

neo

ULTRA HDMI[®] EXTENDER
BY PULSEEIGHT



USER MANUAL

P8-HDBT2-U-EXSET

HDMI[®] CHDBT[™] HDCP^{2.3}

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INTRODUCTION

The neo:Ultra HDMI® Extender is The ultimate HDBaseT™ extender solution. With built in DSC (Display Stream Compression) you can finally extend 4K/60 HDR10 over a HDBaseT link and up to 100m! Additionally at just 13mm it is the slimmest HDBaseT Class C extension solution on the market, making it perfect to mount behind ultra thin TVs.

The Pulse-Eight neo:Ultra with fully HDCP Compliant transmission means source video content can be stored in a dedicated rack away from the viewing location; and control is provided via built-in pass through support for HDMI-CEC Transmission and Infra-Red extension.

The Pulse-Eight neo:Ultra HDMI® Extender Set includes a neo:Ultra transmitter and a neo:Ultra receiver, which are PoH compliant.

FEATURES

- An ultra thin 13mm depth enclosure
- Extend 1080p up to 100 meters over a single Cat 5e/6/7 cable (long range available upon request)
- Extend 4K up to 100 meters over a single Cat 5e/6/7 cable
- Wall Mountable
- ARC (Audio Return Channel), enabling audio from the TV to be returned to the remote location with just the HDMI® cable
- Bi-Directional Infra-Red Transmission
- Ethernet 10/100 Connection
- Serial RS232 via 3.5mm
- HDCP 2.3 Compliant
- DSC support - for HDR and 4K/60 4:4:4 over HDBaseT link

INSIDE THE BOX (KIT)

- 1 x neo:Ultra PoH Receiver
- 1 x neo:Ultra Transmitter
- 1 x IR Blaster Cable Pack
- 1 x Power Supply Adapter
- 1 x Wall Bracket
- 1 x Quick Start Guide



neo:Ultra
PoH Receiver



neo:Ultra
Transmitter



IR Blaster
Cable Pack



Power Supply
Adapter



Quick Start Guide

SPECIFICATIONS

Video Resolution	All 4K formats*, 1080p, 1080i, 720p, 576p, 480p @ 24/25/30/50/59.94/60Hz. (* 4K resolution limited to 3840 x 2160 over HDBT)
Video Input (Receiver)	1 × HDBaseT Class C
Video Output (Receiver)	1 × HDMI® 2.0a/b
Video Input (Transmitter)	1 × HDMI® 2.0a/b
Video Output (Transmitter)	1 × HDBaseT Class C
Input TMDS Signal	6Gbps per data lane (18Gbps total)
Bandwidth	18.0 Gbps
CEC	Yes - Bidirectional
Serial Control	Yes - Bidirectional
IR Control	Yes - Bidirectional
HDMI® Compliance	HDMI® 2.0 (up to 600 MHz TMDS clock)
HDCP Compliance	Up to 2.3 (Pass-through)
Transmission Distance	4K up to 100m (330ft) and 1080p up to 100m (330ft)
Chroma Subsampling	YCbCr4:4:4, YCbCr4:2:2, YCbCr4:2:0, RGB
Colorspace	YUV (rec. 601, rec709, rec2020), RGB
Color Depth	8-bit, 10-bit, 12-bit
IR Receiver Port	3.5mm 5V stereo jack
IR Transmitter Port	3.5mm 5V stereo jack
Ethernet Pass-Through	Yes
Display Stream Compression (DSC)	Yes
Audio Return Channel (ARC)	Yes
Power Over HDBaseT (PoH)	Yes - Transmitter (PSE); Receiver (PD)
Operating Humidity	5 to 90% RH (no condensation)
Operating Temperature	0 to +35°C (32 to +95°F)
Storage Temperature	-20°C to 60°C (-4°F to 140°F)
Power Consumption	Transmitter: 7.3W Receiver: 8W
Power Inlet	1 x 48V DC @ 0.5A (Transmitter only)
Certifications	UKCA, CE, FCC (SDoC), RoHS
ESD Protection	Human Body Model: 8kV air, 4kV contact
Included Accessories	Infrared Blaster Cable Pack, Power Supply Adapter.
Dimensions (W x H x D)	Transmitter: 10.5cm x 1.3cm x 14.8cm Receiver: 10.5cm x 1.3cm x 14.8cm
Weight	Transmitter: 0.16kg Receiver: 0.16kg
Box Dimensions (W x H x D)	24cm x 9cm x 29cm

SAFETY PRECAUTION

Please read the instructions before attempting to install or operate this equipment.

