DIGITALINX
VALUE-ENGINEERED DIGITAL SOLUTIONS

DL-S41-H2 Owners Manual

LIBERTY
## AV SOLUTIONS
A SUBSIDIARY OF WESCO DISTRIBUTION, INC.

Important Safety Instructions

» Please completely read and verify you understand all instructions in this manual before operating this equipment.

» Keep these instructions in a safe, accessible place for future reference.

» Heed all warnings.

» Follow all instructions.

» Do not use this apparatus near water.

» Clean only with a dry cloth.

» Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.

» Use only accessories specified or recommended by Intelix.

» Explanation of graphical symbols:

  ◊ Lightning bolt/flash symbol: the lightning bolt/flash and arrowhead within an equilateral triangle symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product enclosure which may be of sufficient magnitude to constitute a risk of shock to a person or persons.

  ◊ Exclamation point symbol: the exclamation point within an equilateral triangle symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the product.
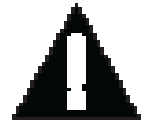
» **WARNING: TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPARATUS TO RAIN OR MOISTURE AND OBJECTS FILLED WITH LIQUIDS, SUCH AS VASES, SHOULD NOT BE PLACED ON THIS APPARATUS.**

» Use the mains plug to disconnect the apparatus from the mains.

» **THE MAINS PLUG OF THE POWER CORD MUST REMAIN READILY ACCESSIBLE.**

» Do not defeat the safety purpose polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong is provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of your obsolete outlet. **Caution! To reduce the risk of electrical shock, grounding of the center pin of this plug must be maintained.**

» Protect the power cord from being walked on or pinched particularly at the plugs, convenience receptacles, and the point where they exit from the apparatus.

» Do not block the air ventilation openings. Only mount the equipment per Intelix's instructions.

» Use only with the cart, stand, table, or rack specified by Intelix or sold with the equipment. When/if a cart is used, use caution when moving the cart/equipment combination to avoid injury from tip-over.

» Unplug this apparatus during lightning storms or when unused for long periods of time.

» **Caution!** Shock Hazard. Do not open the unit.

» Refer to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

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Table of Contents

Product Overview

The DL-S41-H2 is a slimline HDMI 2.0b auto switcher with four HDMI video inputs and one HDMI output. This switcher supports HDMI video resolutions up to 4Kx2K@60Hz 4:4:4, HDR, and multichannel audio. In addition to passing EDID information from the display, there are multiple built-in EDID settings to simplify an installation. The switcher will de-embed digital stereo audio to provide an analog audio source for an existing audio system. The switcher also supports audio return channel (ARC) for transmitting audio back to HDMI input and audio output ports from display device.

When in auto-switch mode, the switcher will switch to an HDMI input as soon as a new source is connected. When the active source is removed, the switcher will select the first source on the lowest numbered input. The switcher may also be controlled via RS232, IR with the included remote, or from the source button on the front of the switcher.

Package Contents

- DL-S41-H2 HDMI 2.0b Auto Switcher
- Quick Install Guide
- (1) IR Remote
- (1) IR Receiver
- (1) RS232 3.5mm to DB9 adapter cable
- (1) DC5V 1A power supply with US, UK, EU and AU power adapter plugs
- (2) Mounting ears with mounting screws
- (4) Plastic cushions

Front and Rear Panel View

Front View

1. AUTO/SOURCE- Auto / manual mode switching selection

    • Press and hold 3 seconds to switch between switching modes

2. POWER LED - Illuminates RED when power is applied

3. AUDIO MODE LED - Audio mode indicator

    • *When LED is green, unit is in de-embed mode*
    • *When LED is yellow, unit is in ARC mode*

4. SOURCE MODE LED- Switch mode indicator

    • *When LED is green, unit is in manual switch mode*
    • *When LED is yellow, unit is in auto switch mo*de

