UHCE-70XL

4K60 18G HDMI 2.0 Cost-effective

Extender Set over CAT5e/CAT6

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Version: UHCE-70XL_2021V1.7

Preface

Read this user manual carefully before using this product. Pictures shown in this manual is for reference only, different model and specifications are subject to real product.

This manual is only for operation instruction only, not for any maintenance usage. The functions described in this version are updated till February, 2021. In the constant effort to improve our product, we reserve the right to make functions or parameters changes without notice or obligation. Please refer to the dealers for the latest details.

All product function is valid till February 25, 2021.

Trademarks

Product model and logo **ut|e** are trademarks of U.T.E. electronic GmbH & Co. KG. Any other trademarks mentioned in this manual are acknowledged as the properties of the trademark owner. No part of this publication may be copied or reproduced without the prior written consent.

FCC Statement

This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. It has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a commercial installation.

Operation of this equipment in a residential area is likely to cause interference, in which case the user at their own expense will be required to take whatever measures may be necessary to correct the interference

Any changes or modifications not expressly approved by the manufacture would void the user's authority to operate the equipment.

SAFETY PRECAUTIONS

To insure the best from the product, please read all instructions carefully before using the device. Save this manual for further reference.

- Unpack the equipment carefully and save the original box and packing material for possible future shipment

- Follow basic safety precautions to reduce the risk of fire, electrical shock and injury to persons.

- Do not dismantle the housing or modify the module. It may result in electrical shock or burn.

- Using supplies or parts not meeting the products' specifications may cause damage, deterioration or malfunction.

- Refer all servicing to qualified service personnel.

- To prevent fire or shock hazard, do not expose the unit to rain, moisture or install this product near water.

- Do not put any heavy items on the extension cable in case of extrusion.

- Do not remove the housing of the device as opening or removing housing may expose you to dangerous voltage or other hazards.

- Install the device in a place with fine ventilation to avoid damage caused by overheat.

- Keep the module away from liquids.

- Spillage into the housing may result in fire, electrical shock, or equipment damage. If an object or liquid falls or spills on to the housing, unplug the module immediately.

- Do not twist or pull by force ends of the optical cable. It can cause malfunction.

- Do not use liquid or aerosol cleaners to clean this unit. Always unplug the power to the device before cleaning.

- Unplug the power cord when left unused for a long period of time.

- Information on disposal for scrapped devices: do not burn or mix with general household waste, please treat them as normal electrical wastes.

Table of Contents

1. Product Introduction

1.1 Introduction to 4K60 18G HDMI 2.0 Extender Set UHCE-70XL

The 4K60 18G HDMI 2.0 Extender UHCE-70XL is a cost-effective point-to-point extender set for HDMI 2.0 and IR signals; this kit supports 4K/UHD video @60 Hz with 4:4:4 Chroma sampling, as well as HDMI data rates up to 18 Gbps, HDCP 2.2 compliant. It provides HDMI transmission up to 70 meters (230 feet) for 4K@60Hz 4:4:4 or 80 meters (262 feet) for 1080p, over single CAT5e/6 cable.

It supports video resolution down-scaling, the 4K input can be automatically downscale to 1080p output for compatibility with 1080p display.

1.2 Features

- Supports HDMI 2.0, up to 4K@60Hz 4:4:4, HDR 10, 18G, HDCP 2.2.
- Extends 4K HDMI signal up to 70m (230 ft) and 1080p HDMI signal up to 80m (262 ft) over a single CAT5e/6 cable
- HDMI loop out on transmitter
- Bi-directional IR pass-through
- Supports video resolution down-scaling, the 4K input can be automatically degraded to 1080p output on receiver for compatibility with legacy 1080p display device
- Features visually lossless compression with no latency
- Smart EDID management
- Compact design, easy to install and simple to operate

1.3 Package Contents

- 1 x UHCE-70XLT: 4K60 Transmitter
- 1 x UHCE-70XLR: 4K60 Receiver
- 1 x Power Adaptor (12V DC 1A)
- 1 x User manual
- 1 x IR Receiver
- 1 x IR Emitter
- 2 x Velcro Tape

📖 Notes：

- Please confirm if the product and the accessories are all included, if not, please contact with the dealers.
- Please contact your dealer immediately if any damage or defect in the in the components is found.