Please keep the following in mind as you unpack and install this equipment:

- Always follow basic safety precautions to reduce the risk of fire, electrical shock, and injury.
- To prevent fire or shock hazards, do not expose the unit to rain, or moisture or install this product near water.
- Never spill liquid of any kind on or into this product.
- Please use the included mounting kit where applicable, avoid blocking any vents on the product and follow best practices in rack design to help avoid overheating.
- Only use the supplied power supply adapter.
- Never push any objects into this product through any openings or empty slots in the unit as you may damage parts inside and/or cause an electrical shock.
- Do not allow anything to rest on the power cabling and avoid putting the weight of any kind on it.
- To protect the unit from overheating do not block any vents or openings in the unit housing that provides ventilation. Allow sufficient space for air to circulate around the unit.
- This product is intended for use in a clean (dust-free) residential environment.

Ventilation

It's important to keep the product well ventilated when installing this Pulse-Eight splitter.

Any electronic equipment will generate heat. A well-ventilated area helps to disperse the heat. If placed in a poorly ventilated area, your equipment may heat up and cause irreparable damage to the circuitries.

Allowing systems to run for prolonged periods under high temperatures will break down circuitry and electrical component. It also applies if the device is left in the path of direct sunlight or near any heat source.

Dust tends to accumulate and will disrupt any fan and/or electronics system. Dust particles contain various compositions like water, oil, and other minerals or chemicals. Having them in your electronic device can sometimes cause a signal error or degradation to the internal chips and circuitries. Because we cannot accurately predict how or when they can affect your device, we highly recommend that you keep Pulse-Eight products not only in a well-ventilated area but also as clean as possible.

In some cases, insects or reptiles can make nests near or inside the electronic casing. Whilst we design our products to maximize the protection of internal electronics, please be aware that insects and reptiles can be drawn to these types of habitats. In the unlikely event, this does happen, this will lead to poor ventilation inside the unit, and it will be unable to disperse heat effectively.

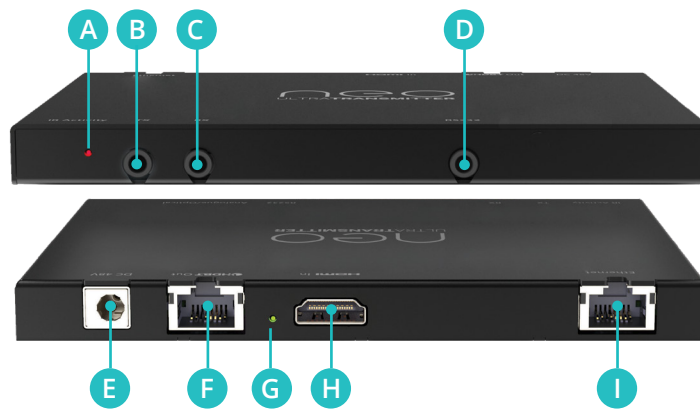
FCC Warning

This equipment 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 residential installation. 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. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

