DIGITALINX

VALUE-ENGINEERED DIGITAL SOLUTIONS

DL-1H1V1U-WP-W Owners Manual

LIBERTY AV SOLUTIONS

Rev 190410

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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.

Table of Contents

Product Overview

The DigitaLinx DL-1H1V1U-WP-W is a 2x1 auto switching HDBaseT 2.0 transmitter that supports the long distance transport of HDMI, VGA and High Speed USB 2.0 signals up to 100 meters / 330' using category cabling. The DL-1H1V1U-WP-W is 4K compatible with a max resolution of 4K@60Hz / 4:2:0 8bit deep color. An additional analog audio pass through input is located on the wall plate that allows for audio distribution to the HDBaseT receiver side. With 48V integrated PoH, the DL-1H1V1U-WP-W can be powered via HDBaseT receiver with a PSE module or the wall plate can be powered by a local power supply.

The DL-1H1V1U-WP-W gives you the ability to automate the display power ON by using pre-loaded RS232 commands whenever a video signal is introduced to the system using either the HDMI or VGA input. It will also turn the display power OFF after a specified amount of time has passed when no video signal is present. It also gives you the ability to turn the display ON or OFF as well and switch from one input to another manually from the transmitter face plate.

The DL-1H1V1U-WP-W is ideal for situations where USB must be extended alongside HDMI or VGA for display interactivity for items such as interactive whiteboards or projectors.

For a complete list of programming commands to automate display power status, please see the complete owners manual online at www.libav.com or by using the QR code on the print page of this guide.

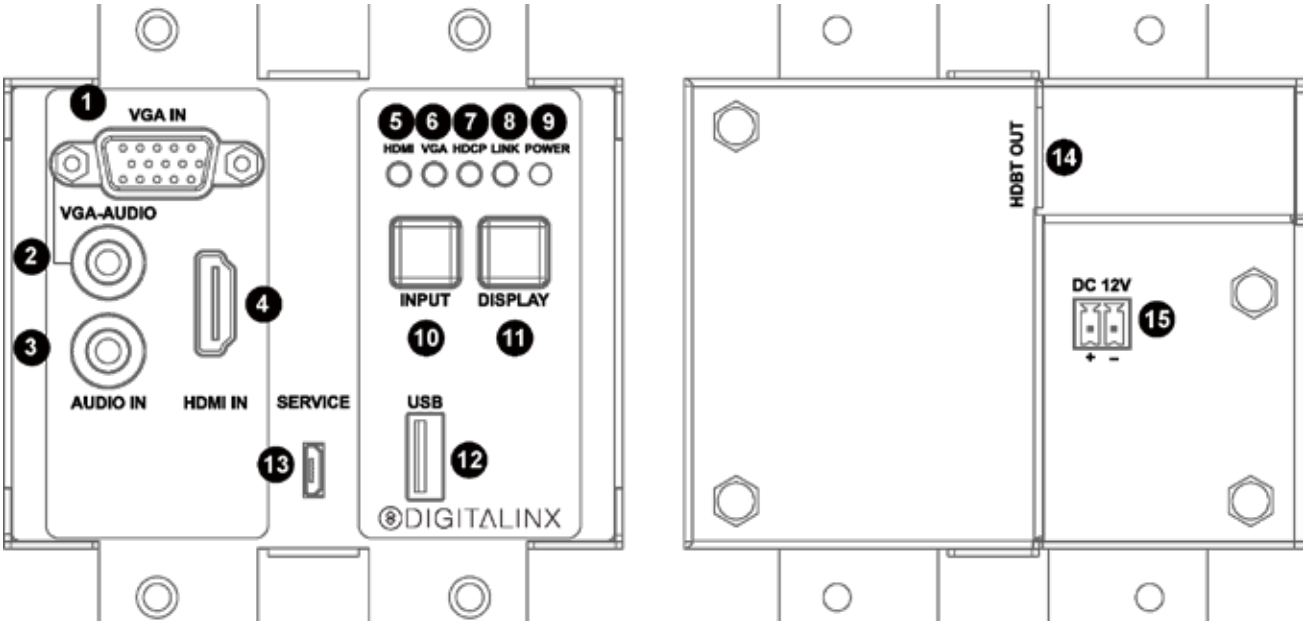
NOTE: The DL-1H1V1U-WP-W HDBaseT transmitter must be used with the DL-HD2-RX HDBaseT 2.0 receiver (sold separately) to complete the circuit.

Package Contents

- DL-1H1V1U-WP-W HDBaseT Wall Plate Transmitter
- (1) Quick Install Guide
- (1) 2 pin Phoenix Male Connector
- (1) 2 gang Decorator wall plate cover
- (1) 2m / 6' USB A to A Cable

