



DIGITALINX

VALUE-ENGINEERED DIGITAL SOLUTIONS

DL-44E-H2-KIT Quick Install Guide



This guide is for quick installation only.
For complete owners manual go to www.libav.com or use a QR reader to access the manual via QR code below.



Scan QR Code with your Smart-phone or Tablet

Product Overview

The DL-44E-H2-KIT is an HDMI 2.0 compatible 4x4 matrix switcher kit which consists of an HDMI and HDBaseT matrix switcher, 3 compatible HDBaseT receivers and accessories. The HDMI and HDBaseT matrix switcher features 4 HDMI inputs, 3 HDBaseT outputs + 1 HDMI output. Digital and/or analog audio can be de-embedded from the 4th output (HDMI). The matrix switcher supports EDID management, is HDCP 2.2 and HDMI 2.0 compliant. The 3 HDBaseT transmitter outputs are compatible only with the 3 HDBaseT receivers that are included with the kit. The HDBaseT extender circuits are capable of extending 4K/60Hz 4:4:4 signals up to 40m, 1080p up to 70m all while powering the remote receivers using CAT6 F/UTP rated cable for each extension circuit. The HDBaseT receivers can also extend bi-directional IR that can be free-routed from the HDBaseT receiver locations to the local switcher to allow flexible control of sources or devices living in the A/V headend.

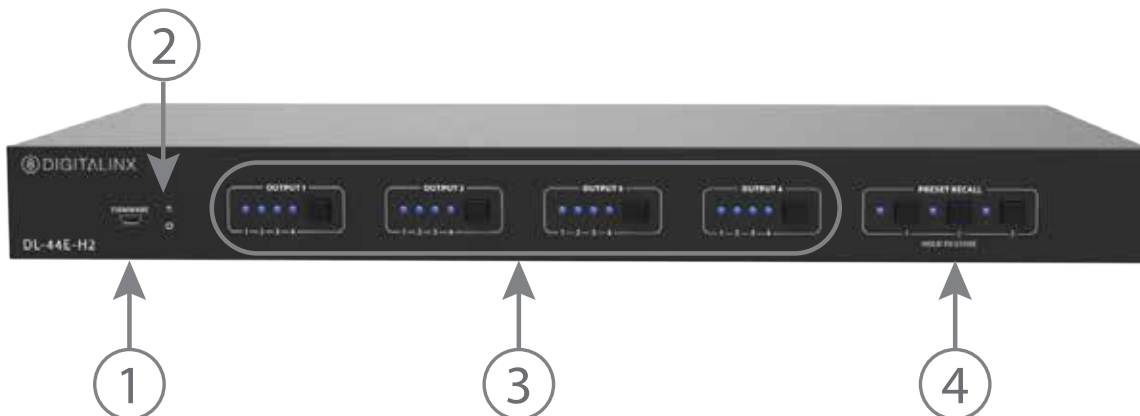
The DigitaLinx DL-44E-H2-KIT can transport HDMI data rates up to 18Gbps over HDBaseT. The system enables high data rates by utilizing visual lossless compression at a 2:1 data compression rate when the signal surpasses 10Gbps, anything under 10Gbps will never be compressed. Supports static HDR (HDR10) only when data rate exceeds 18Gbps, supports dynamic HDR (HDR10+ / Dolby Vision) when data rate is 10Gbps or less.

The switcher kit can be controlled either by front panel buttons, IR remote, TCP/IP, RS232 or by the internal built in web GUI/server. For a list of available control IP and RS232 control commands for, please see the owners manual for this product located online at www.libav.com.