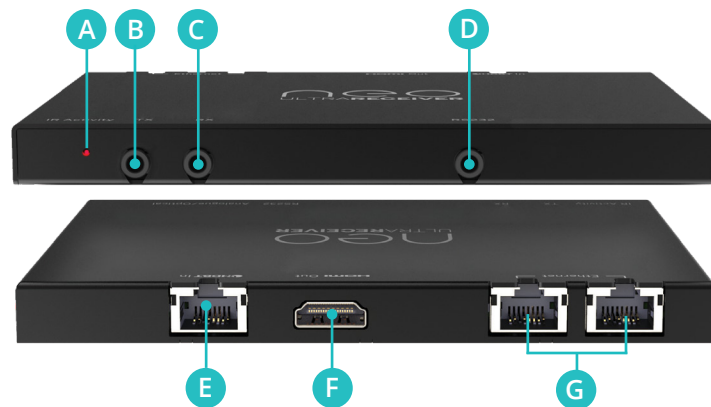
PANEL DESCRIPTIONS

neo:Ultra Transmitter



- A IR Activity Indicator** - The LED will flash green when an IR signal is being received and red when an IR signal is being transmitted.
- B IR Flasher (TX)** - The IR Flasher port is used to control the connected HDMI® Source device (eg: Blu-ray) using the IR transmitter.
- C IR Receiver (RX)** - The IR Receiver port can be used to distribute IR signals to the attached neo:Ultra receiver, when connecting an IR Receiver.
- D RS232 Jack Port** - Connect via male jack adapter (3 pole) for RS232 passthrough over the HDBaseT line.
- E 48V Power Input** - is used with the supplied 48V power adapter.
- F HDBaseT Output** - Connect the appropriate category cable (Cat 5e or higher recommended) to the output of the transmitter; this cable should then be connected to the HDBaseT input on the neo:Ultra receiver. The LEDs will illuminate to indicate a link is established (amber LED) and video (green LED) is being sent.
- G PoE Indicator** - The LED will illuminate (green) when the Transmitter is providing power-over-HDBaset (PoH) to the receiver.
- H HDMI® Input** - Connect the appropriate high speed HDMI® cable to this port and connect to the source device. (Blu-Ray player etc.).
- I Ethernet**: Optional connections for using ethernet passthrough.

neo:Ultra Receiver



- A IR Activity Indicator** - The LED will flash green when an IR signal is being received and red when an IR signal is being transmitted.
- B IR Flasher (TX)** - The IR Flasher port is used to control the connected HDMI® Sink device (TV) using the IR transmitter.
- C IR Receiver (RX)** - The IR Receiver port can be used to distribute IR signals to the attached neo:Ultra receiver, when connecting an IR Receiver.
- D RS232** - Connect via male jack adapter (3 pole) for RS232 passthrough over the HDBaseT line.
- E HDBaseT Input** - Connect the appropriate category cable (Cat 5e or higher recommended) to the input of the receiver; this cable should also be connected to the HDBaseT output on the neo:Ultra transmitter. The LEDs will illuminate to indicate a link (amber LED) and power (green LED) is being received.
- F HDMI® Output** - Connect the appropriate high speed HDMI® cable to this port and connect to the sink device.
- G Ethernet** - Optional connections for using ethernet passthrough.

INFRARED BLASTER CABLE PACK

1. **IR Transmitter 3.5mm Stereo Jack** - An IR flasher (emitter) is required when wanting to output (blast) an IR command to an attached device. Please use compliant Pulse-Eight IR emitters (5V) as failure to do so might result in damage to the product.



2. **IR Receiver 3.5mm Stereo Jack** - An IR receiver is required when wanting to accept incoming IR signals - for example, from a remote control - to distribute and control other attached devices remotely. Please use compliant Pulse-Eight IR receivers (5V) as failure to do so might result in damage to the product.




HDBASET CABLING

What Is The Best Type Of Cable To Use?

Pulse-Eight products use the HDBaseT standard, which makes use of standard Category (Cat) cables. The minimum cable used on a neo system is Cat 5e, but it is recommended to use a higher tier cable such as Cat 6, Cat 6A, or Cat 7 where possible because they have stricter twisted pair and shielding requirements that reduce data loss between data pairs.

Patch cabling is strongly discouraged because it can degrade the signal. Use a long, single high-quality cable for each HDBaseT port whenever possible to allow the system to function at its best.

We do not recommend using pre-made leads unless you are certain of the correct specifications (i.e., solid core 568B); using lower quality cables will result in signal degradation and transmission quality.

 *Note: Please keep in mind that Copper Clad Aluminum (CCA) cables aren't supported. This will cause a HDBaseT performance issue due to the inherent properties of a CCA.*

Shielded Cables

If you prefer shielded FTP cables, please use compatible shielded features such as grounding and termination. A faulty cable can increase interference rather than eliminate it.

Cabling Best Practice

Our recommended and best practise policy is to connect the Pulse-Eight matrix directly to the receiver using a straight cable. This will ensure the best signal quality and the greatest possible distance. On the HDBaseT Alliance website, you can find more information on "HDBaseT Best Practices."

<https://installers.hdbaset.org/wp-content/uploads/2014/09/Dos-and-Donts-WP.pdf>

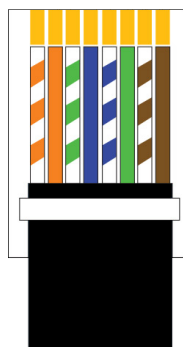
Wall Plates and Patch Panels


If the patch panels are properly terminated, there should be little distance loss. However, the use of wall plates and patch panels has the potential to increase cable resistance and, if not done correctly, could reduce advertised transmission lengths. Brush plates can be used instead of RJ45 wall plates to keep the finish neat.