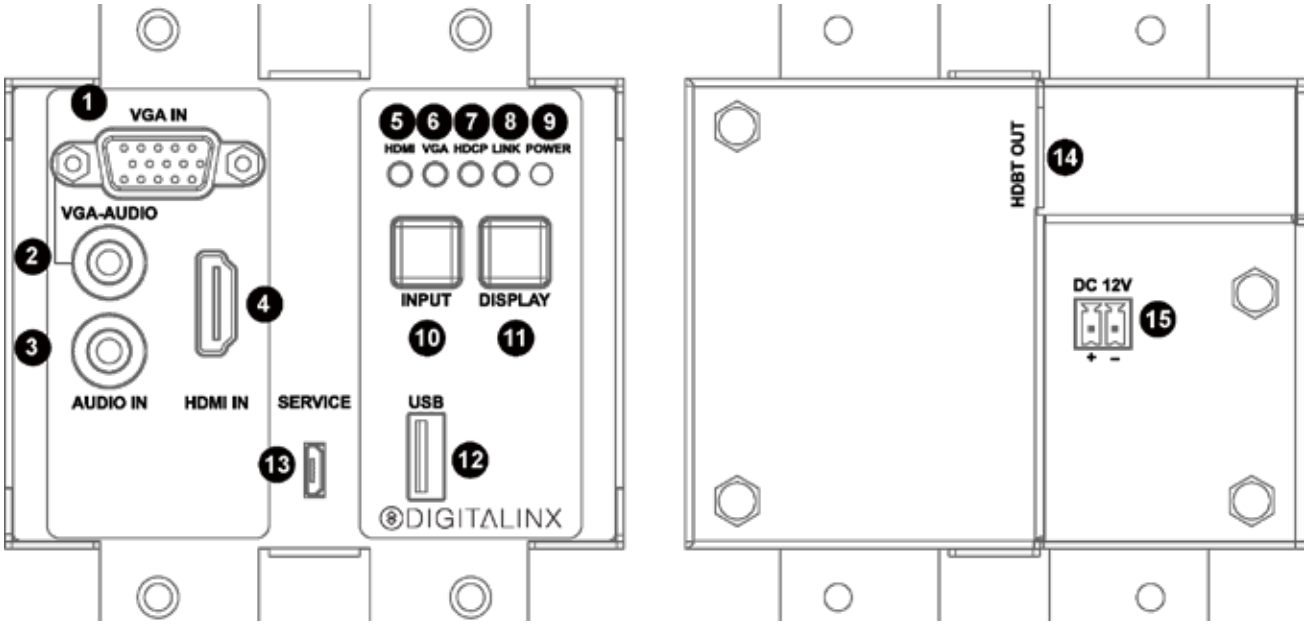
Front and Rear Panel

Transmitter View



1. VGA Input
2. VGA Audio Input
3. Pass-through Audio Input
4. HDMI Input
5. HDMI LED
   - When ON; HDMI signal is being transmitted
   - When OFF; No HDMI signal is being transmitted or signal is unstable
6. VGA LED
   - When ON; VGA signal is being transmitted
   - When OFF; No VGA signal is being transmitted or signal is unstable
7. HDCP LED
   - When ON; HDCP video is being transmitted
   - When BLINKING; Non-HDCP video is being transmitted
   - WHEN OFF; No video is being transmitted
8. LINK LED
   - When ON; HDBaseT Link is normal
   - When OFF / BLINKING; No HDBaseT link or link error

Transmitter View (continued)



9. POWER LED
    - When ON; The transmitter is powered on
    - When OFF; The transmitter is powered off
10. Input Selection Button
11. Display On/Off Button
    - Display ON; Short press to power on display immediately
    - Display OFF; Press and hold for 3 seconds to power display off
12. USB A Input
13. Service Port for Firmware Update
14. HDBaseT Output
15. DC12V Power Supply Input

Installation Instructions

Quick Start

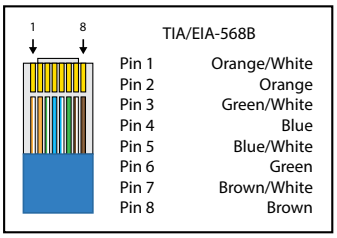
1. Connect HDBaseT Link
2. Connect A/V sources
3. Connect USB peripherals
4. Connect display
5. Connect audio (optional)
6. Connect and configure control (optional)
7. Apply power

Connect HDBaseT Link

HDBaseT Connection

Connect a category cable from the DL-1H1V1U-WP-W HDBaseT output to the DL-HD2-RX receivers HDBaseT input.

Twisted Pair Wiring
Use TIA/EIA-568B wiring for Category 6 connection between the transmitter and receiver



To ensure proper performance of the DL-1H1V1U-WP-W it is recommended that you use solid core shielded Category 6 F/UTP cabling at a minimum. Category 5e F/UTP may perform well but may not support power over HDBaseT reliably.

When using shielded category cabling ALWAYS...

....use shielded connectors
....properly ground the category cable

For optimized performance use the following Liberty Wire and Cable branded cabling;

Category 6 plenum; **24-4P-P-L6SH**
Category 6A plenum; **24-4P-P-L6ASH**

Category 6 NON-plenum; **24-4P-L6SH**
Category 6A NON-plenum; **24-4P-L6ASH**

Connecting A/V Sources

HDMI Input

Connect an HDMI source device to the HDMI input using HDMI cables that are less than or equal to 5 meters in length. For source devices that are further away, an extension device will be required to complete the connection.

VGA Video Input

Connect a VGA source device to the VGA input using a VGA cables that are less than or equal to 5 meters in length. For source devices that are further away, a VGA extension device will be required to complete the connection.

Connecting USB Peripherals

USB Host

Connect a USB host device to the USB A input using a USB A to A cable that is less than or equal to 5 meters in length.

USB Client (Receiver)

Connect a USB client device to any USB A port on the DL-HD2-RX receiver using a USB A to A cable that is less than or equal to 5 meters in length.

Connecting a Display (Receiver)

HDMI Output

Connect the display devices to HDMI output on the receiver using an HDMI cable that is less than or equal to 5 meters in length. For display devices that are further away, it is highly recommended to utilize the HDBaseT output.

Connecting Audio

Audio Input

Connect an audio source to the transmitters audio input using a 3.5mm audio cable. The DL-1H1V1U-WP-W supports a 3.5mm stereo unbalanced input

Audio Output (Receiver)

Connect an audio amplifier to the receivers audio output using a 3.5mm audio cable. The DL-HD2-RX supports a 3.5mm stereo unbalanced output

> ***Note***: The DL-HD2-RX audio output only passes audio fed from the dedicated AUDIO IN port on the DL-1H1V1U-WP-W transmitter wall plate, it does not pass embedded HDMI audio

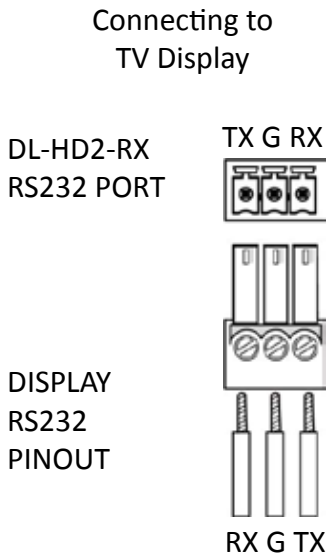
Connecting Control (Receiver)

Connect the DL-HD2-RX receivers RS232 port to a displays serial connection for serial control.

