

# ► SW41AB-V2

## User Manual

**Thank you for purchasing this product.**

For optimum performance and safety, please read these instructions carefully before connecting, operating or adjusting this product. Please keep this manual for future reference.



**Surge protection device recommended**

This product contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. Use of surge protection systems is highly recommended in order to protect and extend the life of your equipment.

**Safety And Performance Notice**

Do not substitute or use any other power supply other than the enclosed unit, or a Blustream approved replacement.

Do not disassemble the unit for any reason. Doing so will void the manufacturer's warranty.

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# Introduction

The SW41AB-V2 is a 4-way HDMI switch with integrated audio breakout. The switch supports full HDMI 2.0 and HDCP 2.2 with video resolutions up to and including 4K @ 60Hz 4:4:4.

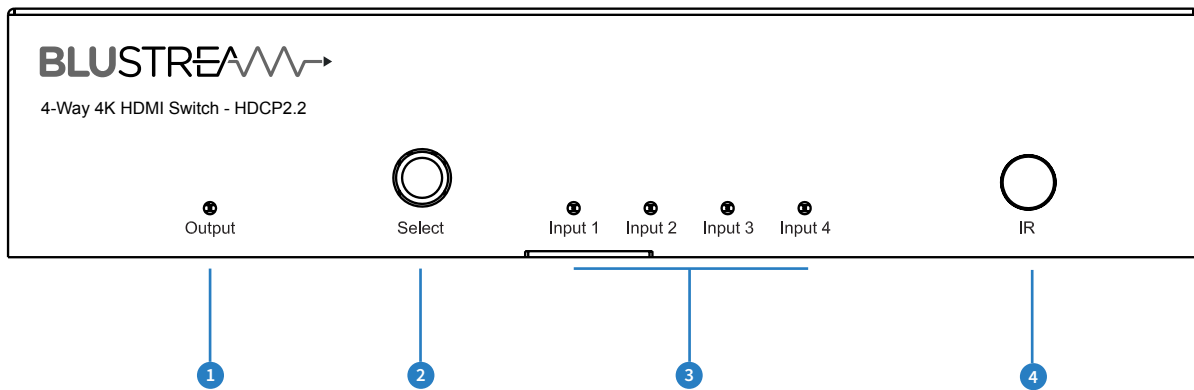
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## FEATURES:

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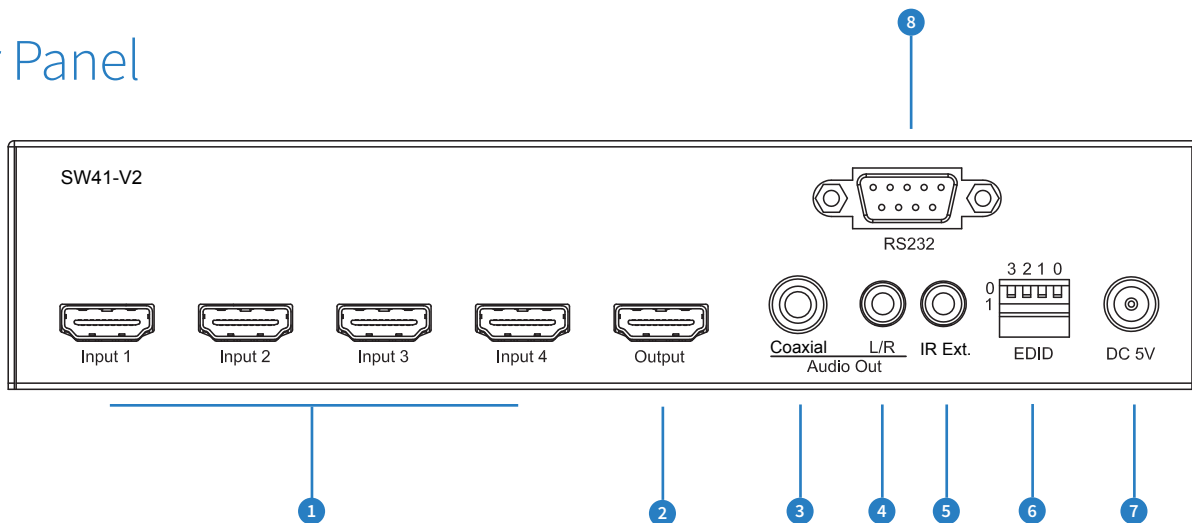
- Features 4x HDMI inputs which can be switched to a single HDMI output
- Supports full HDMI 2.0 specification 4K UHD video (4K @ 60Hz 4:4:4)
- HDCP 2.2 compliant
- Supports 3D signal display
- Supports all industry standard video resolutions including VGA-WUXGA and 480i-4K
- Supports all known HDMI audio formats including Dolby TrueHD, Dolby Atmos, Dolby Digital Plus and DTS-HD Master Audio transmission
- HDMI audio breakout to analogue L/R audio and coaxial digital outputs concurrently
- Control via front panel, RS-232 and IR
- Advanced EDID management