Connection Termination

For Cat 5/Cat 6 UTP (unshielded) cable, we recommend using full plastic encasements rather than metal ones to avoid any grounding leaks into the Pulse-Eight products. However, when using shielded cables (STP), then please ensure to use metal connectors and that the Cat cable's shield/foil and drain wire are making good contact with the connector's shell.

Terminate the cabling using RJ45 connectors to the 568B wiring standard. (See diagram below).




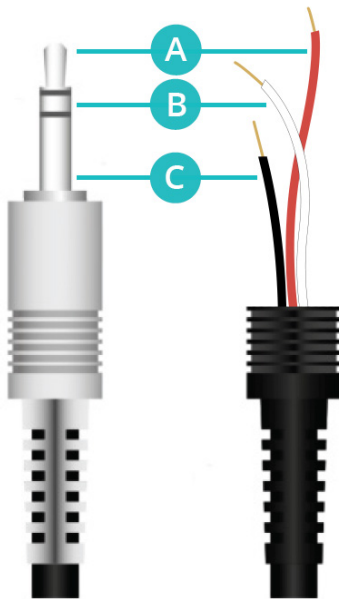
 **IMPORTANT:** Please note that local building regulations may apply to the installation of cabling in properties. It is important to check building regulations to guarantee that you are in accordance with the laws of your territory.

IR PIN ASSIGNMENTS

Pulse-Eight strongly recommends the use of the IR accessories provided. We do not support 3rd party IR component as it could damage the matrix.

The standard range of Pulse-Eight matrices utilise a 3.5mm stereo jack, both for IR flashers and receivers buds. We strongly recommend purchasing a Pulse-Eight Mono-Stereo Optocable when necessary in your installation.

 *Note: If you do require rewiring the IR plug to work with a 3rd party device then please note that this will void the warranty on the matrix if there is damage caused.
The Schematic provided below is as a reference only.*



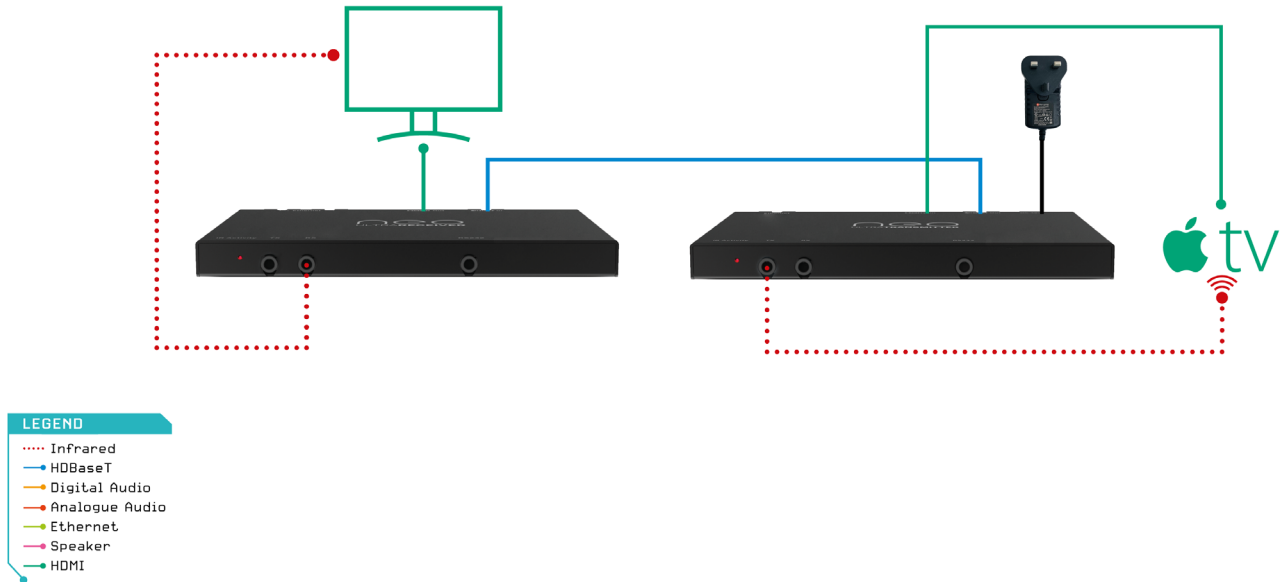
- A Tip** - 5V Power (receiver only).
- B Ring** - IR Signal.
- C Sleeve** - Ground



The 9 Pin RS232 DB9 Female to 3.5mm Male Jack Plug Adapter Serial Data Cable for RS232 passthrough.

