

KanexPro®



SW-4X1SL18G

USER MANUAL

Switch with 4K UHD, ARC, IR, RS-232

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Version: SW-4X1SL18G_2016V1.0

Preface

Read this user manual carefully before using this product. Pictures displayed in this manual are for reference only. Different models and specifications are subject to the actual product.

This manual is only for operational instruction, not for any maintenance usage. The functions described in this version are updated till December 14, 2016. Any changes of functions and parameters since then will be informed separately. Please refer to the dealers for the latest details.

Trademarks

Product model and logo are trademarks. Any other trademarks mentioned in this manual are acknowledged as the properties of the trademark owner. No part of this publication may be copied or reproduced without the prior written consent.

FCC Statement

This equipment can generate, use, and radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits of a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.



SAFETY PRECAUTIONS

To ensure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment.
- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.
- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.
- Refer all servicing to qualified service personnel.
- To prevent fire or shock hazard, do not expose the unit to rain or moisture. Do not install this product near water.
- Do not place any heavy items on the extension cable in case of extrusion.
- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with fine ventilation to avoid damage caused by overheating.
- Keep the module away from liquids.
- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.
- Do not twist/pull by force the ends of the optical cable. It can cause malfunction.
- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power cord to the device before cleaning.
- Unplug the power cord when left unused for a long period of time.
- Information on disposal for scrapped devices: Do not burn or mix with general household waste; please treat the devices as normal electrical waste.

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1. Introduction

1.1 Introduction to SW-4X1SL18G

The KanexPro SW-4X1SL18G is an UltraSlim auto-switcher with 4-input and 1-output which auto-identifies input resolutions of up to four HDMI devices to one 4K display supporting full 4:4:4 YUV color space and 18 Gbps of bandwidth. This switcher can be controlled from the front panel, IR Remote, or by sending RS-232 commands, the corresponding indicator will illuminate to show real-time switching status. It can transmit uncompressed 4Kx2K@60Hz 4:4:4 (at max) signal and supports HDMI 2.0 and HDCP2.2 compliant.

1.2 Features

- UltraSlim 4K HDMI 4x1 switcher with ARC
- Supports YUC 4:4:4 color space w/ HDR
- Incredibly thin design – only 0.4" (11 mm) thick
- Supports UHD 4K/60Hz resolutions
- High-bandwidth 18 Gbps
- Transmits 4K up to 10m (32ft.)
- HDMI supports ARC (Audio Return Channel)
- HDCP 2.2 compliant
- Auto-identifies input resolutions to match displays
- Supports EDID management
- LED status for connection and HDCP
- Firmware update via micro USB
- Control via RS-232, IR & front panel buttons
- Remote control included

1.3 Package List

- 4x1 HDMI Switcher
- 5V power supply
- IR remote
- 3.5mm IR receiver
- Operation Manual

NOTE: If there are defective parts or parts are missing, please contact your local dealer(s).

2. Panel Description

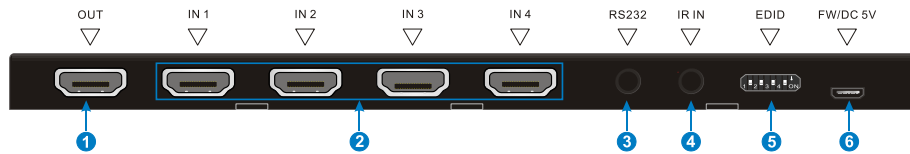
2.1 Front Panel



No.	Name	Description
①	SOURCE/ MODE/3s	<ul style="list-style-type: none"> ● Video source selection button, press to switch among the 4 inputs source circularly. ● Switch mode selection button, press and hold for 3 seconds or more to switch between auto-switch mode and manual switch mode.
②	Power indicator	Illuminate red once powered on.
③	AUTO	Bi-colored indicator for present switching mode. <ul style="list-style-type: none"> ● Green when in auto-switching mode. ● OFF when in manual mode.
④	1~4	Total 4 bi-colored LED indicators: <ul style="list-style-type: none"> ● The indicator of the present input source illuminates green. ● The indicator of the connected input source illuminates orange.

NOTE: Output HDCP compliant status depends on input signal. When the input signal is with HDCP, then output signal is with HDCP and vice versa.

