

User Manual

HD22-4X 4K 2x5 HDBaseT Splitter



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Version: HD22-4X_2017V1.0_rev2


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 March 2017. 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 2017-3-3.

Trademarks

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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.

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1. Introduction

1.1 Brief Introduction to 4K 2x5 HDBaseT Splitter Set HD22-4X

The HD22-4X is a 4K 2x5 HDBaseT Splitter Kit designed to provide HDMI video switching, video distribution and extension, system control and audio de-embedding in a convenient kit. It includes 1 HDBaseT Splitter, 4 HDBaseT Receivers and 1 Wallplate Control Keypad.

One of two HDMI sources can be selected and distributed to 4 HDBaseT and one mirrored HDMI outputs. The video extension distance from HDBaseT Splitter to HDBaseT Receivers can up to 70m at 1080p or 40m at 4K@60Hz 4:2:0.


The kit also supports IR control, the IR signals can be sent to far-end IR output on HDBaseT Receivers to control far-end displays. Additionally, it support audio de-embedding via COAX and balanced analog audio outputs.

1.2 Features

- Features 2 HDMI inputs, 4 HDBaseT outputs, 1 mirrored HDMI output, 1 COAX output and 1 balanced analog audio output.
- The highest video resolution supports 4Kx2K@60Hz 4:2:0.
- HDMI1.4&HDCP2.2 compliant, and is backwards compatible with previous version of HDCP and HDMI.
- Transmits 4Kx2K up to 131ft (40m) or 1080p up to 230ft (70m) via HDBaseT port.
- Supports PoC, the HDBaseT Receivers can be powered by HDBaseT Splitter via HDBaseT ports.
- Supports IR passthrough to control far-end displays from local.
- Supports external Wallplate Control Keypad to switch HDMI input and turn on/off displays.
- Real-time display of working status via LED indicators.
- Support advanced EDID management.

1.3 Package List

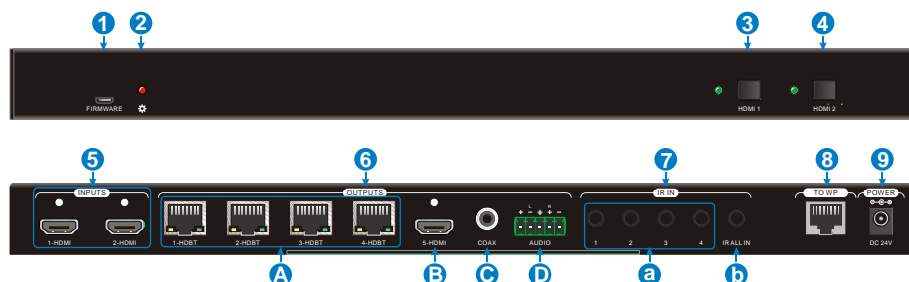
- 1 x 4K 2x5 HDBaseT Splitter
- 1 x Wallplate Control Keypad
- 2 x Mounting ears with 4 Screws
(for 4K 2x5 HDBaseT Splitter)
- 4 x Plastic cushions
(for 4K 2x5 HDBaseT Splitter)
- 2 x mounting Screws
(for Wallplate Control Keypad)
- 5 x IR Receiver (5V)
- 4 x HDBaseT Receivers
- 1 x Power Adapter (24VDC 2.5A)
- 8 x Mounting ears with 8 Screws
(for HDBaseT Receivers)
- 16 x Plastic cushions
(for HDBaseT Receivers)
- 1 x connection cable
(for Wallplate Control Keypad)
- 1 x User Manual