> ***Note***: The DL-HD2-RX RS232 port can be configured to send stored serial commands from the DL-1H1V1U-WP-W
>
> For directions on RS232 configuration see complete list of control commands on pg13 *RS232 / CEC Control Configuration*

RS232 Control Wiring

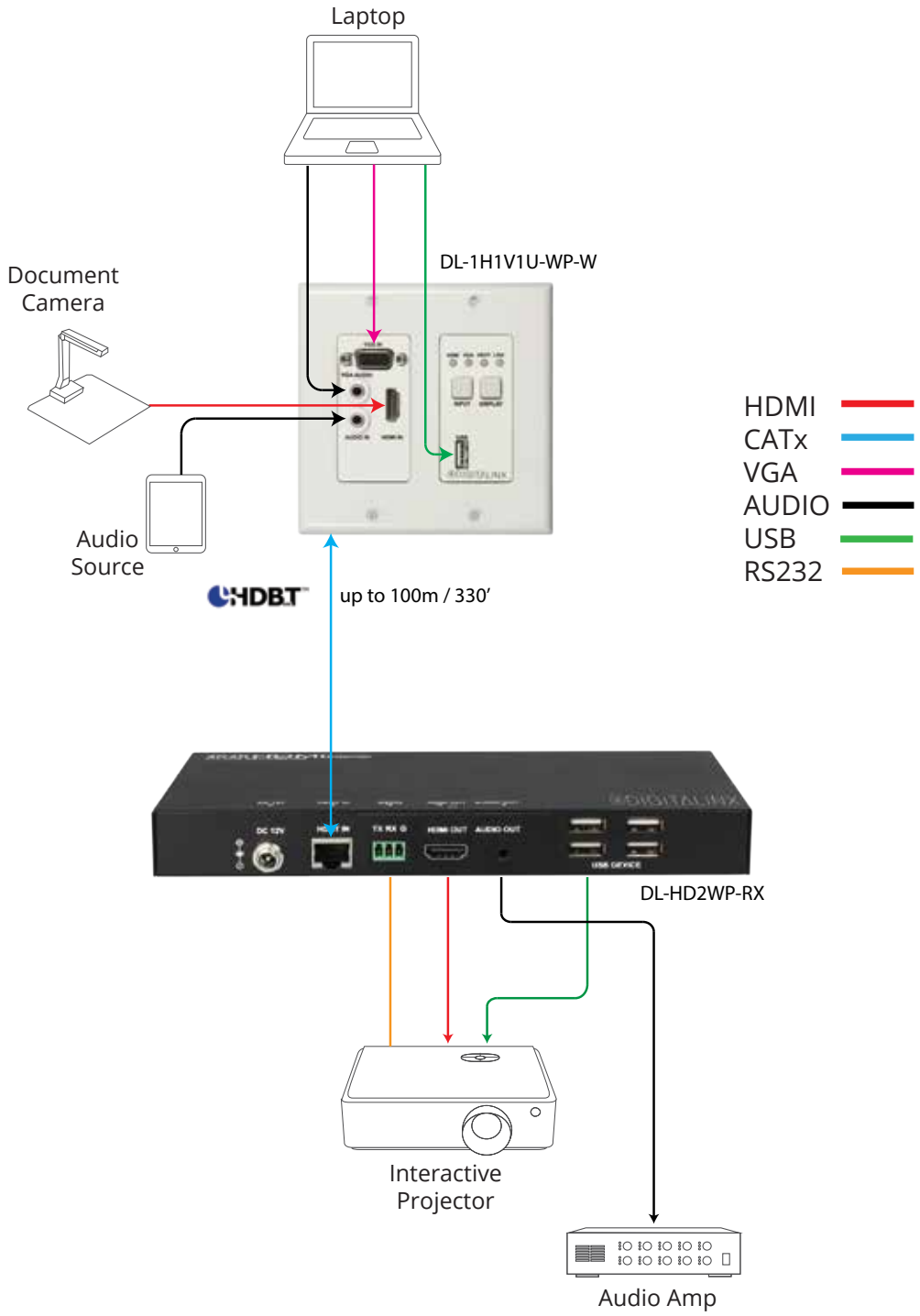
Connect the display devices RX RS232 signal to TX port of the DL-HD2-RX receiver. Then connect the displays TX RS232 signal to the RX port on the DL-HD2-RX receiver.



Apply Power

Plug the power supply into the power input port on the rear of DL-HD2-RX receiver. The receiver will power the transmitter via HDBaseT. Twist the locking ring clockwise to prevent accidental disconnection of power.

Application Diagram



RS232 Port Configuration Software Usage

Overview

The Digitalinx RS232 Automation Configuration Software allows you to load ON and OFF serial commands into the RS232 control port of the DL-1H1V1U-WP-W so the commands can be sent to a connected display or projector to automate power when a video signal is introduced and the DL-1H1V1U-WP-W is in an off state. When programming ON/OFF commands using this software tool, it will also program the DISPLAY on/off button operation of the DL-1H1V1U-WP-W as well.

Downloading RS232 Port Configuration Software

The Digitalinx RS232 Automation Configuration Software can be found online on the DL-1H1V1U-WP-W product page under the SOFTWARE tab at *www.libav.com*. Download the zip file and extract all files, then run the tool on a Windows PC that will be used to configure the DL-1H1V1U-WP-W.