5. HDMI INPUT LEDS - Illuminates GREEN when there is an HDMI input on the corresponding channel

6. FIRMWARE - USB port for firmware updates

Rear View
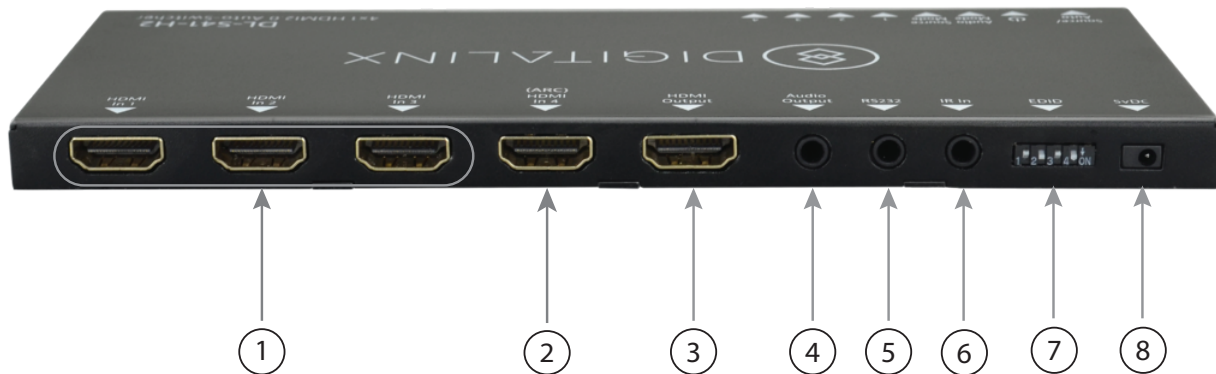
1. HDMI IN 1-3 - HDMI inputs 1- 3 for HDMI sources

2. (ARC) HDMI IN 4 - ARC compatible HDMI input

3. HDMI OUTPUT- HDMI output to connect to display technology

4. AUDIO OUTPUT - 3.5mm audio output jack

5. RS232- 3.5mm serial control output

6. IR IN - 3.5mm IR input port for IR receiver (included)

7. EDID - 4 pin dip switch for EDID settings

8. DC 5V- DC barrel port for 5V power adapter (included)

Installation Instructions

Quick Start

1.   Mount the switcher
2.   Connect display
3.   Connect audio output (optional)
4.   Connect control (optional)
5.   Apply power

Mount the Switcher

At least 2 inches of free air space is required on both sides of the DL-S41-H2 for proper side ventilation. Avoid mounting the DL-S41-H2 near a power amplifier or any other source of significant heat.

Connecting a Display

### HDMI Output

Connect the display device to the HDMI output on the DL-S41-H2 using an HDMI cable that is less than or equal to 5 meters in length.

Connect Audio Output

Connect a compatible 3.5mm audio cable to the 3.5mm audio output port of the DL-S41-H2. The DL-S41-H2 supports a stereo unbalanced output.
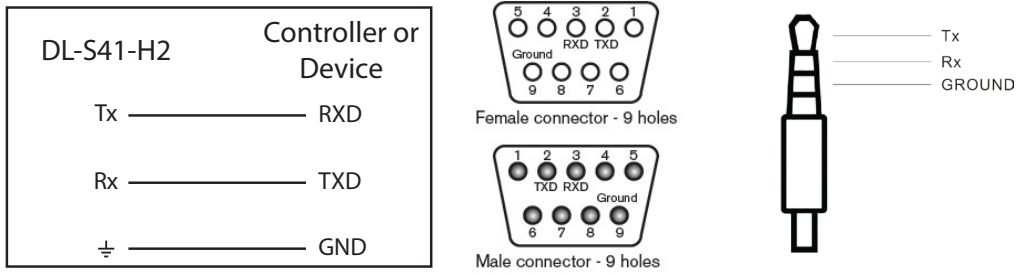
Below is an audio cable pin-out that is compatible with the DL-S41-H2 audio output
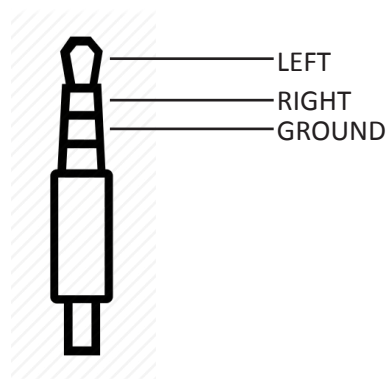
Connecting Control

RS232 Control Wiring

Using the supplied RS232 3.5mm- DB9 serial breakout cable, connect the controller device to the 3.5mm port on DL-S41-H2 switcher labeled as RS232. Below is a pin out for the supplied breakout cable.

IR Remote Control (Optional)

Connect the IR receiver to the IR input port of the DL-S41-H2, the IR remote is used for input switching and it also can be used to control source and display devices based on CEC control. To use this feature with a compatible CEC source and display, turn on the CEC option in the source and displays menu options.