 **Note:** Please confirm if the product and the accessories are all included, if not, please contact with the dealers.

HD22-4X: 4K 2x5 HDBaseT Splitter

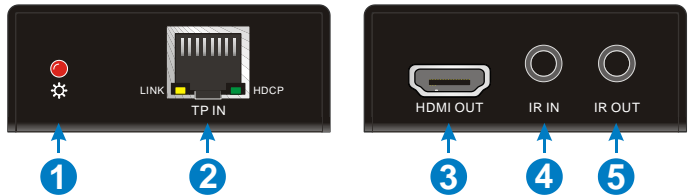
2. Panel Description of HD22-4X

2.1 4K 2x5 HDBaseT Splitter HD22-4X



No.	Name	Description
①	FIRMWARE	USB port, used for firmware update.
②	Power indicator	Red once powered on.
③	HDMI 1	1-HDMI input selector and activity LED.
④	HDMI 2	2-HDMI input selector and activity LED.
⑤	INPUTS	2 HDMI input ports, connect with HDMI source device.
⑥	OUTPUTS	<p>A. 4 HDBaseT outputs, connect with HDBaseT Receivers HD22-4X-R via Cat5e/6/7 cable.</p> <p>B. HDMI output, connects with display.</p> <p>C. COAX digital audio output, connects with audio broadcast device.</p> <p>D. Balanced analog audio output, connects with audio broadcast device.</p>
⑦	IR IN	<p>a. 4 IR input ports, used together with the IR output on the corresponding HDBaseT Receiver to build one-to-one mode. The IR signal can be transmitted to the corresponding IR output to control the display.</p> <p>b. 1 IR ALL IN port, used together with all IR outputs on far-end HDBaseT Receivers to build one-to-all mode. The IR signals can be transmitted to IR outputs to control all displays.</p>
⑧	TO WP	RJ 45 connector, connects with Wallplate Control Keypad.
⑨	POWER	PoC technology. Connects with 24V DC power adaptor.

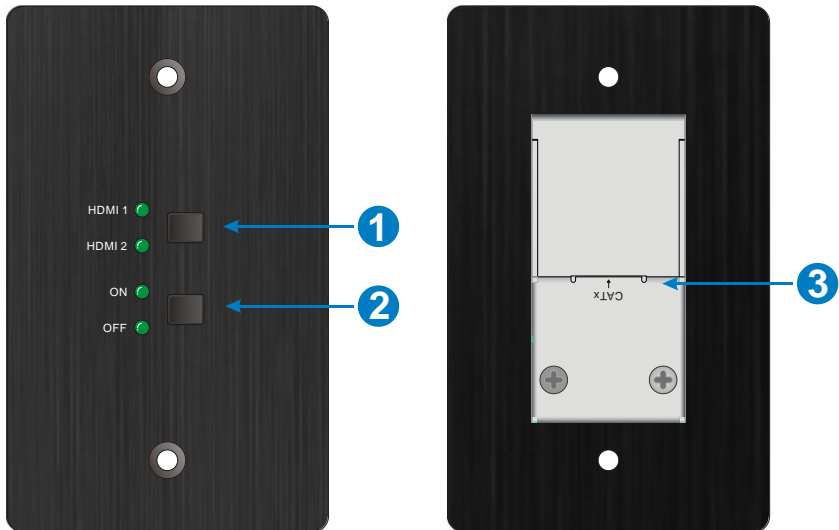
2.2 4K HDBaseT Receiver HD22-4X-R



No.	Name	Description
①	Power indicator	Red once powered on.
②	TP IN	Connects with 4K 2x5 HDBaseT Splitter via Cat5e/6/7 cable.
③	HDMI OUT	Connects with HDMI display.
④	IR IN	Connects with the IR Receiver. This port is not used in this system.
⑤	IR OUT	Connects with the IR Emitter to send the IR signal from the 4K 2x5 HDBaseT Splitter HD22-4X to control the display which is connected to the HDMI output on HDBaseT Receiver.

HD22-4X: 4K 2x5 HDBaseT Splitter

2.3 Wallplate Control Keypad



No.	Name	Description
①	Source Selector	Press it to select video input between 1-HDMI and 2-HDMI, and the corresponding activity LED will turn green.
②	Display Control	Press it to turn on/off display, and the corresponding activity LED will turn green (only with CEC support).
③	CATx	RJ45 connector, connect with the 4K 2x5 HDBaseT Splitter.

3. System Connection

3.1 Usage Precautions

- 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 safe.
- All devices should be connected before power on.

