

SKM-04-PLUS

4-PORT KM SWITCH WITH USB 2.0 WITH LAN



USER MANUAL



Designed and Manufactured in the USA

Smart-AVI

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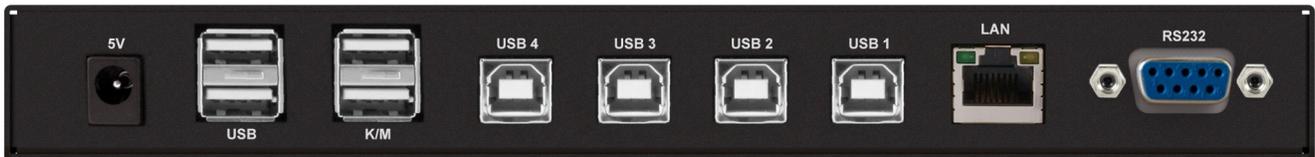
TECHNICAL SPECIFICATIONS

USB	
Signal Type	USB 2.0, 1.1, and 1.0 w/ internal hub
CPU Ports	(4) USB Type B (female)
User Control Interface	(2) USB Type-A for keyboard and mouse connection only; (2) USB Type-A for USB 2.0 transparent
CONTROL	
Front Panel	Buttons
RS-232	Via Control @ 115200 bps
Hot Keys	Via Keyboard
OSD	PASS Technology and Mouse Gesture Switching
OTHER	
Power Adapter	External 100-240 VAC/5VDC2A @ 24W
Dimensions	12.57" W x 1.76" H x 6.69" D
Weight	4.2 lbs
Approvals	UL, CE, ROHS Compliant
Operating Temperature	+32 to +104°F (0 to +40°C)
Storage Temperature	-4 to 140°F (-20 to +60°C)
Humidity	5 to 90% (No Condensation)
Emulation	Keyboard and Mouse

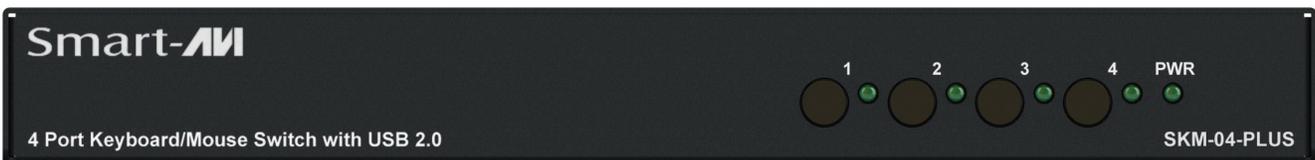
WHAT'S IN THE BOX?

PART NO.	Q-TY	DESCRIPTION
SKM-04-PLUS	1	4-Port KM Switch with USB 2.0 Sharing
PS5VDC2A	1	5VDC 2A (minimum) power adapter with center-pin positive polarity.
	1	User Manual

