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ALFATRON ALF-TPUHD70-RS Mini-Size Extender Set User Manual

www.alfatronelectronics.com
ALFATRON ELECTRONICS GmbH GERMANY
ALF-TPUHD70-RS

Contents

Preface

Read this user manual carefully before using this product. Pictures shown in this manual are for reference only; different models and specifications are subject to real products.
This manual is only for operation instruction only, not for any maintenance usage.

Trademarks

The product model and logo are trademarks. 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 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 manufacturer would void the user's authority to operate the equipment.

SAFETY PRECAUTIONS

To ensure 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 hazards, do not expose the unit to rain, or 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 the housing may expose you to dangerous voltage or other hazards.
- Install the device in a place with good ventilation to avoid damage caused by overheating
- 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 onto 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 waste.

Introduction

1.1 Introduction to TPUHD-70-Rs

TPUHD-70-Rs is a mini-size extender set consisting of a TPUHD-70-Rs-T transmitter and TPUHD-70-Rs-R receiver. HDBaseT technology is used to transmit a high-resolution 1080p/ 4k signal from TPUHD-70-Rs-T to the TPUHD-70-Rs-R via a CAT5e/CAT6a cable at a distance of up to 70/40m. Moreover, TPUHD-70-Rs support CEC, bi-directional RS232&IR control, and unidirectional PoH function.

1.2 Features

- Support Full HD: Delivers high-resolution image (1080p@60Hz@48 b/pixels/3D/4Kx2K).
- The maximum transmission distance is 70m for 1080p and 40m for 4Kx2K over a single CAT5e/CAT6a cable
- High Bandwidth: 10.2Gps.
- HDTV Compatible, use HDMI 1.4 and HDCP2.2 compliant.
- Support CEC/IR/RS232 passthrough.
- Support PoH, the TPUHD-70-Rs-R can be powered by TPUHD-70-Rs-T.
- Bi-directional RS232/IR control.
- Use HDBaseT technology.
- 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 Contents

➤ 1 x TPUHD-70-Rs-T

➤ 1 x TPUHD-70-Rs-R

➤ 4 x Mounting ears

➤ 8 x Plastic cushions

➤ 8 x Screws

➤ 1 x Power adapter (DC 24V 1.25A)

➤ 2 x RS232 cables

➤ 1 x User manual

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

Panel Description

2.1 TPUHD-70-Rs-T

RX

① LINK
② HDCP
③ ☼

RS232	IR IN	IR OUT	HDMI OUT	HDBT IN	DC 24V

Tx ⏚ Rx

④ ⑤ ⑥ ⑦ ⑧ ⑨

No.	Name	Description
①	LINK	HDBT Link status indicator: ➤ OFF: No Link ➤ GREEN: Link Successful ➤ Blinking GREEN: Link abnormal
②	HDCP	HDCP compliant indicator ➤ OFF: No HDMI traffic (no picture) ➤GREEN: Traffic with HDCP. ➤ Blinking GREEN: Traffic without HDCP
③	Power	OFF: No power; RED: DC power present.
④	RS232	RS232 connector.
⑤	IR IN	Connect with 5V IR receiver (with carrier) to collect infrared signal, work with far-end IR OUT port
⑥	IR OUT	Connect with 5V IR Emitter to send an infrared signal, work with far-end IR IN port
⑦	HDMI IN	Connect with an HDMI source
⑧	HDBT OUT	Connect to the HDBT IN socket on the TPUHD-70-Rs-R via CAT5e/ CAT6a cable, support unidirectional PoH.
⑨	DC 24V	Connect with power supply

The pictures shown in this manual are only for reference.

