

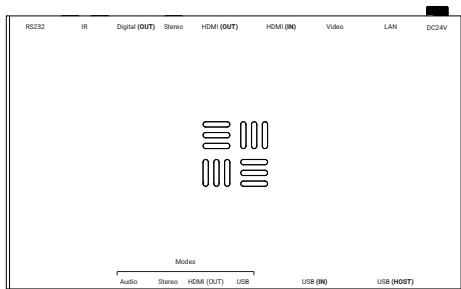
# HDA

## XTND 4K (100) with eARC & USB

PRODUCT GUIDE | 2.58.940

The first of a new era of ultra high performance HDA connectivity products, the XTND 4K (100) eARC + USB is the ultimate all-in-one, long distance (video, audio, USB, control, Ethernet and power) Transmit (TX) and Receive (RX) extender solution.

The XTND 4K (100) eARC + USB is a high-performance extender that delivers uncompressed 4K video, high-quality audio, USB, 1Gb Ethernet and power over a single Cat6A cable for up to 100 metre using HDBaseT 3.0 technology.



# Contents

Contents, Glossary of terms	2-3
In the box, Features	4-5
Specifications	6-7
Device illustration and port diagrams	8-9
Device port descriptions	10-11
IR (Infrared) control, Testing IR works	12-13
Cabling	14-15
Wiring examples (HDMI ARC + CEC and KVM)	16-17
Legals: Compliance, Conformity, Product Guarantee	19-21



# Glossary of terms

**Consumer Electronics Control (CEC)**

Allows for HDMI devices such as AVRs, sound bars and video sources to be controlled from the display remote control.

**Enhanced Audio Return Channel (eARC/ARC)**

eARC enables high-quality audio from a TV to be sent back to a soundbar or home theater system using HDMI or HDBaseT (via XTND). eARC can support advanced audio formats such as Dolby Atmos or uncompressed audio.

**HDBaseT**

Technology used to convert HDMI into a format which can be carried over Category (Cat) cable.

**IR RX & IR TX**

Infrared (IR) Receiver (RX) and Transmitter (TX). The RX 'receives' a signal from another remote control and the TX 'transmits' it. (See page 12)

**Universal Serial Bus (USB)**

A universal method of connection for transferring data and (optionally) power between devices, like computers, phones, and accessories like keyboards or mice.

**XTND transmitter**

Part of the XTND pair. The XTND transmitter takes a HDMI signal and converts it into HDBaseT. The transmitter is installed at the source end of the setup.

**XTND receiver**

Part of the XTND pair. The XTND receiver takes the HDBaseT signal made by the XTND transmitter and converts it back to HDMI so that it can be connected to a display.

# IMPORTANT

For optimum performance and safety, please read these instructions carefully before connecting, operating or configuring this product. Please keep this manual for future reference.

## Cat 6A or Cat 7 cable is REQUIRED

Cat 6A is required because the 500MHz bandwidth capability matches the operating frequency of the HDBaseT 3.0 signal format. HDA does not recommend using any structured cabling below Cat 6A with this device. It is recommended that this XTND is installed with a point-to-point connection.

## Surge protection is recommended

This device contains sensitive electrical components that may be damaged by electrical spikes, surges, electric shock, lightning strikes, etc. The usage of surge protection systems is recommended in order to protect and extend the life of your system.

# In the box

Name: **XTND 4K (100) with eARC & USB**  
Product code: **2.58.940**

- x1** XTND 4K (100) with eARC & USB Transmitter
- x1** XTND 4K (100) with eARC & USB Receiver
- x1** Infrared Transmitter cable (1.5m) (IR TX)
- x1** Infrared (20-60Khz) Receiver cable (1.5m) (IR RX)
- x1** 24V 1A Power Supply with adapters (UK,EU,US,AU)
- x2** Three-Pin Phoenix Connector
- x4** Mounting Brackets + screws
- x1** User Manual



