KRAMER

KDS-EN7, KDS-DEC7 Quick Start Guide

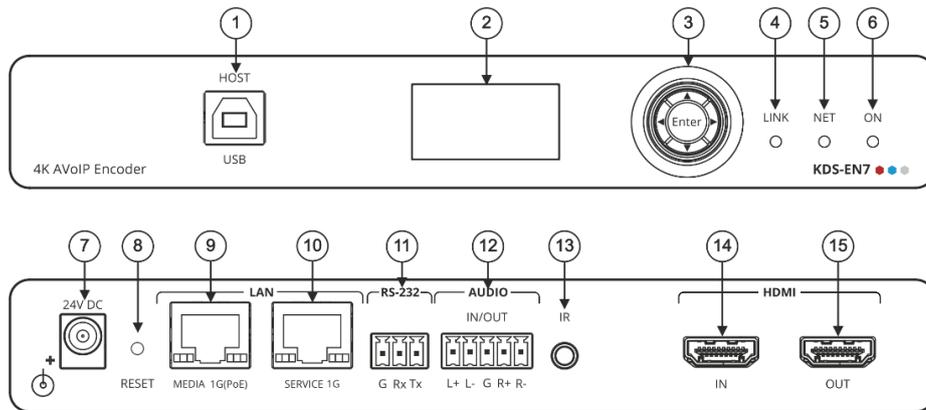This guide helps you install and use your **KDS-EN7, KDS-DEC7** for the first time.

Go to **www.kramerav.com/downloads/KDS-EN7** to download the latest user manual and check if firmware upgrades are available.
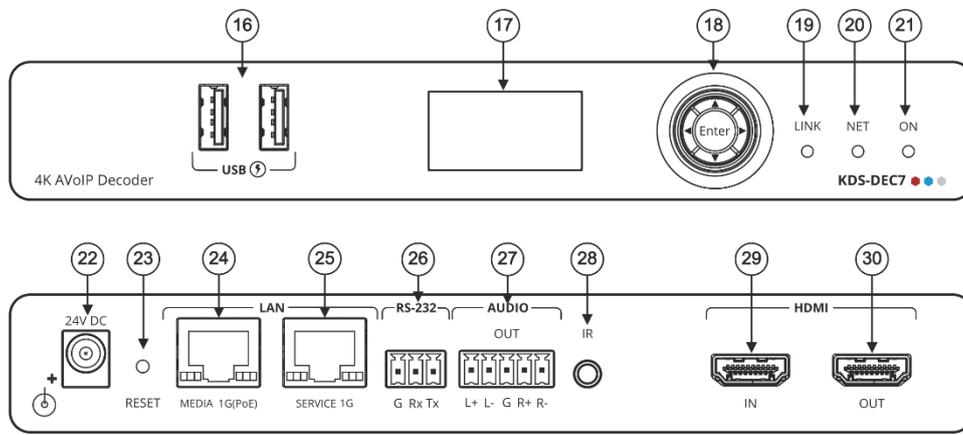
Step 1: Check what's in the box