2.2 Rear Panel



No.	Name	Description
①	OUT	HDMI output port, connect to HDMI display
②	IN1~IN4	Total 4 HDMI input ports, connect with HDMI source devices.
③	RS232	Serial control port, connect with control device (e.g. a PC) to control this switcher.
④	IR IN	Connect with IR receiver to collect IR signal from IR Remote.
⑤	EDID	4-pin DIP switcher to invoke built-in EDID data. Please refer to <u>4.2 Embedded EDID invoking</u> for more details.
⑥	FW/DC 5V	<ul style="list-style-type: none"> ● Micro-USB connector, connect with power adaptor for powering the switcher, or used for updating firmware. ● Connect to PC with USB cable to update firmware. Please refer to <u>7 Firmware Upgrade</u> for more details.

3. System Connection

3.1 Usage Precautions

1. System should be installed in a clean environment, which should have a proper temperature and humidity.
2. All the power switches, plugs, sockets and power cords should be insulated and safe.
3. All devices should be connected before powered on.
4. System Diagram shown in this manual is for reference only; more specific schemes depend on real-time applications.

3.2 Connection Procedures

Step1. Connect HDMI source device(s) (e.g. Blue-Ray DVD) to the “**IN1**” ~ “**IN4**” ports of the SW-4X1SL18G via HDMI cable(s).

Step2. Connect HDMI display (e.g. HDTV) to “**OUT**” port of this switcher with HDMI cable.

Step3. Connect an IR Receiver to the “**IR IN**” to control the switcher via IR Remote.

Step4. Connect the control device (e.g. PC) to the “**RS232**” port to control the switcher via RS232 commands.

Step5. Plug a DC 5V power adapter to the “**FW/DC 5V**” port.

NOTE: All the ports support hot-plug.

3.3 Application

The SW-4X1SL18G is ideal for residential AV and corporate applications, such as under the conference room table. From here, you can run up to four HDMI cables to different points on the table, and then connect your devices (e.g. laptops, tablets, and phones). The switcher handles user signal switching and distribution. You can even connect secondary audio-video inputs, such as Blu-Ray devices, computers, and cable boxes.

4. Panel Control

4.1 Input source switching

The “**Auto Source**” button on the front panel can be used to select input source and switch mode.

4.1.1 Manual switching mode

Press the “**Auto Source**” button to switch among inputs 1~4, the corresponding indicator will illuminate green for easy recognition.

4.1.2 Auto-switching mode

Press and hold the button “**Auto Source**” for **3 seconds or more** to switch between manual mode and auto mode. (Default: Manual switch.). Once enter auto-switching mode, the “**MODE**” LED will light up.

The auto-switching mode abides by the following principles:

- **New input**

Once a new input signal is connected, the SW-4X1SL18G will switch to the new signal automatically.

- **Power Rebooting**

The SW-4X1SL18G supports “power off” memory function. If the last selected signal is still available, the switcher will output said signal. If not, the switcher will detect all the input signals with priority from “**IN 1**” to “**IN 4**” ports. When the first signal is detected, it will transfer to the output.


- **Signal removing**

Once the current input signal is removed, the SW-4X1SL18G will detect all input signals with priority directed towards the succeeding input port. It will transfer the first available input source to the output device.

For example, the selected input signal is “**IN 2**”. If you disconnect the current input source, SW-4X1SL18G will detect all input signals per the following order: “**IN 3**”, “**IN 4**”, “**IN 1**”. Then the first available source will be switched as the input.