# Features

Supports video picture formats up to 4K@60Hz (4:4:4) including HDR and Dolby Vision (4K@30Hz)

HDBaseT 3.0

Uncompressed 18Gbps bandwidth

4K up to 100m (328ft) over Cat 6A cable

Digital audio support up to and including Dolby Atmos and DTS:X

Audio extraction over stereo or SPDIF (not downmixed).

eARC to HDMI, HDMI OUT or SPDIF

Supports external audio embedding or extraction

1Gb Ethernet pass through

Bi-directional USB 2.0 (Host/Device)

Bi-directional IR & RS232

CEC control from display to HDMI source

Bi-directional Power over Cat (PoC)

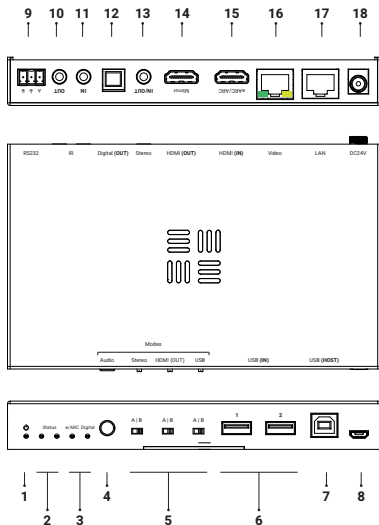
# Specifications

HDMI version	HDMI 2.0b	
HDCP compliance	HDCP 2.2 & HDCP 1.4	
HDBaseT version	3.0	
Video bandwidth	18Gbps Uncompressed (16G up 2G down)	
Video resolution	Up to 4K@60Hz	
Colour space	RGB, YCbCr 4:4:4, YUV 4:4:4, YCbCr 4:2:2/4:2:0	
Colour depth	8-bit, 10-bit, 12-bit	
HDR formats	HDR, HDR10, HDR10+, Dolby Vision, HLG	
Video & audio I/O	<b>XTND Transmitter:</b> Inputs: x1 HDMI Outputs: x1 HDMI (Mirror), x1 HDBaseT, x1 3.5mm Stereo, x1 SPDIF	<b>XTND Receiver:</b> Inputs: x1 HDBaseT, x1 SPDIF Outputs: x1 HDMI, x1 3.5mm Stereo
Transmission distance	1080p 100m (238ft) 4K 100m (238ft)	
HDMI audio formats	PCM 2.0 / 5.1 / 7.1, Dolby Digital / Plus / EX / True HD / Atmos, DTS, DTS-EX, DTS-96 / 24, DTS High Res, DTS-HD Master Audio, DTS-X	
Stereo audio formats	PCM 2.0	
SPDIF audio formats	PCM 2.0, Dolby Digital / Plus, DTS 5.1	



Infrared	20Khz - 60Khz
Ethernet	1000Mbps (1Gb)
USB version	2.0
ESD protection	±8kV (Air-gap discharge) ±4kV (Contact discharge)
Power consumption	15.36W (PoC)
Power supply	24V 1A
Operating temperature	0°C - 40°C / 32°F - 104°F
Storage temperature	-20°C - 60°C / -4°F - 140°F
Relative humidity	20 - 90% (Non-condensing)
Housing	Aluminium
Colour	Grey (Carbonite)
Dimensions (W/D/H) mm	170 x 102 x 22 (Transmitter & Receiver)
Weight	Transmitter: 425g Receiver: 437g
Package weight	1040g