 *Note: This data cable is not included.*

INSTALLATION



1. Connect HDMI® cable from your video source (e.g. Blu-Ray player) to the HDMI® input of the neo:Ultra transmitter.
2. Connect the appropriate category cable (Cat 5e or higher recommended) to the neo:Ultra Transmitter's 'HDBaseT Out' ports.
3. Complete the connection by attaching the other end of the Cat cable to the neo:Ultra Receiver's 'HDBaseT In' port
4. Connect HDMI® Out on the neo:Ultra Receiver to the sink device (i.e. TV) using a high-speed HDMI® cable.
5. If required, connect the compatible IR Flasher (Emitter/Transmitter) cable to the 'TX' port on the neo:Ultra Transmitter and the IR bud placed over the source device's IR window.
6. If required, connect the IR Receiver to the neo:Ultra Receiver's 'RX' port - and place the IR bud on the underside of the sink device (i.e. TV).
7. Insert the supplied power adapter to the neo:Ultra Transmitter and plug it into the AC mains.
8. Turn ON the AC mains.
9. As it powers ON, check the LED status on the attached neo Receiver to ensure correct installation and connection. See LED Status in Troubleshooting section.

 *Note: The Green LED of the HDBaseT port (RJ45) on the neo Receiver should illuminate when there is video to the device .*

TROUBLESHOOTING


Should you encounter installation difficulties or issues with device communication, the following checklist of common issues and causes should help resolve your issues. If you still continue to experience issues, please contact your local representative for further assistance.

No or Poor Picture Quality

- Connected and powered? Double check all HDMI®, Category Cat and power cables are firmly connected into the correct ports and all devices are correctly powered.
- Cable length? Are you approaching the maximum distance of the Cat cable (e.g. 100m) if so, try adjusting the picture resolution/format. Cables bundled together may cause cross-talk and further degrade signal quality.
- Signal strength? The use of cable joins, stranded patch panels, wall outlands and stranded patch leads as interconnects between them can significantly reduce signal strength. Use solid core straight through connections wherever possible.
- The neo:Ultra Extender uses Display Stream Compression (DSC) to support the maximum HDMI® 2.0 bandwidth of 18.0Gbps, which allows video formats such as 4K@60Hz 4:4:4 to be send over the HDBaseT link. However, it is important that to refer to the “Supported 4K Resolutions” section.
- If you reduce the resolution of the source (e.g. from 4K to 1080p), do you get a picture? If so, this suggests a conflicting resolution between source and display or a bandwidth capacity issue with your cable. Check all inputs and outputs share the same resolution capabilities.
- Picture ‘snow’ / HD ‘noise’ signifies a failure to fully establish a signal and can often be caused by poorly terminated RJ45 connectors or excess cable lengths. Ensure your cable is correctly wired to 568B standards.
- Pink or off-colour picture? This could be caused by an invalid EDID or the source device failing to read the EDID over the extender. Try plugging and replugging (hotplug) the HDMI® cable on the transmitter that is connected to the video Source , or even rebooting the attached Source, to force the re-reading of the EDID.
- Cable quality and condition - HDMI® cable/connectors can easily be damaged and the quality of material can vary. Always use good quality leads and cables and try swapping cables that are known to be working into the solution to see if this improves your image.

