



4K2K
HDCP2.2



EL-41S-4K22

4-Way HDMI Switcher (4K, HDCP2.2, HDMI2.0, IR)

OPERATION MANUAL

SAFETY PRECAUTIONS

Please read all instructions before attempting to unpack, install or operate this equipment and before connecting the power supply.

Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.
- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Never push an object of any kind into this product through any openings or empty slots in the unit, as you may damage parts inside the unit.
- Do not attach the power supply cabling to building surfaces.
- Use only the supplied power supply unit (PSU). Do not use the PSU if it is damaged.
- Do not allow anything to rest on the power cabling or allow any weight to be placed upon it or any person walk on it.
- To protect the unit from overheating, do not block any vents or openings in the unit housing that provide ventilation and allow for sufficient space for air to circulate around the unit.

REVISION HISTORY

VERSION NO.	DATE (DD/MM/YY)	SUMMARY OF CHANGE
RDV1	03/10/16	Preliminary Release
RDV1a	02/10/16	Amends to YUV Colourspace

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1. INTRODUCTION

This 4-Way HDMI Switcher is designed to enable the user to switch between any of the four connected HDMI sources to send video and audio to a single HDMI display. This switcher fully supports 4K resolutions and is HDMI2.0 and HDCP 2.2 compliant, ensuring maximum compatibility with the latest 4K UHD sources and displays. The EL-41S-4K22 supports all the latest features of the HDMI 2.0 specification such as 4K UHD resolutions (4K2K@60Hz - YUV4:4:4), HDR (High Dynamic Range), 'Deep Color', and High Definition audio. In addition, this switcher also features an Auto-Switching function which detects the last active input and switches to this input automatically for display. Control is via IR remote control and RS-232.

2. APPLICATIONS

- Demo Room Displays
- Hotel Lobby Information Displays
- Showrooms and Demo Rooms
- Public Commercial Displays
- Home Theaters

3. PACKAGE CONTENTS

- 4 by 1 HDMI Switcher
- 5V/2.6A DC Power Adaptor
- Operation Manual
- IR Remote control (battery included)

4. SYSTEM REQUIREMENTS

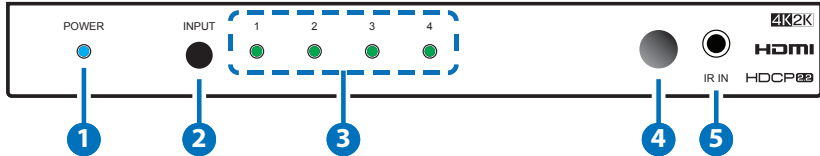
- HDMI source equipment such as UHD media players, video game consoles or set-top boxes.
- HDMI receiving equipment such as HDTVs, monitors or audio amplifiers.
- The use of "Premium High Speed HDMI" cables is highly recommended.

5. FEATURES

- HDMI2.0, HDCP 2.2 and DVI compatible
- Supports 4 HDMI inputs and 1 HDMI output
- Supports CEC pass-through
- Supports HDTV resolutions up to 4K2K (3840x2160@24/25/30/50/60 & 4096x2160 @24/25/30/50/60Hz) including HDR
- Supports pass-through of HD audio formats of PCM 2/5.1/7.1CH, Dolby Digital 2/5.1CH, DTS 2/5.1CH, Dolby Digital Plus, Dolby TrueHD, Dolby Atmos and DTS-HD Master Audio
- Supports control via IR remote and RS-232
- Supports Auto-switching which can send the signal of the latest active HDMI input source to output port
- 3D signal support (with 3D source and compatible 3D TV)

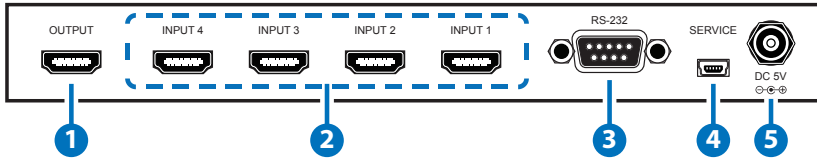
6. OPERATION CONTROLS AND FUNCTIONS

6.1 Front Panel



- 1 POWER LED:** This LED will illuminate to indicate the unit is on and receiving power.
- 2 INPUT:** Press this button to sequentially switch through the available inputs.
- 3 1~4:** The illuminated LED indicates which source is currently selected.
- 4 IR Window:** Accepts IR signals from the included IR remote for control of this unit only.
- 5 IR IN:** Connect to an IR Extender to extend the IR control range of the unit. Ensure that the remote being used is within direct line-of-sight of the IR Extender.

