Liberty
Digitalinx Series

Owners Manual

DL-HDE100ARC-H3

HDBaseT3.0 18G HDMI Extension Set with eARC/ARC

Product Overview

The DL-HDE100ARC-H3 is an HDBaseT 3.0 complete signal extension set. Capable of extending HDMI 2.0 18Gbps signals up to 4K60 4:4:4 uncompressed with support of all current HDR formats including Dolby Vision & HDR10 up to 100 meters. In addition to HDMI signals, the DL-HDE100ARC-H3 can extend eARC / ARC signals from the receiver back to the transmitter supporting all eARC audio formats including Atmos and DTS:X allowing for integrated TV apps and local sources to send audio signals from RX back to TX to accommodate remotely located AVR's. In addition, this device can extend control signals including IR, RS232, and gigabit ethernet allowing a single cable run to the TV for both signal extension and networking.

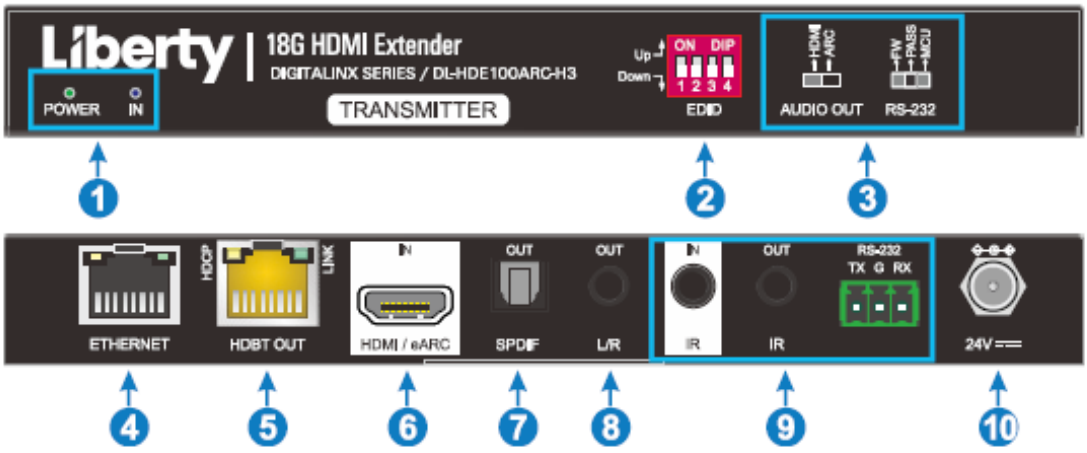
Audio de-embedding is available at both the transmit and receive side and supports de-embdded audio up to 5.1 via SPDIF on the Toslink ports, or PCM 2channel via 3.5mm analog port. Power can be applied at either end and will remotely power the opposite end using PoC. Integrated EDID management ensures max compatibility with displays and connected devices. All HDBaseT 3.0 products should be extended using shielded Cat6a or above high quality, certified cabling.

PACKAGE CONTENTS

- 1 x D L HDE100ARC H3 Transmitter
- 1 x D L HDE100ARC H3 Receiver
- 4 x Mounting Ears 4 Screws
- 2 x 3 pin terminal block
- 1 x IR Emitter
- 1 x IR Receiver
- 8 x Rubber feet
- 1 x Power Adapter (24V DC 1.25A)
- 4 x Power Plug (EU, UK, AU, US)

Front and Rear Panels

Transmitter



① **Power LED:** Illuminates green when the power is applied;

IN LED: Illuminates blue when there is an HDMI source device is connected to HDMI input port.

② **EDID:** 4-pin dip switch for EDID management.

③ **AUDIO OUT switch:** Select the output for ARC/eARC return audio from receiver.

- HDMI: Output the de-embedded audio from HDMI IN via the SPDIF and L/R audio ports;
- ARC: Output the return audio from Rx via the HDMI IN, SPDIF and L/R audio ports.

RS232 switch: Select the mode of RS232 port.

- FW: Upgrade the Valens chip;
- PASS: RS232 pass-through mode;
- MCU: Upgrade the MCU.

④ **ETHERNET:** 1x RJ45 port for Ethernet pass-through.

⑤ **HDBT OUT:** 1x RJ45 port, connect to the HDBT IN port of the receiver for transmitting the video, audio, Ethernet, IR and RS232;

Support two-way 24V PoC;
Green light indicates Link status, yellow light indicates HDCP.

⑥ **HDMI IN:** 1x HDMI2.0 Type-A female port, connect to the source. Receiving the ARC/eARC return audio from the receiver.