2. Panel Description of UHCE-70XL
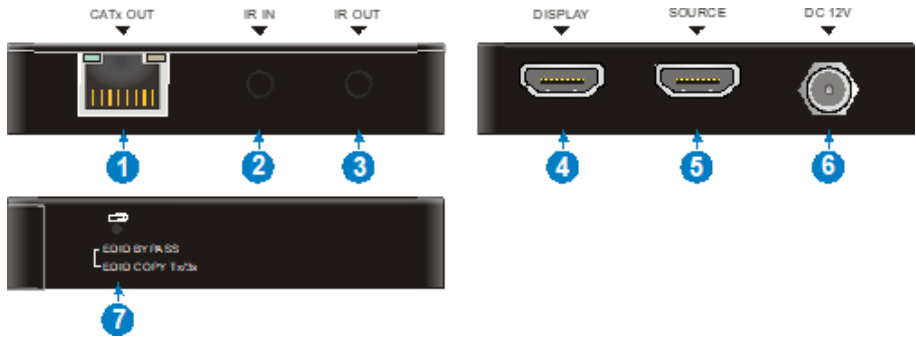
2.1 4K60 18G HDMI 2.0 Transmitter (UHCE-70XLT)

Figure 2-1 UHCE-70XLT (4K60 18G HDMI2.0Transmitter)

No.	Name	Description
①	CATx OUT	RJ45 port to connect the CATx IN port of receiver by CATx cable. It supports 12V PoC to power the receiver. The orange LED illuminates when there is a valid HDMI signal input. The green LED illuminates when power is applied.
②	IR IN	3.5mm mini jack to connect IR receiver for IR pass-through.
③	IR OUT	3.5mm mini jack to connect IR emitter for IR pass-through.
④	DISPLAY	Type-A female HDMI port to connect HDMI display device.
⑤	SOURCE	Type-A female HDMI port to connect HDMI source device.
⑥	DC 12V	DC connector for the power adapter connection.
⑦	EDID Management	• EDID BYPASS: Press the button with paper clip or other sharp tool to learn the EDID from the remote display connected to the Receiver's HDMI out. • EDID COPY Tx/3s: Press and hold the button for 3 seconds to copy the EDID from the local display connected to the Transmitter's HDMI out. • DEFAULT: Factory default, the source device learns EDID from the TV which has the lowest resolution. Press and hold the button while the product is in turned-off period, and then release the button after 6 seconds of power on can restore the default setting. 📖 **Note**: If the standard resolution of the local display is lower than the receiver's, the unit will output the video with the lower resolution to ensure video can be shown on both displays.

2.2 4K60 18G HDMI 2.0 Receiver (UHCE-70XLR)

Figure 2-2 UHCE-70XLR (4K60 18G HDMI2.0 Receiver)

No.	Name	Description
①	DISPLAY	Type-A female HDMI port to connect HDMI display device.
②	CATx IN	RJ45 port to connect the CATx OUT port of transmitter by CATx cable. It supports 12V PoC and the receiver can be powered from the transmitter. The orange LED illuminates when there is a valid HDMI signal input. The green LED illuminates when power is applied.
③	IR IN	3.5mm mini jack to connect IR receiver for IR pass-through.
④	IR OUT	3.5mm mini jack to connect IR emitter for IR pass-through.

📖 **Note**: Pictures shown in this manual are only for reference.

3. System Connection

3.1 Usage Precautions

- Make sure all components and accessories included before installation.