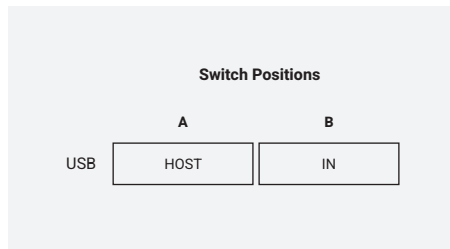
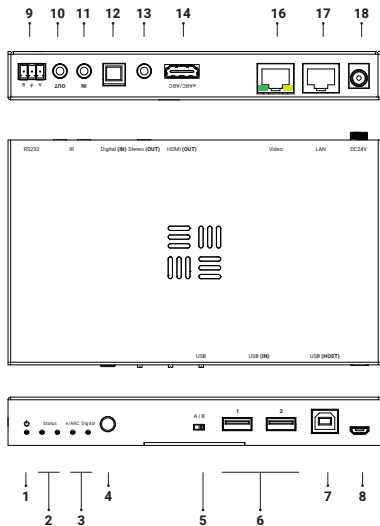
# Transmitter Diagram



Switch Positions		
	A	B
USB	HOST	IN
HDMI (OUT)	MIRROR	AUDIO (ARC/SPDIF)
STEREO	EMBED	HDMI (IN)



# Receiver Diagram



# Description

1. **Power:** Indicator light. If this light is on and solid then the XTND has power.
2. **Status:** Indicator lights. **Left** Solid: Good connection between XTND units / Flashing: Operating in low power mode / Off: No connection **Right** Solid: Video has HDCP / Flashing: Video has no HDCP detected / Off: No signal detected
3. **Audio Output:** Indicator light for input audio from the XTND receiver "eARC" or "Digital (IN)" port to the XTND transmitter.
4. **Audio Selector:** Sets the audio mode for XTND described by indicator lights #3. If both ARC and SPDIF lights are off then audio is being extracted at the HDMI source.
5. **Operational Modes:** A set of three switches to control the operational mode of XTND unit. Each switch has two positions marked "A" and "B" which are described below.
  - Stereo:** Controls the behaviour of the "Stereo" port #13 (**A:** Sets the port as an Input | **B:** Sets the port to act as an output)
  - HDMI (OUT)** Sets the mode for the "HDMI (OUT)" port #14 (**A:** Sets the port to mirror the "HDMI (IN)" port | **B:** Sets the port to output audio only)
  - USB** Tells XTND what type of USB device is connected to it (**A:** Sets the device to HOST mode (e.g. PC, CCTV) | **B:** Sets the XTND into DEVICE mode for keyboards and mice). Reboot the XTND unit after making any USB switch position change.
6. **USB (IN):** Connect this port to USB DEVICES like keyboards and mice.
7. **USB (HOST):** Connect this port to USB HOST devices such as PCs or CCTV systems.
8. **Service Port:** Used for servicing and firmware upgrades
9. **RS232:** Connect the three-pin phoenix connector to this port to send RS232 commands to the XTND transmitter or vice-versa.
10. **IR (OUT):** Connect an IR TX to the "IR OUT" to enable remote (IR) control of a display local to the XTND receiver.



11. **IR (IN):** Connect an IR RX to the “IR IN” port to receive an IR command from a remote control to pass through to the XTND transmitter.

12. **Digital (OUT) / Digital (IN):** The “Digital (OUT)” port can be found on the XTND Receiver. SPDIF audio output. This port can be enabled by toggling the Audio Selector button #4. The “Digital (IN)” port on the XTND Transmitter can be used to receive audio from a display if ARC is not supported.

13. **Stereo / Stereo (OUT):** The “Stereo” port is a dual mode audio port (input or output) found on the XTND Transmitter. The operational mode for this port is defined by the switch position #5. The “Stereo (OUT)” port on the XTND Receiver outputs audio received from the XTND Transmitter.

14. **HDMI (OUT) Mirror / HDMI (OUT) ARC/eARC:** The “HDMI (OUT) Mirror” on the XTND Receiver has two modes of operation is defined in #5 with the option to toggle between full video mirror (picture + audio) or audio only modes. Connect a HDMI cable from your display to the “HDMI (OUT) ARC/eARC” port for picture and/or ARC.

15. **HDMI (IN):** HDMI video input. If the HDMI input is an AVR both ARC audio and CEC commands will pass from the display connected to the XTND Receiver to this port.