2.2 TPUHD-70-Rs-R

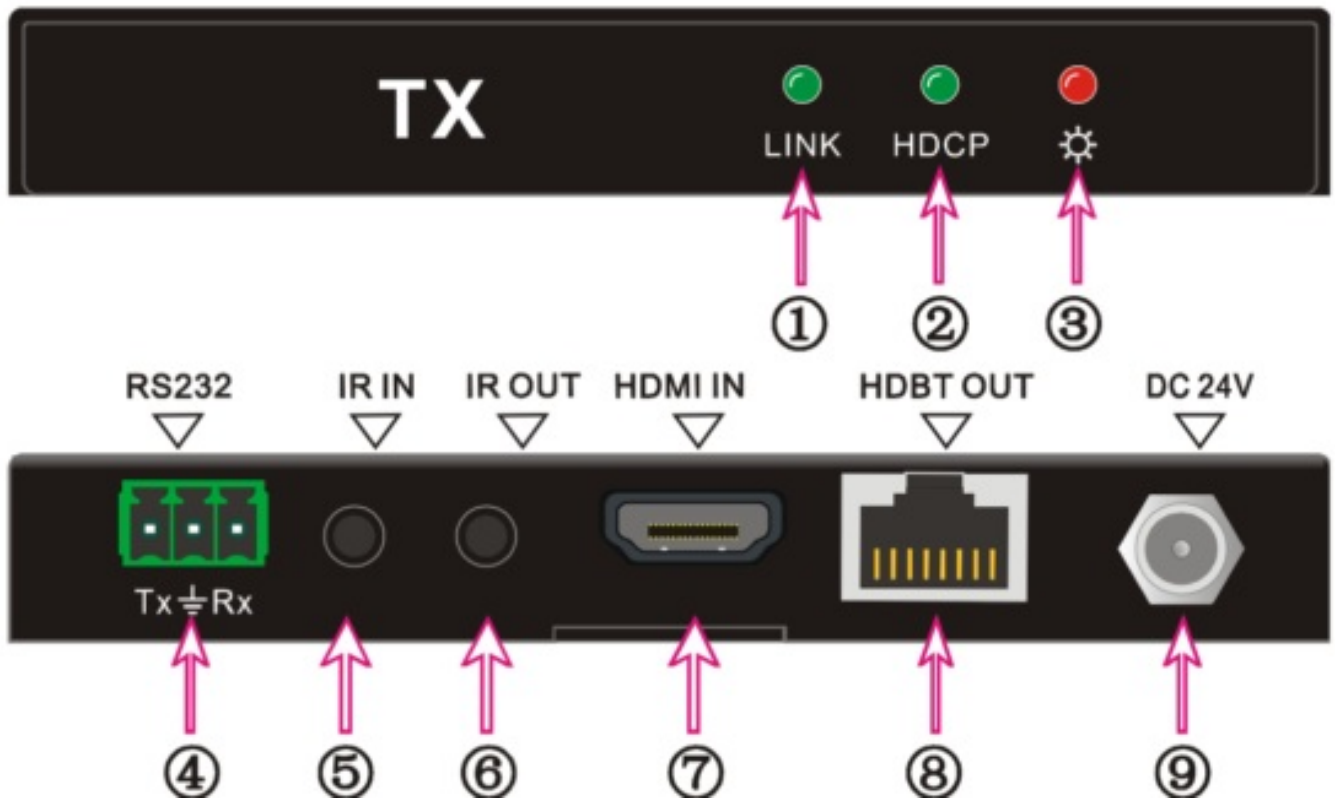| No.	Name	Description
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③	Power	OFF: No power; RED: DC power present.
④	RS232	RS232 connector.
⑤	IR IN	Connect with 5V IR receiver (with carrier) to collect infrared signal, work with far-end IR OUT port
⑥	IR OUT	Connect with 5V IR Emitter to send an infrared signal, work with far-end IR IN port
⑦	HDMI OUT	Connect with HDMI display
⑧	HDBT IN	Connect to the HDBT OUT socket on the TPUHD-70-Rs-T via CAT5e/ CAT6a cable.
⑨	DC 24V	Connect with power supply (Not necessary if TPUHD-70-Rs-T connects with power).

The pictures shown in this manual are only for reference.

System Connection

3.1 Usage Precautions

1) System should be installed in a clean environment and have controlled temperature and humidity.
2) All of the power switches, plugs, sockets, and power cords should be insulated
3) All devices should be connected before power on.
4) Use shielded straight-thru CAT5e/CAT6a cable with TIA/EIA T568B terminations for good transmission.

