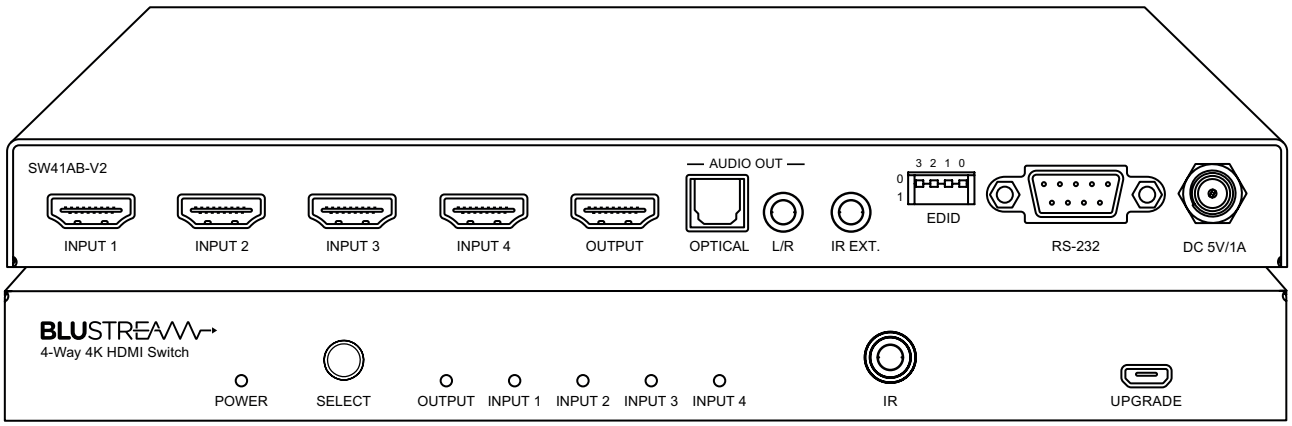


SW41AB-V2

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.

Contents

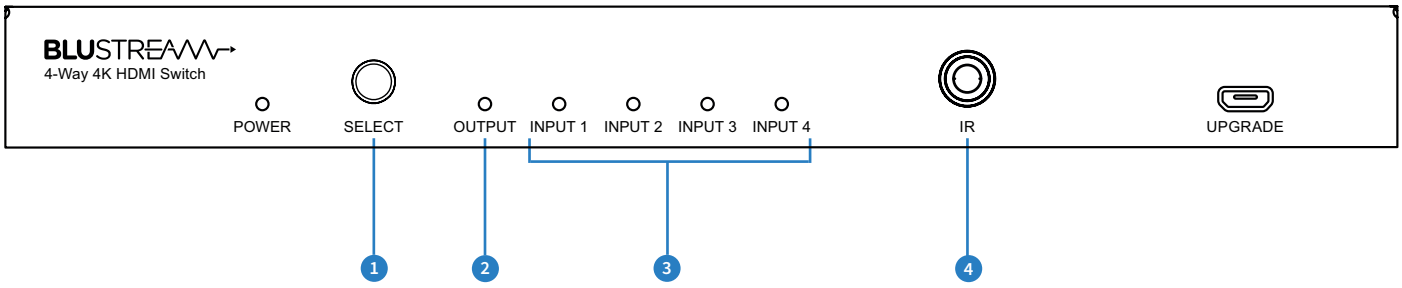
Introduction

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

FEATURES:

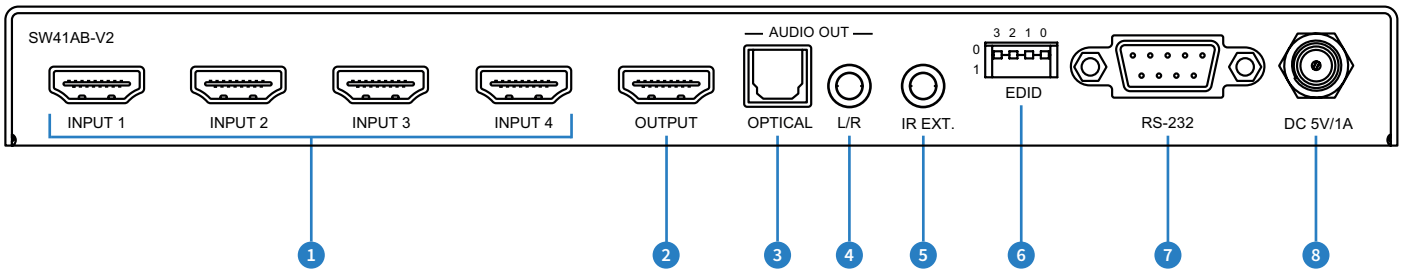
- Features 4 x HDMI inputs which can be switched to a single HDMI output
- Supports full HDMI 2.0 specification 4K UHD video (4K @ 60Hz 4:4:4)
- HDCP 2.2 compliant
- Auto-switching capabilities
- Supports 3D signal display
- Supports all industry standard video resolutions including VGA-WUXGA and 480i-4K
- 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 or IR
- Advanced EDID management

Front Panel



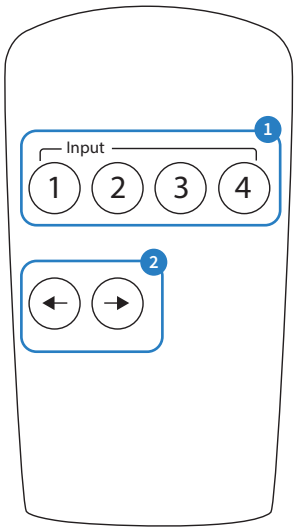
1. Select button - press to toggle between HDMI inputs. Auto-switching function is enabled / disabled by pressing and holding the Select button for 5 seconds. Input light will flash 3 times to confirm switching function enabled / disabled
2. Output LED indicator - indicates if a display device is connected to the switches HDMI output
3. Input LED indicators - displays the HDMI input currently active
4. IR receiver window

Rear Panel



1. HDMI inputs - connect to HDMI source devices
2. HDMI output - connect to a HDMI display device
3. Optical S/DIF Output - De-embed digital audio from the 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 does not down-mix multi-channel audio signals
5. External IR port - connect supplied Blustream 5V IR receiver, or control processor to control the switcher
6. EDID DIP switches - see page 06
7. RS-232 port - for control of the switcher from a PC or control processor
8. Power port - use supplied Blustream 5V/1A DC adaptor to power the switcher

Infrared Remote Control - REMSW41



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

Infrared (IR) Distribution

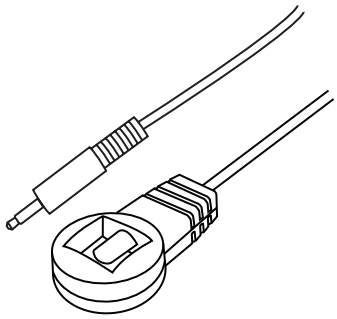
The Blustream range of HDMI products include multiple options for control and routing of IR.

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 the Blustream IRCAB cable for IR conversion (12V to 5V) - sold separately.

Each Blustream HDMI product is supplied with the necessary IR hardware required:

IR Receiver - IRR

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

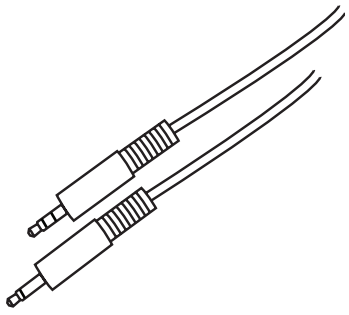


IR Control Cable - IRCAB

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 resolution that need to be output.

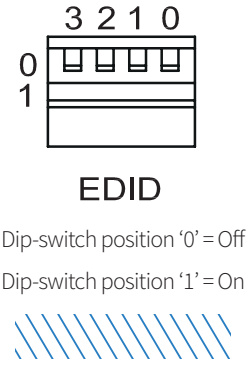
While the objective of EDID is to make connecting a digital display to a source a simple plug and play procedure, issues do arise when multiple displays or video matrix switching is introduced because of the increased number of variables.