☑ **KDS-EN7 4K AVoIP Encoder** or
   KDS-DEC7 4K AVoIP Decoder

☑ 2 Bracket sets for each product
☑ 1 Quick start guide

Step 2: Get to know your KDS-EN7 and KDS-DEC7

KDS-EN7

#	Feature		Function
1	HOST USB Type B Port		Connect to a USB host, for example, a PC for KVM/USB support.
2	LCD Display		Use for device configuration such as unique channel/AV stream setting on encoder and channel tuning on decoder.
3	Menu Navigation Button	◄	Press to return to the previous menu.
		▲	Press to move up to the next configuration parameter.
		►	Press to go to the next menu.
		▼	Press to move down to the next configuration parameter.
		Enter	Press to accept changes.
4	LINK LED		See LED Functionality.
5	NET LED		See LED Functionality.
6	ON LED		See LED Functionality.
7	24V/1A DC Connector		Connect to the power adapter (purchased separately).
8	RESET Recessed Button		Press and hold for 10 seconds to reset the device to its factory default values. All LEDs flash.
9	LAN MEDIA 1G(PoE) RJ-45 Port		Unicast: connect for streaming either directly to a decoder or via LAN. Multicast: connect to multiple decoders or connect to one decoder to which multiple decoders are daisy-chained via SERVICE (1G) port.
10	LAN SERVICE 1G RJ-45 Port		Used OPTIONALLY for physical separation between AV and command streams to separate LAN for security and reliability purposes.
11	RS-232 3-pin Terminal Block Connector		Connect to an RS-232 device to use as a Gateway and bi-directional signal extension (even when no AV signal is extended).
12	AUDIO IN/OUT 5-pin Terminal Block Connector		Connect to a balanced analog stereo audio source/acceptor.
13	IR 3.5 Mini Jack		Connect to an IR sensor or emitter for bi-directional signal extension (even when no AV signal is extended). Expected voltage for IR receiver - (3.3V).
14	HDMI IN Connector		Connect to an HDMI source.
15	HDMI OUT Connector		Connect to loop the signal.

HDMI™
HIGH-DEFINITION MULTIMEDIA INTERFACE

P/N: 2900-301545QS   Rev: 2

KDS-DEC7

#	Feature		Function
16	USB Type A Port		Connect to a keyboard and mouse.
17	LCD Display		Upon power up, displays the last video source. Use for device information and configuration.
18	Menu Navigation Button	◄	Press to return to the previous menu.
		▲	Press to move up to the next configuration parameter.
		►	Press to go to the next menu.
		▼	Press to move down to the next configuration parameter.
	Enter		Press to accept changes.
19	LINK LED		See LED Functionality.
20	NET LED		See LED Functionality.
21	ON LED		See LED Functionality.
22	24V/1A DC Connector		Connect to the power adapter (purchased separately).
23	RESET Recessed Button		Press and hold for 10 seconds to reset the device to its factory default values. All LEDs flash.
24	LAN MEDIA 1G(PoE) RJ-45 Port		Connect for streaming.
25	LAN SERVICE 1G RJ-45 Port		Use, optionally, to create a physical separation between AV streams (MEDIA) and command streams (SERVICE), for enhancing security and reliability.
26	RS-232 3-pin Terminal Block Connector		Connect to an RS-232 device to use as a Gateway and bi-directional signal extension (even when no AV signal is extended).
27	AUDIO OUT 5-pin Terminal Block Connector		Connect to a balanced analog stereo audio acceptor.
28	IR 3.5 Mini Jack		Connect to an IR sensor or emitter for bi-directional signal extension (even when no AV signal is extended). Expected voltage for IR receiver – (3.3V).
29	HDMI IN Connector		Connect to an HDMI source. Can be used, alternatively, as a backup input to the decoder.
30	HDMI OUT Connector		Connect an acceptor.

LED Functionality
KDS-EN7 and **KDS-DEC7** LEDs function as follows:

| LED	Color	Definition
LINK LED	Lights Green	A link is established between **KDS-EN7** and **KDS-DEC7** and is transmitting A/V signals.
	Flashes Green	A signal is established, and a problem is detected.
NET LED	Off	No IP address is acquired.
	Lights green	A valid IP address has been acquired.
	Flashes Green very fast (for 60sec)	A device identification command is sent (Flag me).
	Lights Yellow	Device falls back to default IP address.
	Lights Red	Security is blocking IP access.
ON LED	Flashes Red	On fallback address acquiring, device 'ON' LED flashes continuously in slow 0.5/10sec cadence.
	Lights Green	When power is on.
	Flashes Green Slowly	Device is in standby mode.
	Flashes green fast	FW is downloaded in the background.
	Flashes Green very fast (for 60sec)	A device identification command is sent (Flag me).
	Lights Yellow	Device falls back to default IP address.
	Lights Red	Security is blocking IP access.
Post reboot, all LEDs light for 3 seconds then return to their normal LED display mode.		