3.2 System Diagram
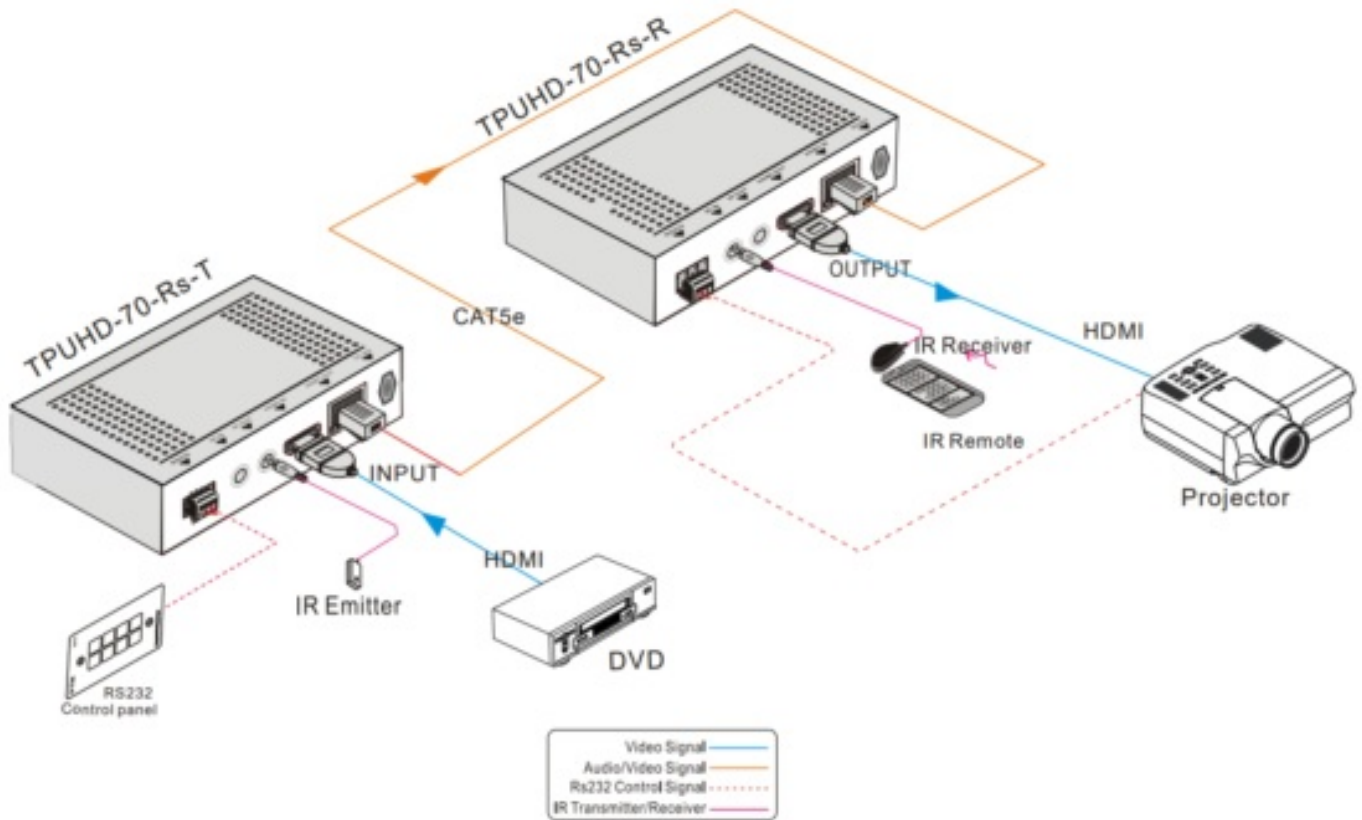
3.3 Connection Procedure

Step1. Connect HDMI source (such as Blue-ray DVD) to HDMI IN port of TPUHD-70-Rs-T with HDMI cable.

Step2. Connect HDBT OUT port of TPUHD-70-Rs-T and HDBT IN port of TPUHD-70-Rs-R, with a single CAT5e/CAT6a cable.

Step3. Connect HDMI displayer (such as HDTV) to HDMI OUT port of TPUHD-70-Rs-R with HDMI cable.

Step4. Both TPUHD-70-Rs-T and TPUHD-70-Rs-R have IR IN and OUT. 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 TPUHD-70-Rs-T connects with an IR receiver, the IR emitter must connect to IR OUT of TPUHD-70-Rs-R.