⑦ **SPDIF OUT:** 1x Toslink port, output the de-embedding audio of the HDMI input or the ARC audio from receiver.

⑧ **L/R OUT:** 1x 3.5mm port, output the de-embedding audio of the HDMI input or the ARC audio from receiver. *(NOTE: The L/R out port can only support PCM2.0 audio format.)*

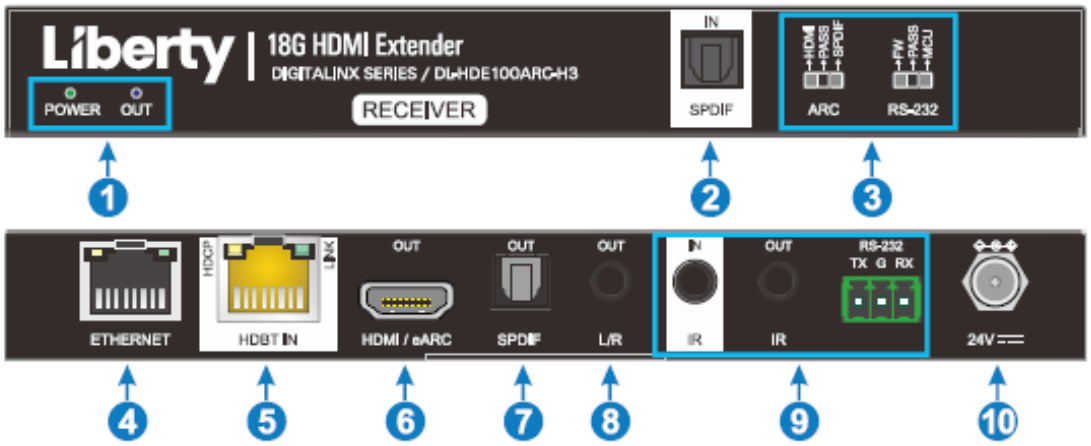
⑨ **IR IN/OUT:** 3.5mm mini jack, connect to the IR receiver or IR emitter for IR pass-through with the IR IN/OUT in the receiver.

RS232: 3-pin terminal block, connect to the RS232 control device (e.g. PC) or a third-party device for RS232 control, the RS232 port also support to upgrade the MCU or the Valens chip.

⑩ **DC 24V:** DC connector for the 24V1.25A power adapter connection.

Front and Rear Panels (Cont.)

Receiver



① **Power LED:** Illuminates green when the power is applied;

OUT LED: Illuminates blue when the there is an HDMI display device is connected to HDMI output port.

② **SPDIF IN:** 1x Toslink port, connect to the audio source for transmitting the audio to the transmitter.

③ **ARC switch:**

- HDMI: The ARC audio signal return to Tx via HDMI output port of Rx.
- PASS: CEC & ARC pass-through.
- SPDIF: The ARC audio signal return to Tx via SPDIF input port of Rx.

RS232 switch:

- FW: Upgrade the Valens chip.
- PASS: RS232 pass-through mode.
- MCU: Upgrade the MCU.

④ **ETHERNET:** 1x RJ45 port for Ethernet pass-through.

⑤ **HDBT IN:** 1x RJ45 port connect to the HDBT OUT port of the receiver for transmitting the video, audio, Ethernet, IR and RS232;

Support two-way 24V PoC;

Green light indicates Link status, yellow light indicates HDCP.

⑥ **HDMI:** Connects to HDMI display device.

⑦ **SPDIF:** Output the de-embedded audio of the HDMI OUT.

⑧ **L/R OUT**: Output the de-embedded audio of the HDMI OUT.

(NOTE: The L/R OUT port only supports PCM 2.0 audio format.)

⑨ **IR IN/OUT:** 3.5mm mini jack, connect to the IR receiver or IR emitter for IR pass-through with the IR IN/OUT in the transmitter.

RS232: 3-pin terminal block, connect to the RS232 control device (e.g. PC) or a third-party device for RS232 control, the RS232 port also support to upgrade the MCU or the Valens chip.

⑩ **DC 24V:** DC connector for the 24V1.25A power adapter connection.

EDID Settings

Use the DIP Switch in transmitter to select the EDID:

When the DIP switch is in 1111(all UP) mode, the device will read the EDID of RX HDMI output, and output the EDID. If you can't learn it, the device will use the built-in EDID: 1920x1080@60 8bit 2CH PCM.