Package Contents

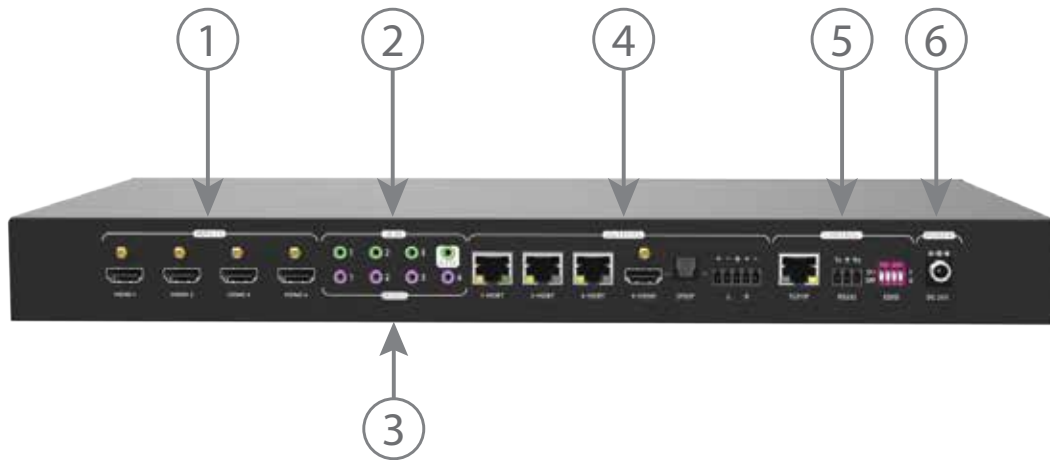
- 4x4 HDMI 2.0 and HDBaseT Matrix Switcher
- (3) 70m HDBaseT Receivers
- Quick Install Guide
- (1) IR Remote
- (4) IR Emitters
- (4) IR Receivers
- (1) 5-pin Phoenix connector
- (1) 3-pin Phoenix connector
- (1) DB9 to 3 pin Phoenix Adapter Cable for RS232
- (1) DC24V 2.71A power supply with US, UK, EU and UA power plugs
- (8) Rack mount ears with 8 mounting screws
- (4) Plastic Cushions

Front Panel View- Switcher



1. **FIRMWARE** - Micro USB port for firmware upgrades
2. **POWER LED** - Illuminates red when power is applied
3. **FRONT PANEL SWITCHING**
 - There are four LEDs that corresponds to every source input and labeled accordingly 1-4. Illuminates blue to indicate which source is selected for each output
 - Press the output button repeatedly to through inputs
4. **PRESET RECALL**- Save / Recall switching presets
 - Press and hold buttons 1-3 to save current switching status
 - Press the buttons 1-3 to recall the saved switching preset

Back Panel View- Switcher



1. INPUTS

- *HDMI 1-4* - HDMI inputs 1-4

2. IR IN

- *1-3* - 3.5mm ports for IR receivers for IR pass through control
- *IR EYE* - 3.5mm ports for IR receiver for switchers IR remote control

3. IR OUT

- *1-4* - 3.5mm ports for IR emitters for IR pass through control

4. OUTPUTS

- *1-3 HDBT* - HDBaseT outputs 1-3
- *4 HDMI* - HDMI output
- *SPDIF* - Digital S/PDIF audio output
- *L/R* - Analog RCA stereo audio output

5. CONTROL

- *TCP/IP* - RJ45 to control device via network / web GUI
- *RS232* - 3 pin phoenix connector for RS232 control
- *EDID* - 4 pin dip switch for EDID settings

6. DC24V- Locking power supply port

Front Panel View- HDBaseT Receiver



1. **HDMI OUT** - HDMI output port for connection to TV display
2. **IR IN** - 3.5mm IR input port for connection to IR receiver or IR system
3. **IR OUT** - 3.5mm IR output port for connection to IR emitter

Back Panel View- HDBaseT Receiver



1. **DC24V**- Locking power supply port
2. **POWER LED** - Illuminates red when power is applied
3. **HDBT IN** - RJ45 HDBaseT connection. Connect Cat6 cable to HDBT output transmitter of the DL-44E-H2-KIT
 - *LINK LED* - Illuminates orange when there is a valid HDBaseT link between switcher and receiver
 - *HDCP LED* - Illuminates green when video content is encrypted