Infrared Not Functioning

1. Make sure to use the compatible IR flasher/receiver for this video extender.
2. Check and see if the LED beside the IR port is lighting up. It signifies whether the IR connection is working.
3. If the IR bud is not receiving or transmitting, test it out with a different port or swap with another IR bud to deduce the problem

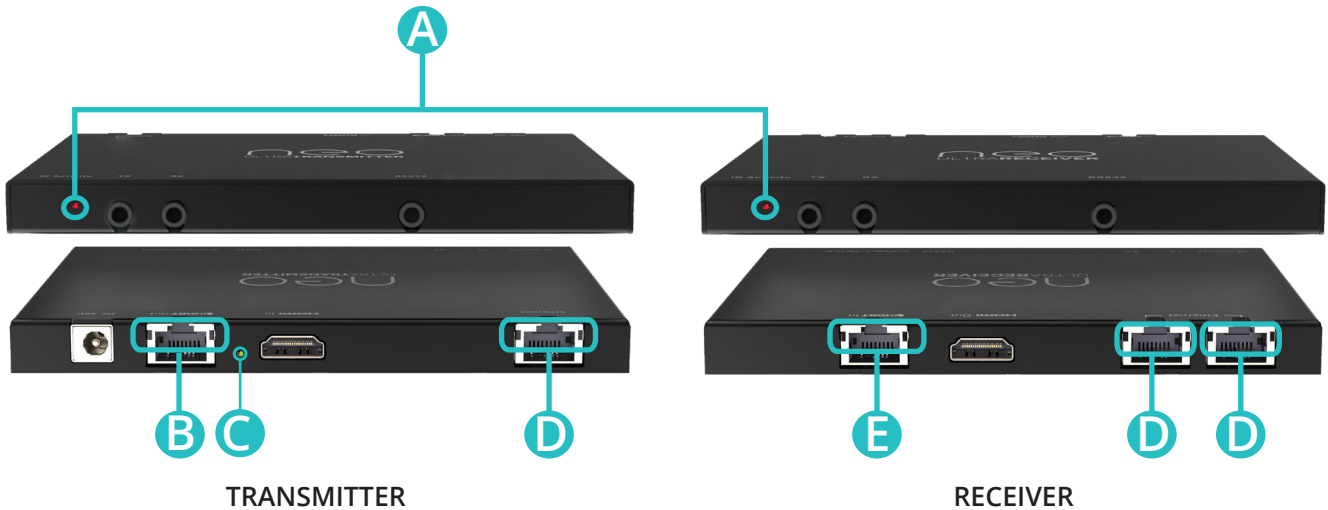
 *Note: Do not mix and match 12V or 5V IR products to different video extender as they could cause irreparable damage.*

IR Control

- Are the IR emitters and receivers correctly positioned to allow infrared signals to be transmitted and received? Emitters should be fixed firmly over infrared sensors of sources. Receivers should be attached or next to displays ensuring a clear line of sight to the remote control used to operate. Each IR port has an LED, when correctly installed the LED will flash when IR is transmitting or receiving.
- Is your remote control powered and sending a signal? As IR is invisible to the naked eye. A good trick to check whether your remote is transmitting a signal is by viewing the remote handset sensor through a digital camera/ camera phone. The sensor should flash when a button on the handset is held down.
- IR signal dropout can be experienced due to exterior emissions of infrared radiation. Ensure emitters and receivers are away from direct sunlight. Halogen lighting and plasma screens may also interfere with IR signals.

LED Status

There are several debug LEDs next to the input and output ports that can help with any further troubleshooting.



A IR Activity LED:

GREEN (Flashing) - IR signal present on IR receiver port (RX).
RED (Flashing) - IR signal present on IR emitter port (TX).

B HDBT RJ45 Left:

OFF - No HDBT Link.
AMBER - HDBT Link established.

HDBT RJ45 Right:

OFF - No Video
GREEN (Flashing) - Video Present (No HDCP).
GREEN (Solid) - Video Present (HDCP).

C PoE Indicator:

GREEN (Solid) - Power is provided to the attached receiver.

D ETH RJ45 Left:

OFF - No Ethernet.
AMBER (Flashing) - Activity on Network.

ETH RJ45 Right:

OFF - No Ethernet.
GREEN - Connected to Network.

E HDBT RJ45 Left:

OFF - No HDBT Link.
AMBER - HDBT Link established.

HDBT RJ45 Right:

OFF - No Video.
GREEN (Flashing) - Video Present (No HDCP).
GREEN (Solid) - Video Present (HDCP).

SUPPORTED 4K RESOLUTIONS

The neo:Ultra extender has an 18Gbps backplane that allows it to accept and route HDMI® 2.0 formats within the matrix.

Below is the list of 4K/UHD resolution formats supported over the HDBaseT 2.0 outputs by using Display Stream Compression (DSC), a highly-advanced compression standard providing true visually-lossless performance with zero latency.