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 the switcher 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, or switcher, after EDID changes have been made for the source to update its video & audio output settings.

Global EDID Settings

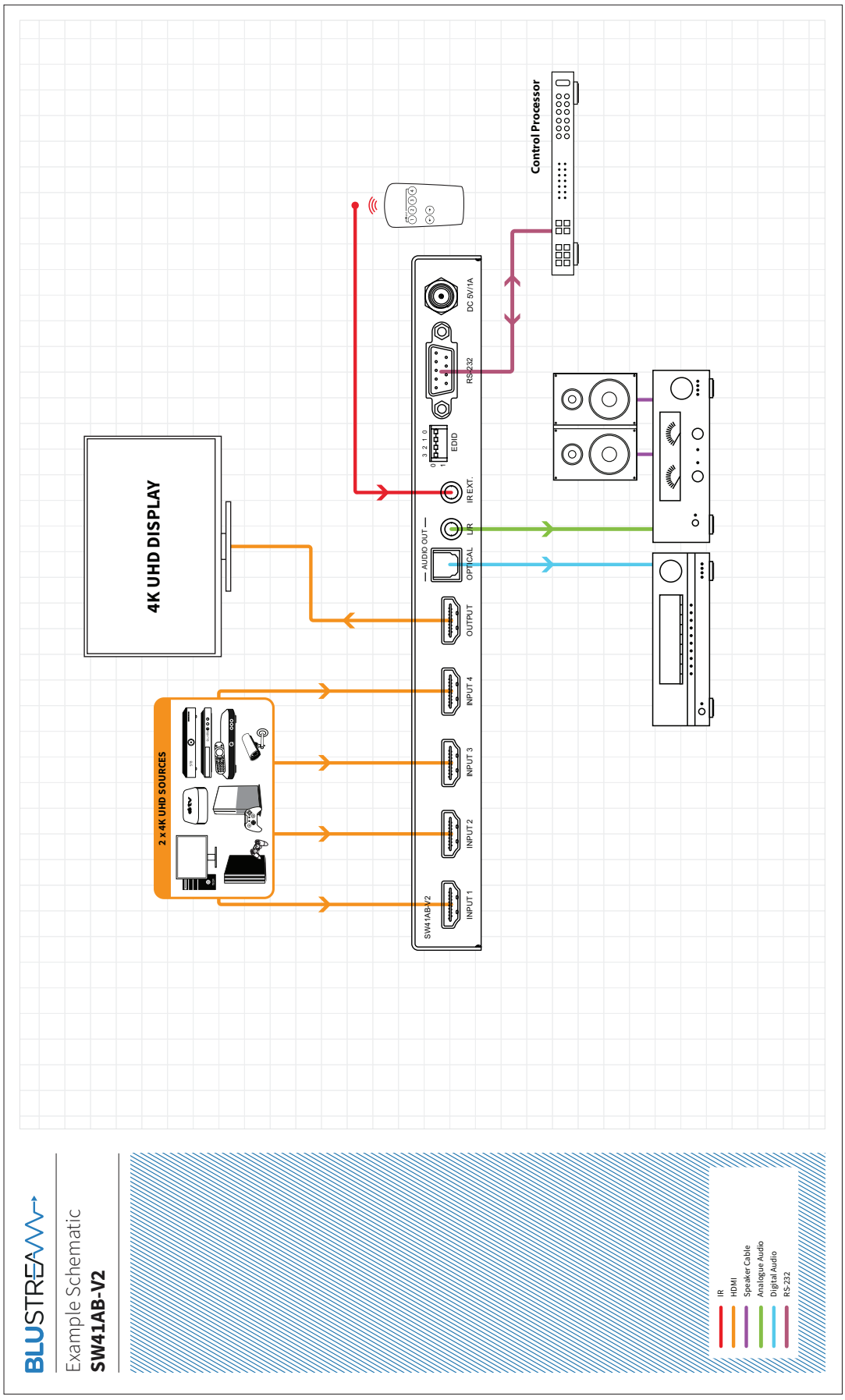


Dip-switch position '0' = Off

Dip-switch position '1' = On

DIP ON /OFF SWITCHING POSITIONS				
3	2	1	0	EDID TYPE
OFF	OFF	OFF	OFF	1080p@60Hz, Audio 2ch PCM
OFF	OFF	OFF	ON	1080p@60Hz, Audio 5.1ch PCM/DTS/Dolby
OFF	OFF	ON	OFF	1080p@60Hz, Audio 7.1ch PCM/DTS/Dolby/HD
OFF	OFF	ON	ON	4K@60Hz 4:2:0 / 4K@30Hz 4:4:4, Audio 2ch PCM
OFF	ON	OFF	OFF	4K@60Hz 4:2:0 / 4K@30Hz 4:4:4, Audio 5.1ch PCM/DTS/Dolby
OFF	ON	OFF	ON	4K@60Hz 4:2:0 / 4K@30Hz 4:4:4, Audio 7.1ch PCM/DTS/Dolby/HD
OFF	ON	ON	OFF	4K@60Hz 4:4:4, Audio 2ch PCM
OFF	ON	ON	ON	4K@60Hz 4:4:4, Audio 5.1ch PCM/DTS/Dolby
ON	OFF	OFF	OFF	4K@60Hz 4:4:4, Audio 7.1ch PCM/DTS/Dolby/HD
ON	OFF	OFF	ON	4K@60Hz 4:4:4, Audio 2ch PCM
ON	OFF	ON	ON	4K@60Hz 4:4:4, Audio 5.1ch PCM/DTS/Dolby
ON	OFF	ON	ON	4K@60Hz 4:4:4, Audio 7.1ch PCM/DTS/Dolby/HD
ON	ON	OFF	OFF	DVI 1920x1080@60Hz, Audio None
ON	ON	OFF	ON	DVI 1920x1200@60Hz, Audio None
ON	ON	ON	OFF	API Control - Software Control
ON	ON	ON	ON	EDID pass-through

Application Diagram



Specifications

- **Video Input Connectors:** 4 x HDMI Type A, 19-pin, female
- **Video Output Connectors:** 1 x HDMI Type A, 19-pin, female
- **Audio Output Connectors:** 1 x Optical (S/PDIF) & 1 x Analogue audio L/R (3.5mm stereo jack)
- **IR Input Ports:** 1 x 3.5mm stereo jack
- **RS-232 Serial Port:** 1 x DB9, female
- **Dimensions (WxDxH):** 196 x 104 x 41mm, including connections, without feet (removable)
- **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:** 1 x 5V/1A DC

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

Package Contents

- 1 x SW41AB-V2