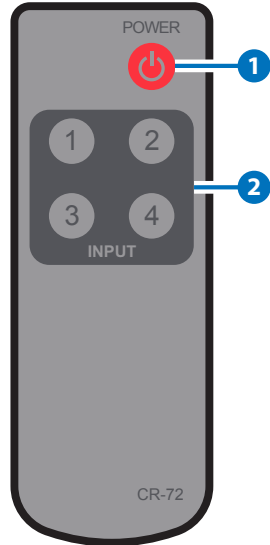
6.2 Rear Panel



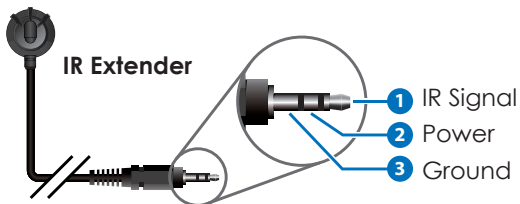
- 1 OUTPUT:** Connect to HDMI TVs, monitors or amplifiers for digital video and audio output.
- 2 INPUT 1~4:** Connect to HDMI source equipment such as media players, game consoles or set-top boxes.
- 3 RS-232:** Connect directly to your PC/laptop to send RS-232 commands to control the unit (refer to Sections 6.5 & 6.6 for details).
- 4 SERVICE:** This slot is reserved for firmware update use only.
- 5 DC 5V:** Plug the 5V DC power adapter into the unit and connect it to an AC wall outlet for power.

6.3 Remote Control

- 1 **POWER:** No function
- 2 **INPUT 1~4:** Press any of these buttons to switch to the corresponding input.



6.4 IR Pin Definitions



6.5 RS-232 Protocols

MATRIX			REMOTE CONTROLLER	
PIN	Definition		PIN	Definition
1	NC	▶	1	NC
2	Tx		2	Rx
3	Rx		3	Tx
4	NC		4	NC
5	GND		5	GND
6	NC	◀	6	NC
7	NC		7	NC
8	NC		8	NC
9	NC		9	NC

Baud Rate: 115200bps

Data bits: 8

Parity: None

Flow Control: None

Stop Bits: 1

6.6 RS-232 Commands

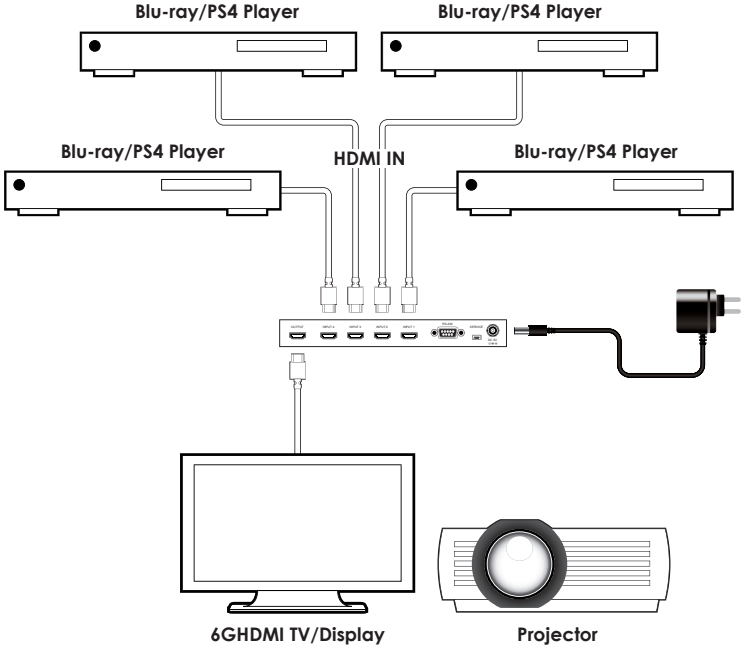
Command Name	Description	Parameters
OUT N	SET/SHOW CURRENT INPUT SELECTION	OUT N, N=1~4 (INPUT), N=0 (MUTE), N=? (STATUS)
SOURCEDET	SHOW INPUT INFORMATION	NONE
SINKINFO	SHOW SINK INFORMATION	NONE
HDCPIN N1 N2	SET/SHOW INPUT HDCP STATUS	HDCPIN N1 N2, N1=1~4 (INPUT), N2=1~3, N=? (STATUS) 1:FOLLOW IN 2:FOLLOW OUT 3:APPLE MODE
EDIDMODE N	SET/SHOW EDID MODE	EDIDMODE N, N=1~2, N=? (STATUS) 1:ALL 2:APPOINT
EDIDALL N	SET/SHOW EDID ALL SELECTION	EDIDALL N, N=1~7, N=? (STATUS) 1:FHD/2CH 2:FHD/MCH 3:UHD/2CH 4:UHD/MCH 5:UHD+/2CH 6: UHD+/MCH 7:SINK