Copy EDID	▲ ▲ ▲ ▲	4K@60 420, 7.1CH	▼ ▲ ▲ ▲
1920x1080p@60, 2CH	▲ ▲ ▲ ▼	4K@60 444, 2CH	▼ ▲ ▲ ▼
1920x1080p@60, 7.1CH	▲ ▲ ▼ ▲	4K@60 444, 5.1CH	▼ ▲ ▼ ▲
1920x1200p@60, 2CH	▲ ▲ ▼ ▼	4K@60 444, 7.1CH	▼ ▲ ▼ ▼
1920x1200p@60, 7.1CH	▲ ▼ ▲ ▲	User Defined 1	▼ ▼ ▲ ▲
4K@30 444, 2CH	▲ ▼ ▲ ▼	User Defined 2	▼ ▼ ▲ ▼
4K@30 444, 7.1CH	▲ ▼ ▼ ▲	User Defined 3	▼ ▼ ▼ ▲
4K@60 420, 2CH	▲ ▼ ▼ ▼	User Defined 4	▼ ▼ ▼ ▼

Follow the below steps to upload User Defined EDID 1-4:

1. Connect the PC to the transmitter;
2. Set the RS232 DIP Switch to MCU;
3. Turn on the RS232 control software;
4. Set the baud rate, data bit, stop bit and the parity bit;
5. Send the RS232 command: EDIDUPGRADE Uxx (xx = 1 – 4);
6. Send the EDID file;
7. Get feedback of the upgrade success;
8. Finish upload.

RS232 Control

Connect the machine to the control device (e.g. PC) with RS232 cable and set the parameters in the right manner, the control device is capable to control this machine by RS232 commands.

RS232 Control Software

Installation: Copy the control software file to the computer.

Uninstallation: Delete all the control software files in corresponding file path.

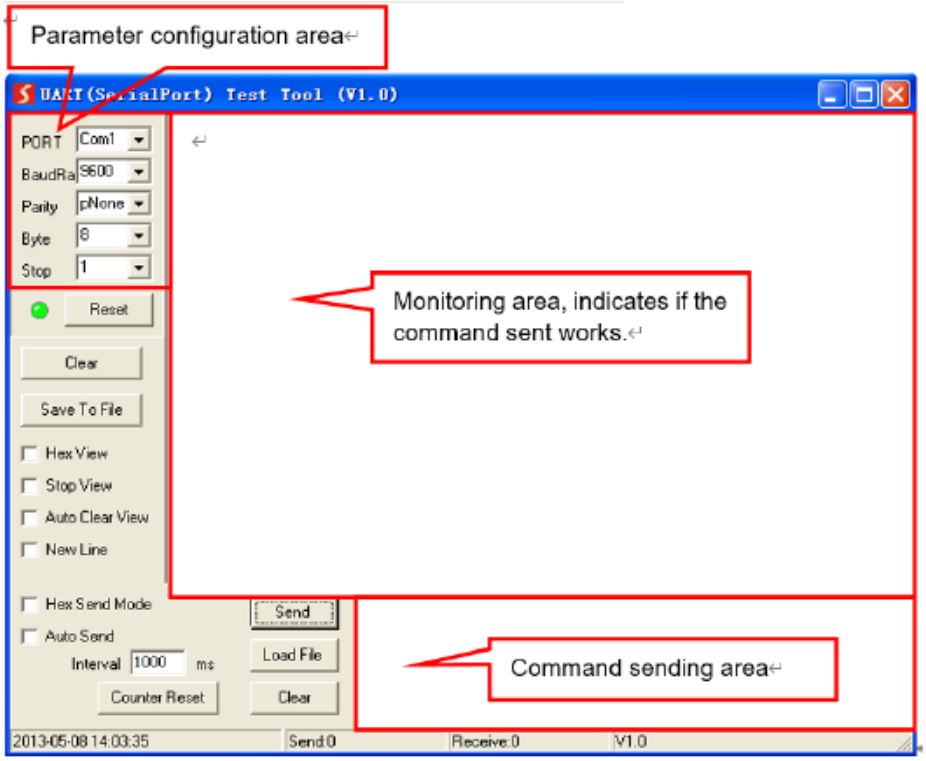
Basic Settings

First of all, please connect all needed input devices and output devices, then to connect it with a computer which is installed with RS232 control software such as **CommWatch.exe**

Double-click the following icon:

CommWatch.exe

The interface of the control software is shown as below:



Please set the parameters of COM number, baud rate, data bit, stop bit and the parity bit correctly, then the RS232 commands can be sent in Command Sending Area.

Baud rate: 9600;

Data bit: 8;

Stop bit: 1;

Parity bit: none.

RS232 Commands

Note: All commands must be ended with "<CR><LF>".