FRONT AND BACK



SKM-04-PLUS Back



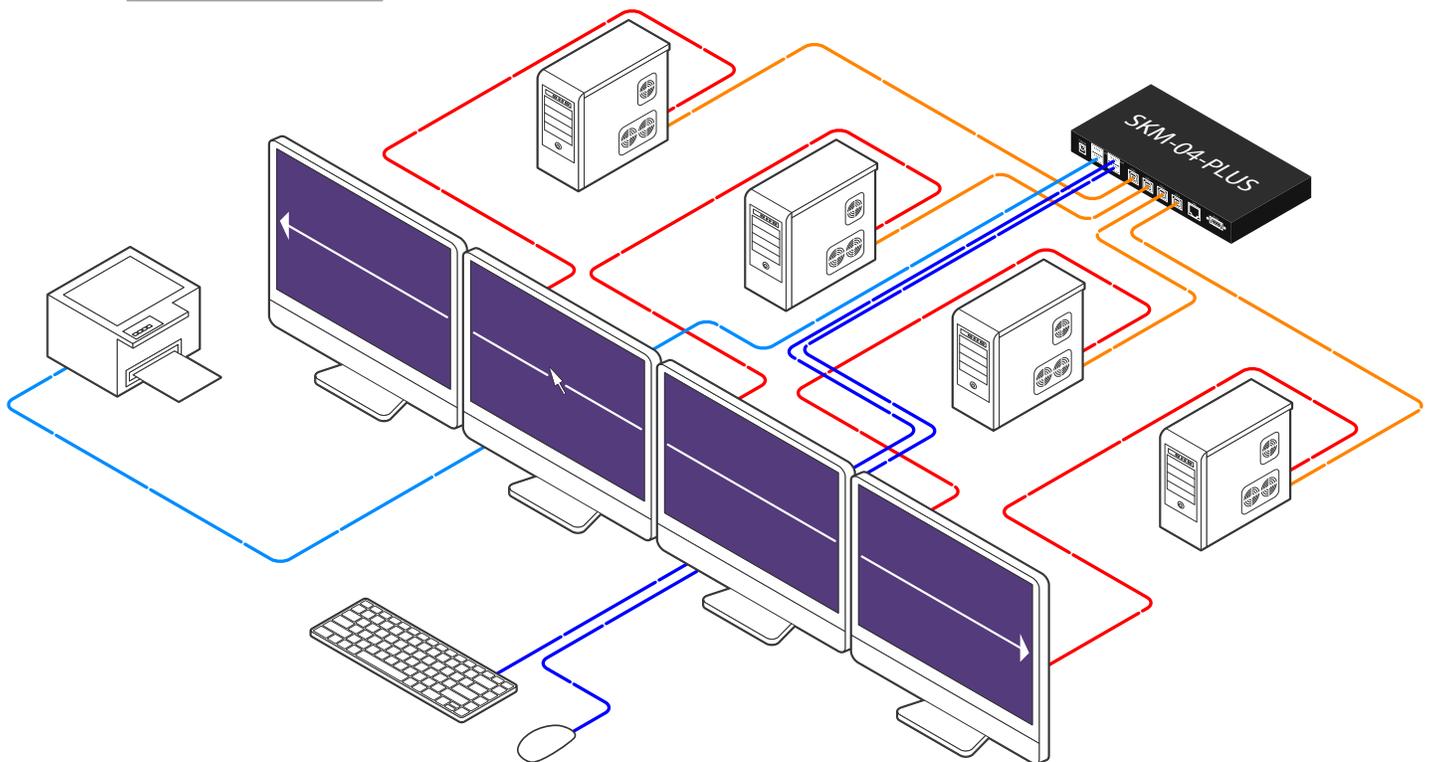
SKM-04-PLUS Front

INSTALLATION

1. Ensure that power is turned off or disconnected from the unit and the computers.
2. Use a USB cable (Type-A to Type-B) to connect a USB port on each computer to the respective USB ports on the unit.
3. Connect a USB keyboard and mouse in the two USB console ports.
4. Power on the KM by connecting a 5VDC power supply to the power connector.
5. Turn on all the computers.

Note: You can connect up to 4 computers to the 4 port KM.

Smart-KM



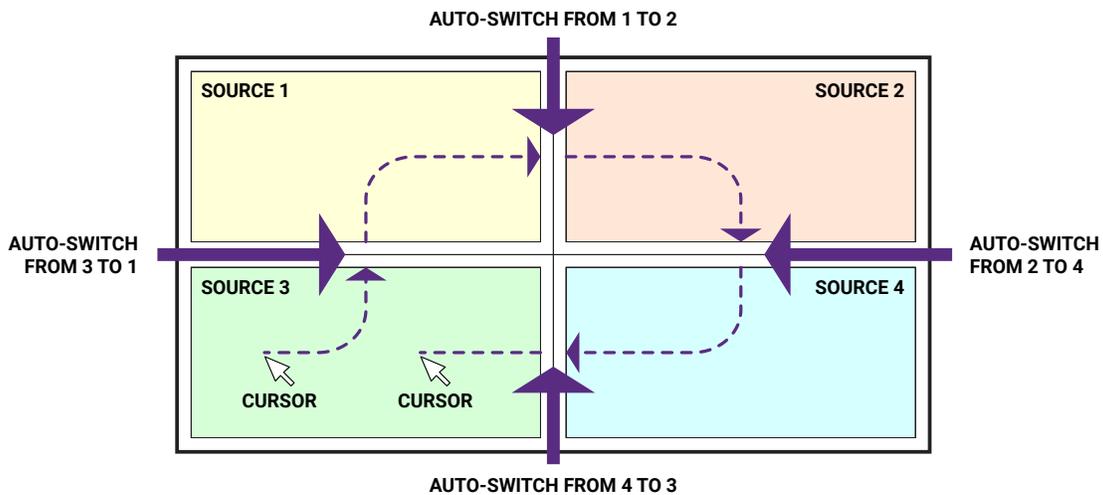
INITIAL SETUP

After all devices are connected to the SKM-04-PLUS, the user must choose a display topology configuration and display mode. By default, the SKM-04-PLUS is configured to a topology with four screens arranged horizontally starting with Port 1 on the left.

