

USER MANUAL

DL-HD70-H3 Owners Manual



Digitalinx Series HDBaseT 3.0 70m Extension Set

18G HDBaseT 3.0 Extender set extends uncompressed resolutions up to 4K60 4:4:4, IR, RS232 & Power up to 40m or 70m

PRODUCT OVERVIEW

The Digitalinx DL-HD70-H3 HDBaseT 3.0 extender set transmits video, audio, IR, and RS232 over single category 6a F/UTP or better twisted pair cable. The DL-HD70-H3 can transmit 4K resolutions up to 4K@60Hz,

4:4:4 up to 40m / 131' and 4K30 or below up to 70m / 230'. The Digitalinx DL-HD70-H3 supports HDMI 2.0 and is HDCP 2.2/2.3 compliant and supports CEC pass through. The Digitalinx DL-HD70-H3 supports multiple audio formats including PCM 2.0/5.1/7.1, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio and DTS:X. The Digitalinx DL-HD70-H3 supports any HDR format, including Dolby Vision and HDR10+.

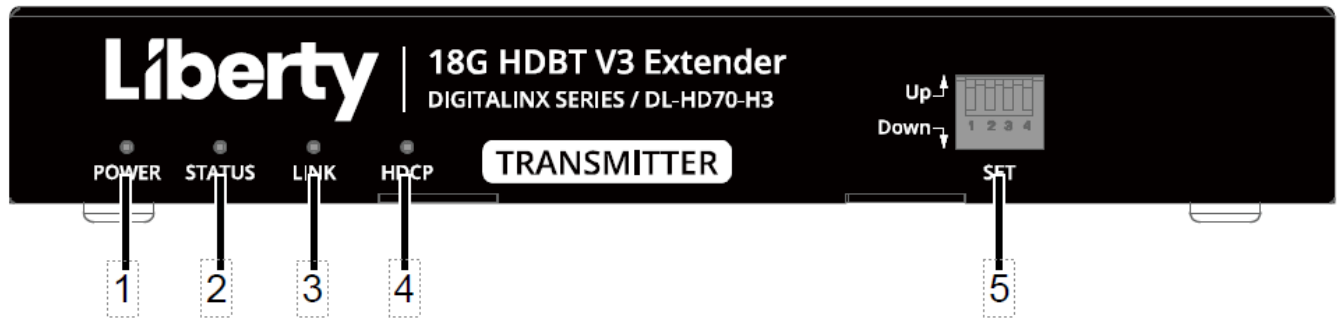
DL-HD70-H3 offers two bandwidth modes and allow to transmit via not only Cat 6A or above cables but also lower specification cables, such as Cat 5e and Cat 6. The extender kit includes a test pattern generator with both non-HDCP and HDCP 2.2 encryption to test setup HDCP capabilities.

The DL-HD70-H3 is sold only as a set with a single power supply, and can be powered on either end.

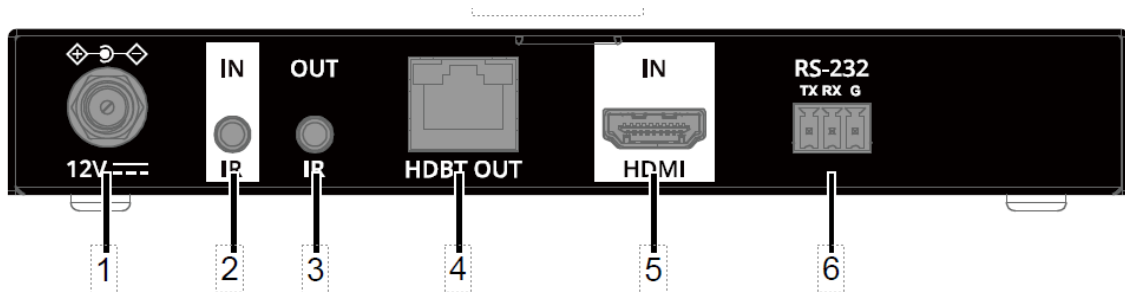
PACKAGE CONTENTS

- DL-HD70-H3 extender set
- (2) 3pin-3.81mm Phoenix Connectors (Male)
- (4) Mounting Ears with Mounting Screws
- 12V 2A Power Adapter with US, UK, AU AND EU Power Adapters
- (1) IR Emitter
- (1) IR Receiver (30kHz - 50kHz)
- (1) IR-AC Coupler Cable

TRANSMITTER PRODUCT BREAKDOWN



1. Power LED (Red) :When the red power LED is on the transmitter has power.
2. Status LED (Green) : When blinking the units are working properly.
3. Link LED (Green) : Link LED is on, the transmitter and receiver have a good connection. When it's off the units are not connected.
4. HDCP LED : Solid light means HDMI signal with HDCP. Flashing light means HDMI signal without HDCP. OFF - No Light means noHDMI signal
5. Settings DIP switch : See Settings section for settings.