Note: CEC performance may differ for various sources and displays and not all remote functions may be supported by third party source and display manufacturers.

Apply Power

Plug the power supply into the power input port on the rear of the DL-S41-H2 receiver.

EDID Management

The rear panel features a 4-pin DIP switch for setting predefined EDID input settings. The ten types of embedded EDID and their corresponding switch settings are shown below.

When in the *down* position, the switch represents "ON", when the switch position in the *up* position it represents "OFF".

EDID Setting	DIP 1	DIP 2	DIP 3	DIP 4
EDID Pass Through	UP	UP	UP	UP
1920x1080p@60Hz / 4:4:4 / 8 bit 2 Channel Audio	UP	UP	UP	DOWN
1920x1080p@60Hz / 4:4:4 / 8 bit Multi Channel Audio	UP	UP	DOWN	UP
1920x1080p@60Hz / 4:4:4 / 12 bit 2 Channel Audio	UP	UP	DOWN	DOWN
1920x1080p@60Hz / 4:4:4 / 8 bit Multi Channel Audio	UP	DOWN	UP	UP
3840x2160p@60Hz / 4:2:0 / 8 bit 2 Channel Audio	UP	DOWN	UP	DOWN
3840x2160p@60Hz / 4:2:0 / 8 bit Multi Channel Audio	UP	DOWN	DOWN	UP
3840x2160p@60Hz / 4:4:4 / 10 bit HDR 2 Channel Audio	UP	DOWN	DOWN	DOWN
3840x2160p@60Hz / 4:4:4 / 10 bit HDR Multi Channel Audio	DOWN	UP	UP	UP
1280x800@60Hz 2 Channel Audio	DOWN	UP	UP	DOWN
1920x1200@60Hz 2 Channel Audio	DOWN	UP	DOWN	UP

ARC Mode

Audio Return Channel (ARC) allows audio from a display to pass "upstream" through an HDMI cable to an audio processing device, such as an A/V amplifier. When ARC mode is active on the switcher, the ARC stream will pass to the active HDMI source device if it can process the signal.

To adjust the audio mode of the DL-S41-H2, *see pg 16- RS232 Control Commands: Audio Mode Settings*

When the display and A/V amplifier support ARC, follow the audio connection diagram below

SURROUND AUDIO SYSTEM

STEREO AUDIO SYSTEM

ARC AUDIO

NOTE: Only HDMI 4 supports ARC upstream

SMART TV

Application Diagram

BLURAY

WIRELESS
BYOD

LAPTOP

MEDIA
PLAYER

RS232 CONTROL

HDMI
AUDIO
RS232
IR

IR RECEIVER

IR REMOTE
(supplied)