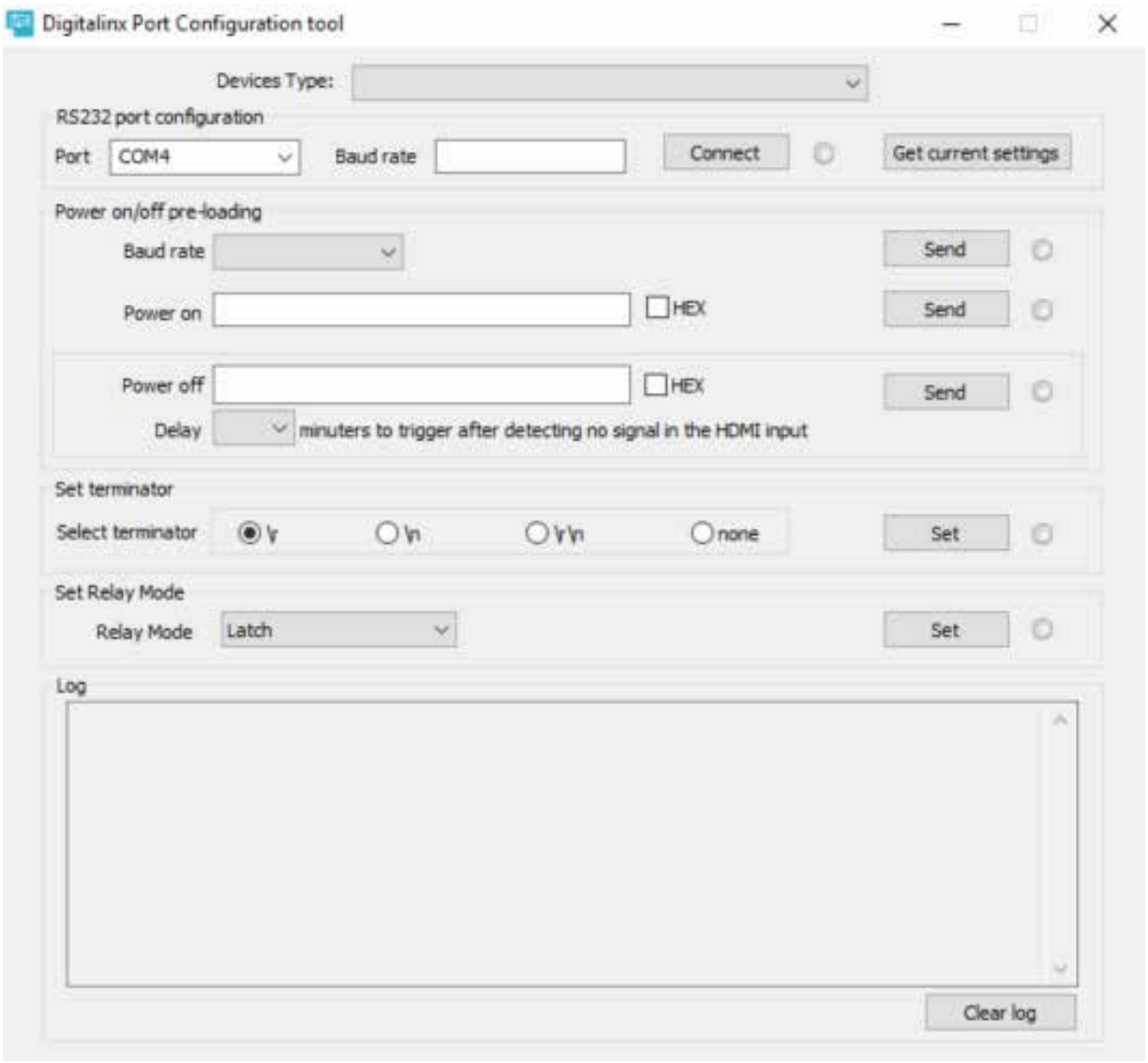
Making a PC Connection

The DL-HD2-RX compatible receiver must be used to configure automation when using this device. To connect a PC to the DL-HD2-RX RS232 port, a DB9 (RS232) to USB adapter is required. The Liberty 120-DA-0004 RS232 to USB adapter can be used for this configuration connection.

Once the RS232 to USB adapter has been installed on the PC, connect the USB adapter to a DB9 female connector that is terminated to a 3 pin phoenix connector.

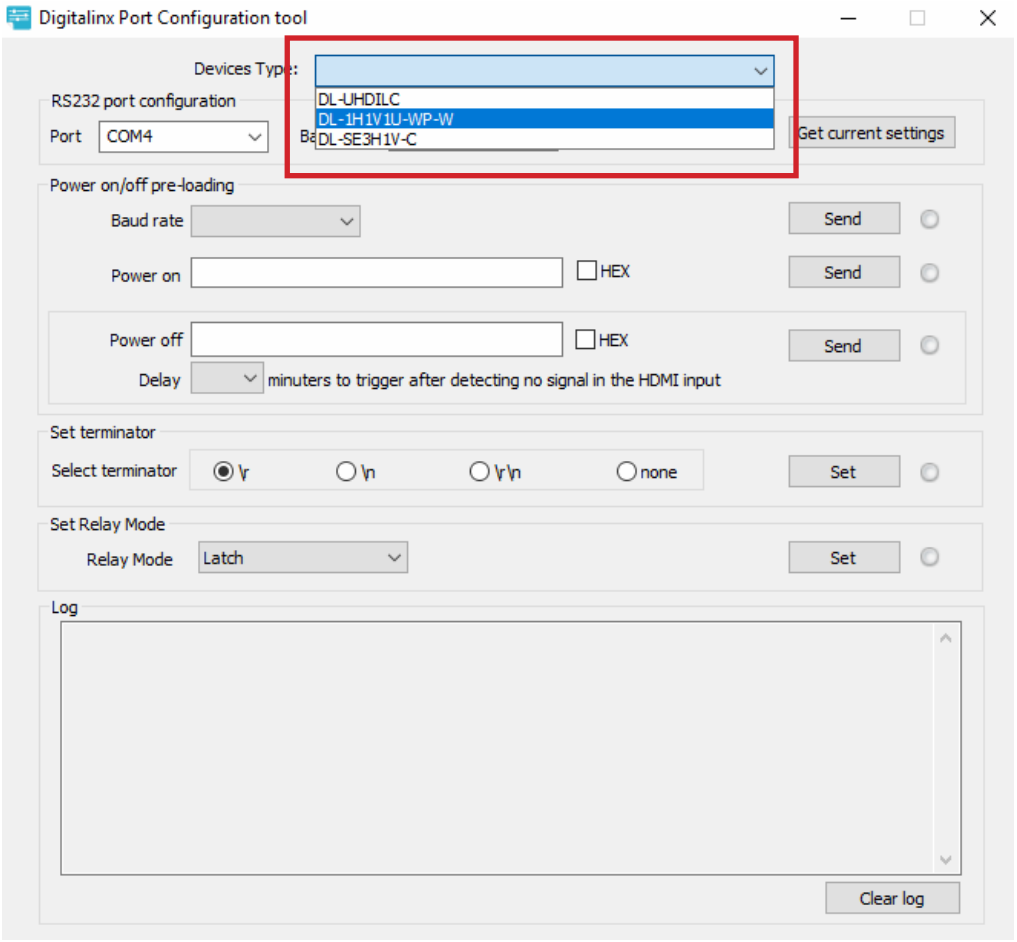
Running RS232 Automation Configuration Software

Open the configuration software by double clicking the configuration tool icon. The following screen will appear