16. **VIDEO:** Uncompressed 18G HDBaseT (RJ45) video port. **YOU MUST USE CAT 6A cable** with this XTND unit.

**Yellow LED:** Defines HDMI state. Solid: HDMI + HDCP / Flashing: HDMI no HDCP / Off: No HDMI detected

**Green LED:** Defines connection state between XTND Receiver & Transmitter. Solid: Good / Flashing: Suboptimal / Off: No connection

17. **LAN:** Gigabit Ethernet port 1Gb. Connect to any IP networking device.

18. **DC24V:** Connect the supplied power supply to this port to provide power to the XTND Receiver and Transmitter. Choose if you want to power the XTND from the receiving or transmitting end.

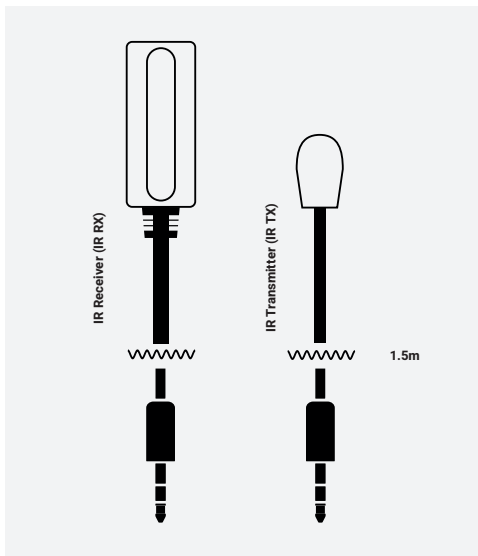
# IR (Infrared) control

XTND can send IR signals bi-directionally between the transmitter and receiver to control almost any AV device. Using this feature will allow you to use a remote control at either end of the XTND setup and pass that IR command from your display location back to the XTND transmitter or vice-versa.

## Sending IR commands from a display 'back' to the XTND transmitter

1. Connect an IR TX to port labelled "IR (OUT)" on the XTND transmitter.
2. Place the IR TX bud (small tear drop part) in front of the IR window of the device that you wish to control.
3. Connect an IR RX to port labelled "IR (IN)" on the XTND receiver.
4. Place IR RX in line-of-sight of the remote control.

To send commands in the other direction (from the source / XTND transmitter) to a display, simply follow the process above but swap any instance of an XTND transmitter with a XTND receiver.



# Testing that IR works

This section aims to verify that your XTND's IR control system is setup correctly and assumes that all other setup has been followed as per the instructions laid out in this manual. Please refer to the XTND wiring diagrams in this document to ensure that your setup matches that before proceeding with the verification below.

## **Testing operation from a display 'back' to the XTND transmitter**

Start this test by ensuring that your XTND system is powered on and your source device (connected to your XTND transmitter) is being correctly displayed on screen. Check that your IR cabling is correctly connected to your XTND system (page 12) and that your remote control has a clear line-of-sight to the IR RX. Point your remote at the IR RX and test a remote control command for your source device. You should notice that it responds as if the source device was directly in front of you. If it worked then you have setup IR control correctly. Repeat this step at the XTND transmitter end to confirm control over displays.

# Cabling

You must use Cat 6A or above with this XTND.

## Optimum performance

Whichever network cable type you choose, ensure that the main wiring architecture is 'solid core' and not stranded 'patch' cabling. Patch cabling can be used for the last few metres of a run (e.g wallplate) but should be avoided over longer runs as signal transfer over stranded cores is significantly impacted. The use of pre-made leads is not recommended unless you can be absolutely sure of their construction credentials (i.e. solid core 568B). For optimum performance, use a single piece of Cat cable terminated directly at the transmitter and the receiver ends. Make sure to use the correct connector types (i.e. RJ45 solid core) crimp connectors.

## Shielded cables

Shielded FTP cable is not a stipulation. However, if you are using this type of cable ensure compatible shielded accessories are used. Failure to terminate cable screen at all points can induce interference rather than eliminate it.