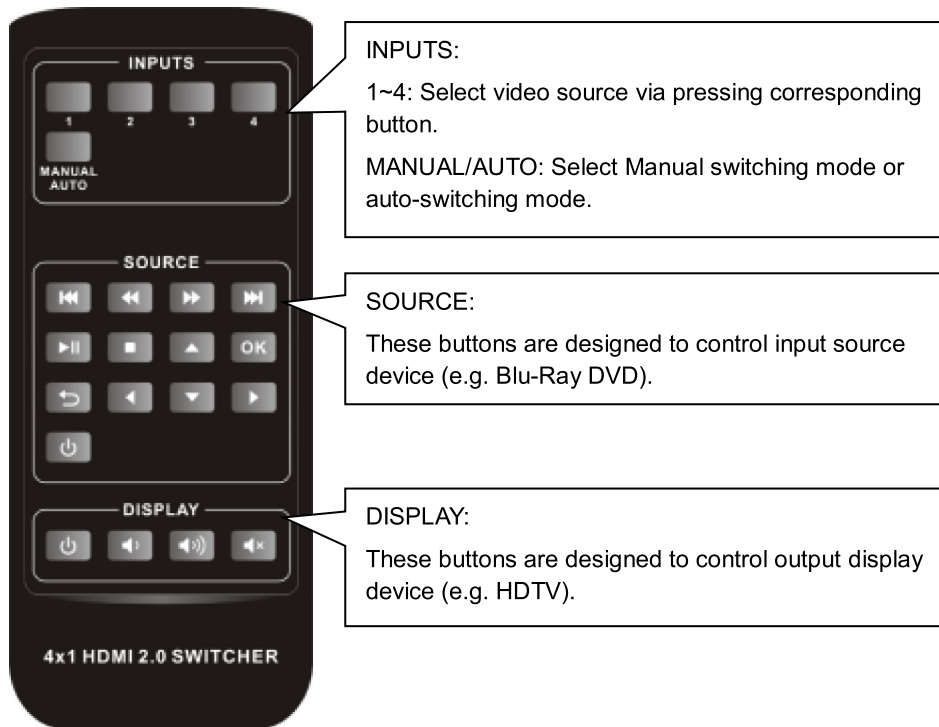
4.2 Embedded EDID invoking

The rear panel contains a 4-pin DIP switcher to invoke embedded EDID. The embedded EDID data and their corresponding DIP switcher status are shown in the below list.

	ID	Status	EDID
 <p data-bbox="129 465 400 539">DIP Switcher The location "ON" is "0".</p>	00	0000	Pass through (default)
	01	0001	1080p 3D 2CH
	02	0010	1080p 3D Multichannel
	03	0011	1080P 2D 2CH
	04	0100	1080P 2D Multichannel
	05	0101	840x2160 2D(30Hz)
	06	0110	3840x2160 2D(60Hz)

5. IR Control

Connect an IR receiver to the **IR IN** port. The SW-4X1SL18G can be controlled via the included IR Remote. As CEC function, it is able to use the IR Remote to control the source or display device. Here is a brief introduction about the IR Remote:



NOTE: The source and display devices should support CEC when the IR Remote is used for controlling them.

6. RS232 Control

The SW-4X1SL18G provides an RS232 port for serial port control. Connect the switcher to the control device (e.g. PC) with an RS232 cable and set the parameters in the right manner. The control device can control the switcher via designed software.

6.1 Installation/uninstallation of RS232 Control Software

Installation: Copy the control software file to the computer connected with this switcher.

Uninstallation: Delete all the control software files in corresponding file path.

6.2 Basic Settings

Connect this switcher with an input device and an output device. Then connect it with a computer, which is installed with the RS232 control software. Double-click the software icon to run this software.

Here we take the software **CommWatch.exe** as example. The icon is shown below:



The interface of the control software is shown below:

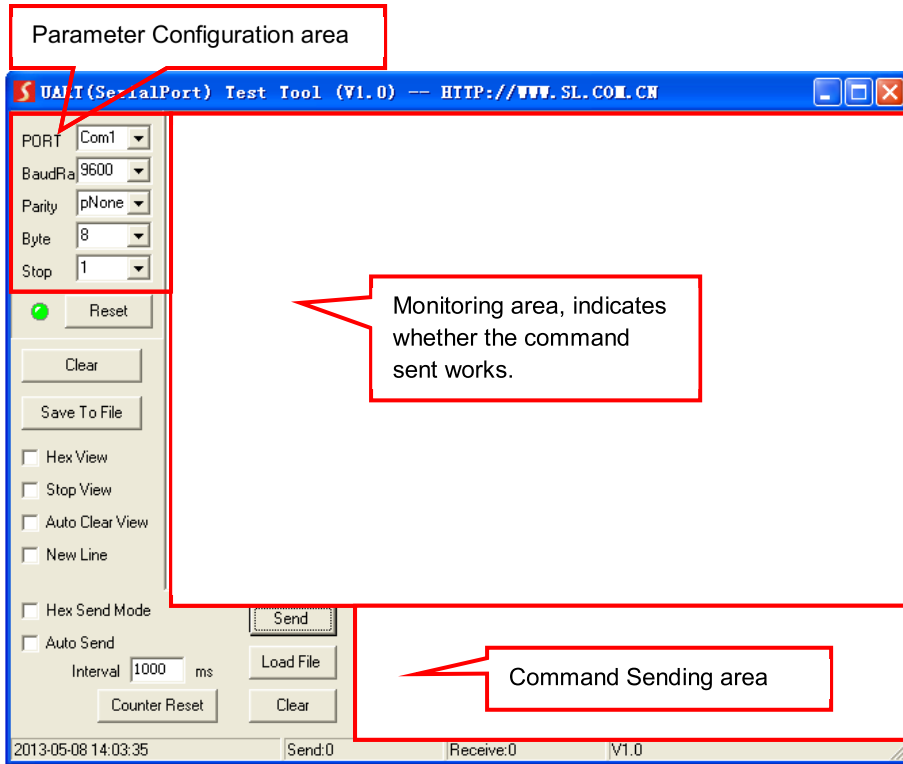
Please set the parameters of COM number, bound rate, data bit, stop bit and the parity bit correctly. Only then will you be able to send command in the Command Sending Area.

