITCHING	7
MULTI-HEAD MODE KM SWITCHING	7
OTHER METHODS TO CONTROL SKM-04	8
LIMIT INPUT PORTS CONFIGURATION	9
INDEPENDENT USB 2.0 SWITCHING	9
LIMITED WARRANTY STATEMENT	10

WHAT'S IN THE BOX?		
PART NO.	QTY	DESCRIPTION
SKM-04S	1	SKM-04 (4-Port Keyboard and Mouse Switch)
PS5VDC2A	1	Power Supply
	1	Quick Start Guide

INTRODUCTION

The SKM-04 enables users to manage and switch KM (Keyboard and Mouse) functions of up to four connected computers, including multi-head computers. With support of multiple displays per computer, users can create the ultimate KM environment. Users can simply connect the monitors directly to the computers and use the SKM-04 to switch between computers for KM operation.

The SKM-04 is completely driverless, requiring no software or updates (although the device has the capability for firmware updates). It is compatible with virtually any PC and all major operating systems without the need for software downloads, and it supports all USB 2.0 devices. With full USB keyboard and mouse emulation, the SKM-04 delivers the utmost in user-friendly operation. Furthermore, the device enables users to control KM functions on one computer while maintaining the connection of other USB peripheral devices on another connected computer simultaneously, without interruption for improved workflow.

Users can switch inputs via the buttons on the front panel or hot keys. The SKM-04 is the first KM device on the market to offer RS-232 control. Users can also switch using a double click of a mouse's center button (known as Mouse Gesture Switching). In single-head mode, users can switch computers with SmartAVI's new PASS (Progressive Automatic Screen Switching) technology, which enables the device to automatically switch computers based on where the user's mouse goes. It's a quick, efficient and intuitive way to provide smooth switching that corresponds with a user's cursor movement.

FEATURES

- Manage four connected computers
- Dedicated processors for emulation
- Supports independent switching for USB 2.0 devices
- Full keyboard and mouse emulation
- PASS (Progressive Automatic Screen Switching) technology for automatic switching following the user's mouse movement
- Front-panel switching and RS-232 control
- Driverless operation for easy implementation, including multi-head use

APPLICATIONS

- Government Operations
- Defense Applications
- Security Control Rooms
- Corporate Communications
- Server Operations
- Medical Campuses
- Airports

TECHNICAL SPECIFICATIONS

USB	
Signal Type	USB 2.0, 1.1, 1.0 with internal hub
Computer Ports	(4) USB Type B (female)
User Console Interface, Keyboard and Mouse	(2) USB Type A
User Console Interface, USB 2.0 Transparent	(2) USB Type A
CONTROL	
Front Panel	Buttons
RS-232	Via Control @ 9600 bps
Hotkeys	Via Keyboard
Mouse	Pass and Mouse Gesture Switching
AUDIO	
Stereo Audio	(4) 3.5 mm input, (1) 3.5 mm output
OTHER	
Power	External Power Supply 5VDC2A
Weight	.65 lbs.
Dimensions	9.06" W X 4.75" D X 1.13 H
Operating Temp	32-131 °F (0-55 °C)
Storage Temp	-4-185 °F (-20-85 °C)
Operating Humidity	Up to 95% (Non-Condensing)
Emulation	Keyboard & Mouse

SKM-04 FRONT



SKM-04 REAR



HARDWARE INSTALLATION

1. Ensure that power is disconnected from SKM-04.
2. Use a USB cable (Type-A to Type-B) to connect a USB port on a computer to the respective port of the SKM-04. Do this for each of the computers.
3. Optionally Use 3.5mm Stereo (Male-to-Male) audio cables to connect the audio out ports of the four computers to their respective ports (Audio In) of the SKM-04.
4. Optionally connect RS-232 for control functions.
5. Connect the USB keyboard and mouse to the two USB ports marked Keyboard and Mouse.
6. Optionally connect speakers to the Audio Out port on the SKM-04.
7. Optionally connect up to two USB 2.0 devices to the two USB ports marked USB 2.0