## Patch panels and wall plates

If patch panels are terminated correctly then there is a minimal loss of distance. The use of wallplates and patch panels has the potential to cause increased resistance on the cable introducing pinch points for signal transmission and could reduce transmission lengths. TIP: Instead of using RJ45 wallplates use brush plates.

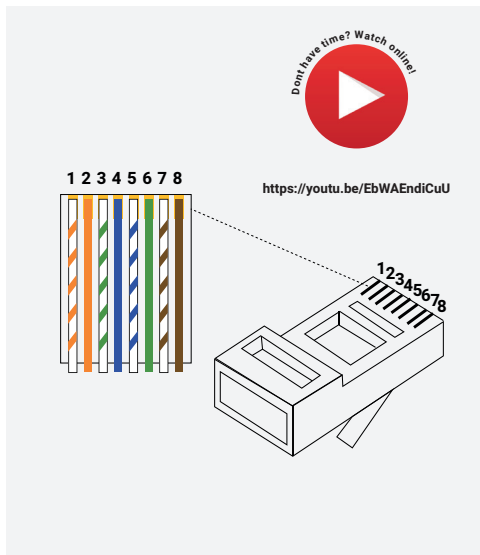


## HDMI cabling

We recommend using suitably robust and good quality HDMI cables. It is not advised to use passive HDMI cables over 5 metres in length either on the inputs or the outputs of the XTND system. Where HDMI cables longer than 5 metres are required, HDA recommends utilising its own brand of long distance HDMI cables or a suitable alternative.

**Note:**

**DO NOT USE ANY COPPER CLAD ALUMINIUM (CCA) CABLE.**



Terminate using RJ45 connectors to 568B wiring standard.

# HDMI/CEC/ARC wiring example

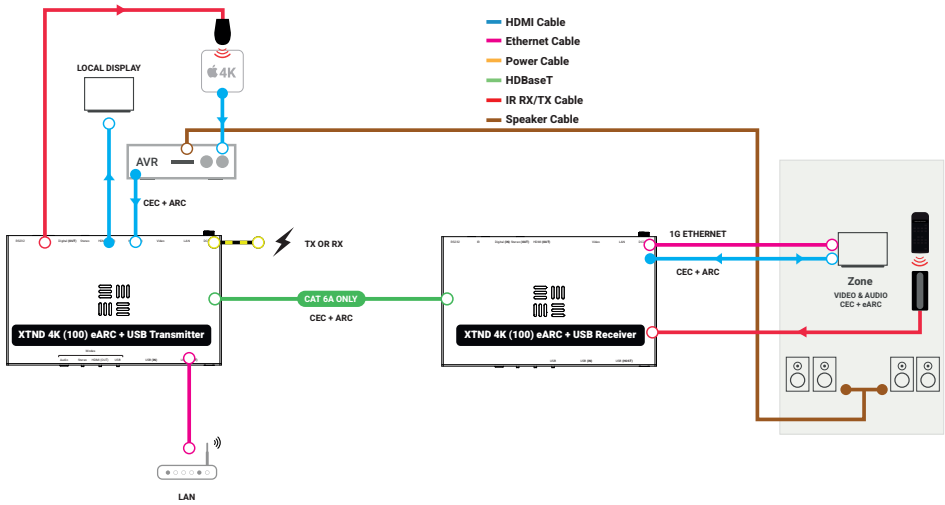


Diagram 1.