AUDIO AMP

DISPLAY
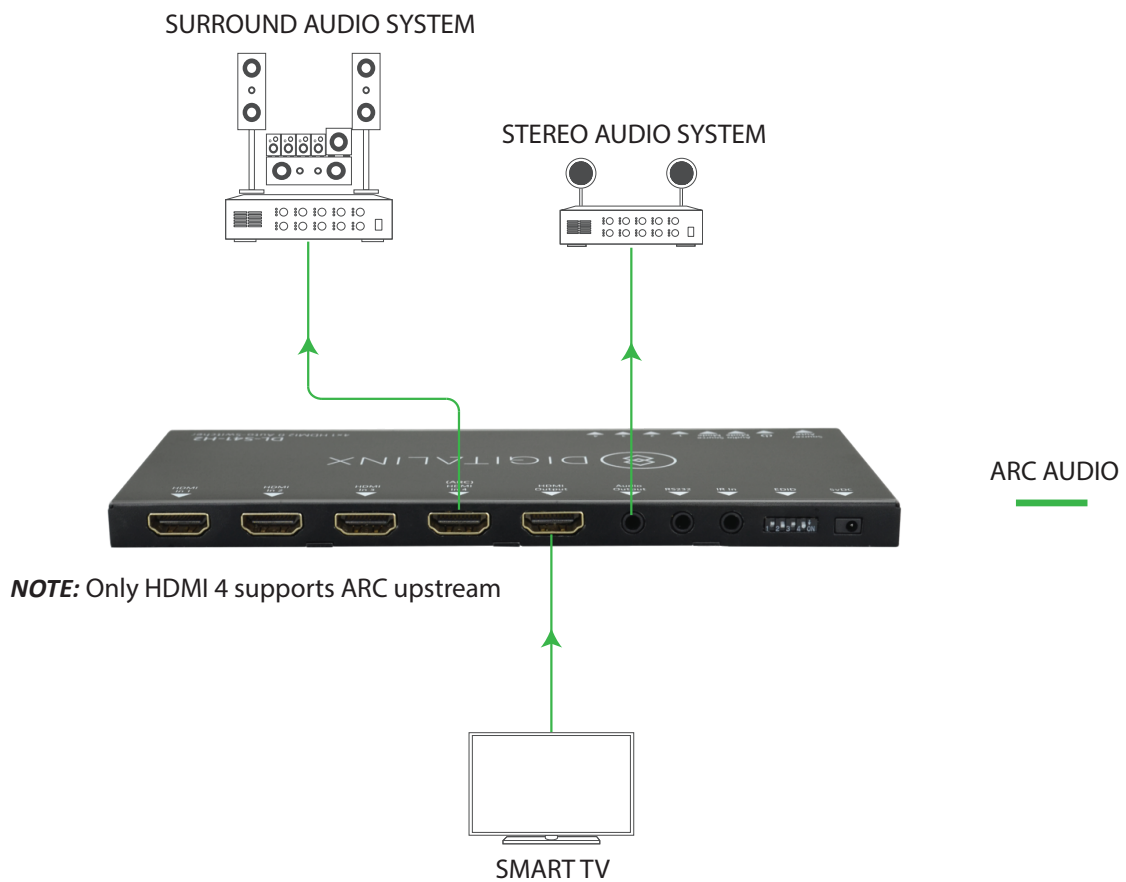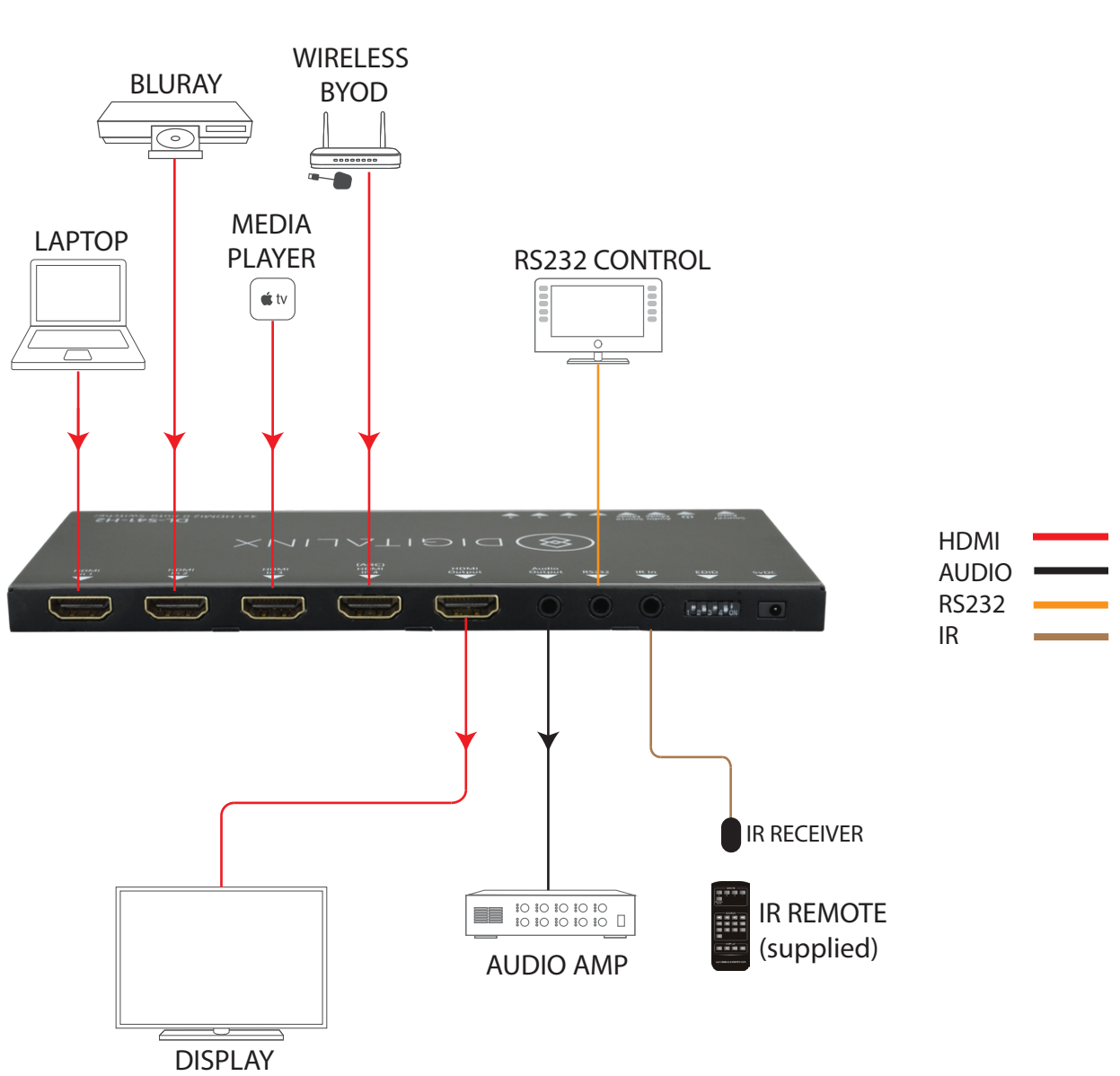
RS232 Control Commands