3.2 System Diagram HD22-4X

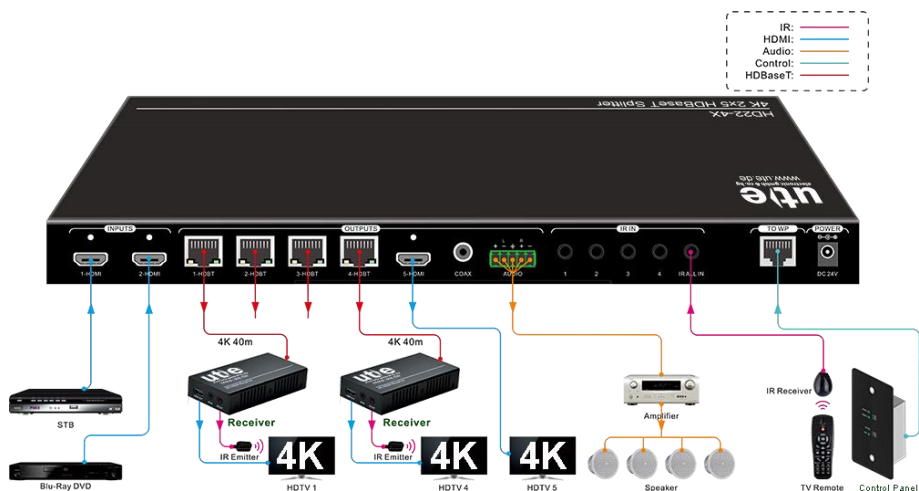


Figure 3- 1 Connection and System Diagram

Note: Pictures shown in this manual are for reference only, different model and specifications are subject to real product.

3.3 Connection Procedure

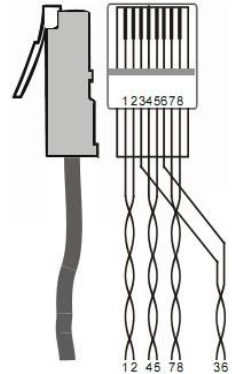
- Step1.** Connect HDMI source devices (e.g. Blue-ray DVDs) to HDMI input ports of 4K 2x5 HDBaseT Splitter HD22-4X with HDMI cables.
- Step2.** Connect HDBaseT Receivers HD22-4X-R to HDBaseT output ports of 4K 2x5 HDBaseT Splitter HD22-4X with Cat5e/6/7 cables.
- Step3.** Connect HDMI displays (HDTVs) to HDMI output ports of HDBaseT Receivers HD22-4X-R with HDMI cables.
- Step4.** Connect HDMI display (HDTV) to HDMI output port of 4K 2x5 HDBaseT Splitter HD22-4X with HDMI cable.
- Step5.** Connect audio broadcast device (Amplifier) to the COAX or balanced analog audio output port with audio cable.
- Step6.** Connect Wallplate Control Keypad to the TO WP port of 4K 2x5 HDBaseT Splitter HD22-4X with the included connect cable.
- Step7.** IR Connection:
- **One-to-one:** Connect 4 IR Receivers to 4 IR input ports of 4K 2x5 HDBaseT Splitter, and then connect 4 IR Emitters to IR OUT ports of HDBaseT Receives. The IR signal can be transmitted from IR Receiver to the corresponding IR Emitter to control the display connected with corresponding HDBaseT Receiver.
 - **One-to-all:** Connect one IR Receiver to IR ALL IN port of 4K 2x5 HDBaseT Splitter, and then connect 4 IR Emitters to IR OUT ports of HDBaseT Receives. The IR signal can be transmitted from the IR Receiver to all IR Emitters to control the displays connected with HDBaseT Receivers.
- For more details, please refer to the **4.2 Control far-end display.**
- Step8.** Connect the 24VDC power adapter to the power port of 4K 2x5 HDBaseT Splitter HD22-4X.

3.4 Twisted Pair Cable Connection

The twisted pair **MUST** be a straight-through cable.

The connectors can be T568A or T568B, but both sides must be the same.