# Keyboard, video, mouse wiring example

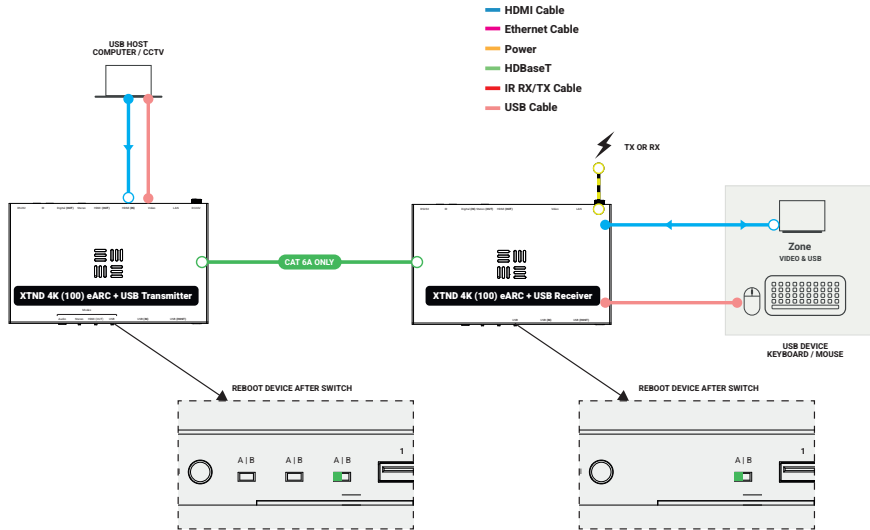


Diagram 2.

# 2 Year Guarantee

## WHO WE ARE

1. We are HD CONNECTIVITY LTD trading as HDANYWHERE ("HDA"), a limited company registered under number 06046737 in England and Wales with its registered offices at The Haysfield, Malvern, WR14 1GF, United Kingdom.

## OUR GUARANTEE TO YOU

2. We, HDANYWHERE warrant to you, the end user of the HDA hardware (the "Products") that on the date of delivery of the Products to you, and for a period of 2 years from that date of delivery, the Products shall:

- match any description that has been provided to you;
- be free from any significant defects in their design, the materials used to make them, and the way they are made;
- be of satisfactory quality (within the meaning of the Consumer Rights Act 2015); and
- be fit for any purpose held out by us.

This 2 year period, or, if the period has been extended to 3 years in accordance with paragraph 3, will be the "Guarantee Period". We offer this guarantee to all our customers who are resident and have an address in Great Britain and Northern Ireland.

## EXTENDING YOUR GUARANTEE (NOT APPLICABLE TO ANY XTND)

3. On registering your Products with the HDA Cloud, the guarantee offered in paragraph 2 by us will automatically extend for a period of one year, provided that your registration takes place within 30 days from the date of delivery. The one year guarantee extension starts automatically from the date that the original 2 year guarantee ends.

## HOW TO CLAIM ON YOUR GUARANTEE AND YOUR REMEDIES

4. Subject to paragraphs 5 and 6 of this guarantee, Your sole remedies under Our guarantee to You are as follows:

- Up to 30 days: we will repair or replace your Products or provide you with a full refund of the price of the defective Products at your option.
- Up to 6 Months: we will repair or replace your Products. If we are unable to repair or replace your Products we will provide you with a full refund of the price of the defective Products.
- Up to 2 (3) Years: we will repair or replace your Products. If we are unable to repair or replace your Products we will provide you with a partial refund of the price of the defective Products based upon the devaluation of the Products since the time of purchase.

5. In order to claim under the guarantee given to you in paragraph 2 you will need to:

- give us notice in writing of your intention to claim under the guarantee during the Guarantee Period, and do so within a reasonable time after finding that some or all of the Products do not comply with the guarantee set out in paragraph 2;
- show that the Products that you claim are defective, have been examined by a HDA Pro or other authorised or suitably qualified installer, and that they have [MG3] confirmed in writing that the suspected defect in the Products stems solely from a fault in the HDA hardware;
- give us a reasonable opportunity to examine the Products in question;
- provide us with an order number and a dated sales or delivery receipt from an HDA Distributor, HDA Pro or other authorised dealer, reseller or installer of the Products.
- obtain from us in advance of returning the Products a return merchandise authorisation and/or case number [MG4]; and
- (if asked to do so by us) return such Products to our place of business at our cost.