Command Name	Description	Parameters
EDIDIN N1 N2	SET/SHOW EDID INPUT SELECTION	EDIDIN N1 N2, N1=1~4 (INPUT), N2=1~7, N1=? (STATUS) 1:FHD/2CH 2:FHD/MCH 3:UHD/2CH 4:UHD/MCH 5:UHD+/2CH 6: UHD+/MCH 7:SINK
AUTOSWITCH N	SET/SHOW AUTO SWITCHING MODE	AUTOSWITCH N, N=0~1, N=? (STATUS) 0:OFF 1:ON
ECHO N	SET/SHOW COMSOLE AUTO ECHO MODE	ECHO N, N=0~1,0:OFF,1:ON, N=? (STATUS)
FADEFAULT	SET UNIT TO FACTORY DEFAULT	NONE
VER	SHOW UNIT FIRMWARE VERSION	NONE
REBOOT	SYSTEM REBOOT	NONE
?	SHOW DESCRIPT OF COMMAND	NONE
HELP	SHOW DESCRIPT OF COMMAND	NONE

6.7 Factory Default settings

Factory Default Settings	
OUT	INPUT 1
EDID MODE	ALL Mode
EDID	SINK
HDCP	Follow Out
AutoSwitch	OFF
ECHO	ON

7. CONNECTION DIAGRAM



8. SPECIFICATIONS

Video Bandwidth	600MHz/6Gbps
Input Ports	4 x HDMI 1 x IR 1 x RS232 1 x Mini USB (Service)
Output Ports	1 x HDMI
Supported Resolutions	VGA~WUXGA 480i~1080p@60Hz 4K@24/25/30/50/60Hz
HDMI Cable I/O Distance*	3M (4K@60Hz, YUV 4:4:4 8-bit) 5M (4K@60Hz, YUV 4:2:0 8-bit) 10M (1080p@60Hz, 8-bit)
IR Frequency	30~50kHz
Baud Rate	115200 bps
Power Supply	5VDC/2.7A (US/EU standards, CE/FCC/ UL certified)
ESD Protection	Human Body model: ± 8kV (air-gap discharge) ± 4kV (contact discharge)
Chassis Material	Metal
Silkscreen color	Black
Dimensions	213.5mm × 25mm × 108mm (W×H×D) [All Inclusive]
Weight	608g
Operating Temperature	0°C~40°C/32°F~104°F
Storage temperature	-20°C~60°C/-4°F~140°F
Relative Humidity	20~90% RH (no condensation)
Power Consumption	6.6 W

9. TIMING

HDMI SUPPORTED RESOLUTIONS (HZ)	INPUT	OUTPUT
640x480@60/72/75/85	✓	✓
800x600@56/60/72/75/85	✓	✓
1024x768@60/70/75/85	✓	✓
1280x1024@60	✓	✓
1366x768@60	✓	✓
1600x1200@60	✓	✓
1920x1080@60	✓	✓
1920x1200@60	✓	✓
720x576i@50	✓	✓
720x480i@59.94/60	✓	✓
720x480p@59.94/60	✓	✓
720x576p@50	✓	✓
1280x720p@50/59.94/60	✓	✓
1920x1080i@50/59.94/60	✓	✓
1920x1080p@23.97/24/25/29.97/30/50/59.94/60	✓	✓
3840x2160@24/25/30	✓	✓
3840x2160@50/60	✓	✓
4096x2160@24/25/30	✓	✓
4096x2160@50/60	✓	✓



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RDV1a