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



 **Note:** Every pin in pure color groups with its half white pin.

HD22-4X: 4K 2x5 HDBaseT Splitter

4. System Operation

4.1 Video Switching

There are two ways can be chosen to switch one HDMI video input between 1-HDMI and 2-HDMI.

- Press **HDMI 1** or **HDMI 2** on front panel of 4K 2x5 HDBaseT Splitter HD2-4X to select HDMI video input, and then the corresponding activity LED will turn green.
- Press the source selector on Wallplate Control Keypad to select HDMI video input, and then the corresponding activity LED will turn green.

4.2 Control far-end display

4.2.1 IR passthrough control: One-to-one mode

Connect 4 IR Receivers to 4 IR input ports of 4K 2x5 HDBaseT Splitter HD22-4X, and then connect 4 IR Emitters to IR OUT ports of HDBaseT Receives HD22-4X-R. The IR signal can be transmitted from IR Receiver to the corresponding IR Emitter to control the display connected with corresponding HDBaseT Receiver.

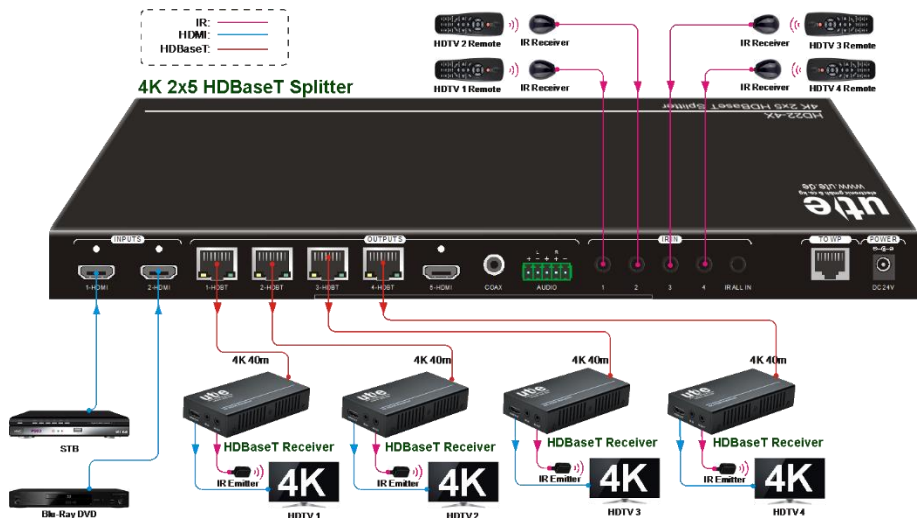


Figure 4- 1 Connection and System Diagram: IR One-to-one mode

HD22-4X: 4K 2x5 HDBaseT Splitter

4.2.2 IR passthrough control: One-to-all mode

Connect one IR Receiver to IR ALL IN port of 4K 2x5 HDBaseT Splitter, and then connect 4 IR Emitters to IR OUT ports of HDBaseT Receives. The IR signal can be transmitted from the IR Receiver to all IR Emitters to control the displays connected with HDBaseT Receivers.