The installation setup must match one of SKM-04-PLUS's predefined display topology configurations. This can be selected through keyboard hotkey commands. Please refer to the "Display Topology Configuration" section for the available display topologies. Other configurations are possible through the GUI after initial setup.

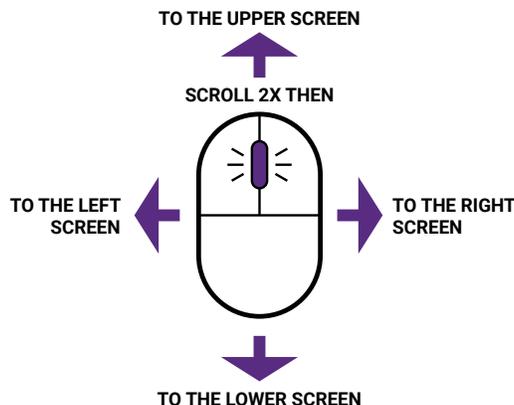
ABSOLUTE MOUSE MODE KM SWITCHING

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 Absolute Mouse Mode.**



RELATIVE MOUSE MODE KM SWITCHING

For using computers with multiple displays, SmartAVI developed a new feature called Mouse Gesture Switching, which is a technology that allows switching between computers using 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 to. **This feature only works in Relative Mouse Mode.**



SYSTEM OPERATION

There are four ways to control the SKM-04-PLUS: front panel buttons, keyboard hotkeys, RS-232 serial commands, and through the included graphical user interface (GUI).

Front Panel Control

To switch to an input port, simply push the button on the front-panel of the KM. If an input port is selected, the LED of that port will turn on.

Front Panel - Port Selection LEDs:

#	STATUS	DESCRIPTION
1	OFF	Non-selected port
2	ON	Selected port

Hotkey Commands

A Hotkey command is a keyboard sequence used to trigger an action on the SKM-04-PLUS via the keyboard connected to the USB port of the SKM-04-PLUS. To activate the hotkey sequence, press the **CTRL** key twice and then enter the desired hotkey commands.

Note: All commands can use upper and/or lower case characters.

COMMANDS	HOTKEY
Display Topology (multiple rows)	[CTRL] [CTRL] H [1-4]
Limit Input Ports (one row only)	[CTRL] [CTRL] W [1-4]
Cursor Rolling (roll past display borders up, down, left, and right)	[CTRL] [CTRL] O [0(OFF), 1(ON)]

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

Custom Hotkey Triggers

Users can customize the keys that trigger hotkeys. The default trigger for hotkey function on the keyboard is **Ctrl + Ctrl**. The trigger function can be used to change to the following keys:

Ctrl (Left / Right), **Alt**, **Shift** (Left / Right), **Caps Lock**, **Scroll Lock**, **F1-F12**

To view the current hotkey trigger setting:

Use the RS-232 command: / + / + ? + ? + **Enter** to view the current hotkey trigger. To reset the Hotkey Trigger, use the "**Factory Defaults**" command.

To change the hotkey trigger setting:

[hotkey] + [hotkey] + **X** + [desired hotkey]

Example: If the user's current hotkey trigger is **Shift** and they want to change it to **Scroll Lock**, the user would type **Shift + Shift + X + Scroll Lock**.

SYSTEM OPERATION (CONTINUED)

RS-232 Serial Control

The SKM-04-PLUS may also be controlled via RS-232 commands. To use these commands, you must use HyperTerminal or an alternate terminal application. The settings for the connection are as follows: Baudrate **115200**; Data Bits **8**; Parity **None**; Stop Bits **1**; Flow Control **None**.

Once you have connected to the SKM-04-PLUS via Serial, you will see the SKM-04-PLUS information when the device starts up.