Connectivity Instructions

1. Verify all components included with the DL-44E-H2-KIT set are present before installation.
 2. If the DL-44E-H2-KIT is going to be permanently mounted in a rackmount case, attach the included mounting brackets with the supplied screws.
 3. Turn off power and disconnect the audio/video equipment by following the manufacturer's instructions.
 4. Connect Category 6 or greater twisted pair cable with RJ45 connectors between the DL-44E-H2-KIT HDBaseT output / transmitters to the supplied receivers. TIA/EIA-568B straight-through wiring connections must be used.
 5. Connect an HDMI cable that is less to or equal to 5 meters in length between the display and the HDMI output of the DL-44E-H2-KIT HDBaseT receiver.
 6. Connect an HDMI cable that is less to or equal to 5 meters in length between the display and the HDMI output of the DL-44E-H2-KIT. For display devices that are further away, an HDMI extension device will be required to complete the connection.
 7. Connect a source device to the HDMI inputs using a HDMI cable that is less than or equal to 5 meters in length. For source devices that are further away, an HDMI extension device will be required to complete the connection.
 8. Connect RS232 control to a 3rd party control system to control switcher functions (optional)
 9. Connect TCP/IP control to a 3rd party control system to control switcher functions (optional)
- NOTE:** A list of control commands for this unit is available in the owners manual online at www.libav.com under the *DOCUMENTATION* tab of the DL-44E-H2-KIT product page
10. Connect IR receiver to IR EYE port to control switcher via supplied IR remote (optional)
 11. Connect IR emitters to IR out ports of the HDBaseT receiver or local switcher (optional)
 12. Connect the analog or digital audio output to a local audio amplifier (optional)
 13. Connect the included power supply to the DL-44E-H2-KIT and lock the power supply to the power connector by twisting the locking collar clockwise.
 14. Power on attached audio/video devices.

Cabling Wiring Requirements

HDBaseT Cabling

To ensure proper performance of the DL-44E-H2-KIT HDBaseT circuits, 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 over longer distances.



When using shielded category cabling *ALWAYS*...

-use shielded connectors
-properly ground the category cable

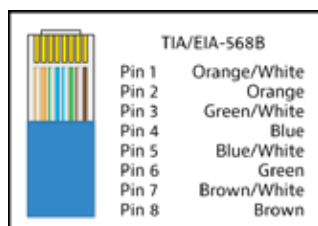
For optimized HDBaseT performance use the following Liberty Wire and Cable branded cabling;

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**

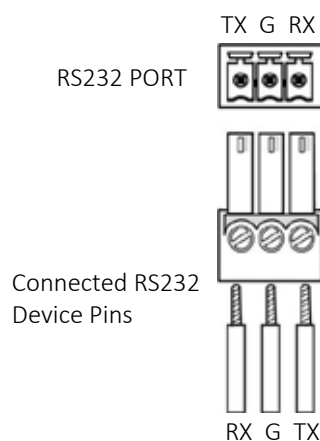


Twisted Pair Wiring

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

RS232 Wiring

Some controllers may not have a DB9 port available for RS232 communication, but may have removable terminal block connections. Consult the manual of the control device(s) to determine which pins the TX/RX signals are carried on. Be sure to always connect TX to RX and RX to TX.



Passing IR Signals:

The DL-44E-H2-KIT is capable of passing IR signals between 33 and 55 KHz. To prevent damage to any of the electronics, the extenders should be powered off while inserting or removing any IR components. Inserting an IR transmitter into the IR IN port may damage the IR circuit for that extender.