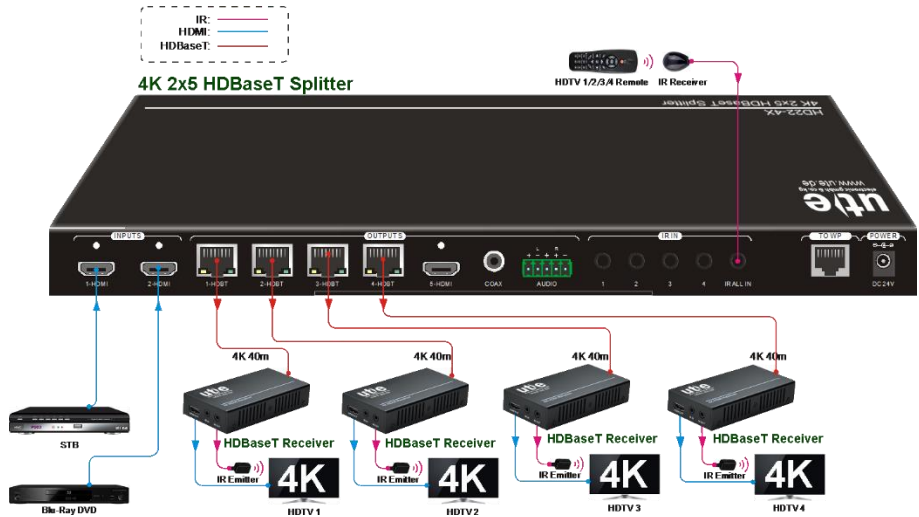


Figure 4- 2 Connection and System Diagram: IR One-to-all mode

4.2.3 Turn on/off displays via Wallplate Control Keypad

Press the display control button on Wallplate Control Keypad to turn on/off HDMI display device, and then the corresponding activity LED ON/OFF will turn green (only CEC support).

4.3 EDID Management

The EDID setting for the 4K 2x5 HDBaseT Splitter is defined by the first detected display (detecting from 1-HDBT~5-HDMI).

For example: when output 1-HDBT connects with a 4K display, 4K 2x5 HDBaseT Splitter will select 4K as output resolution and distribute 4K video signal to all displays. If a display does not support the 4K video content, there will be no video output on the display.

5. Specification

5.1 4K 2x5 HDBaseT Splitter HD22-4X

Input & Output	
Input	(2) HDMI
Input Connector	(2) Type A Female HDMI
Output	(4) HDBaseT; (1) HDMI; (1) COAX; (1) AUDIO
Output Connector	(4) Female RJ45(with LED indicators); (1) Type A Female HDMI; (1) SPDIF; (1) 5-Pin phoenix connector
Control	(4) IR IN; (1) IR ALL IN; (1) TO WP
Control Connector	(5) 3.5mm mini jacks; (1) RJ45
General	
Maximum Resolution	4Kx2K@60Hz 4:2:0
Bandwidth	10.2Gbps
HDCP	Compliant with HDCP2.2,and is backward compatible to HDCP1.4
EDID	In-built EDID management
Power Supply	Input:100V~240V AC; Output: 24VDC 2.5A
Power Consumption	35 (max)
Temperature	-10°C ~ 55°C
Humidity	10% ~ 90%
Dimension (W*H*D)	360mm x 28mm x 150mm
Net Weight (g)	470g

5.2 4K HDBaseT Receiver HD22-4X-R

Input & Output	
Input	(1) HDBaseT;
Input Connector	(1) Female RJ45(with LED indicators);
Output	(1) HDMI
Output Connector	(1) Type A Female HDMI
Control	(1) IR IN; (1) IR OUT
Control Connector	(2) 3.5mm mini jacks
General	
Resolution Range	Up to 4Kx2K@60Hz
Transmission Mode	HDBaseT
Transmission Distance	1080P@60Hz ≤70m; 4Kx2K@60Hz ≤40m
Bandwidth	10.2Gbps
HDMI Standard	Support HDMI1.4 & HDCP1.4
Temperature	0 ~ +50°C
Humidity	10% ~ 90%
Power Supply	Powered by 4K 2x5 HDBaseT Splitter
Dimension (W*H*D)	61mm x 24mm x 120mm
Net Weight (g)	280g

5.1 Wallplate Control Keypad

Connection Port	(1) CATx (RJ45)
Control Button	(1) HDMI input Selector (9mmx7.8mm); (1) Displays control button (9mmx7.8mm)
General	
Temperature	0 ~ +50°C
Humidity	10% ~ 90%
Power Supply	Powered by 4K 2x5 HDBaseT Splitter
Dimension (W*H*D)	70mm x 114mm x 38mm
Net Weight (g)	116g