Step5. Connect the RS232 port of the devices to be controlled and TPUHD-70-Rs-R or TPUHD-70-Rs-T.

Step6. Connect with a DC24V power adaptor(s) (One is enough if TPUHD-70-Rs-T is connected with the adapter as its PoH function).

3.4 Application

TPUHD-70-Rs have a good application in various situations, such as computer realm, monitoring, big-screen displays, meeting room, education, and bank & securities institution, etc.

3.5 Twisted Pair Cable Connection

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

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

TIA/EIA T568B	
Pin	Cable color
1	orange white
2	orange
3	green white
4	blue
5	blue white
6	green
7	brown white
8	brown
1st Ground	4–5
2nd Ground	1–2
3rd Group	3–6
4th Group	7–8
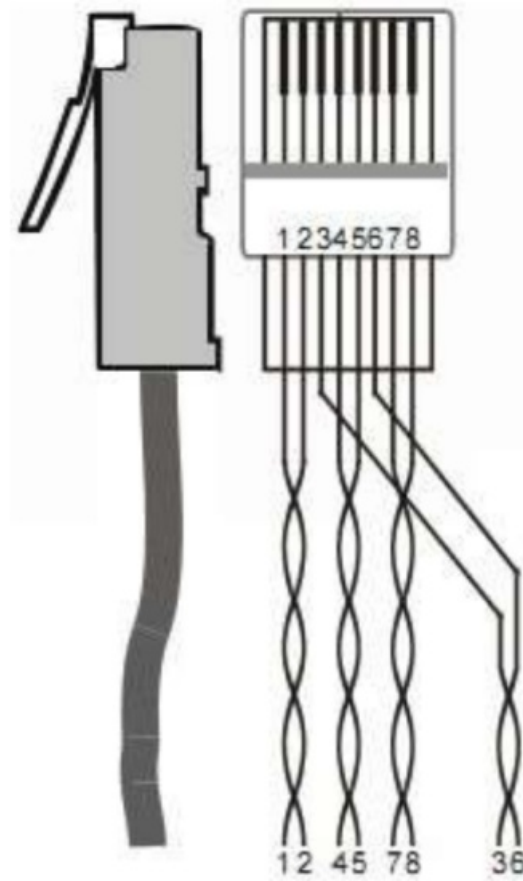
Notice: Cable connectors MUST be metal one, the shielded layer of cable MUST be connected to the connector's metal shell, to ensure correct transmission.

Specification

| Model Spec	TPUHD-70-Rs-T	TPUHD-70-Rs-R
Input		
Input Signal	1 HDMI,1 IR & 1 RS232	1 IR, 1 RJ-45 & 1 RS232
Input Connector	HDMI female, 3.5mm mini-jack, 3p captive screw connector	3.5mm mini-jack, RJ-45, 3p captive screw connector
Audio	Digital audio, transmit through HDMI audio	Digital audio, transmit through HDMI audio
Output		
Output	1 RJ-45, 1 IR, 1 RS232	1 HDMI, 1 IR, 1RS232
Output Connector	RJ-45, 3.5mm mini-jack, 3p captive screw connector	HDMI female, 3.5mm mini-jack, 3p captive screw connector
General		
Resolution Range	640×480@60Hz~4K×2K@30Hz	
Transmission Mode	HD Base T	
Transmission Distance	1080p 70m 4k 40m	
Bandwidth	10.2Gbps	
HDMI Standard	Support HDMI1.4 and HDCP2.2	
Impedance	75Ω	
Temperature	-20 ~ +70℃	
Humidity	10% ~ 90%	
Power Supply	Input: 100VAC~240VAC, 50/60Hz Output: DC 24V, 1.25A	
Power Consumption	11W	
Case Dimension	W115xH16x D84mm	W115xH16x D84mm
Net Weight	150g	150g

NOTE: All nominal levels are at ±10%.