RESOLUTION	FRAME RATE (FPS)	CHROMA	DEEPCOLOUR/ BIT DEPTH	HDR	HDBASET 2.0
3840x2160(UHD)	24, 35, 30	4:2:0	8 Bit	No	Yes
			10 Bit	Yes	Yes
			12 Bit	Yes	Yes
		4:2:2	8 Bit	No	Yes
			10 Bit	Yes	Yes - with DSC
			12 Bit	Yes	Yes - with DSC
		4:4:4	8 Bit	No	Yes
			10 Bit	Yes	Yes - with DSC
			12 Bit	Yes	Yes - with DSC
	50, 60	4:2:0	8 Bit	No	Yes
			10 Bit	Yes	Yes - with DSC
			12 Bit	Yes	Yes - with DSC
		4:2:2	8 Bit	No	Yes - with DSC
			10 Bit	Yes	Yes - with DSC
			12 Bit	Yes	Yes - with DSC
		4:4:4	8 Bit	No	Yes - with DSC

MANUAL VERSION HISTORY

V2.0 - 21st July 2022. Update existing manual to new format

V2.1 - Further updates and ncluded Revision History section.

V2.2 - 9th February 2024. Minor update on the Safety Precaution and Intallation section.

WARRANTY PROCEDURE

The following policies covers all Pulse-Eight products.

Unless otherwise instructed, please do not open any of our products. Doing so will invalidate your warranty. As part of the troubleshooting procedure, you may be instructed to open the device, but you can only proceed with this once consent has been given.

To open a support ticket, please visit: www.pulse-eight.com/support.

Please Note: Warranty cover for ALL products starts from date of receipt of goods NOT date of installation. Should we find that your product does need replacing, we will send your replacement directly to the distributor you purchased from, if not purchased directly from Pulse-Eight.

From 1st April 2022, any products purchased will have new warranty lengths. The length of warranty is determined by the type of product purchased. Our cover can be broken down into 3 categories:

Gold, Silver, and Bronze.

GOLD: Pulse-Eight Audio and Video Matrices

- 5-year warranty as standard
 - 3-year advanced replacements
 - 2-year return to base for repair

SILVER: Pulse-Eight Amps, Extender Sets, and Accessories

- 3-year warranty as standard
 - 1-year advanced replacements
 - 2-year return to base for repair

BRONZE: IR, Cables, Brackets, and our Tech Tools

- 1-year advanced replacements

Pulse-Eight Current Product—Within the advanced replacement warranty year(s)

1. Contact support via phone or a support ticket. Pulse-Eight will try to help troubleshoot and resolve the issue remotely.
2. If unable to resolve the fault remotely and the unit needs replacing an advanced replacement will be raised with the installer who purchased it. If you purchased from a distributor you will need to return to your distributor and they will contact Pulse-Eight to get the RMA raised. All distributor advanced replacements will be sent to the distributor and cannot be sent directly to their installer.

Pulse-Eight Current Product—Within return to base warranty

1. Contact support via phone or a support ticket. Pulse-Eight will try to help troubleshoot and resolve the issue remotely.
2. If unable to resolve the fault remotely and the unit needs to be repaired, an RMA will be raised with the installer if purchased direct from Pulse-Eight. Or if purchased from a distributor, the installer will be directed back to their distributor who will raise an RMA.

Pulse-Eight Products Purchased Before 1st April, 2022.

Please visit: [Warranty Page](#). Or Contact support via phone, opening a support ticket or emailing support@pulse-eight.com.

WARRANTY TERMS & CONDITIONS

IMPORTANT INFORMATION ABOUT YOUR RIGHTS AND OBLIGATIONS, AS WELL AS LIMITATIONS AND EXCLUSIONS THAT MAY APPLY TO YOU. YOUR RIGHTS AND THIS LIMITED WARRANTY

This Limited Warranty gives you specific legal rights. You may also have other legal rights that vary by state, province, or jurisdiction. The disclaimers, exclusions, and limitations of liability under this Limited Warranty will not apply to the extent prohibited by applicable law. For a full description of your legal rights, you should refer to the laws applicable in your jurisdiction and you may wish to contact a relevant consumer advisory service.