- System should be installed in a clean environment and has a prop temperature and humidity.
- All of the power switches, plugs, sockets and power cords should be insulated and safety.
- All devices should be connected before power on.

- Use shielded straight-thru CAT5e/ CAT6 cable with TIA/EIA T568B terminations for good transmission effect.

3.2 System Diagram UHCE-70XL

The following figure shows a typical application that can be realized with 4K60 18G HDMI 2.0 Cost-effective Extender Set over CAT5e/CAT6 UHCE-70XL:
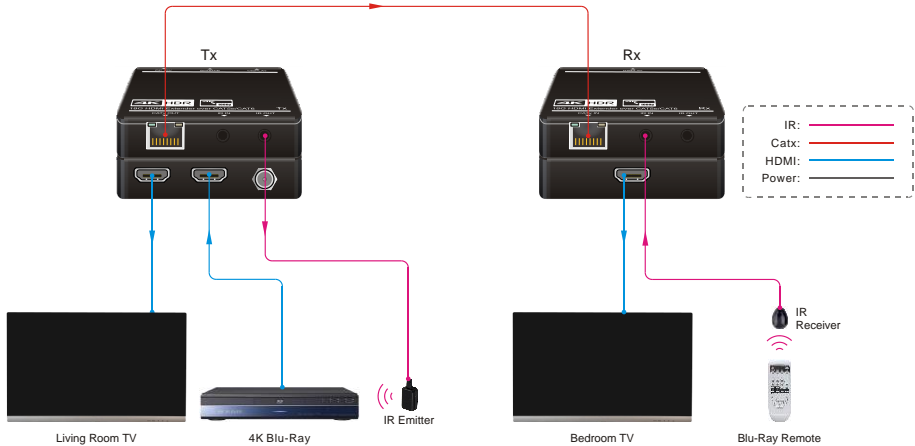

Figure 3-1 Connection and System Diagram

3.3 Connection Procedure

Step1. Connect HDMI source (e.g. Blue-ray, DVD, PS4, Laptop, …) to **SOURCE** port of transmitter with HDMI cable.

Step2. Connect local HDMI displayer (e.g. HDTV, Projector, …) to **DISPLAY** port (HDMI Loop-Out) of transmitter with HDMI cable

Step3. Connect **CATx OUT** port of transmitter and **CATx IN** port of receiver with single CAT5e/ CAT6 cable.

Step4. Connect HDMI displayer (e.g. HDTV, Projector, …) to **DISPLAY** port of receiver with HDMI cable.

Step5. Both transmitter and receiver have "**IR IN**" and "**IR OUT**" Port.
When one end is used as an IR receiver, the signal sent from the end can only be transmitted via the other end.
For example: When "**IR IN**" of transmitter connects with an IR receiver, the IR emitter must connect to "**IR OUT**" of receiver.

Step6. Connect **DC 12V** port of transmitter with DC12V power adaptor.

📖 **Notes**:

● When connecting to 4K sources, make sure the HDMI cables are compliant with HDMI2.0 to ensure reliable transmission.

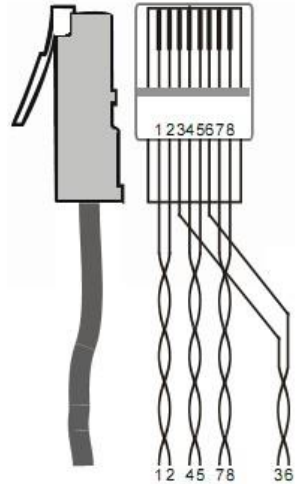● Note that the CATx cable length should not be less than 15 meters for best video output.

3.4 System Application

The 4K60 18G HDMI2.0 Extender Set UHCE-70XL has a good application in various occasions, such as home theater and home entertainment etc.

3.5 Twisted Pair Cable Connection

The twisted pair used in this extender MUST be a straight-through cable.