4.1 Supported Resolution

Aspect Ratio	Resolution	Refresh Rate
4Kx 2K	4096×2160	30Hz
	3840×2160	24/25/30Hz
16:9	1920×1080	60Hz
	1600×900	60Hz
	1366×768	60Hz
	1280×720	60Hz
	1024×576	60Hz
16:10	1920×1200	60Hz
	1680×1050	60Hz
	1360×768	60Hz
	1280×800	60Hz
4:3	1600×1200	60/65/70/75/85Hz
	1280×1024	60/75/85/96Hz
	1024×768	60/70/75/85Hz
	800×600	56/60/72/75/85Hz
	640×480	60/72/75Hz

Note: TPUHD-70-Rs support 4k HDMI signal, please use quality HDMI cables compliant with HDMI 2.0 for reliable transmission.

Panel Drawing
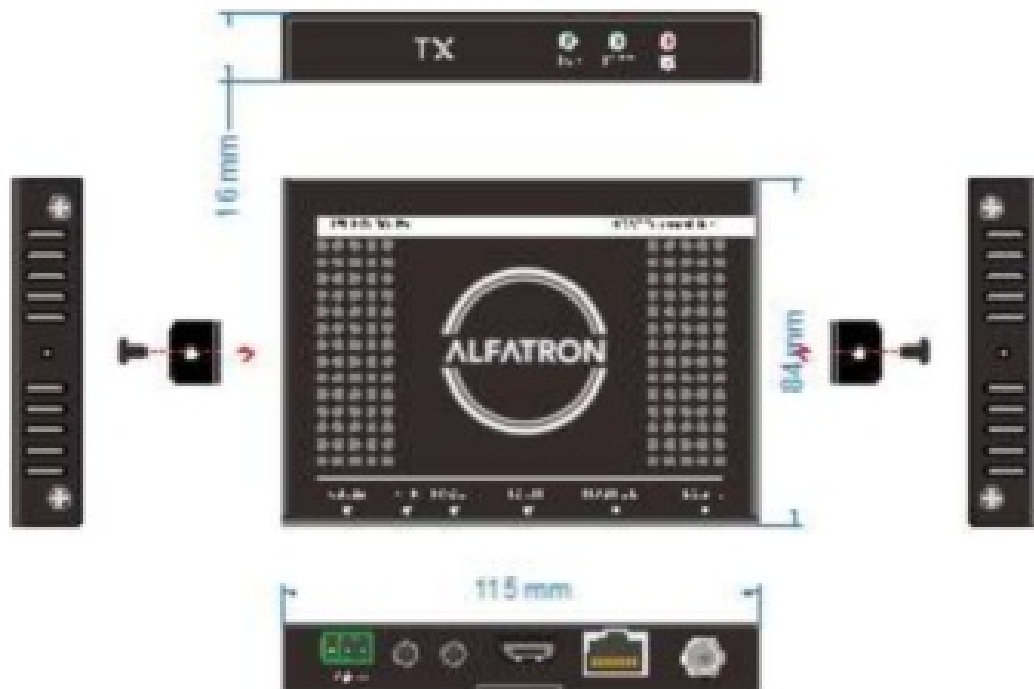
5-1 TPUHD-70-Rs-T

5-2 TPUHD-70-Rs-R

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 T568B on both ends. A temporary length of CAT5e/Cat6 can be used for testing to ensure that the devices are

all compatiband 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 the Technical Support of your director for a solution to these issues

- Color loss 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 an authorized dealer or our technical support.

After-sales Service

If there appear some problems when running the device, please check and deal with the problems referenced in this user manual. Any transport costs are borne by the users during the warranty.
1) Product Limited Warranty: We warrant that its products will be free from defects in materials and workmanship for five years, which starts from the first day the product leaves the warehouse (check the SN mark on the product).
Proof of purchase in the form of a bill of sale or receipted invoice must be presented to obtain warranty service.
2) What the warranty does not cover:

- Warranty expiration.
- The 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 proof of warranty.
- The product model shown on the warranty card does not match with the model of the product for repair or had been altered.
- Damage caused by force majeure.
- Servicing not authorized
- Any other causes which do not relate to a product defect
- Delivery, installation, or labor charges for installation or setup of the product

  3) Technical Support: Email our after-sales department or make a call, please inform us of 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.

1. Limited warranty in respect of Alfatron Products Only

1.1 This limited warranty covers defects in materials and workmanship in this product.

1.2 Should warranty service be required, proof of purchase must be presented to the Company. The serial number on the product must be clearly visible and not have been tampered with in any way whatsoever.