## Front Panel



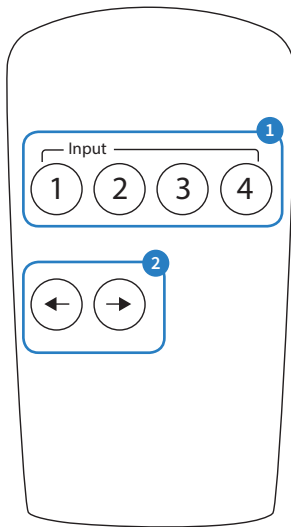
- ① Output LED indicator - indicates if a display device is connected to the switches HDMI output
- ② Select button - press to toggle between HDMI inputs
- ③ Input LED indicators - displays the HDMI input currently active
- ④ IR receiver window

## Rear Panel



- ① HDMI inputs - connect to a HDMI source devices
- ② HDMI output - connect to a HDMI display device
- ③ Coaxial digital output (SPDIF) - de-embedded from selected HDMI input
- ④ Analogue audio Left/Right output (3.5mm stereo jack) - de-embedded from the selected HDMI input. Source input must be PCM 2 channel audio for the analogue output to work. The SW41AB-V2 doesn't down-mix multi-channel audio signals.
- ⑤ External IR port - connect Blustream 5V IR receiver or control processor to control switcher
- ⑥ EDID DIP switches - see page 06
- ⑦ Power port - use supplied Blustream 5V/2A DC adaptor to power the switcher
- ⑧ RS-232 port - for control of the switcher from a PC or control processor

## Infrared Remote Control - REMSW41



- ① Direct HDMI input selection buttons
- ② Scroll through input buttons - HDMI input 1-2-3-4-1...

## Infrared (IR) Distribution

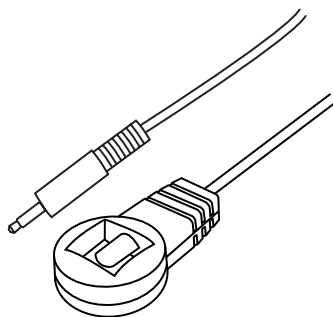
The Blustream range of HDMI products include multiple options for control and routing of IR.

**IMPORTANT: Blustream Infrared products are all 5V and NOT compatible with alternative manufacturers Infrared solutions. When using third party 12V IR control solutions please use supplied Blustream IRCAB cable for IR conversion (sold separately).**

Each Blustream HDMI product is supplied with all necessary IR hardware required and includes:

### IR Receiver - IRR

Blustream 5V IR receiver (supplied) to receive IR signal and control the SW41AB-V2

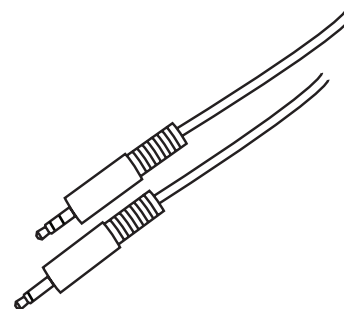


### IR Control Cable - IRCAB

Blustream IR Control cable 3.5mm Mono to 3.5mm Stereo for linking third party control solutions to Blustream products.

Compatible with 12V IR third party products.

Note: Cable is directional as indicated - not supplied



# EDID Control

EDID (Extended Display Identification Data) is a data structure that is used between a display and a source. This data is used by the source to find out what audio and video resolutions are supported by the display, from this information the source will discover what the best audio and video resolutions need to be outputted.

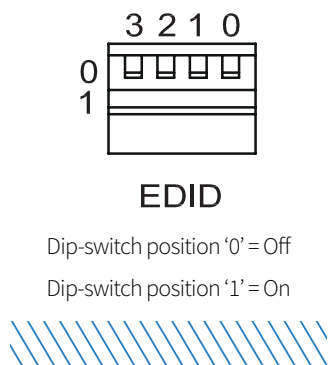
While the objective of EDID is to make connecting a digital display to a source a simple plug and play procedure, issues do arise when multiple displays or video matrix switching is introduced because of the increased number of variables.