TIA/EIA T568A		TIA/EIA T568B	
Pin	Cable color	Pin	Cable color
1	green white	1	orange white
2	green	2	orange
3	orange white	3	green white
4	blue	4	blue
5	blue white	5	blue white
6	orange	6	green
7	brown white	7	brown white
8	brown	8	brown
1st Ground	4--5	1st Ground	4--5
2nd Ground	3--6	2nd Ground	1--2
3rd Group	1--2	3rd Group	3--6
4th Group	7--8	4th Group	7--8

📖 **Note**: Cable connectors MUST be metal one, the shielded layer of cable MUST be connected to the connector's metal shell, to make a better transmission.
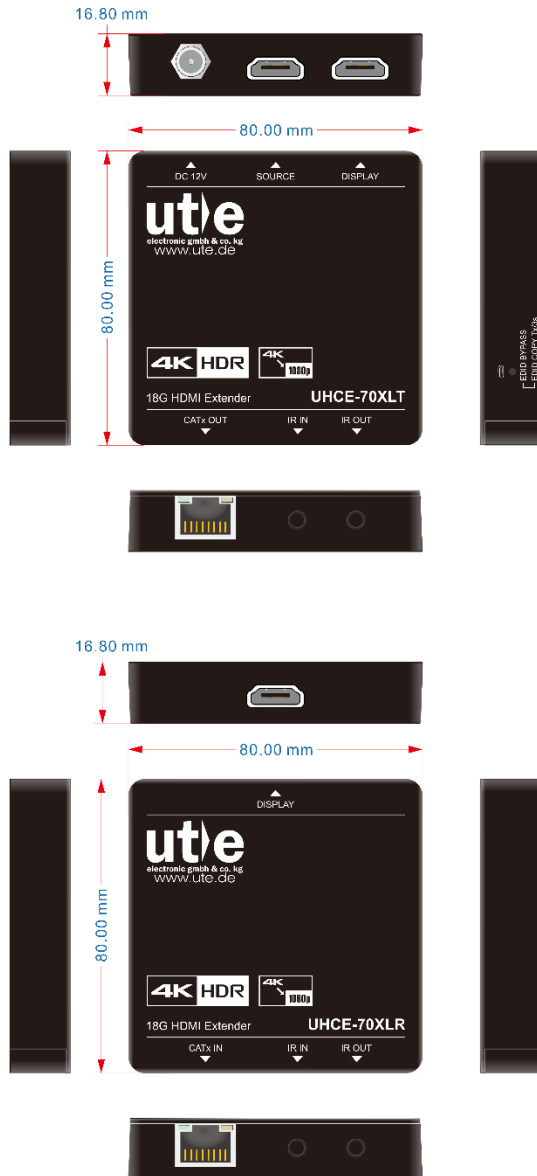
4. Specification

Model / Spec	Transmitter (UHCE-70XLT)	Receiver (UHCE-70XLR)
Input		
Input Signal	1 HDMI &1 IR	1 CATx IN & 1 IR,
Input Connector	1 HDMI female (19-pin type-A), 1 3.5mm mini jack	1 RJ-45, 1 3.5mm mini jack
Output		
Output Signal	1 CATx OUT, 1 HDMI, 1 IR	1 HDMI, 1 IR
Output Connector	1 RJ-45, 1 HDMI female (19-pin type-A), 1 3.5mm mini jack	1 HDMI female (19-pin type-A), 1 3.5mm mini jack
General		
Video Resolution	Up to 4K@60Hz 4:4:4, HDR 10	
HDMI Audio Format	Supports LPCM 2ch, LPCM 5.1ch, LPCM 7.1ch, Dolby Digital 2ch, Dolby Digital 5.1ch, DTS 2ch, DTS 5.1ch, DTS 96/24 5.1ch.	
Transmission Distance	4K≤ 70 meters (230ft) / 1080p ≤ 80 meters (262ft)	
Bandwidth	18Gbps	
HDMI Version	HDMI 2.0	
HDCP Version	HDCP 2.2. compliant The HDCP of output follows the HDCP version of display device.	
EDID	Smart EDID management	
Power Supply	Input: 100VAC~240VAC, 50/60Hz Output: DC 12V, 1A	
Power Consumption	4 W (max.)	
Operation Temperature	-5 ~ 55℃	
Storage Temperature	-25 ~ 70℃	
Humidity	10% ~ 90%	
Dimension (W*H*D)	80mm x 16.8mm x 80mm	80mm x 16.8mm x 80mm
Net Weight	70g	70g