- 1 x REMSW41 Remote Control
- 1 x 5V/1A DC Power Supply
- 1 x IR Receiver (IRR)
- 1 x Mounting Bracket Set
- 1 x User Manual

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 10 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 (Type “Yes” To Confirm, “No” To Discard)
OUTFRyy	Set OUTPUT From INPUT:yy
OUTON/OFF	Set OUTPUT Port On or Off
OUT AUTO ON/OFF	Set OUTPUT Port to Auto Switch 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 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0689
Input 2	55	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 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 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0689
Input 4	4A	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0689
Back (Input 4, 3, 2, 1, 4...)	06	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0689
Forward (Input 1, 2, 3, 4, 1...)	05	0000 006D 0000 0022 0157 00AC 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0041 0016 0016 0016 0016 0016 0041 0016 0016 0016 0016 0016 0016 0016 0016 0041 0016 0016 0016 0041 0016 0016 0016 0041 0016 0041 0016 0041 0016 0016 0016 0041 0016 0041 0016 0016 0016 0041 0016 0689

Certifications

FCC NOTICE

This equipment has been tested and found to comply with the limits for 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 residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

CAUTION - changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CANADA, INDUSTRY CANADA (IC) NOTICES

This Class B digital apparatus complies with Canadian ICES-003.

Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

CORRECT DISPOSAL OF THIS PRODUCT

This marking indicates that this product should not be disposed with other household wastes. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmentally safe recycling.

Installer Notes:

www.blustream.co.uk
www.blustream.com.au