Function	Description	Example and Feedback
>EDIDUPGRADE Uxx	Upload the User defined EDID file xx = 1 – 4;	>EDIDUPGRADE U1 <Please Send The EDID File!
>RST	Factory reset.	>RST <Factory Default! DL-HDE100ARC-H3 TX V1.0.0a Power ON! Local RS232 Baudrate Is 9600! DIPEDID1111!
>BAUDRATE xx	Set the baud rate xx = 2400, 4800, 9600, 19200, 38400, 57600, 115200	>BAUDRATE 115200 <Set Local RS232 Baudrate Is 115200!

Technical Specifications

	Transmitter	Receiver
Video		
Input	(1) HDMI IN	(1) HDBT IN
Input Connector	(1) Type-A female HDMI	(1) RJ45
Input Resolution	Up to 4K@60Hz 4:4:4	
Output	(1) HDBT OUT, (1) LOOP OUT	(1) HDMI OUT
Output Connector	(1) RJ45, (1) Type-A female HDMI	(1) Type-A female HDMI
Output Resolution	Up to 4K@60Hz 4:4:4	Up to 4K@60Hz 4:4:4
Audio		
Input	-	(1) SPDIF IN
Input Connector	-	(1) Toslink Connector
Output	(1) SPDIF OUT, (1) L/R OUT	(1) SPDIF OUT, (1) L/R OUT
Output Connector	(1) Toslink connector (1) 3.5mm Jack	(1) Toslink connector (1) 3.5mm Jack
Audio Format	Toslink (eARC): PCM, Dolby Digital, DTS 5.1CH	
SPDIF OUT		
Frequency Response	20Hz ~ 20KHz, ±1dB	
Max Output Level	±0.05dBFS	
THD+N	< 0.05% (-80 dB), 20 Hz – 20 kHz bandwidth, 1 kHz sine at 0 dBFS level (or max level)	
SNR	> 90dB, 20Hz-20 kHz bandwidth	
Crosstalk Isolation	< - 80 dB, 10 kHz sine at 0 dBFS level	
Noise	- 90dB	
Analog L/R OUT		
Frequency Response	20Hz ~ 20KHz, ±1dB	
Max output level	2.0 Vrms ± 0.5 dB. 2 V = 16 dB headroom above -10 dBV (316 mV) nominal consumer line level signal	
THD+N	< 0.05%, 20 Hz – 20 kHz bandwidth, 1 kHz sine at 0 dBFS level (or max level)	
SNR	> 80dB, 20Hz-20 kHz bandwidth	
Crosstalk isolation	< -80 dB, 10 kHz sine at 0 dBFS level (or max level before clipping)	
L-R level deviation	< 0.05 dB, 1 kHz sine at 0 dBFS level (or max level before clipping)	
Output load capability	1k ohm and higher (supports 10x paralleled 10k ohm loads)	
Noise	- 80dB	
Control		
Control Part	(1) Audio OUT	(1) ARC Switch,

	(1) RS232 Switch (1) IR IN (1) IR OUT (1) RS232	(1) RS232 Switch, (1) IR IN, (1) IR OUT, (1) RS232
Control Connector	(1) 2-pin DIP Switch, (1) 3-pin DIP Switch, (2) 3.5mm Jacks, (1) 3-pin Terminal Block	(2) 3-pin DIP Switch, (2) 3.5mm Jacks, (1) 3-pin Terminal Block
General		
Bandwidth	18Gbps	
HDMI Standard	2.0	
HDCP Version	HDCP 2.2, HDCP 1.4 compliant	
Bi-directional PoC	Supported	
HDMI V2.0 Cable Length	4K@60Hz 4:4:4 ≤ 5m, 4K@60Hz 4:2:0 ≤ 10m, 1080P ≤ 15m	
Transmission Standard	HDBaseT3.0	
Transmission Distance	4K/1080p ≤ 328 feet (100 meters)	
Operation Temperature	-5 to +55℃ (+23° to +131°F)	
Storage Temperature	-25 to +70℃ (-13° to +158°F)	
Relative Humidity	10% to 90%, Non-condensing	
Power Supply	DC 24V 1.25A	
Power Consumption	18W(Max)	
Dimension (W*H*D)	TX:180mm x 21.7mm x 110mm RX:180mm x 21.7mm x 110mm	
Package Dimension (W*H*D)	221mm x 222mm x 77mm	
Net Weight	TX: 395g RX:390g	
Shipping Weight	1.24 kg	

Note: *Please use high-qualified HDMI cable fully compliant with HDMI V2.0 for reliable transmission and connection.*

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

Liberty

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