Step 3: Mount KDS-EN7

Install **KDS-EN7** using one of the following methods:

- Attach the rubber feet and place the unit on a flat surface.
- Fasten a bracket (included) on each side of the unit and attach it to a flat surface
  (see www.kramerav.com/downloads/KDS-EN7).

- Mount the unit in a rack using the recommended rack adapter
  (see www.kramerav.com/product/KDS-EN7).
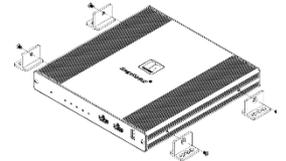
- Ensure that the environment (e.g., maximum ambient temperature &
  air flow) is compatible for the device.
- Avoid uneven mechanical loading.
- Appropriate consideration of equipment nameplate ratings should be
  used for avoiding overloading of the circuits.
- Reliable earthing of rack-mounted equipment should be maintained.
- Maximum mounting height for the device is 2 meters.

# Step 4: Connect inputs and outputs

Always switch OFF the power on each device before connecting it to your **KDS-EN7** and **KDS-DEC7**.
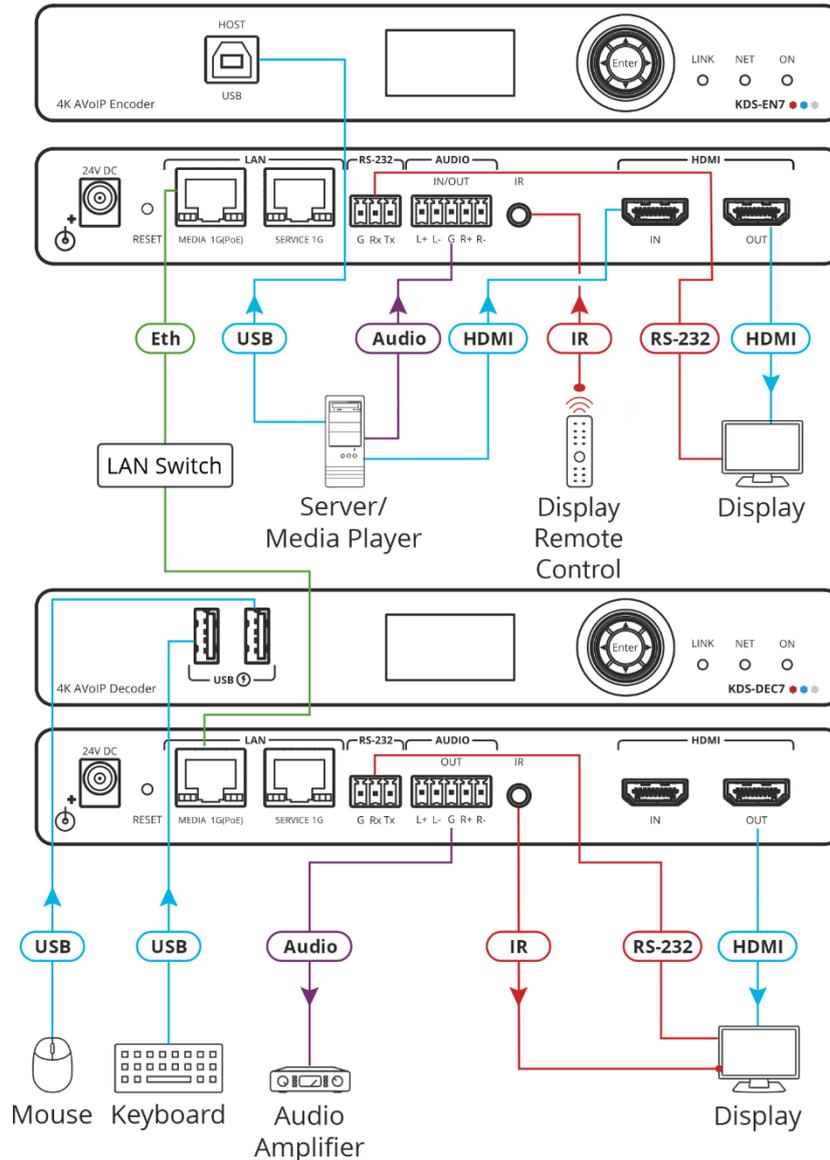
KDS-EN7 and **KDS-DEC7** can stream 4K video, requiring a gigabit Ethernet switch for high quality performance, since the maximum momentary transfer rate can reach 850Mbps. We recommend using AVoIP Ethernet switches that support: Multicast forwarding or filtering, IGMP Snooping, IGMP Querier, IGMP snooping fast leave and Jumbo frame (8000 bytes or larger).
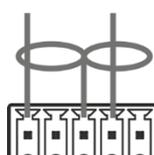
Connecting the audio input/output
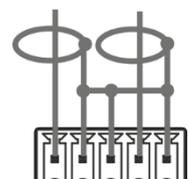
To a balanced
stereo audio
source/acceptor:
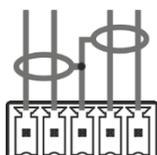
L+ L- G R+ R-

