User Manual

VL120007

HDBaseT Extender Set 70m



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PROFESSIONAL AV SOLUTIONS

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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 A 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 Introduction to VL120007

The extender set consists of a transmitter and receiver pair. HDMI signals are input into the transmitter and HDBaseT technology is used to transmit the signals to the receiver up to 70 m via a Cat5e/Cat6 cable. The receiver then outputs the HDMI signal.

Bi-directional IR is also transmitted across the Cat5e/Cat6 cable. The extender set supports PoC, which can be used to power the receiver via the Cat5e/Cat6 cable. This eliminates the need for power at the receiver end.

1.2 Features

- Supports full HD: Delivers high-resolution image (1080p 3D, 4Kx2K)
- Maximum transmission distance is 230 ft. (70 m) for 1080p and 131 ft. (40m) for 4Kx2K over single CAT5e/CAT6 cable
- High Bandwidth: 10.2Gps.
- HDTV Compatible, use HDMI 1.4 and HDCP compliant.
- Support PoC & CEC.
- Uses HDBaseT technology for extended capability and reliability
- Bi-directional IR control
- LED indicators show work status.

Note: Please use a CAT5e cable with low impedance (Shielded twisted pair will be better and should be well grounded) for good transmission effect.

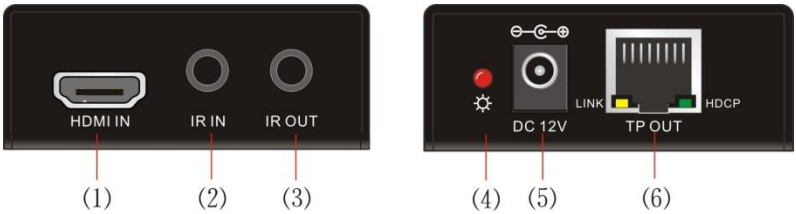
1.3 Package List

- 1 x VL120007 (including TX and RX)
- 4 x detachable mounting ears
- 4 x screws
- 8 x plastic cushions
- 1 x power adapter (DC 12V 1A)
- 1 x user manual

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

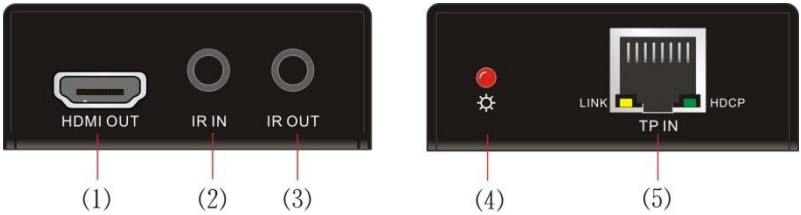
2. Introduction of Product Appearance

2.1 Appearance of VL120007T



1) HDMI IN: Connect to HDMI source.
2) IR IN: Connect to an IR receiver, the IR signal received from this port can only send out via VL120007R.
3) IR OUT: Connect with IR emitter, the sent IR signals are received by VL120007R.
4) Power Indicator: illuminate when power up
5) DC 12V: Connect with power supply, energize both VL120007T and VL120007R (PoC solution) synchronously.
6) TP OUT: Connect to the TP IN socket on the VL120007R via CAT5e/ CAT6 cable.

2.2 Appearance of VL120007R



1) HDMI Out: Connect to HDMI display.
2) IR IN: Connect to an IR receiver, the IR signal received from this port can only send out via VL120007T.
3) IR OUT: Connect with IR emitter, the sent IR signals are received by VL120007T.
4) Power Indicator: illuminate when power up
5) TP IN: Connect to the HDBaseT port on the VL120007T via CAT5e/ CAT6 cable.

Note: VL120007 boasts 2 indicators to show real-time operation information:

Indicator	Function	Details
Green	Show input signal connection	**Connected**: HDCP Compliant: Illuminate; Not HDCP Compliant: Blink. **Disconnected**: Off
Yellow	Indicate linking status of the transmitter and the receiver	**Connected**: Illuminate **Disconnected**: Off