RS232 Settings: 9600 baud, 8 Data bits, 1 Stop bit, Parity = None

The commands are case sensitive. All commands below are in ASCII and all strings and responses end in a carriage return (hex 0D) and a line feed (hex 0A).

`<CR>` = Carriage return (Hex 0D)
`<LF>` = Line Feed (Hex 0A)

A/V Switching Commands

Note: Switching A/V inputs via RS232 requires the switching mode to be set to *MANUAL* switching mode

Description	Command	Example
Switches input to HDMI 1	`>>HDMI1`	*Command:* `>>HDMI1<CR><LF>` *Return:* `<<HDMI1<CR><LF>`
Switches input to HDMI 2	`>>HDMI2`	*Command:* `>>HDMI2<CR><LF>` *Return:* `<<HDMI2<CR><LF>`
Switches input to HDMI 3	`>>HDMI3`	*Command:* `>>HDMI3<CR><LF>` *Return:* `<<HDMI3<CR><LF>`
Switches input to HDMI 4	`>>HDMI4`	*Command:* `>>HDMI4<CR><LF>` *Return:* `<<HDMI4<CR><LF>`
Enables auto switching mode	`>>AUTO`	*Command:* `>>AUTO<CR><LF>` *Return:* `<<AUTO Switch<CR><LF>`
Enables manual switching mode	`>>MANUAL`	*Command:* `>>MANUAL<CR><LF>` *Return:* `<<MANUAL Switch<CR><LF>`

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CEC Source Device Control

To use these commands sets with a compatible CEC source, turn on the CEC option in the sources menu option.

Note: CEC performance may differ for various sources and not all command functions may be supported by third party source manufacturers.

Description	Command	Example
Turns the selected input source device ON via CEC	>>SRCOn	*Command:* >>SRCOn<CR><LF> *Return:* <<SRCOn<CR><LF>
Turns the selected input source device OFF via CEC	>>SRCOff	*Command:* >>SRCOff<CR><LF> *Return:* <<SRCOff<CR><LF>
Play	>>SRCPlay	*Command:* >>SRCPlay<CR><LF> *Return:* <<SRCPlay<CR><LF>
Pause	>>SRCPause	*Command:* >>SRCPause<CR><LF> *Return:* <<SRCPause<CR><LF>
Stop	>>SRCStop	*Command:* >>SRCStop<CR><LF> *Return:* <<SRCStop<CR><LF>
Fast forward x 1	>>SRCForward	*Command:* >>SRCForward<CR><LF> *Return:* <<SRCForward<CR><LF>
Rewind x 1	>>SRCBackward	*Command:* >>SRCBackward<CR><LF> *Return:* <<SRCBackward<CR><LF>
Next Section	>>SRCSkipForward	*Command:* >>SRCSkipForward<CR><LF> *Return:* <<SRCSkipForward<CR><LF>
Previous Section	>>SRCSkipBackward	*Command:* >>SRCSkipBackward<CR><LF> *Return:* <<SRCSkipBackward<CR><LF>

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CEC Source Device Control (continued)