1. Power In : Connects to power adapter. Either transmitter or receiver needs to be plugged in to power.
2. IR in : Connects to the provided IR receiver.
3. IR out: Connects to the provided IR emitter.
4. HDBT out : Connects CAT cable to connect to the receiver.
- 5.HDMI in: Connects to an HDMI source.
6. RS-232 : Connects to a RS232 device Pass-through to receiver RS-232 port.

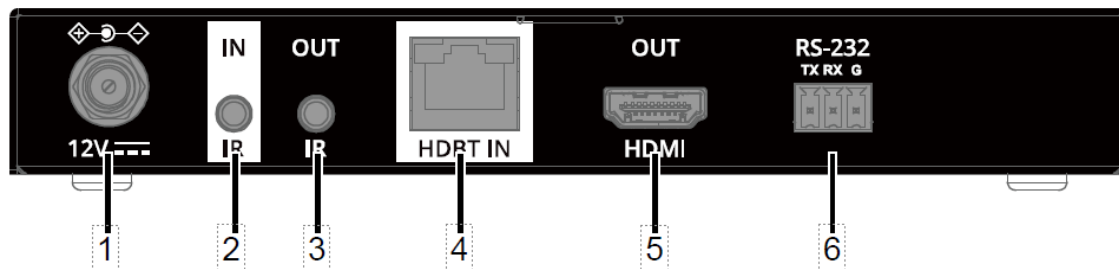
RECEIVER PRODUCT BREAKDOWN

Front Panel



1. Power LED (Red) :When the red power LED is on the transmitter has power.
2. Status LED (Green) : When blinking the units are working properly.
3. Link LED (Green) : Link LED is on, the transmitter and receiver have a good connection. When it's off the units are not connected.
4. HDCP LED : Solid light means HDMI signal with HDCP. Flashing light means HDMI signal without HDCP. OFF - No Light means no HDMI signal
5. Settings Dip switch : See Settings section for details.

Rear Panel



1. Power In : Connect to power adapter. Either transmitter or receiver needs to be plugged into power.
2. IR in : Connects to the provided IR receiver.
3. IR out: Connects to the provided IR emitter.
4. HDBT in : Connects CAT cable to connect to the transmitter.
5. HDMI out: Connects to an HDMI display or projector.
6. RS-232 : Connects to a RS232 device, Pass-through to transmitter RS-232 port.

CONFIGURATION SETTINGS

Transmitter:

1	2	3	4	Function
Up	-	-	-	Audio EDID 2CH (default)
Down	-	-	-	Audio EDID pass-through
-	Up	-	-	Audio de-embed (default)
-	Down	-	-	Audio return (from OPTICAL IN of the receiver)
-	-	Up	-	Upgrade Valens (default)
-	-	Down	-	Upgrade MCU
-	-	-	Up	High-bandwidth mode (default)
-	-	-	Down	Low-bandwidth mode

Receiver:

1	2	3	4	Function
-	-	Up	-	Upgrade Valens (default)
-	-	Down	-	Upgrade MCU
-	-	-	Up	High-bandwidth mode (default)
-	-	-	Down	Low-bandwidth mode

Note: "-" indicates the position of this pin doesn't affect the current function.

Instructions of DIP Switches:

- When the DIP switch on front panel of the transmitter is set to "Up, x, x, x", the extender will automatically filter EDID and only supports PCM 2.0CH. When set the DIP switch on front panel of the transmitter to "Down, x, x, x", the audio input EDID is set to copy display's EDID.
- When the DIP switch on front panel of the transmitter is set to "x, Up, x, x", the AUDIO OUT port and OPTICAL OUT port of the transmitter will output the de-embedded audio from HDMI IN. When set the DIP switch on front panel of the transmitter to "x, Down, x, x", the AUDIO OUT port and OPTICAL IN port of the transmitter will output the audio from OPTICAL IN port of the receiver. If audio source signal is compressed audio, AUDIO OUT port will be muted.
- Both Valens firmware of the transmitter and receiver can be upgraded through FW port of the transmitter/receiver. Set the DIP switch of the transmitter/receiver to "x, x, Up, x". Connect a PC to FW port of the transmitter/receiver, and connect the transmitter and receiver, users can upgrade Valens firmware of transmitter and receiver through the FW port of the transmitter/receiver.
- Set the DIP switch of the transmitter/receiver to "x, x, Down, x" position, and connect a PC to FW port of the transmitter/receiver to upgrade the MCU firmware of the transmitter/receiver.
- When both transmitter and receiver DIP switches pin 4 are set to "Up", the extender will work in high-bandwidth mode. In this mode, the extender transmits uncompressed AV signal using Cat 6A (foiled twisted pair) cable or above up to 40m/131ft. When both transmitter and receiver DIP switches pin 4 are set to "Down", the extender enters low-bandwidth mode. In this mode, visually lossless compression is engaged allowing 4K60 4:4:4 signals to be transmitted over category cables rated less than Cat6A such as 5e or 6. This feature is designed to ensure an image even in retrofit situations where older cabling is existing and cannot be replaced.

Test Pattern Generation

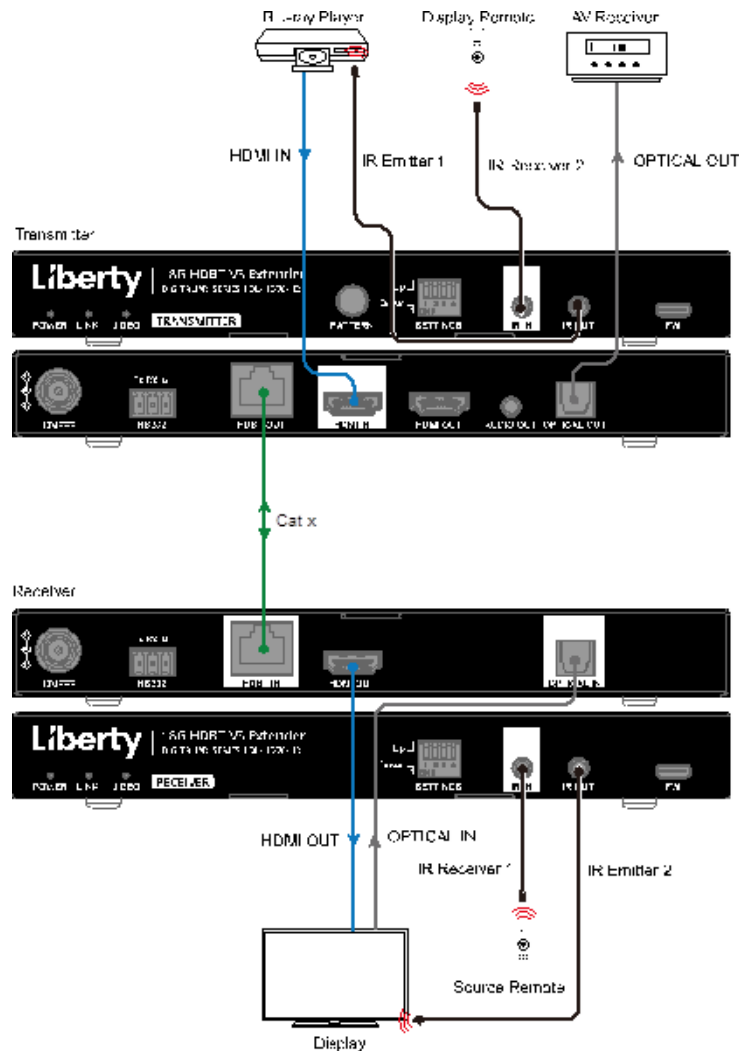
The extender kit supports a test pattern generator video signal, with different HDCP capabilities. This feature is usually used to test setup before use and help troubleshooting.

The "Pattern" button on front panel of the transmitter is used to switch different pattern generation.

- Hold the button for about 3s to enter test pattern generation. In this mode, short press the button to switch between non-HDCP video and HDCP 2.2 encrypted video. When test pattern is with non-HDCP, the VIDEO LED will light blue, and extender will output a blue pattern video. When test pattern is with HDCP 2.2, the VIDEO LED of the extender will light red, and extender will output a red pattern video.
- To exit the pattern mode, hold the button for about 3s and extender will exist the pattern mode.