Serial Settings for DL-1H1V1U-WP-W

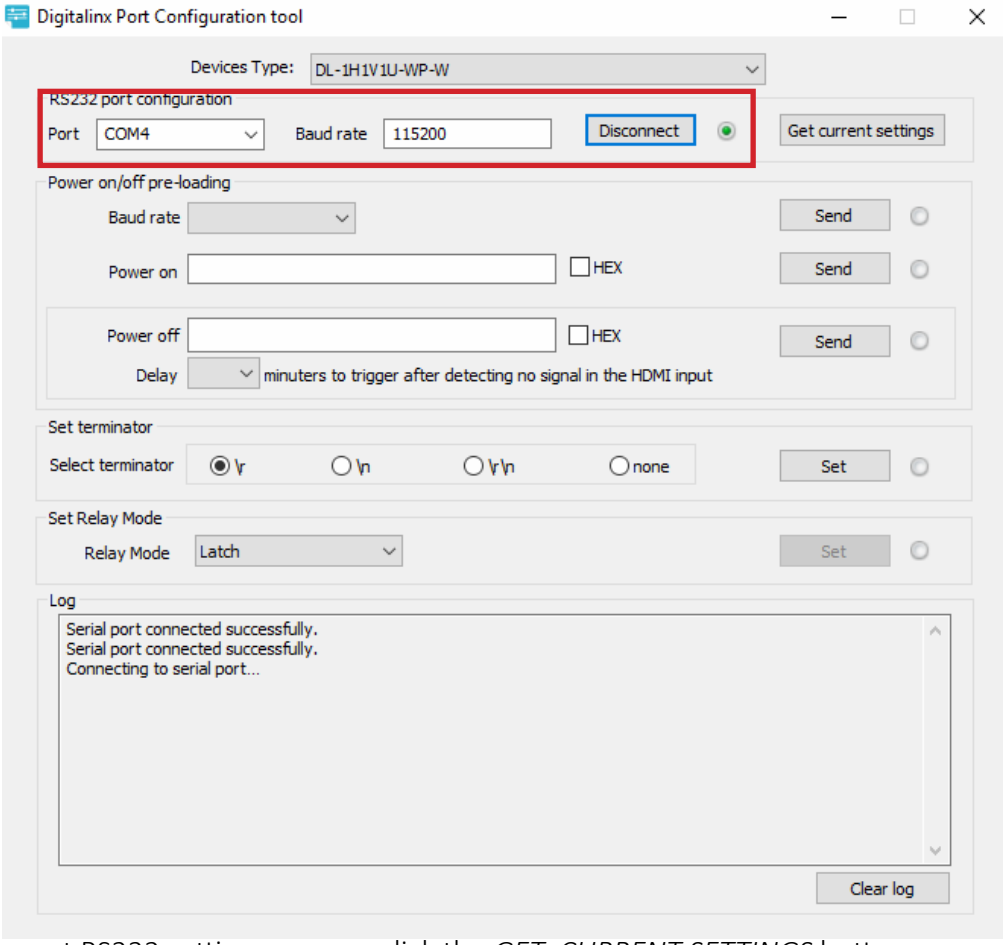
To establish communication with the software, select the DL-1H1V1U-WP-W under *DEVICE TYPES.*



After a device is selected, select the Port number in the drop down field that the USB to RS232 is connected to on the computer. Typically this will default when starting the software after the serial COM connection has been made.

Enter in the baud rate for the DL-1H1V1U-WP-W in the *BAUD RATE* field and click *CONNECT*. The default baud rate for the DL-1H1V1U-WP-W is 115200.

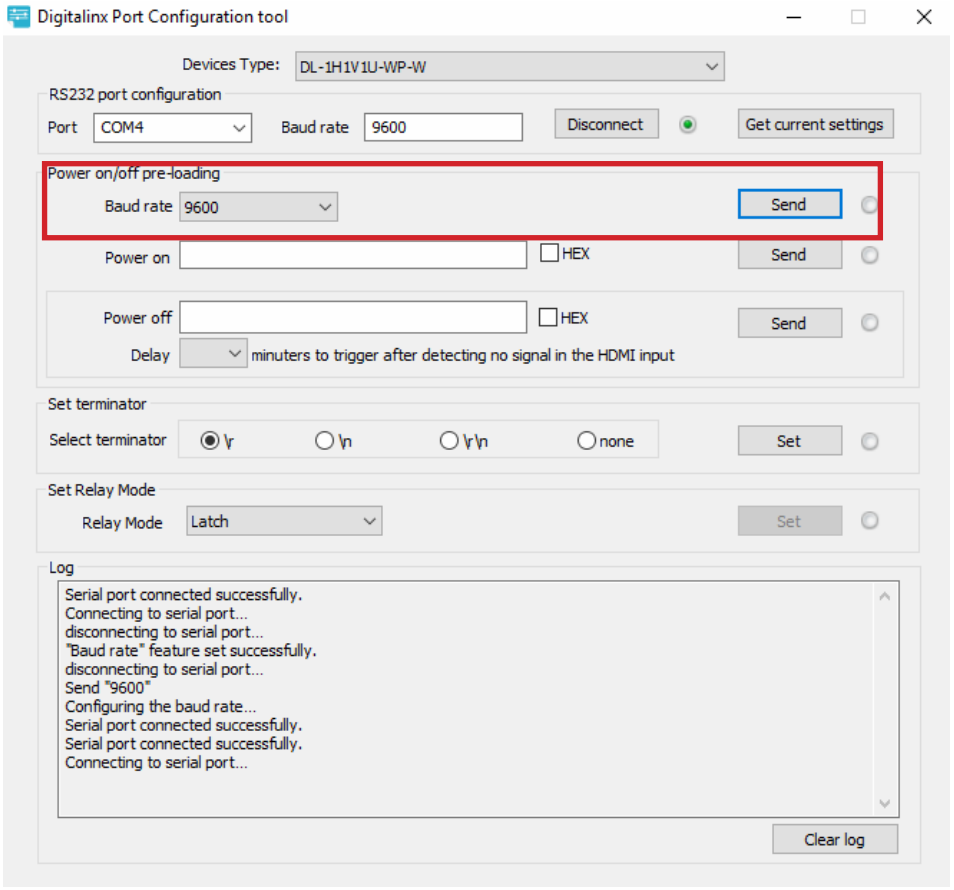
If you are successfully connected to the unit, a green light will appear next the *Connect* button which will now read *DISCONNECT*.



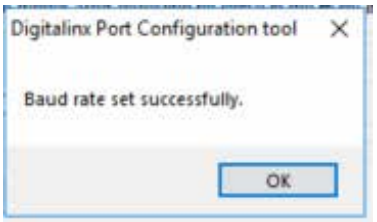
To obtain current RS232 settings you can click the *GET CURRENT SETTINGS* button.

Configuring RS232 Serial Commands

In the *Power on/off pre-loading* section, enter in the Baud Rate of the display device by selecting the correct setting from the drop down menu and the click Send. The baud rate of the display device will be located in the manufacturers owners manual of the display device.