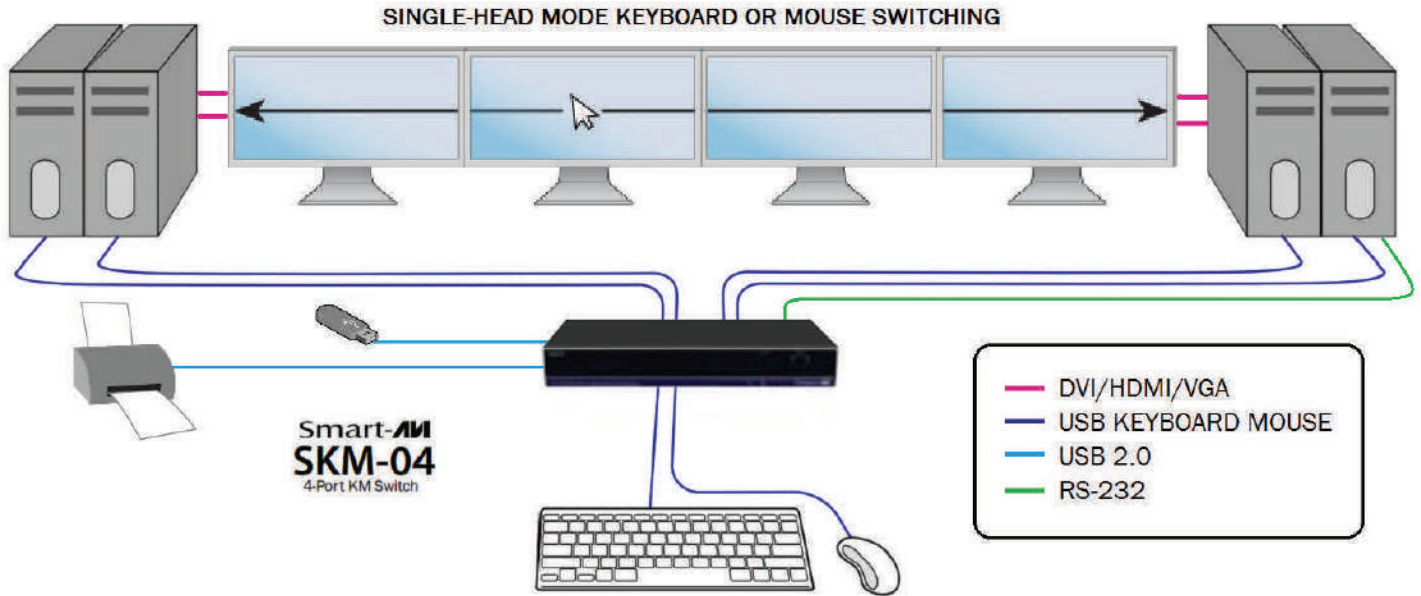


Figure 5-1

After connecting all devices to the SKM-04, a display topology configuration and display mode must be chosen. By default the SKM-04 is configured to single-head mode and a topology with 4 screens arranged horizontally starting with port 1 on the most left-hand side. The displays' installation setup must match one of SKM-04's predefined display topology configurations. See the section on Display Topology Configuration for more information. The Display Topology can be selected through keyboard hotkey commands or through RS-232. If one or more of the input computers have multiple displays, Multi-head Display Mode must be selected. Otherwise, select Single-head mode. Please refer to the Commands / Hotkeys table for the commands to select Single or Multi Head Mode.

COMMANDS	HOTKEYS	RS-232 CONTROL
Single-head Display Mode	ctrl + ctrl + k + s	//ks
Multi-head Display Mode	ctrl + ctrl + k + m	//km

DISPLAY TOPOLOGY CONFIGURATION

The SKM-04 has a configurable display topology configuration that can be easily activated through keyboard hotkeys or through RS-232 commands. No software or drivers required for configuring the display topology.

Hotkey Command: “ctrl + ctrl + h + 4 + ENTER”

RS-232 Command: //h4<CR>

1	2	3	4
---	---	---	---

Hotkey Command: “CTRL + CTRL + H + 3 + ENTER” RS-232 Command: //H3<CR>

1	2	3
---	---	---

Hotkey Command: “ctrl + ctrl + h + 2 + ENTER”

RS-232 Command: //h2<CR>

1	2
3	4

Hotkey Command: “ctrl + ctrl + h + 1 + ENTER”

RS-232 Command: //h1<CR>

1
2
3
4

Each of the cells shown represents a display or multiple displays from a computer.

Display Topology specifies the number of horizontal columns. The number of vertical rows is calculated in the software by $4/n$ columns.

Notes:

- PASS Technology can only be used in Single-Head display mode.
- Multi-Head display mode switching must be used if any of the four computers have multiple displays.

SINGLE-HEAD MODE KM SWITCHING

SmartAVI's new *PASS* (Progressive Automatic Screen Switching) technology allows seamless switching between computers by moving the mouse cursor from one display to another. With *PASS*, users can effortlessly switch computers for faster productivity. *PASS only works in Single-Head mode.*