The following commands can be used for RS-232 with available keyboard hotkeys:

COMMAND DESCRIPTION	HOTKEY	RS-232 COMMAND
Switch All USB	[CTRL][CTRL] [port #] [ENTER]	//m [port #] [ENTER]
Switch KM Only	[CTRL][CTRL] c [port #] [ENTER]	//c [port #] [ENTER]
Switch USB Only	[CTRL][CTRL] u [port #] [ENTER]	//u [port #] [ENTER]
Disable/Limit Ports	[CTRL][CTRL] d [2-4] [ENTER]	//d [2-4] [ENTER]
Reset Software	[CTRL][CTRL] r [ENTER]	//r [ENTER]
Factory Defaults	[CTRL][CTRL] f [ENTER]	//f [ENTER]
Get Port Status	N/A	//?? [ENTER]
Switch resolution Channel: 1-4 Resolution: 1 (1080p), 2 (4K), 3 (2K), 4 (720p)	N/A	//ce [SPACE] [SKM #] [SPACE] [RESOLUTION #]
Mouse control speed (per resolution type) X and Y axes set in percent [0-500]	N/A	//mm [SPACE] [resolution #] [SPACE] [x #] [y #]
Get resolution/mouse info	N/A	//r1 [ENTER]

Graphical User Interfaces

In addition to the front panel buttons, keyboard hotkeys, and RS-232 serial commands described above, the SKM-04-PLUS can be configured through simple GUIs that offer all the same customization options as the other control methods. These interfaces can be accessed on the connected computers, in a web browser, or in an Android app.

SYSTEM OPERATION (CONTINUED)

Display Topology Configuration

The SKM-04-PLUS has a configurable display topology that can be easily activated through keyboard hotkeys. No software or drivers are required to configure the display topology.

(1) Hotkey Command: “CTRL + CTRL + H + 4 + ENTER”

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

(2) Hotkey Command: “CTRL + CTRL + H + 2 + ENTER”

1	2
3	4

(3) Hotkey Command: “CTRL + CTRL + H + 3 + ENTER”

1	2	3
4		

(4) Hotkey Command: “CTRL + CTRL + H + 1 + ENTER”

1
2
3
4

With GUI

To reconfigure the display topology on the GUI,

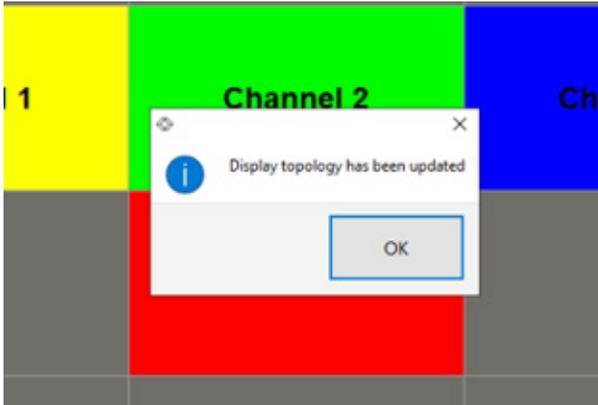
1. Click the Topology and Display button in the left pane.



If the display has not been previously configured, the default configuration will appear. The channels are color coded: yellow for Channel 1, green for Channel 2, blue for Channel 3, and red for Channel 4. The interface is click-and-drag.

SYSTEM OPERATION (CONTINUED)

2. Move the tiles for the four channels into the desired positions on the grid.
3. Click submit.



The GUI will display a dialog box to confirm that the topology has been updated.

Limit Input Ports Configuration

The SKM-04-PLUS allows the user to shut off input from specific connected computers without the need to disconnect them from the switch.

Note: Limit Input Ports commands reset the Display Topology configuration.

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

CTRL + CTRL + W + 4 + ENTER

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

CTRL + CTRL + W + 3 + ENTER

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

Note: Port 4 N/A

CTRL + CTRL + W + 2 + ENTER

1	2
----------	----------

Note: Port 3, 4 N/A

CTRL + CTRL + W + 1 + ENTER

1

Note: Port 2-4 N/A

Note: Limit Input Ports commands reset Display Topology configuration.