By pre-determining the video resolution and audio format of the sources and display device you can reduce the time needed for EDID hand shaking thus making switching quicker and more reliable.

Configuration of extender EDID settings can be achieved using the product dip-switches on the SW41AB-V2. EDID dip-switch settings are shown below.

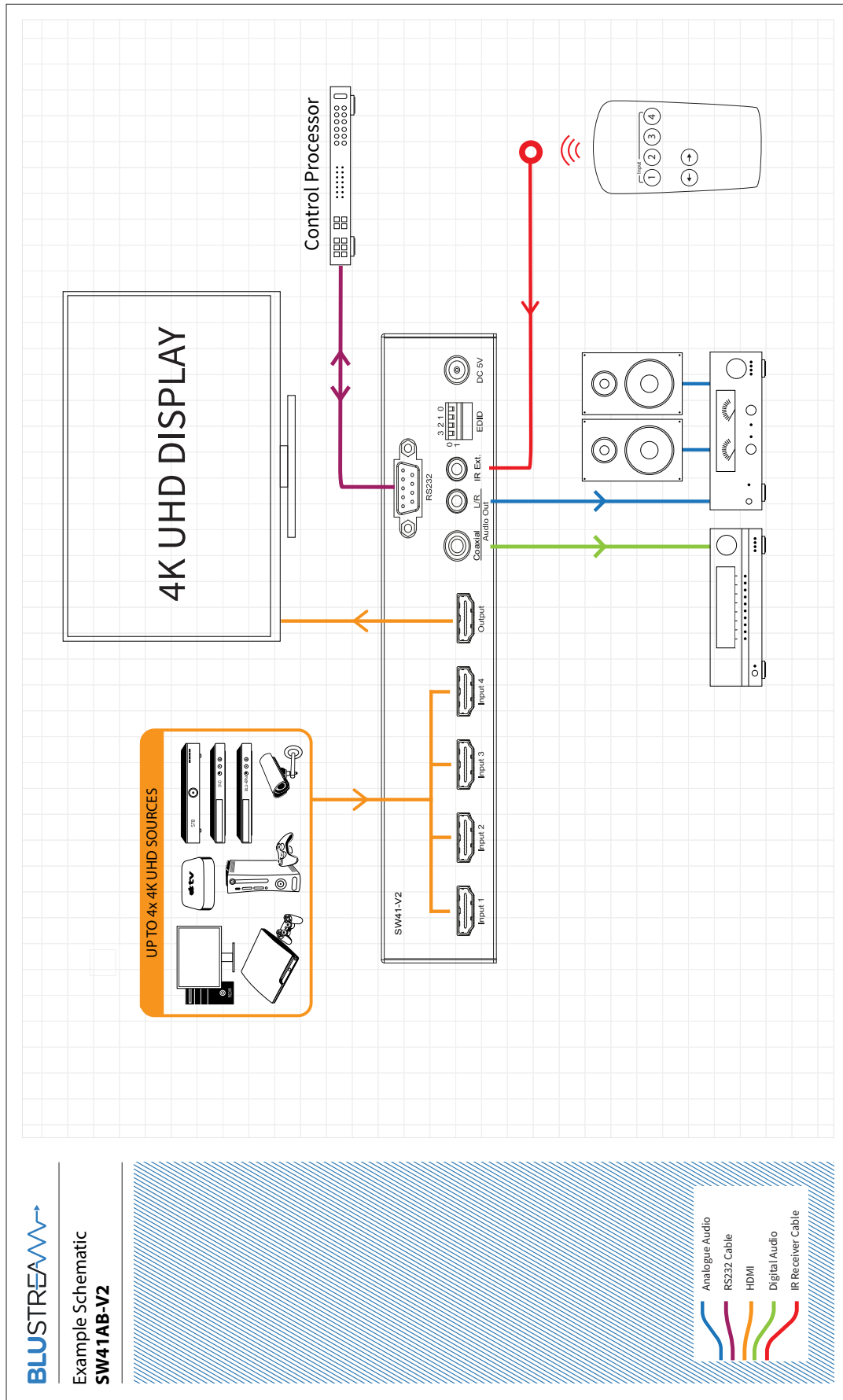
**Note:** You must power cycle the product after making EDID changes. For some sources it may be necessary to power cycle the source after EDID changes have been made for the source to update its video & audio output settings.