Baud rate: 9600

Data bit: 8

Stop bit: 1

Parity bit: none



6.3 RS232 Commands

6.3.1 Switching Commands

Function	Command	Feedback Example
Switch to HDMI input 1.	HDMI 1%	[CMD]: switch to HDMI1.
Switch to HDMI input 2.	HDMI 2%	[CMD]: switch to HDMI2.
Switch to HDMI input 3.	HDMI 3%	[CMD]: switch to HDMI3.
Switch to HDMI input 4.	HDMI 4%	[CMD]: switch to HDMI4.
Enable auto-switching mode.	AUTO%	[CMD]: switch to AUTO Mode.
Enable manual switching mode.	MANUAL%	[CMD]: switch to MANUAL Mode.

NOTE: The source and display devices should support CEC.


6.3.2 EDID Customizing

Function	Command	Feedback Example
Query the current EDID	EDIDInfo%	
Customize EDID.	EDIDSxx%	
Remove all customized EDID.	EDIDR%	

Besides the 6 embedded EDID, there are 9 EDIDs that can be customized as needed.

Firstly, send the command “**EDIDSxx%**” (XX=ID=07~15), and then click “**Load File**” on the RS232 control software to load the customized EDID file (.bin).

After customizing EDID data, you can invoke the new EDID via DIP switcher, and the EDID ID and their corresponding DIP switcher status are shown in the below list.

 <p>DIP Switcher The location “ON” is “0”.</p>	ID	Switcher Status	ID	Switcher Status	ID	Switcher Status
	07	0111	08	1000	09	1001
	10	1010	11	1011	12	1100
	13	1101	14	1110	15	1111

6.3.3 Source Device Control

Function	Command	Feedback Example
Turn on the input source device, e.g. Blue-ray DVD.	SRCon%	[CMD]: blue ray power on.
Turn off the input source device, e.g. Blue-ray DVD.	SRCOff%	[CMD]: blue ray power off.
Play	SRCPplay%	[CMD]: blue ray play.
Pause	SRCPause%	[CMD]: blue ray pause.
Stop	SRCStop%	[CMD]: blue ray stop.
Fast Forward x1	SRCFoward%	[CMD]: blue ray forward.
Fast Rewind	SRCBackward%	[CMD]: blue ray backward.
Next Section	SRCSkipForward%	[CMD]: blue ray skid forward.
Previous Section	SRCSkipBackward%	[CMD]: blue ray skid backward.
Open the MENU	SRCMenu%	[CMD]: blue ray menu.

Back	SRCBack%	[CMD]: blue ray back.
Confirm (OK)	SRCOk%	[CMD]: blue ray OK.
Exit	SRCExit%	[CMD]: blue ray Exit.
Up direction	SRCUp%	[CMD]: blue ray up.
Down direction	SRCDown%	[CMD]: blue ray down.
Left direction	SRCLeft%	[CMD]: blue ray left.
Right direction	SRCRight%	[CMD]: blue ray right.
Next	SRCNext%	[CMD]: blue ray next.
Enter	SRCEnter%	[CMD]: blue ray Enter.

6.3.4 Display Device Control

Function	Command	Feedback Example
Turn on the display device, e.g. HDTV.	TVOn%	[CMD]: TV Power on.
Turn off the display device, e.g. HDTV.	TVOff%	[CMD]: TV Power off.
Select input source.	TVINSel%	[CMD]: TV input select.
Volume up.	TVVOL+%	[CMD]: TV VOL +.
Volume down.	TVVOL-%	[CMD]: TV VOL -.
Mute.	TVMUTE%	[CMD]: TV VOL Mute.

6.3.5 Baud Rate Setting

Function	Command	Feedback Example
Set the baud rate as 9600.	UART9600%	[CMD]: Baud 9600.
Set the baud rate as 19200.	UART19200%	[CMD]: Baud 19200.
Set the baud rate as 38400.	UART38400%	[CMD]: Baud 38400.
Set the baud rate as 57600.	UART57600%	[CMD]: Baud 57600.
Set the baud rate as 115200.	UART115200%	[CMD]: Baud 115200.

7. Firmware Upgrade

This switcher contains a USB port for online firmware upgrade on the rear panel. Follow these steps to upgrade firmware:

- Step1.** Connect control PC to the USB port of this switcher with USB cable.
- Step2.** Open “My Computer”, and then find the new disk named BOOTDISK.
- Step3.** Copy the latest upgrade file (.bin) to this disk.
- Step4.** The switcher will restart automatically, and then the software update will complete after the USB port is connected successfully.