APPLICATION DIAGRAM

Below is an example of an extender set in a typical application.



Cabling Requirements

HDBaseT Cabling

HDBaseT3.0 Specification is made using high quality Cat6a F/UTP cabling. For maximum full capability performance, ensure Cat6a F/UTP or above is used. To ensure proper performance of the DL-HD70-H3, it is recommended that you use solid core, shielded Category 6a F/UTP or above cabling. Category 6 or 5e F/UTP may work but may not support power over HDBaseT reliably and may only work over short distances.



When using shielded category cabling **ALWAYS...**

....use shielded connectors

....properly ground the category cable

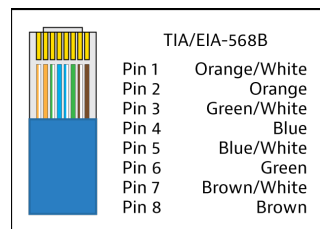
For optimized HDBaseT performance use the following Liberty Wire and Cable branded cabling;

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

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

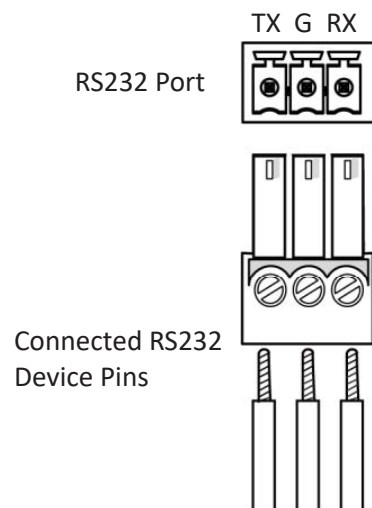
Category 6 NON-plenum; **24-4P-L6SH**

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



Twisted Pair Wiring

Use TIA/EIA-568B wiring for Category 6a connection between send and receive units.



RS232 Wiring

Connect the controller or device RX signal to TX on the DL-HD70-H3 extender. Connect the controller or device TX signal to Rx on the DL-HD70-H3 extender.

TECHNICAL SPECIFICATIONS

Model	DL-HD70-H3		
Physical Parameter			
Case Material	Receiver: Industrial-grade metal chassis with metal brackets Transmitter: Industrial-grade metal chassis with metal brackets		
Dimensions	Transmitter: 190mm [W] x 115mm [D] x 23mm [H] Receiver: 190mm [W] x 115mm [D] x 23mm [H]		
Weight	Transmitter: 265g Receiver: 265g		
Power Protection	ESD protection with human body model — ±8kV (Air-gap discharge) & ±4kV (Contact discharge)		
Power Output	DC 12V 2A		
Power Input	AC 100-240V 50/69Hz		
Power Consumption	14.28W (Max)		
Operating Temperature	32- 113°F / 0- 45°C		
HDMI Specifications			
HDMI	2.0b		
HDCP	2.3/2.2/1.4		
Video Bandwidth	18 Gbps		
Video Resolutions	4096×2160@24/25/30/50/60Hz,3840×2160@24/25/30/50/60Hz, 1920x1080p,1080p@23.98/24/25/29.97/30/50/59.94/60Hz,1080i@50/59.94/60Hz, 720p@50/59.94/60Hz, 576p, 576i, 480p, 480i		
Color Space	RGB, YCbCr 4:4:4 / 4:2:2. YUV 4:4:4		
Color Depth	8/10/12-bit		
Analog Audio Format	LPCM 2.0		
HDMI Audio Formats	HDMI IN/OUT: Fully supports audio formats in HDMI 2.0 specification, including PCM 2.0/5.1/7.1, Dolby TrueHD, Dolby Atmos, DTS-HD Master Audio and DTS:X		
Connectivity			
Inputs	Inputs: 1x HDMI 1x IR IN 1x DC 12V Rx : 1xHDBT IN [RJ45, Female] 1x IR IN 1x DC 12V		
Outputs	Outputs: 1x HDBT OUT [RJ45, 8-pin female] 1x RS-232 Phoenix jack 3 pin (3.81mm) 1x IR OUT Rx: 1xHDMI Type A-Female 1x IR OUT		
Transmission			
Max Distance (4K30)	230ft / 70m over CAT6a 60m over Cat6		
Max Distance (4K60 4:4:4)	131ft / 40m over CAT6a/7		

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 800-530-8998