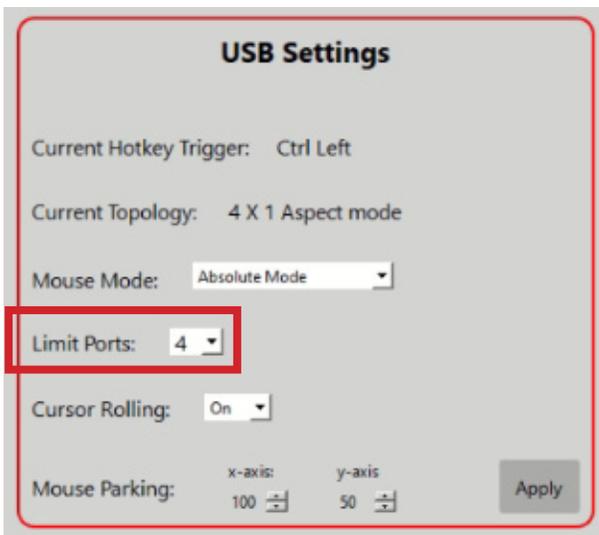
SYSTEM OPERATION (CONTINUED)

With GUI

1. Click the Configuration button in the left pane.



2. Under USB Settings, use the Limit Ports dropdown menu to turn on or off the input from desired ports.



3. Click Apply.

SYSTEM OPERATION (CONTINUED)

Resolution and mouse configuration only work in absolute mouse mode (//KS)

DESCRIPTION	RS-232 COMMAND
Switch resolution	//ce [SPACE] [SKM #] [SPACE] [resolution #] [ENTER]
Mouse control speed (per resolution type)	//mm [SPACE] [resolution #] [SPACE] [x #] [SPACE] [y #] [ENTER]
Get resolution/mouse info	//r1 [ENTER]

//CE [SPACE] [SKM #] [SPACE] [resolution #]

Where SKM channel can be set 1-4

Where Resolution number is the following:

1. 1080p
2. 4K
3. 2K
4. 720p

For example: //CE 1 2

In this example we are setting channel 1 to reference 4K resolution.

//MM [SPACE] [resolution #] [SPACE] [x integer # (1-100)] [y integer # (1-100)]

For example: //MM 2 80 50

In this example we are setting the mouse movement according to 4K resolution with 80 as the mouse speed multiplier for X and 50 as the mouse speed multiplier for Y.

The integer number set for the mouse multiplier will act as a value from 1-100%.

In the example above we are using the following:

80 for X, therefore 80 will become 80% of the mouse movement moving horizontally on the X-axis

50 for Y, therefore 50 will become 50% of the mouse movement moving vertically on the Y-axis

100 will do 100%, 65 will do 65%, 5 will do 5%, etc.

Suppose you move the mouse 100 units for the X axis and 10 units for the Y axis. The software will change $100 * 80\% = 80$ units for the X axis and $10 * 50\% = 5$ unit for the Y axis. This will cause the mouse cursor to move slower.

//RL will return the channel's current mouse multiplier percentage and the current resolution which will reference the resolution number mentioned in the //CE command.

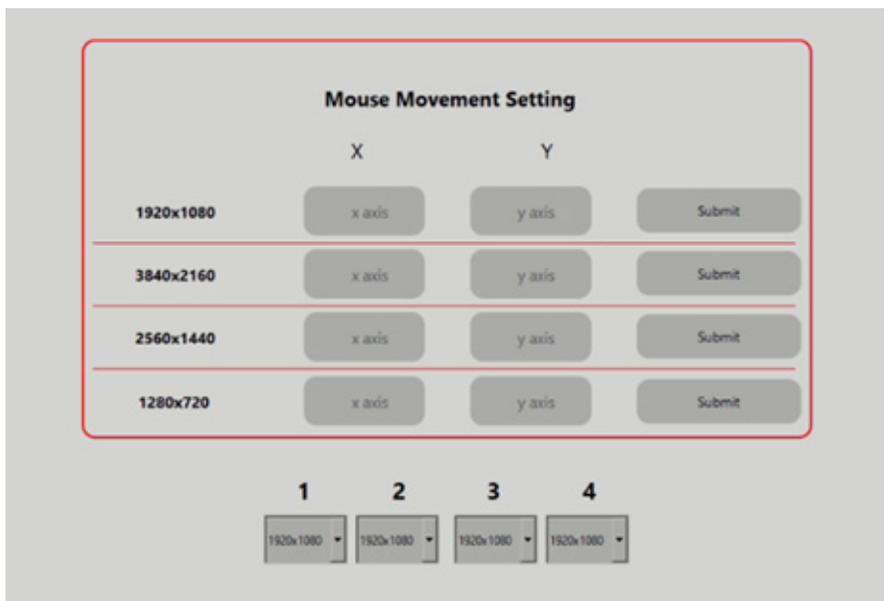
SYSTEM OPERATION (CONTINUED)

With GUI

1. Click the Mouse Speed Settings button in the left pane.



Each channel is represented by a dropdown menu at the bottom of the center pane.