NOTE: The USB port can also be used to energize the device.

8. Specification

Input Signal	4 HDMI
Input Connector	Female Type-A HDMI
Output Signal	1 HDMI
Output Connector	Female Type-A HDMI
Control Signal	1 IR IN; 1 RS232
Control Connector	2 3.5mm mini jacks
Video Signal	HDMI2.0& HDCP2.2
Audio Signal	Dolby Digital, DTS, DTS-HD
General	
EDID Management	Embedded EDID data and manual EDID management.
Resolution Range	640x480@60Hz ~ 4Kx2K@60Hz 4:4:4.
HDMI Cable Length	≤3m
Power Supply	5VDC, 2A
Power Consumption	5W (Max)
Dimension (W*H*D)	194.0mm × 12.0mm × 81.5mm
Weight	200g
Temperature	-10°C~ 55°C
Reference Humidity	10% ~ 90%

NOTE: Please adopt qualified HDMI cables compliant with HDMI2.0 for reliable transmission when connecting.

9. Troubleshooting & Maintenance

Problems	Causes	Solutions
Color losing or no video signal output in HDMI display	The connecting cables may not be connected correctly or it may be broken.	Check whether the cables are connected correctly and in working condition.
No HDMI signal output in this switcher while local HDMI input is in normal working state		
Splash screen in output devices	Poor quality of the connecting cable	Change for another cable of good quality.
Cannot control this switcher by control device (e.g. a PC) through RS232 port	Wrong RS232 communication parameters	Make sure the RS232 communication parameters are correct.
	This switcher is defective	Send it to authorized dealer for repairing.
Static becomes stronger when connecting the video connectors	Bad grounding	Check the grounding and make sure it is connected well.

If your problem persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support.

10. After-sales Service

If problems arise when operating the device, please refer to this user manual. Any transport costs are borne by the users during the warranty.

1. **Product Limited Warranty:** We warrant that products will be free from defects in materials and workmanship for **three years**, which starts from the first day the product exits warehouse. (Make note of the serial number on the product)
Proof of purchase in the form of a bill of sale or receipted invoice **MUST** be presented to obtain warranty service.
2. **What the warranty does not cover:**
 - Warranty expiration.
 - Factory applied serial number has been altered or removed from the product.
 - Damage, deterioration or malfunction caused by:
 - Normal wear and tear
 - Use of supplies or parts not meeting our specifications
 - No certificate or invoice as the proof of warranty.
 - The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
 - Damage caused by force majeure.
 - Servicing not authorized
 - Any other causes which does not relate to a product defect
 - Delivery, installation or labor charges for installation or setup of the product
3. **Technical Support:** Email or call our after-sales department if there are any problems or any unanswered questions. Please inform us the following information about your cases:
 - Product version and name.
 - Detailed failure situations.
 - The formation of the cases.

Remarks: For any questions or problems, please try to get help from your local distributor or contact kanexpro.com or call us at 888-975-1368 for further support.

11. Warranty

A. LIMITED WARRANTY

KanexPro™ warrants that (a) its products (the "Product") will perform greatly in agreement with the accompanying written materials for a period of 36 months (3 full years) from the date of receipt and (b) that the product will be free from defects in materials and workmanship under normal use and service for a period of 3 years.

B. CUSTOMER REMEDIES

KanexPro's entire liability and Customer's exclusive remedy shall be, at KanexPro option, either return of the price paid for the product, or repair or replacement of the Product that does not meet this Limited Warranty and which is returned to KanexPro with a copy of customers' receipt. This Limited Warranty is void if failure of the Product has resulted from accident, abuse, or misapplication. Any replacement Product will be warranted for the remainder of the original warranty period of 3 years, whichever is longer.

C. NO OTHER WARRANTIES

To the maximum extent permitted by applicable law, KanexPro disclaims all other warranties, either express or implied, including, but not limited to implied warranties of merchantability and fitness for a purpose, regarding the product and any related written materials. This limited warranty gives customers specific legal rights. Customers may have other rights depending on the jurisdiction.

D. NO LIABILITY FOR DAMAGES

To the maximum extent permitted by applicable law, in no event shall KanexPro be liable for any damages whatsoever (including without limitation, special, incidental, consequential, or indirect damages for personal injury, loss of business profits, business interruption, loss of business information, or any other pecuniary loss) arising out of the use of or inability to use this product, even if KanexPro has been advised of the possibility of such damages.

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