## Global EDID Settings



DIP ON ▼/OFF▲ SWITCHING POSITIONS				EDID TYPE
3	2	1	0	
OFF	OFF	OFF	ON	1080p / 2ch
OFF	OFF	ON	OFF	1080p / 5.1ch
OFF	OFF	ON	ON	1080p / 7.1ch
OFF	ON	OFF	OFF	1080i / 2ch
OFF	ON	OFF	ON	1080i / 5.1ch
OFF	ON	ON	OFF	1080i / 7.1ch
OFF	ON	ON	ON	4K@60Hz 4:2:0 / 2ch
ON	OFF	OFF	OFF	4K@60Hz 4:2:0 / 5.1ch
ON	OFF	OFF	ON	4K@60Hz 4:2:0 / 7.1ch
ON	OFF	ON	OFF	4K / 2ch
ON	OFF	ON	ON	4K / 5.1ch
ON	ON	OFF	OFF	4K / 7.1ch
ON	ON	OFF	ON	DVI 1280x1024
ON	ON	ON	OFF	DVI 1920x1080
ON	ON	ON	ON	DVI 1920x1200
OFF	OFF	OFF	OFF	Copy sink EDID

# Application Diagram



## Specifications

- Video Input Connectors: 4x HDMI Type A, 19-pin, female
- Video Output Connectors: 1x HDMI Type A, 19-pin, female
- Audio Output Connectors: 1x RCA (SPDIF) & 1x Analogue audio L/R (3.5mm stereo jack)
- IR Input Ports: 1x 3.5mm stereo jack
- RS232 Serial Port: 1x DB9, female
- Dimensions (WxDxH): 196 x 104 x 41mm, including connections
- Shipping Weight: 0.9kg
- Operating Temperature: 32°F to 104°F (0°C to 40°C)
- Storage Temperature: -4°F to 140°F (-20°C to 60°C)
- Power Supply: 1x 5V/2A DC

**NOTE:** Specifications are subject to change without notice. Weights and dimensions are approximate.

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## Package Contents

- 1 x SW41AB-V2
  - 1 x REMSW41 remote control
  - 1 x 5V/2A DC power supply
  - 1 x IR receiver (IRR)
  - 1 x Mounting bracket set
  - 1 x User manual
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## Maintenance

Clean this unit with a soft, dry cloth. Never use alcohol, paint thinner or benzene to clean this unit.

Components inside this unit are not user serviceable. Do not remove the protective cover from the unit. Removing any panel from this product will invalidate the manufacturers warranty.



## RS-232 Control

The SW41AB-V2 switch can be controlled via a 9-pin serial cable.

See page 11 for the full list of control protocols.

Details of RS-232 pin assignment and communication are below. Please note that depending on your control device serial port pin configuration you may require either a 'Straight' RS-232 cable or 'Null-modem' type.

### RS-232 Settings

**Baud Rate:** 57600 bps

**Data Bit:** 8-bit

**Parity:** None

**Stop Bit:** 1-bit

**Flow Control:** None

BLUSTREAM RS-232		CONTROL SYSTEM	
PIN	Assignment	PIN	Assignment
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

### Commonly used Serial commands

There are several commands that are commonly used for control and testing:-

**STATUS** Status will give feedback on switch such as zones on, type of connection etc

**PON** Power on

**POFF** Power off

**OUTFRyy** (where 'yy' is the input)

Example:- OUTFR04 (This would switch the output to source input 4)

### Common Mistakes

- Carriage return – some programs do not require the carriage return where as other will not work unless sent directly after the string. In the case of some Terminal software the token <CR> is used to execute a carriage return. Depending on the program you are using this token maybe different. Some other examples that other control systems deploy include \r or 0D (in hex)
- Spaces – Blustream commands do not require space between commands unless specified. There may be some programs that require spacing in order to work.
  - How the string should look is as follows OUTFR03
  - How the string may look if spaces are required: OUT{Space}FR{Space}03
- Baud rate or other serial protocol settings not correct - see above

## RS-232 Commands

RS-232 COMMAND	DESCRIPTION
?	Print Help Information
HELP	Print Help Information
STATUS	Print System Status And Port Status
IRON/OFF	Set System IR Control On Or Off
KEYON/OFF	Set System KEY Control On Or Off
RESET	Reset System To Default Setting (Should Type "Yes" To Confirm, "No" To Discard)
OUTFRyy	Set OUTPUT From INPUT:yy
OUTON/OFF	Set OUTPUT Port On or Off

## SW41AB-V2 IR Commands

SW41	NEC IR: CUSTOMER CODE 1898	HEX IR
Input 1	50	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0689
Input 2	55	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0689
Input 3	48	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0689
Input 4	4A	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0689
Back	06	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0689
Forward	05	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0689

## Installer notes:



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[www.blustream.com.au](http://www.blustream.com.au)