3. System Connection

3.1 Usage Precautions

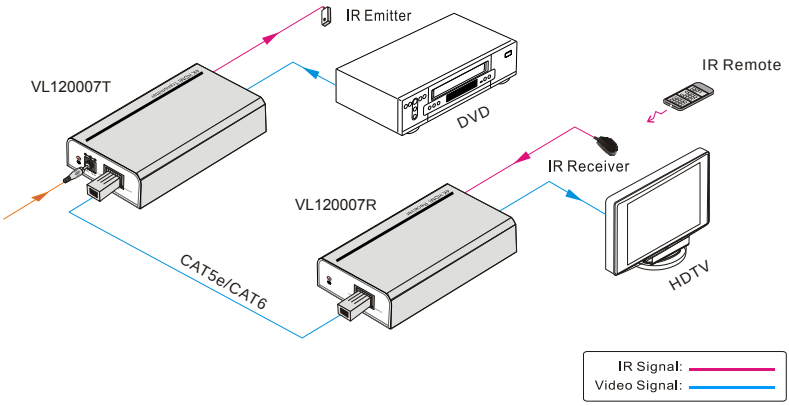
1) System should be installed in a clean environment and has a prop temperature and humidity.

2) All of the power switches, plugs, sockets and power cords should be insulated and safety.

3) All devices should be connected before power on.

4) The Cat5e/Cat6 terminations for HDBaseT devices should be a straight-thru TIA/EIA T568B standard.

3.2 System Diagram



3.3 Connection Procedure

Step1. Connect HDMI source (such as Blue-ray DVD) to **HDMI In** port of the transmitter with an HDMI cable.

Step2. Connect **TP OUT** port of the transmitter to **TP IN** port of the receiver through a CAT5e/CAT6 cable.

Step3. Connect a HDMI displayer (such as HDTV) to **HDMI Out** port of the receiver with HDMI cable.

Step4. When using the bi-directional IR control, do the following.

a) Connect the IR emitter at either end to the **IR OUT** port on either the transmitter or the receiver.

b) When using a powered IR receiver, connect via a 3.5 mm stereo plug to the **IR IN** on either the receiver or the transmitter.

Step5. Connect with DC 12V power adaptor to the power port of VL120007T, VL120007R be energized synchronously with PoC solution.

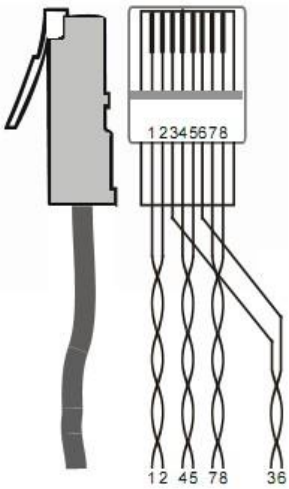
3.4 Application

VL120007 has a good application in various occasions, such as computer realm, monitoring, big screen displaying, meeting room, education and bank & securities institution etc.

3.5 Twisted Pair Cable Connection

The Cat5e/Cat6 terminations for HDBaseT devices should be a straight thru TIA/EIAT568B standard. TIA/EIA T568A standard is NOT recommended.

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: To make a better transmission, cable connectors MUST be metallic, the shielded layer of cable MUST be connected to the connector's metal shell.

4. Specification

Model / Spec	VL120007T	VL120007R
Input		
Input Signal	1 HDMI,1 IR	1 IR, 1 RJ-45
Input Connector	HDMI female 3.5mm mini jack	3.5mm mini jack RJ-45
Video Signal	HDMI1.4	HDMI1.4
Audio	Digital audio, transmit through HDMI audio	Digital audio, transmit through HDMI audio
Output		
Output	1 RJ-45, 1 IR	1 HDMI, 1 IR
Output Connector	RJ-45 3.5mm mini jack	HDMI female 3.5mm mini jack
Video signal	HDMI1.4	HDMI1.4
Transmission Mode	HDBaseT	HDBaseT
General		
Resolution Range	800x600@60Hz~4K×2K	
Transmission Distance	Maximum distance 230 ft. (70 m)	
SNR	>70dB@ 100MHz-100M	
Bandwidth	10.2Gbps	
THD	＜0.005%@1KHz	
HDMI Standard	Support HDMI1.4, and HDCP	
Impedance	75Ω	
Temperature	0~ 50℃	
Reference Humidity	10% ~ 90%	
Power Supply	DC 12V, 1A	
Power Consumption	9.6W	
Dimension (W*H*D)	61 x 24x 120 mm	61 x 24x 120 mm
Weight	0.28Kg	0.28Kg