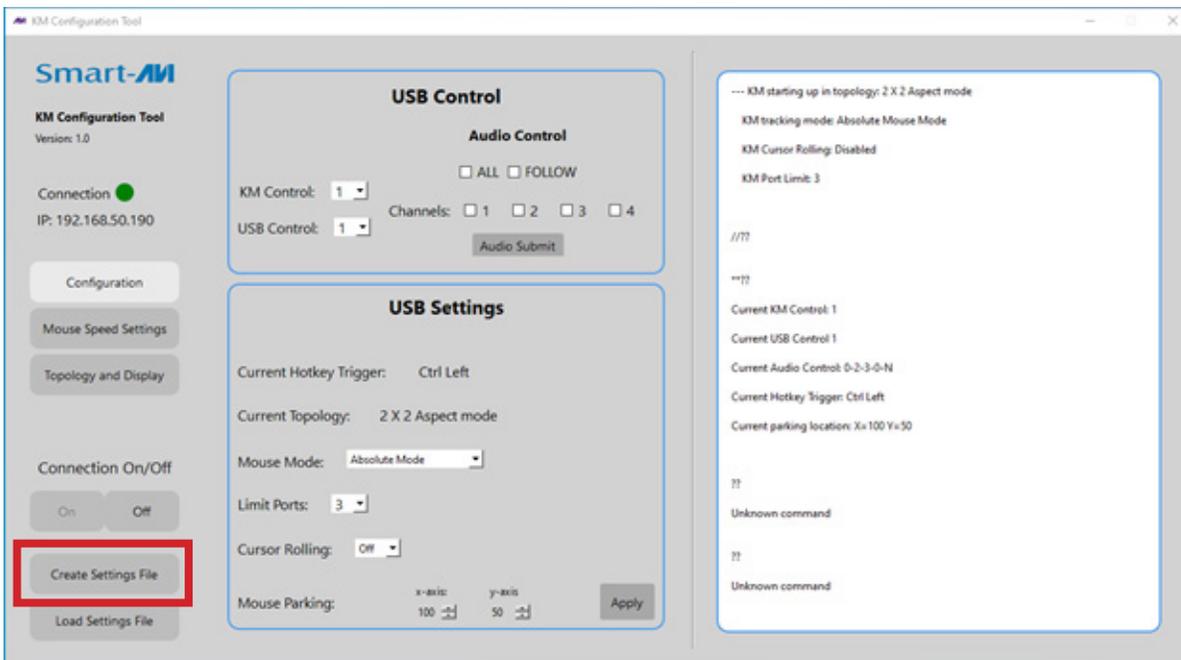
2. Follow the formula outlined in the previous section to calculate the desired mouse settings for each channel.
3. Click the X or Y axis for the desired channel and enter the mouse multiplier.
4. Click Submit.

SETTINGS FILES

In addition to one-time adjustment of settings through any of the control methods, the user can establish a settings file through the GUI. This allows the user to restore a previous configuration with a single click instead of making each adjustment every time they log in.

Creating a Settings File

1. Open the KM Configuration Tool.
2. Adjust the display configuration to your preferred settings.
3. Click “Create Settings File.



4. This will open a standard dialogue box for saving a .txt file. Navigate to the desired folder and click Save.

Loading a Settings File

1. Open the KM Configuration Tool.
2. Click “Load Settings File.”
3. Select the desired settings file and click Open.

TROUBLESHOOTING

No Power

- Make sure that the power adapter is securely connected to the power connector of the unit.
- Check the output voltage of the power supply and make sure that the voltage value is around 5VDC.
- Replace the power supply.

No Video

- Check if all the video cables are connected properly.
- Connect the computer directly to the monitor to verify that your monitor and computer are functioning properly.
- Restart the computers.

Keyboard is not working

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

Mouse is not working

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

TECHNICAL SUPPORT

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

LIMITED WARRANTY STATEMENT

A. Extent of limited warranty

SmartAVI, Inc. warrants to the end-user customers that the SmartAVI 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.

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

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

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

SmartAVI limited warranty is valid in any country where the covered product is distributed by SmartAVI.

B. Limitations of warranty

To the extent allowed by local law, neither SmartAVI nor its third party suppliers make any other warranty or condition of any kind whether expressed or implied with respect to the SmartAVI 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 SmartAVI 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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SMART AUDIO VIDEO INNOVATION

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20180109



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