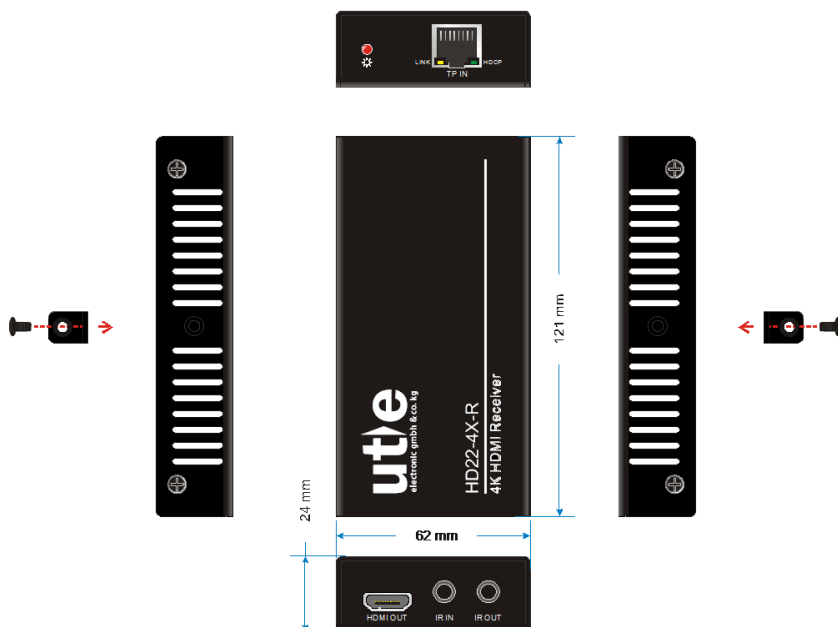
HD22-4X: 4K 2x5 HDBaseT Splitter

6. Panel Drawing

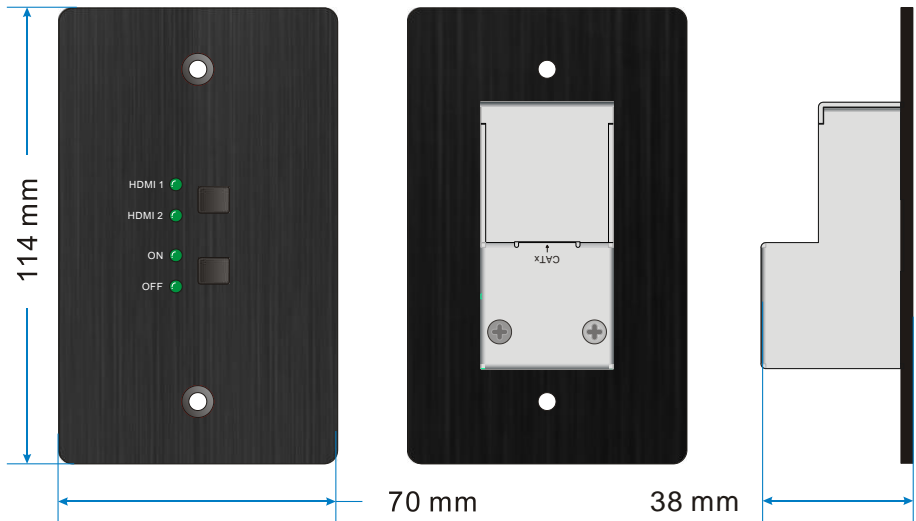
6.1 4K 2x5 HDBaseT Splitter HD22-4X



6.2 4K HDBaseT Receiver HD22-4X-R



6.3 Wallplate Control Keypad



7. Troubleshooting & Maintenance

Problems	Causes	Solutions
Color losing or no video signal output in HDMI display	The connecting cables may not be connected correctly or it may be broken.	Check whether the cables are connected correctly and in working condition.
No HDMI signal output while local HDMI input is in normal working state		
Static becomes stronger when connecting the video connectors	Bad grounding	Check the grounding and make sure it is connected well.

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

8. After-sales Service

If there appear some problems when running this product, please check and deal with the problems referring to this user manual. Any transport costs are borne by the users during the warranty.

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) What the warranty does not cover (servicing available for a fee):

- 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.
 - Any other causes which does not relate to a product defect
- Delivery, installation or labor charges for installation or setup of the product

3) 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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