## CIRCUMSTANCES WHERE YOUR GUARANTEE DOESN'T APPLY

6. We shall not be liable for the Products' failure to comply with the guarantee set out in paragraph 2 in any of the following events:



- (a) If you make any further use of the Products after giving us notice of an issue in accordance with paragraph 5;
- (b) the defect arises because you failed to follow our oral or written instructions as to the storage, installation[MG5], use and maintenance of the Products;
- (c) the defect arises as a result of your use of the Products with any other software or hardware that is not compatible with the Products;
- (d) the products are used by you for any commercial purpose, including rental or demonstrative purposes;
- (e) you alter or repair the Products without the written consent of HDA;
- (f) the defect arises as a result of an act of god, fair wear and tear, or your misuse, abuse, unreasonable use, wilful damage, negligence, or abnormal storage of the Products or by any other causes unrelated to defective hardware or manufacturing;
- (g) where the serial number has been altered, defaced or removed;
- (h) where the warranty seal on the system has been altered, defaced or removed; or
- (i) where the Products differ from their description as a result of changes made to ensure they comply with applicable statutory or regulatory requirements.

#### **TRANSFERRING YOUR GUARANTEE TO SOMEONE ELSE**

7. HDA will not accept any liability under such guarantee unless you are the original customer or can produce a letter or chain of letters from the original customer and subsequent customers (where appropriate) transferring the benefit of the guarantee to you.

#### **PRODUCTS THAT ARE NOT COVERED BY THIS GUARANTEE**

8. This guarantee does not cover products sold and clearly marked "as is", "B-grade", or with faults. This guarantee does not apply to any system software that is preinstalled in the HDA hardware, or is subsequently provided via update or upgrade releases. Any and all HDA software is licensed to you under the terms of a separate end user licence agreement found here: <https://hdanywhere.com/legals>

#### **HOW THIS GUARANTEE WORKS WITH OUR EULA**

9. We may void this guarantee if we reasonably believe that the HDA system has been used in a manner that violates terms of our separate End User Licence Agreement (EULA) for the HDA software. You assume all-risk and liabilities associated with the use of third party products in conjunction with the Products.

#### **YOUR STATUTORY RIGHTS**

10. This guarantee is in addition to your statutory rights (including under the Consumer Rights Act) which are not affected by this guarantee

#### **GENERAL TERMS OF THIS GUARANTEE**

11. Except as provided in this guarantee, we shall have no liability to you in respect of the Products' failure to comply with the guarantee set out in paragraph 2.

12. We reserve the right to amend or withdraw this guarantee at any time although for the avoidance of doubt any guarantees that are in existence at such a time will be honoured.

13. These Conditions shall apply to any repaired or replacement Product supplied by us.

#### **GUARANTEE CONTACT INFORMATION**

To contact ([support@hdanywhere.com](mailto:support@hdanywhere.com)) or call HDANYWHERE Technical Support (call charges will depend on your telephone provider. Please check with your operator for exact charges). The team is available 9am - 5pm weekdays. To help us handle your query promptly, please have your invoice number and model SKU and serial ready.

# Important information

## EU Conformity

Hereby, HDA declares that this HDMI connectivity device is in compliance with the essential requirements and other relevant provisions of the following Directives: 2006/95/EC (LVD Directive); 2004/108/EC (EMC Directive); 1999/5/EC (R&TTE Directive). The full text of the EU declaration of conformity is available in the compliance section at [HDANYWHERE.com/legals](https://HDANYWHERE.com/legals)

## Recycling your device properly

In some areas, the disposal of certain electronic devices is regulated. Make sure you dispose of or recycle your device in accordance with your local laws and regulations.







Copyright © HDA.

HDA™ is a trading name of HD Connectivity Ltd.

Registered in England & Wales 06046737 VAT 913222367

HDA assumes no responsibility for any inaccuracies that may be contained in this document. In no event will HDA be liable for direct, indirect, special, incidental, or consequential damages resulting from any defect or omission in this document, even if advised of the possibility of such damages.