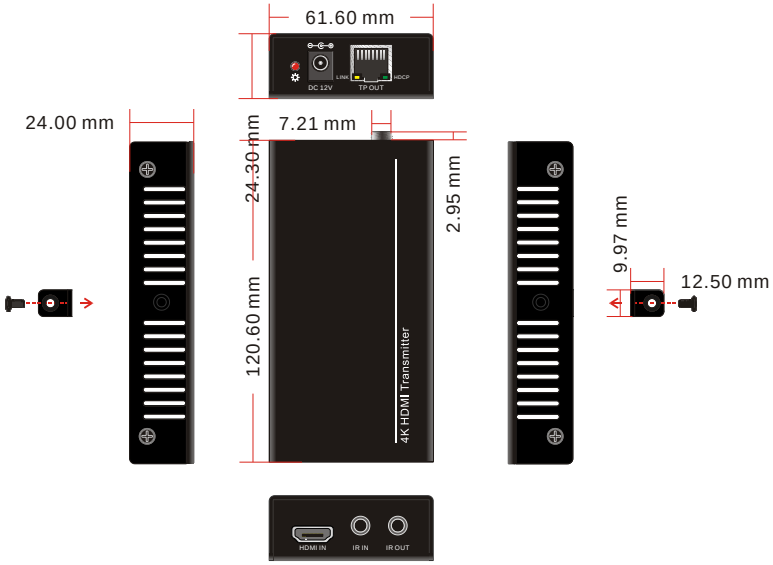
NOTE: All nominal levels are at ±10%.

4.1 Supported Resolution

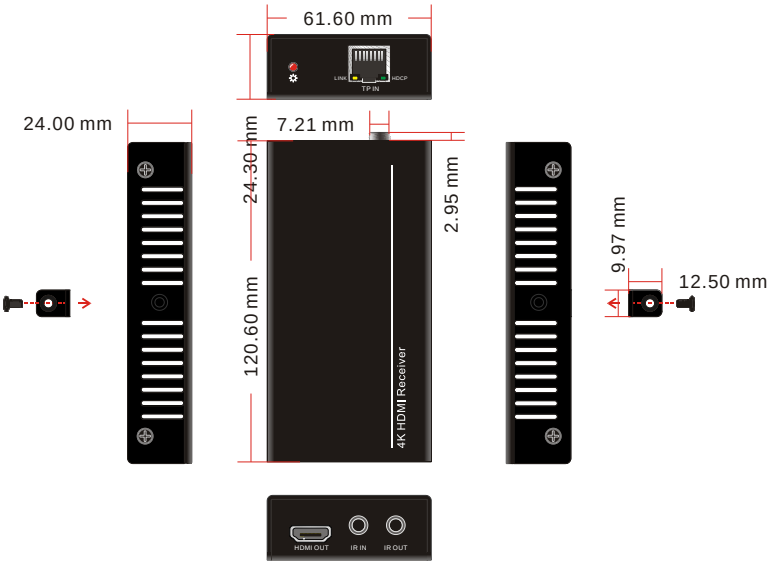
Format	Resolution
HDMI	480I, 480P, 576I, 576P, 720P, 1080I, 1080P, 4Kx2K, 1080P 3D
DVI	640x480@60Hz, 640x480@72Hz, 640x480@75Hz, 800x600@60Hz, 800x600@72Hz, 800x600@75Hz, 1024x768@60Hz, 1024x768@70Hz, 1024x768@75Hz, 1280x720@60 Hz, 1280x1024@60Hz, 1280x1024@75Hz, 1600x1200@60Hz, 1920x1080@60Hz, 1920x1200@60Hz

Note: VL120007 supports 4k&1080p 3D HDMI signal, please adopt quality HDMI cables compliant with HDMI1.4 for reliable transmission when using.

5. Panel Drawing



VL120007T



VL120007R

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/Cat6 cable has not been damaged and that it has been terminated correctly with 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.
  - Known issues with HDMI 1.2 source devices:

    Older compatibility (HDMI 1.2) may result in HDBaseT transmission issues. Please contact Technical Support of obsupport@eet.dk for a solution to these issues.
- **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.

7. After-sales Service

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

1) **Product Limited Warranty:** We warrant that our products will be free from defects in materials and workmanship for **three 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:**
   - 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 distributor, or contact Customer Support at **obsupport@eet.dk**

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