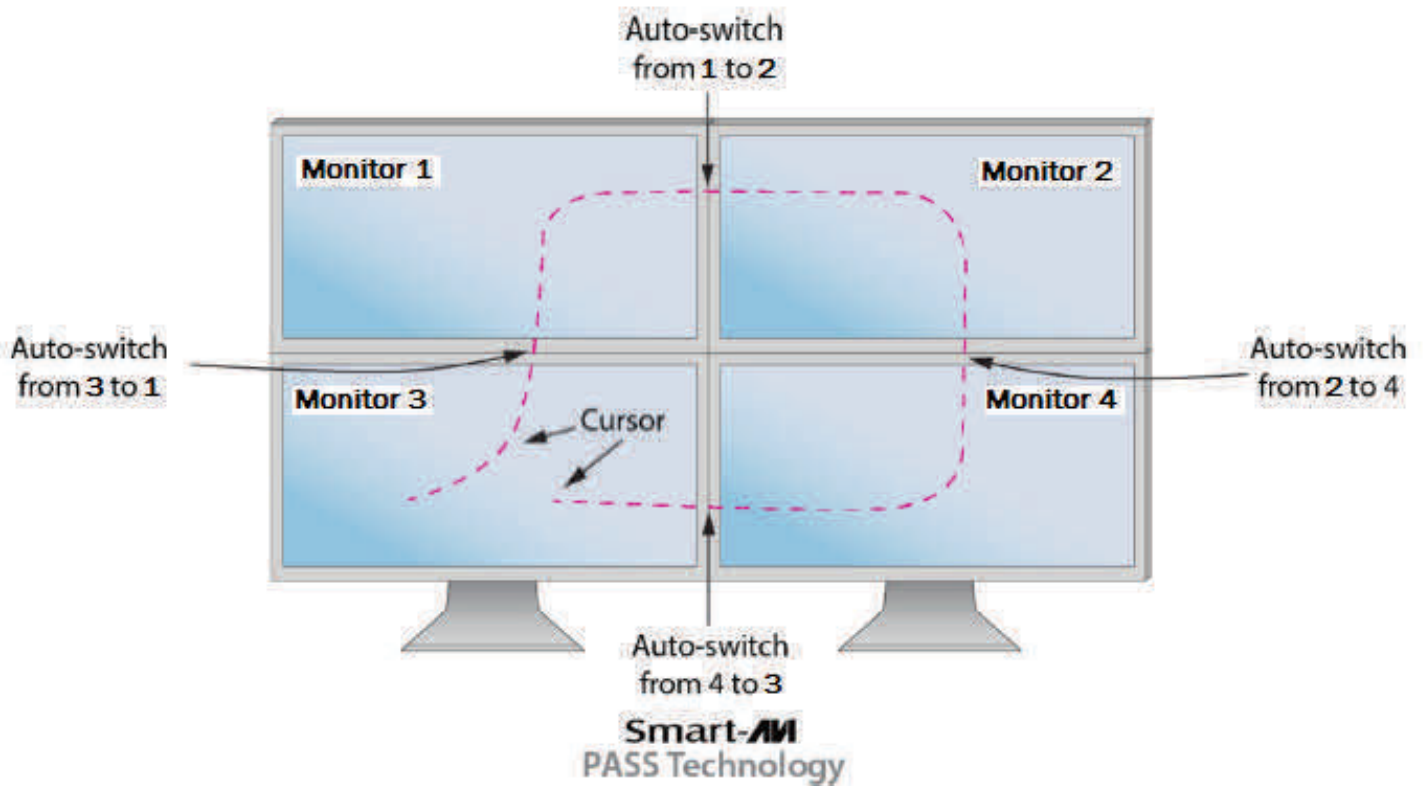


Figure 7-1

MULTI-HEAD MODE KM SWITCHING

When using computers with multiple displays, SmartAVI developed a new feature called Mouse Gesture Switching technology that allows switching between computers through the use of simple mouse clicks and gestures. No device driver is required. Simply press the scroll wheel twice and then move the mouse in the direction of the channel you desire to switch. *This feature only works in Multi-Head display mode.*

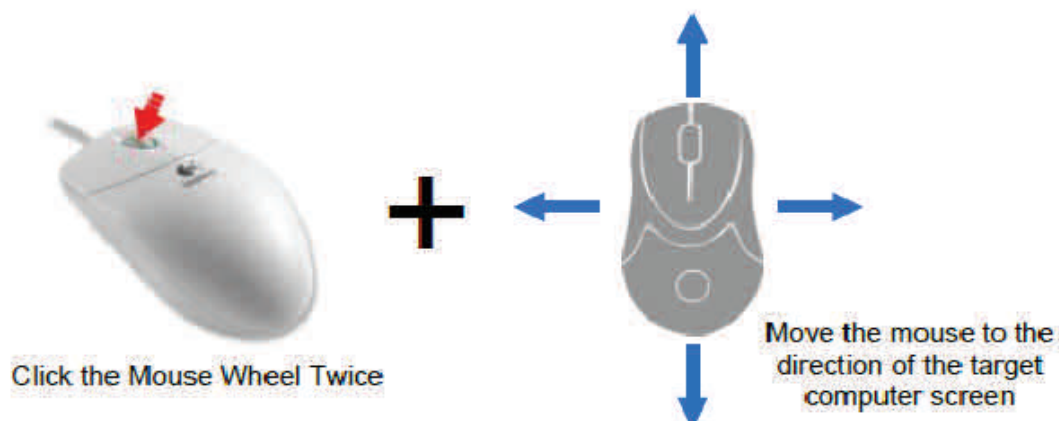


Figure 7-2

OTHER METHODS TO CONTROL SKM-04

Front Panel Control

To switch ports using the front panel, press the *UP* button to increase the port number and *DOWN* button to decrease the port number.