1. WHAT THIS LIMITED WARRANTY COVERS; PERIOD OF COVERAGE

Pulse-Eight Limited ("Pulse-Eight"), 8-12 Alder Hills, Poole, BH12 4AL, UK, warrants to the owner of the enclosed product that the product contained in this box ("Product") will be free from defects in materials and workmanship for a period of three years from the date of delivery following the original purchase (the "Warranty Period"), or if this product has been professionally installed, the warranty start date is from the date your installer purchased the item, not your system commissioning date. Please check with your installer for their purchase date. If the Product fails to conform to this Limited Warranty during the Warranty Period, Pulse-Eight will, at its sole discretion, either (a) repair or replace any defective Product or component; or (b) accept the return of the Product and refund within 45 days of return the money actually paid by the original purchaser for the Product. Repair or replacement may be made with a new or refurbished product or components, at Pulse-Eight's sole discretion.

If the Product or a component incorporated within it is no longer available, Pulse-Eight may replace the Product with a similar product of similar function, at Pulse-Eight's sole discretion. This is your sole and exclusive remedy for breach of this Limited Warranty. Any Product that has either been repaired or replaced under this Limited Warranty will be covered by the terms of this Limited Warranty for the longer of ninety (90) days from the date of delivery or the remaining Warranty Period. This Limited Warranty is transferable from the original purchaser to subsequent owners, but the Warranty Period will not be extended in duration or expanded in coverage for any such transfer.

2. TOTAL SATISFACTION RETURN POLICY

If you are the original purchaser of the Product and you are not satisfied with this product for any reason, you may return it in its original condition within thirty (30) days of the original purchase and receive a full refund. If this is a professionally installed product, you must check with your installer regarding their own returns policy.

3. WARRANTY CONDITIONS; HOW TO GET SERVICE IF YOU WANT TO CLAIM UNDER THIS LIMITED WARRANTY

Before being able to claim under this Limited Warranty, the owner of the Product must (a) notify Pulse-Eight of the intention to claim by emailing support@pulse-eight.com during the Warranty Period and providing a description of the alleged failure, and (b) comply with Pulse-Eight's return shipping instructions, and (c) ship the Product at owner's cost (except where prohibited by applicable law) to Pulse-Eight for repair or replacement. Pulse-Eight will have no warranty obligations with respect to a returned Product if it determines, in its reasonable discretion after examination of the returned Product that the Product is an Ineligible Product (defined below). Pulse-Eight will bear all costs of return shipping to the owner, except with respect to any Ineligible Product, for which the owner will bear all shipping costs.

4. WHAT THIS LIMITED WARRANTY DOES NOT COVER

This warranty does not cover the following (collectively "Ineligible Products"): Products marked as "sample" or sold "AS IS"; or Products that have been subject to: (a) modifications, alterations, tampering, or improper maintenance or repairs; (b) handling, storage, installation, testing, or use not in accordance with the Installation Guide or other instructions provided by Pulse-Eight; (c) abuse or misuse of the Product; (d) breakdowns, fluctuations, or interruptions in electric power or the telecommunications network; or (e) Acts of God, including lightning, fire, flood, tornado, earthquake, or hurricane. This warranty does not cover consumable parts, including batteries unless damage is due to defects in materials or workmanship of the Product, or software (even if packaged or sold with the product). Pulse-Eight recommends that you use only authorized service providers for maintenance or repair. Unauthorized use of the Product or software can impair the Product's performance and may invalidate this Limited Warranty. Pulse-Eight does not warrant that operation of the Product will be error-free or uninterrupted or that the Product will in every case process all data correctly.

5. DISCLAIMER OF WARRANTIES

Except as stated above in this limited warranty, and to the maximum extent permitted by applicable law, Pulse-Eight disclaims all express, implied, and statutory warranties and conditions with respect to the product, including the implied warranties of merchantability, fitness for a particular purpose. To the maximum extent permitted by applicable law, also limits the duration of any implied warranties or conditions to the duration of this limited warranty.

6. LIMITATION OF DAMAGES

In addition to the above warranty disclaimers, in no event will Pulse-Eight be liable for any consequential, incidental, exemplary, or special damages, including any damages for lost data or lost profits, arising from or relating to this limited warranty or the product, and Pulse-Eight's total cumulative liability arising from or related to this limited warranty or the product will not exceed the amount actually paid for the product by the original purchaser.

7. LIMITATION OF LIABILITY

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