To an unbalanced
stereo audio
acceptor:

L+ L- G R+ R-

To an unbalanced
stereo audio source:

L+ L- G R+ R-

To achieve specified extension distances, use the recommended Kramer cables available at www.kramerav.com/product/KDS-EN7.

Using third-party cables may cause damage!

Step 5: Connect power

By-default, the device uses PoE for powering the device.
Optionally, you can separately purchase a power adapter to connect to the product and plug into the mains electricity.

Safety Instructions (See www.kramerav.com for updated safety information)
Caution:
- For products with relay terminals and GPIO ports, please refer to the permitted rating for an external connection, located next to the terminal or in the User Manual.
- There are no operator serviceable parts inside the unit.

Warning:
- Use only the power cord that is supplied with the unit.
- Disconnect the power and unplug the unit from the wall before installing.

Step 6: Operate KDS-EN7

Allocating the IP Address via LCD screen menu

KDS-EN7 / KDS-DEC7 IP default addresses are: 192.168.1.39 for the Encoder and 192.168.1.40 for the Decoder. By default, DHCP is enabled, and assigns an IP address to the device. If DHCP Server is not available, for example, in case a device is connected directly to the laptop, that device gets the default IP address. If these IP addresses are already in use, the system searches for a random unique IP in the range of 192.168.X.Y. the allocated IP address can be identified using the LCD screen menu.

To allocate the IP address via LCD screen Menu:

1. Connect the device to the 24V DC power adapter and connect the adapter to the mains electricity. The ON LED lights green, and the LINK LED flashes (indicating that no streaming activity is detected).

2. Use the Navigation button to view the assigned IP address on the LCD screen:

   - DEV STATUS > LAN1 Status

   - DEV STATUS > LAN2 Status (if the Service port connected as well).

Setting Channel Number

Each encoder requires a unique channel number, and the connected decoders should be tuned to that encoder channel. You can set the channel number via the LCD screen menu or the embedded web pages.

To set the channel number for KDS-EN7/KDS-DEC7, via LCD screen menu:

1. Connect the device to the 24V DC power adapter and connect the adapter to the mains electricity. The ON LED lights green, and the LINK LED flashes (indicating that no streaming activity is detected).

2. Change channel number using arrow buttons:

   - For the **KDS-EN7**, In the LCD screen menu, go to DEV SETTINGS > CH DEFINE, set a unique channel number and press **Enter** to save your selection.

   - For each of the **KDS-DEC7** devices, set to the defined **KDS-EN7** channel number.

To set the channel number via web pages:

1. Connect the **KDS-EN7** / **KDS-DEC7** Ethernet port to the network and power the device.

2. Access the embedded web pages.

3. In the **Main** page:

   For **KDS-EN7**:

   - Go to **AV Routing** page.

   - Select **Channel ID** and define the channel ID number.

   For **KDS-DEC7**:

   - Go to **AV Routing** page.

   - Select **Channel ID** (corresponding to the desired encoder channel ID).