Hotkey Commands

The Hotkey command is a keyboard sequence used to trigger an action on the SKM-04 through the use of the keyboard connected on the USB port of the SKM-04. To activate the hotkey sequence, press the *CTRL* key twice and then enter the de-sired hotkey commands.

RS-232 Control

Use a serial cable to connect a computer to the RS-232 port of the SKM-04. Use terminal client software such as the HyperTerminal to connect to the SKM-04. Make sure to use the standard communication mode of **9600 bps, 8, N, 1, No Flow Control**. This port can also be used for firmware upgrade.

COMMANDS	HOTKEYS	RS-232 CONTROL
Switch Keyboard, Mouse, Audio and USB	ctrl + ctrl + m + Port# + <CR>	//m[port #]<CR>
Switch Audio Only	ctrl + ctrl + a + Port# + <CR>	//a[port #]<CR>
Switch Keyboard, Mouse and Audio to Next Channel (USB stays)	ctrl + ctrl + ▲	
Switch Keyboard, Mouse and Audio to Previous Channel (USB stays)	ctrl + ctrl + ▼ (arrow key)	
Switch USB 2.0 only (Not Keyboard, Mouse USB)	ctrl + ctrl + u + Port# + <CR>	//u<CR>
Switch USB 1.1 only (Keyboard, Mouse USB)	ctrl + ctrl + c + Port# + <CR>	//c<CR>
Reset to Factory Default	ctrl + ctrl + f	//f
Software Reset	ctrl + ctrl + r	//r
Single-head Display Mode	ctrl + ctrl + k + s	//ks
Multi-head Display	ctrl + ctrl + k + m	//km
Display Topology (multiple rows)	CTRL + CTRL + h1–4)	//h (1-4)
Limit Input Ports (one row only)	CTRL + CTRL + w(1–4)	//w (1-4)
Cursor Rolling (roll past display borders up, down, left, and right)	CTRL + CTRL + o (0–OFF) or (1–ON)	//o (0–OFF) or (1–ON)

LIMIT INPUT PORTS CONFIGURATION

Hotkey Commands: CTRL, CTRL W(X) commands (allows one row only):

RS-232 Commands: //W(X)

W4<CR>

1	2	3	4
---	---	---	---

W3<CR> *Note: Port 4 is not selectable*

1	2	3
---	---	---

W2<CR> *Note: Ports 3 and 4 are not selectable*

1	2
---	---

W1<CR> *Note: Port 2-4 are not selectable*

1

Note: Limit Input Ports commands reset Display Topology configuration

INDEPENDENT USB 2.0 SWITCHING

The USB 2.0 Hub on the SKM-04 may be used for USB 2.0 devices such as printers, web cams, flash drives, and so on. Devices plugged in to the SKM-04's USB 2.0 hub may be switched independently from keyboard and mouse user control via hotkey or RS-232 commands:

Hotkey Command: CTRL + CTRL + U + port# + ENTER

or

RS-232 Command: //U [port #]<CR>

NOTE: Switching using PASS technology or Multi-Head mouse switching will not switch USB 2.0 devices.

You can copy files to a flash drive on a computer using the USB 2.0 hub while controlling another target computer.

LIMITED WARRANTY STATEMENT

A. Extent of limited warranty

Smart-AVI Technologies, Inc. warrants to the end-user customers that the Smart-AVI 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.

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

- a. Improper or inadequate maintenance or modifications
- b. Operations outside product specifications
- c. Mechanical abuse and exposure to severe conditions

If Smart-AVI receives, during applicable warranty period, a notice of defect, Smart-AVI will at its discretion replace or repair defective product. If Smart-AVI is unable to replace or repair defective product covered by the Smart-AVI warranty within reasonable period of time, Smart-AVI shall refund the cost of the product.

Smart-AVI shall have no obligation to repair, replace or refund unit until customer returns defective product to Smart-AVI.

Any replacement product could be new or like new, provided that it has functionality at least equal to that of the product being replaced.

Smart-AVI limited warranty is valid in any country where the covered product is distributed by Smart-AVI.

B. Limitations of warranty

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

C. 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 Smart-AVI 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.

D. 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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