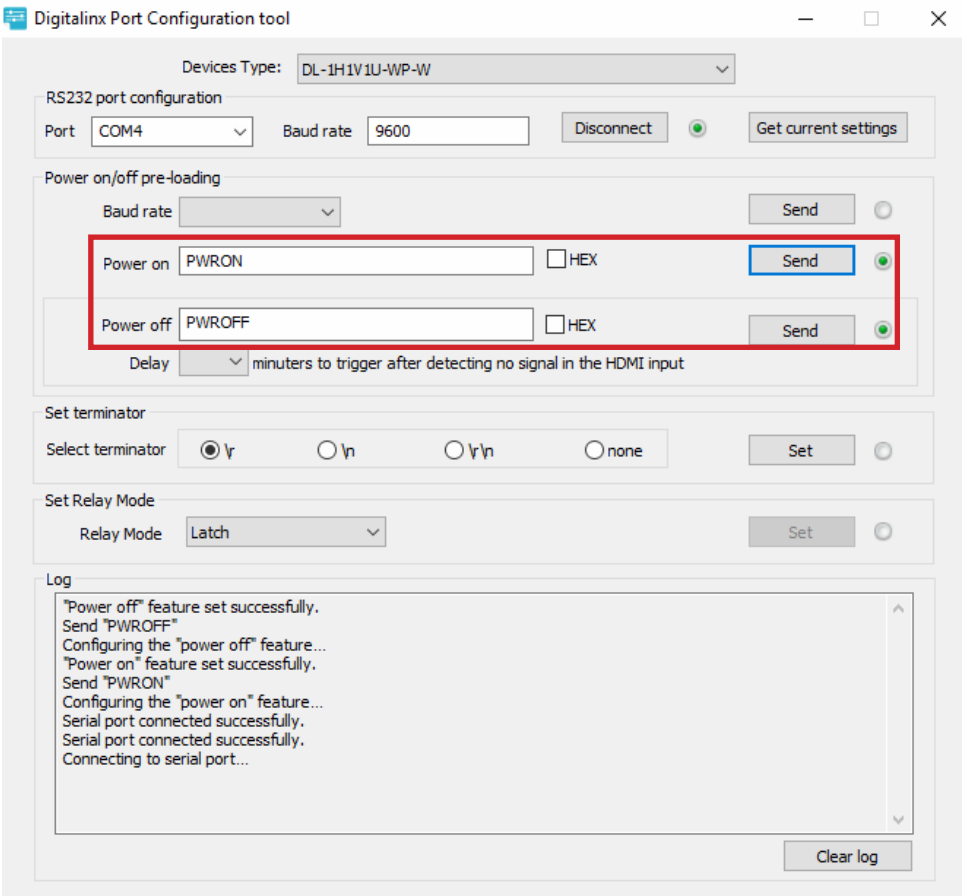
If connection was successful, the green light next to the Send button will illuminate and pop up window will notify you of the successful connection.



Once you have entered in the *Baud Rate* of the display device in the software, the DL-1H1V1U-WP-W default baud rate setting will be changed to the same rate setting as well. The RS232 configuration tool will reset the connection to the device using the newly selected baud rate.

Enter the displays POWER ON and OFF/STANDBY command for the display device in the *Power on* and *Power off* field. Serial commands for displays and projectors are provided by the display manufacturer and can be found in the products instructional documentation.

Click the *Send* buttons adjacent to both the *Power On* and *Power off* field to upload the commands. If upload is successful a green light next to the *Send* button will illuminate and a pop up window will confirm a successful upload.



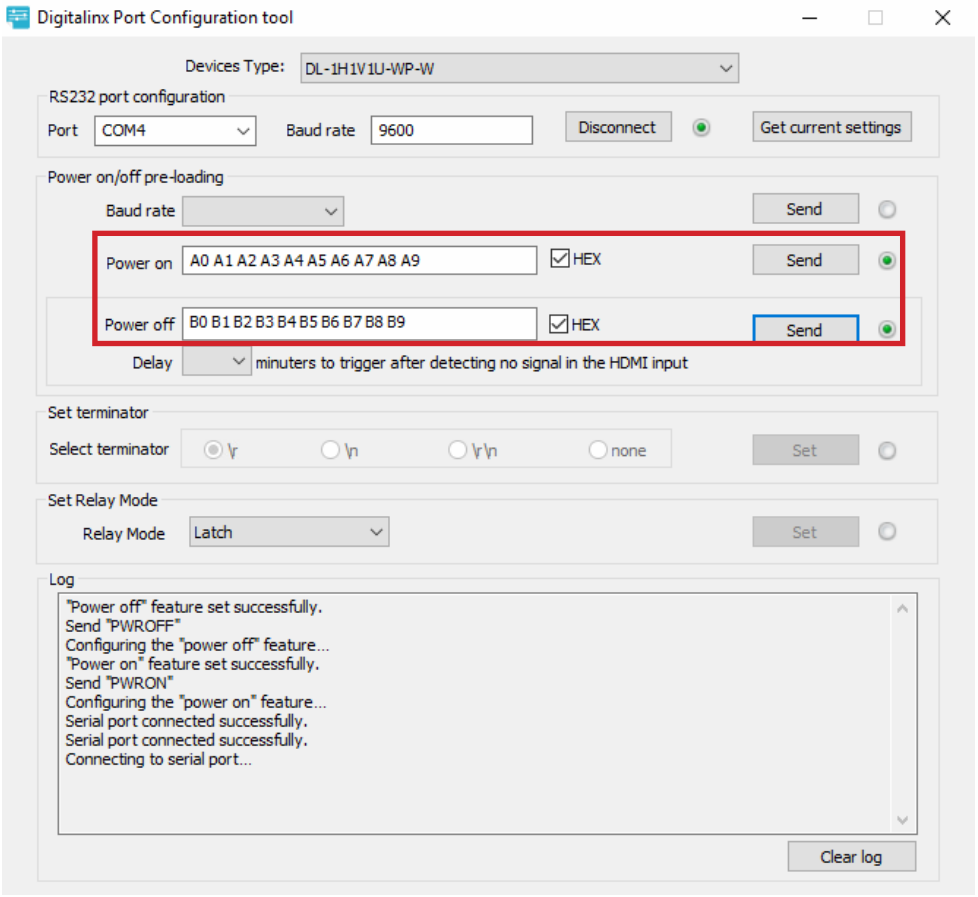
If the ASCII based commands require a terminator, choose the appropriate terminator from the *Set terminator* section and then click the Set button. If upload is successful a green light next to the Set button will illuminate and a pop up window will confirm a successful upload. Note, this option is only for ASCII based commands, this is not required or is an option for HEX based commands.