Description	Command	Example
Open Menu Settings	>>SRCMenu	*Command:* >>SRCMenu<CR><LF> *Return:* <<SRCMenu<CR><LF>
Go Back	>>SRCBack	*Command:* >>SRCBack<CR><LF> *Return:* <<SRCBack<CR><LF>
Confirm (OK)	>>SRCOk	*Command:* >>SRCOk<CR><LF> *Return:* <<SRCOk<CR><LF>
Exit	>>SRCExit	*Command:* >>SRCExit<CR><LF> *Return:* <<SRCExit<CR><LF>
Up direction	>>SRCUp	*Command:* >>SRCUp<CR><LF> *Return:* <<SRCUp<CR><LF>
Down direction	>>SRCDown	*Command:* >>SRCDown<CR><LF> *Return:* <<SRCDown<CR><LF>
Left direction	>>SRCLeft	*Command:* >>SRCLeft<CR><LF> *Return:* <<SRCLeft<CR><LF>
Right direction	>>SRCRight	*Command:* >>SRCRight<CR><LF> *Return:* <<SRCRight<CR><LF>
Enter	>>SRCEnter	*Command:* >>SRCEnter<CR><LF> *Return:* <<SRCEnter<CR><LF>

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CEC Display Control

To use these commands sets with a compatible CEC display, turn on the CEC option in the displays menu option.

Note: CEC performance may differ for various displays and not all command functions may be supported by third party source manufacturers.

Description	Command	Example
Turn display ON via CEC	>>TVOn	*Command:* >>TVOn<CR><LF> *Return:* <<TVOn<CR><LF>
Turn display OFF via CEC	>>TVOff	*Command:* >>TVOff<CR><LF> *Return:* <<TVOff<CR><LF>
Volume UP	>>TVVOL+	*Command:* >>TVVOL+<CR><LF> *Return:* <<TVVOL+<CR><LF>
Volume DOWN	>>TVVOL-	*Command:* >>TVVOL-<CR><LF> *Return:* <<TVVOL-<CR><LF>
Mute / Unmute (toggle)	>>TVMUTE	*Command:* >>TVMUTE<CR><LF> *Return:* <<TV MUTE&UNMUTE<CR><LF>

Audio Mode Settings

Description	Command	Example
Enable ARC mode	>>AUDExternal	*Command:* >>AUDExternal<CR><LF> *Return:* <<AUDExternal<CR><LF>
Enable embedded HDMI audio input	>>AUDInternal	*Command:* >>AUDInternal<CR><LF> *Return:* <<AUDInternal<CR><LF>

System Commands

Description	Command	Example
Factory Reset	>>RESET	*Command:* >>RESET<CR><LF> *Return:* <<SYSRESET<CR><LF> DL-S41-H2 VER 1.0.0 <<AUTO Switch <<AUDInternal
Query current system settings	>>SYSInfo	*Command:* >>SYSInfo<CR><LF> *Return:* <<AUDExternal << DL-S41-H2 << V1.0.0 << -------- <<HDMI1 <<Auto Switch <<AUDExternal <<EDID0

Technical Specifications

VIDEO	
Video Inputs	(4) HDMI
Video Input Connector	(4) HDMI type A
Input Video Signal	HDMI
Video Output	(1) HDMI
Video Output Connector	(1) HDMI type A
Output Video Signal	HDMI
Input Resolutions Supported	Up to 3840 x 2160 @ 60Hz, 4:4:4, 8bit color depth
Standards	Compliant with HDMI 2.0b & HDCP2.2
AUDIO	
Supported output formats	PCM 2.0
Audio Output	Stereo analog
Audio Output Connector	(1) 3.5mm TRS audio jack
Audio Output Impedance	70 Ohms
Frequency Response	20Hz~20K Hz
CONTROL	
Control Port / Connector	(1) IR / 3.5mm connector (1) RS232 / 3.5mm connector
OTHER	
System Bandwidth	18Gbps
Operating Temperature	-10C ~ +55C
Storage Temperature	-25C ~ +70C
Humidity	10% ~ 90%
Power Supply	Input:100V~240V AC; Output: 5V DC 1A
Power Consumption	5 watts
Dimension (W*H*D)	194mm * 12mm * 81mm / 7.6” * .47” * 3.2”
Weight	180g / .4 lbs
Warranty	2 years
Certification	CE, FCC, RoHS

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Thank you for your purchase.

For Technical Support please call our toll free number at
800-530-8998 or email us at supportlibav@libav.com

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