Technical Specifications- Switcher

Video	
Video Inputs	(4) HDMI
Video Input Connectors	(4) HDMI Type A Female
Input video Signal	HDMI 2.0 compliant
HDMI Input Resolution Support	Up to 4K@60Hz 4:4:4 / 8 bit deep color
Video Output	(1) HDBaseT, (1) HDMI
Video Output Connector	(2) Type-A Female HDMI, (1) RJ45
Output Resolution Support	Up to 3840 x 2160 @60Hz / 4:4:4 / 8 bit deep color
Standards	HDMI 2.0, HDCP 2.2
Bandwidth	All HDMI inputs / outputs: 18Gbps HDBaseT Output: 18Gbps
Audio Output	
Audio Output	(1) Balanced audio (L+R) (1) Digital SPDIF audio (L+R)
Audio Output Connector	(1) 5-pin terminal block (1) Toslink connector
Frequency Response	20Hz – 20KHz, ± 3 dB
Max Input Level	2.0Vrms \pm 0.5dB. 2V = 16dB headroom above -10dBV (316mV) nominal consumer line level signal
Output Impedance	70 Ω
Control	
Control Ports	(1) RS232, (1) IR Eye, (3) IR IN, (4) IR OUT, (1) TCP/IP, (1) Firmware
Control Connectors	(1) 3-pin terminal block- RS232, (8) 3.5mm jacks- IR, (1) RJ45- TCP/IP, (1) Micro USB- Firmware
IR Carrier Frequency Range	33-55kHz at 5 volts
HDBaseT Signal Characteristics	
Maximum Distance	HDBaseT Output (Transmitter): 70 m (up to 1080p) , 40 m (up to 4K@60Hz / 4:4:4 / 8 bit deep color)
Cable Requirements	Solid core shielded Category 6 F/UTP cable or greater with TIA/EIA-568B crimp pattern
Bandwidth	HDBaseT Output (Transmitter): 18Gbps
Chassis and Environmental	
Dimensions (WxHxD)	436 mm x 44 mm x 236.5 mm (17 in x 1.7 in x 9.3 in) – 1RU
Shipping Weight	1.9kg (2.2 lbs.)
Operating Temperature	0° to +55° C (+32° to +131° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-20° to +70° C (+14° to +158° F)
Storage Humidity	10% to 90%, Non-condensing
Power, ESD, and Regulatory	
Power Supply Input	100V-240VAC / 50-60 Hz
Power Supply Output	24VDC / 2.71A
Power Consumption	58 watts (max)
ESD Protection	15kV
Product Regulatory	FCC, CE, RoHS
Power Supply Regulatory	CE, RoHS
Other	
Standard Warranty	5 years
Included Accessories	Quick Install Guide, (1) 3-pin Phoenix connectors, (1) 5-pin Phoenix connectors, IR Remote, (4) IR Emitters, (4) IR Receivers, (1) DB9 to 3 pin Phoenix adapter cable for RS232, (1) DC24V power supply with US, UK, EU and AU power plug, (8) Rack mount ears with 8 mounting screws, (4) Plastic Cushions
Compatible Transmitters	INT-HD70-TXWP, INT-HD70-TX, AS-1H1V, AS-1H1V-WP-W., AS-2H, AS-2H-WP-W, INT-HD52

Distances and picture quality may be affected by cable grade, cable quality, source and destination equipment, RF and electrical interference, and cable patches.

Technical Specifications- HDBaseT Receiver

Supported Audio and Video	
Video Input	(1) HDBaseT
Video Input Connector	(1) RJ45
Video Output	(1) HDMI
Video Output Connector	(1) HDMI Type A Female
Video Compliance	HDMI 2.0, HDCP 2.2
Output Resolution Support	Up to 4K@60Hz (4:4:4 chroma sub-sampling / 8 bit deep color)
Embedded Audio	Supports up to 8Ch LPCM, Dolby TrueHD, DTS-HD, Dolby Digital5.1, DTS 5.1, Dolby Digital Plus
HDBaseT Signal Characteristics	
Maximum Distance	70 m (up to 1080p) , 40 m (up to 4K@60Hz / 4:4:4 / 8 bit deep color)
Cable Requirements	Solid core shielded Category 6 F/UTP cable or greater with TIA/EIA-568B crimp pattern
Bandwidth	18Gbps
Control	
Control Ports	(1) IR IN, (1) IR OUT
Control Connectors	(2) 3.5mm jacks
IR Carrier Frequency Range	33-55kHz at 5 volts
Chassis and Environmental	
Dimensions (WxHxD)	74 mm x 18 mm x 120 mm (2.9 in x .7 in x 4.7 in)
Shipping Weight	235g (.5 lbs.)
Operating Temperature	0° to +40° C (+32° to +104° F)
Operating Humidity	10% to 90%, Non-condensing
Storage Temperature	-10° to +50° C (+14° to +122° F)
Storage Humidity	10% to 90%, Non-condensing
Power, ESD, and Regulatory	
Power Supply Input Power	24V DC 1.25A or PoC (Power Over Cable), 100-240VAC, 50/60Hz
Power Consumption	9.5 watts (max)
ESD Protection	15kV
Product Regulatory	FCC, CE, RoHS
Power Supply Regulatory	CE, RoHS
Other	
Standard Warranty	5 years

Distances and picture quality may be affected by cable grade, cable quality, source and destination equipment, RF and electrical interference, and cable patches.

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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