Explanation of terminator menu:

\r = Carriage Return <CR>
\n = Line Feed <LF>
\r\n = Carriage Return + Line Feed <CR><LF>
none = No terminator required

By default, ASCII command type is used. If the command for display ON/OFF is only available in Hex coding, check the *HEX* button next to the *Power On* command field and then enter the Hex command in the *Power On* and *Power Off* field.

NOTE: *When entering in HEX formatted commands, place a space between each character. Prefix and suffix characters are not required i.e. 0x01 0x 02, 01h, 02h. Correct formatted example is below.*

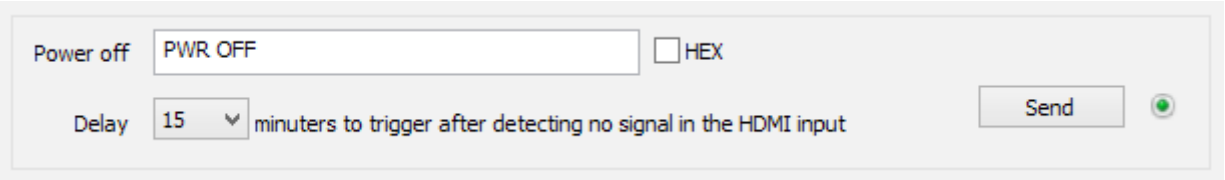


Configuring System Timeout

By default system timeout is set to 3 minutes. After there is no present video signal passing through the DL-1H1V1U-WP-W for 3 minutes the system will transmit the *Power off* command to the display or projector and trigger the second relay port switch.

To change the default system timeout, choose the desired time from the Delay drop down menu underneath the *Power off* command field.

Click the *Send* button adjacent to the *Power off* field. If upload is successful a green light next to the *Send* button will illuminate and a pop up window will confirm a successful upload.



RS232 / CEC Control Configuration

To configure control so a connected display can be controlled by the wall plate, connect the DL-1H1V1U-WP-W USB service port to a local computer using a micro USB to USB A cable. Use a RS232 scripting tool like Putty or Docklight to issue the commands in this guide to set the CEC and RS232 settings according to the displays manufacturers instructions.

RS232 Settings: 115200 baud, 8 Data bits, 1 Stop bit, Parity = None

The commands are case sensitive

All responses end in a carriage return (hex 0D) and a line feed (hex 0A).

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

CEC Setup and Control

A CEC enabled displays ON and OFF status can be controlled by the DL-1H1V1U-WP-W via HDMI from the DL-HD2-RX by pressing the DISPLAY button on the DL-1H1V1U-WP-W. By default the CEC control option is always on, simply turn the CEC option ON in the displays settings to use this control capability.

To turn the display ON using CEC, simply quick press the DISPLAY button on the DL-1H1V1U-WP-W; to turn display OFF simply long press the DISPLAY button on the DL-1H1V1U-WP-W for 3-5 seconds.

CEC ON command can also be automatically generated to a connected display via HDMI when an active video source is connected to the DL-1H1V1U-WP-W. When using auto CEC on / off control of a display, use the CEC delay commands to define the time when the display will be turned OFF when no video signals are present in the DL-1H1V1U-WP-W.

For example if the delay time is set to 3 minutes, the CEC enabled display will turn off when there is no present video signal in the switcher / extender for 3 minutes. By default the auto CEC control is on and the default delay time is set to 3 minutes.

Use the commands below to adjust the settings for CEC control

Description	**Command**	**Example**
Auto CEC On/Off	SET AUTOCEC_M {*x*} {*x*} = [on, off]	*Command:* SET AUTOCEC_M on<CR><LF> *Return:* AUTOCEC_M on <CR><LF>
Query Auto CEC Mode Status	GET AUTOCEC_M	*Command:* GET AUTOCEC_M<CR><LF> *Return:* AUTOCEC_M on <CR><LF>
Reset Auto CEC Mode to Factory Default (Default is ON)	RESET AUTOCEC_M	*Command:* RESET AUTOCEC_M<CR><LF> *Return:* AUTOCEC_M on <CR><LF>
Set CEC Power OFF Delay Time	SET AUTOCEC_D {*t*} {*t*} = [1-60] Note: Maximum delay time is 60 minutes	*Command:* SET AUTOCEC_D 5<CR><LF> *Return:*AUTOCEC_D 5 <CR><LF>
Query CEC Power OFF Delay Time	GET AUTOCEC_D	*Command:* GET AUTOCEC_D<CR><LF> *Return:* AUTOCEC_D 5<CR><LF>
Reset Auto CEC Delay Time to Factory Default (Default is 3 minutes)	RESET AUTOCEC_D	*Command:* RESET AUTOCEC_D<CR><LF> *Return:* AUTOCEC_D 3 <CR><LF>

RS232 Control and Configuration

An RS232 enabled displays ON and OFF status can be controlled by the DL-1H1V1U-WP-W via RS232 from the DL-HD2-RX by pressing the DISPLAY button on the DL-1H1V1U-WP-W.

To turn the display ON using RS232, simply quick press the DISPLAY button on the DL-1H1V1U-WP-W; to turn display OFF simply long press the DISPLAY button on the DL-1H1V1U-WP-W for 3-5 seconds.

RS232 ON command can also be automatically sent to a display when an active video source is connected to the DL-1H1V1U-WP-W. When using auto RS232 on / off control of a display, use the RS232 delay commands to determine the time when the display will be turned OFF when no video signals are present in the DL-1H1V1U-WP-W.

For example if the delay time is set to 3 minutes, the RS232 enabled display will turn off when there is no present video signal in the switcher / extender for 3 minutes. By default the auto RS232 control is on and the default delay time is set to 5 minutes.

Use the commands below to adjust the settings for RS232 control, be sure to consult the displays owners manual for the correct RS232 settings and commands so RS232 control can be generated by the DL-HD2-RX receiver.