 Notes:
- Note that the CATx cable length should not be less than 15 meters for best video output.
- The UHCE-70XL does not support HBR audio.

5. Panel Drawing

📖   **Note**: Pictures shown in this manual are only for reference.

6. Troubleshooting & Maintenance

- **No image on display:**
  - Ensure that the display device has been set to the correct input.
  - Ensure that the HDMI cables used for both the source/transmitter and the receiver/display are properly connected and are working. Test the HDMI cables directly from a source to display and ensure their operation.
  - Ensure that the CAT5e/CAT6a cable has not been damaged and that it has been terminated correctly with T568A or T568B on both ends. A temporary length of CAT5e/Cat6 can be used for testing to ensure that the devices are all compatible and working properly.
  - Ensure proper grounding of the power supply.

- **Color lose or poor picture quality:**
  - Ensure that the HDMI cables used for both the source and transmitter and the receiver and display are properly connected and are of good quality. Test the HDMI cables directly from a source to display and ensure their picture quality.
  - Ensure proper grounding of the power supply.
  - If the static becomes stronger or picture quality becomes worse when connecting the video connectors, this may be due to improper grounding.
  - Check the grounding and make sure all the components are properly grounded to a common ground. Improper grounding may cause damage to the receiver.

If your problem persists after following the above troubleshooting steps, seek further help from authorized dealer or our technical support (info@ute.de).

7. After-sales Service

If there appear some problems when running the 4K60 18G HMDI2.0 Cost-effective Extender Set over CAT5e/CAT6 UHCE-70XL, please check and deal with the problems referring to this user manual. Any transport costs are borne by the users during the warranty.

The return of a product to our Customer Service implies the full agreement of the terms and conditions hereinafter. There terms and conditions may be changed without prior notice.

1) **Product Limited Warranty:** We warrants that its products will be free from defects in materials and workmanship for two years**,** which starts from the first day you buy this product (The purchase invoice shall prevail).
   Proof of purchase in the form of a bill of sale or receipted invoice which is evidence that the unit is within the Warranty period must be presented to obtain warranty service.

2) **Scope**
   These terms and conditions of Customer Service apply to the customer service provided for the products or any other items sold by authorized dealer only.

3) **What the warranty does not cover (Warranty Exclusion)**
   - Warranty expiration.
   - Factory applied serial number has been altered or removed from the product.
   - Damage, deterioration or malfunction caused by:
     - Normal wear and tear.
     - Use of supplies or parts not meeting our specifications.
     - No certificate or invoice as the proof of warranty.
     - The product model showed on the warranty card does not match with the model of the product for repairing or had been altered.
     - Damage caused by force majeure.
     - Servicing not authorized by distributor.
     - Any other causes which does not relate to a product defect.
   - Shipping fees, installation or labor charges for installation or setup of the product.

4) **Documentation:** Customer Service will accept defective product(s) in the scope of warranty coverage at the sole condition that the defeat has been clearly defined, and upon reception of the documents or copy of invoice, indicating the date of purchase, the type of product, the serial number, and the name of dealer.

5) Technical Support: Email to our after-sales department or make a call, please inform us the following information about your cases.

- ● Product version and name.
- ● Detailed failure situations.
- ● The formation of the cases.

Remarks: For any questions or problems, please try to get help from your local dealer or our customer support (info@ute.de).

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