1.3 This limited warranty does not cover any damage, deterioration, or malfunction resulting from any alteration, modification, improper or unreasonable use or maintenance, misuse, abuse, accident, neglect, exposure to excess moisture, fire, improper packing and shipping (such claims must be presented to the carrier), lightning, power surges, or other acts of nature. This limited warranty does not cover any damage, deterioration, or malfunction resulting from the installation or removal of this product from any installation, any unauthorized tampering with this product, any repairs attempted by anyone unauthorized by the Company to make such repairs, or any other cause which does not relate directly to a defect in materials and/or workmanship of this product. This limited warranty does not cover equipment enclosures, cables, or accessories used in
conjunction with this product.

This limited warranty does not cover the cost of normal maintenance. Failure of the product due to insufficient or improper maintenance is not covered.

1.4 The Company does not warrant that the product covered hereby, including, without limitation, the technology and/or integrated circuit(s) included in the product, will not become obsolete or that such items are or will remain compatible with any other product or technology with which the product may be used.

1.5 Only the original purchaser of this product is covered under this limited warranty.

This limited warranty is not transferable to subsequent purchasers or owners of this product.

1.6 Unless otherwise specified, the goods are warranted in accordance with the manufacturer's product-specific warranties against any defect attributable to faulty workmanship or materials, fair wear and tear are excluded.

1.7 This limited warranty only covers the cost of faulty goods and does not include the cost of labor and travel to return the goods to the Company's premises.

1.8 In the event of any improper maintenance, repair, or service being carried out by any third person during the warranty period without the Company's written authorization, the limited warranty shall be void.

1.9 A 7 (Seven) year limited warranty is given on the aforesaid product were used correctly according to the Company's instructions, and only with the use of the Company's components.

1.10 The Company will, at its sole option, provide one of the following three remedies to whatever extent it shall deem necessary to satisfy a proper claim under this limited warranty:

1.10.1 Elect to repair or facilitate the repair of any defective parts within a reasonable period of time, free of any charge for the necessary parts and labor to complete the repair and restore this product to its proper operating condition.; or

1.10.2 Replace this product with a direct replacement or with a similar product deemed by the Company to perform substantially the same function as the original product, or 1.10.3 Issue a refund of the original purchase price less depreciation to be determined based on the age of the product at the time remedy is sought under this limited warranty.

1.11 The Company is not obligated to provide the Customer with a substitute unit during the limited warranty period or at any time thereafter.

1.12 If this product is returned to the Company this product must be insured during shipment, with the insurance and shipping charges prepaid by the Customer. If this product is returned uninsured, the Customer assumes all risks of loss or damage during shipment. The Company will not be responsible for any costs related to the removal or re-installation of this product from or into any installation. The Company will not be responsible for any costs related to any setting up this product, any adjustment of user controls, or any programming required for a specific installation of this product.

1.13 Please be aware that the Company's products and components have not been tested with competitor's products and therefore the Company cannot warrant products and/or components used in conjunction with competitor's products.

1.14 The appropriateness of the goods for the purpose intended is only warranted to the extent that the goods are used in accordance with the Company's installation, classification, and usage instructions.

1.15 Any claim by the Customer which is based on any defect in the quality or condition of the goods or their failure to correspond with specification shall be notified in writing to the Company within 7 days of delivery or (where the defect or failure was not apparent on reasonable inspection by the Customer) within a reasonable time after discovery of the defect or failure, but, in any event, within 6 months of delivery.

1.16 If delivery is not refused, and the Customer does not notify the Company accordingly, the Customer may not reject the goods and the Company shall have no liability and the Customer shall pay the price as if the goods had been delivered in accordance with the Agreement.

1.17 THE MAXIMUM LIABILITY OF THE COMPANY UNDER THIS LIMITED WARRANTY SHALL NOT EXCEED

THE ACTUAL PURCHASE PRICE PAID FOR THE PRODUCT.

Documents / Resources

ALFATRON www.alfatronelectronics.com ALFATRON ELECTRONICS GmbH GERMANY ALF-TPUHD70-RS	[**ALFATRON ALF-TPUHD70-RS Mini-Size Extender Set**](#) [pdf] User Manual ALF-TPUHD70-RS, Mini-Size Extender Set, ALF-TPUHD70-RS Mini-Size Extender Set