Description	**Command**	**Example**
Auto RS232 On/Off	SET AUTOUART_M {*x*} {*x*} = [on, off]	*Command:* SET AUTOUART_M on<CR><LF> *Return:* AUTOUART_M on <CR><LF>
Query Auto RS232 Mode Status	GET AUTOUART_M	*Command:* GET AUTOUART_M<CR><LF> *Return:* AUTOUART_M on <CR><LF>
Reset Auto RS232 Mode to Factory Default (Default is ON)	RESET AUTOUART_M	*Command:* RESET AUTOUART_M<CR><LF> *Return:* AUTOUART_M on <CR><LF>
Set RS232 Power OFF Delay Time	SET AUTOUART_D {*t*} {*t*} = [1-60] Note: Maximum delay time is 60 minutes	*Command:* SET AUTOUART_D 10<CR><LF> *Return:*AUTOUART_D 10 <CR><LF>
Query RS232 Power OFF Delay Time	GET AUTOUART_D	*Command:* GET AUTOUART_D<CR><LF> *Return:* AUTOUART_D 10<CR><LF>
Reset Auto RS232 Delay Time to Factory Default (Default is 5 minutes)	RESET AUTOUART_D	*Command:* RESET AUTOUART_D<CR><LF> *Return:* AUTOUART_D 5 <CR><LF>

RS232 Control and Configuration....continued

Description	Command	Example
Set RS232 Port Baud Rate	SET UART_B *{b}* *{b}* = [9600] [19200] [38400] [57600] [115200]	*Command:* SET UART_B 9600<CR><LF> *Return:* UART_B 9600 <CR><LF>
Query RS232 Port Baud Rate	GET UART_B	*Command:* GET UART_B<CR><LF> *Return:* UART_B 9600 <CR><LF>
Reset RS232 Port Baud Rate (Default is 115200)	RESET UART_B	*Command:* RESET UART_B<CR><LF> *Return:* UART_B 115200 <CR><LF>
Set RS232 End Character	SET UART_E *{e}* *{e}* = [null] [cr] [lf] [crlf]	*Command:* SET UART_E cr<CR><LF> *Return:* UART_E cr <CR><LF>
Get RS232 End Character	GET UART_E	*Command:* GET UART_E<CR><LF> *Return:* UART_E cr <CR><LF>
Reset RS232 End Character to Factory Default (Default is crlf)	RESET UART_E	*Command:* RESET UART_E<CR><LF> *Return:* UART_E crlf <CR><LF>

RS232 Control and Configuration....continued

Description	Command	Example
Edit RS232 Display On / Off ASCII String (Up to 64 Characters)	SET UART_STR *{p} 1 {s}* *{p}* = [poweron, poweroff] *{s}* = [xxxx] xxxx = TV displays ON or OFF string command (issued by TV display manufacturer)	*Command:* SET UART_STR poweron 1 xxxx<CR><LF> *Return:* SET UART_STR poweron 1 xxxx<CR><LF>
Edit RS232 Display On / Off HEX Code (Up to 64 Characters)	SET UART_HEX *{p} 1 {h}* *{p}* = [poweron, poweroff] *{h}* = [xx xx] xx xx = TV displays ON or OFF string command (issued by TV display manufacturer)	*Command:* SET UART_HEX poweron 1 xx xx<CR><LF> *Return:* UART_HEX POWERON 1 xx xx<CR><LF>
Query the RS232 Stored Display On / Off Command String	GET UART_STR *{p} 1* *{p}* = [poweron, poweroff]	*Command:* GET UART_STR poweron 1<CR><LF> *Return:* UART_STR poweron 1 xxxx<CR><LF>

USB Mode Configuration

The USB mode on the DL-1H1V1U-WP-W can be defined to operate in a host or client (device) mode.

Use the commands below to adjust the wall plates USB mode

Description	Command	Response
Set USB Mode	SET USB_M *{m}* *{m}* = [host, device]	*Command:* SET USB_M device<CR><LF> *Return:* USB_M device <CR><LF>
Query USB Mode	GET USB_M *{m}* *{m}* = [host, device]	*Command:* GET USB_M<CR><LF> *Return:* USB_M device <CR><LF>
Reset USB Mode to Factory Default (Factory default is host)	RESET USB_M	*Command:* RESET USB_M<CR><LF> *Return:* USB_M host <CR><LF>

System / Factory Default

Description	Command	Response
Query Device Version	GET SW_VERSION	*Command:* GET SW_VERSION<CR><LF> *Return:* HDBaseT2.0 Wall Plate V1.8 <CR><LF>
Factory Reset	RESET	*Command:* RESET<CR><LF> *Return:* RESET<CR><LF>

Technical Specifications

Video	
Video Inputs	(1) HDMI; (1) VGA
Video Input Connector	(1) HDMI type A; (1) VGA female 15 pin
Input Video Signal	HDMI, VGA
Output Video Signal	HDBaseT 2.0
Input Resolutions Supported	**HDMI**: 4096 x 2160@24/30/60 (YUV4:2:0); 3840 x 2160@24/30/60 (YUV4:2:0); 2560 x 1600@60; 2560 x 1440@60; 1920 x 1200@60; 1920 x 1080@60; 1680 x 1050@60; 1600 x 1200@60; 1600 x 900@60; 1440 x 990@60; 1366 x 768@60; 1360 x 768; 1280 x 1024@60; 1280 x 960@60; 1280 x 800@60; 1280 x 768@60; 1280 x 720@60; 1024 x 768@60; 800 x 600@60 **VGA**: 1920x1080@60; 1920 x 1200@60; 1680 x 1050@60; 1600 x 1200@60; 1600 x 900@60; 1440 x 900@60; 1360 x 768@60; 1280 x 1024@60; 1280 x 960@60; 1280 x 800@60; 1280 x 720@60; 1024 x 768@60; 800 x 600@60
Standards	Compliant with HDMI 2.0 & HDCP 2.2
USB	
Supported USB Standard	Up to USB 2.0 High Speed up to 190Mbps
USB Port Type	USB A
Audio	
Supported input formats	**HDMI:** PCM 2.0, LPCM 5.1, LPCM 7.1, Dolby TrueHD, DTS-HD Master Audio **Unbalanced 3.5.mm:** Stereo
Audio Input	(1) Unbalanced stereo 3.5mm (VGA) (1) Unbalanced stereo 3.5mm (pass through)
General	
System Bandwidth	10.2Gbps
Transmission Distance	100m or less when using Cat6A F/UTP, 70m or less when using Cat6 F/UTP
Operating Temperature	0 ~ +45 C (32 F to +113 F)
Storage Temperature	-20- +70 C (-4- +158 F)
Humidity	10% ~ 90%
Power Supply	DC12V / PoH
Power Consumption	7 watts (maximum)
Dimension (W*H*D)	106mm*91mm*36mm / 4.1”*3.6”*1.4”
Weight	0.18kg, .4 lbs
Warranty	5 years
Certification	CE, FCC, RoHS

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

www.libav.com

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