

Manual

VX USB-C & HDMI Video/Audio Extender Kit



Thank you for choosing Ashton Bentley

Please read before proceeding.

Before proceeding with assembly, connection, and operation, please ensure that you read this document fully, and any additional documentation that may be included with the product.

Please keep this manual for future reference.

Important. Please read Section 7 Important Safety information

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Patent Information

The accompanying product is protected by one or more UK, EU, US, and foreign patents and/or pending patent applications held by Ashton Bentley Technology Limited.

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About this document.

This document covers the following product(s):

- VX USB-C & HDMI Video Extender Kit

Comprising:

- VXT-USB-C & HDMI Video Extender Transmitter
- VXR-USB-C & HDMI Video Extender Receiver
- 10m Cat7 Cable (RJ45 to RJ45)
- VXR PSU (Input 90v -220v)

In this manual you will find everything you need to assemble, connect, test, and configure a VX USB-C & HDMI Video Extender Kit.

Connection and operation of 3rd party products are not covered by this document.

Please note

Illustrations in this document might look different



1. Package Contents

1.A Box Labels.

Each box has a packing label with details about the contents. Please ensure you have all boxes as listed in your delivery documents, and that the contents of all boxes are as listed on the following pages.

Please inform your vendor immediately if any boxes are damaged or contents missing.

ab. Ashton Bentley.

B



A **USB-C & HDMI Video Extender**

Part No. 900-00555

C



D

Power Cable:



E



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23 Schooner Park, Crossways Business Park, DA2 6NW United Kingdom

Made in UK

- A: Product Description
- B: Carton ID
- C: Part Number
- D: Part Number Barcode
- E: Compliance & Conformity

1.B Box Contents.

VX - USB-C & HDMI Video Extender

900-00555

Qty	Box Contents	Part Number
1	VXT-USB-C & HDMI Video Extender Transmitter Unit	810-00278
1	VXR-USB-C & HDMI Video Extender Receiver Unit	810-00279
1	10m Cat6A Cable (RJ45 to RJ45)	115-00063
1	VXR PSU (Input 90v-220v)	170-00013

1.C Shipping Weights & Dimensions.

Shipping Weight: 3.5Kg
Dimensions (mm): (L) 330 x (W)310 x (H)150

1.D Optional Accessories (Supplied Separately).

- 2.5m Locking USB-C Input Cable 115-00065
- 2.8m Locking HDMI Input Cable 115-00066
- BX/VX USB-C Charging PSU (100W) 900-00586
Input: AC 90v-240v ~50/60Hz
Charging : >20v >5amp
Power Consumption: 100W (max)
- Tablebox 900-00491
- Tablebox Touch Panel 900-00509
- 3rd Party Under-Table Tablebox Enclosure 900-00528
- USB-C Retractor 900-00490
- HDMI Retractor 900-00489

2. VXT Transmitter & VXR Receiver

2.A Overview.

The Ashton Bentley VX provides a simple solution to extend & connect USB-C and HDMI Video/Audio over distances of up to 35m (100ft). A 10m Cat7 cable is included, however other high quality Cat6A and Cat7 cables can be used.

2.B VXT - USB-C & HDMI Video Extender Transmitter.

The main functionality of the VXT is as a 2:1 switcher with HDMI and USB-C inputs supporting video resolutions up to 4K2K@50/60Hz 4:4:4.

The VTX is remotely powered from the VRX via the Cat7 interconnect. If USB-C laptop charging is required use the optional USB-C Charging PSU (100W). See Section 3.

Inputs are via standard USB-C & HDMI cables, however it can accommodate optional Ashton Bentley locking cables to ensure inadvertent disconnection. See Section 3.

The back plate makes placement simple in Ashton Bentley Chassis, under furniture or inside cabinets.



2.C VXR - USB-C & HDMI Video Extender Receiver.

The VXR Receiver provides a single HDMI output with embedded audio from either the USB-C and HDMI connections of the VXT.

The VXR Receiver has an additional AUX HDMI input for local device connection allowing the connection of a video conferencing system or a presentation device if required. Note: this AUX input cannot be selected if there is a source connected to the VXT. Removing all sources from the VXT will result in the VXR switching to the AUX input.

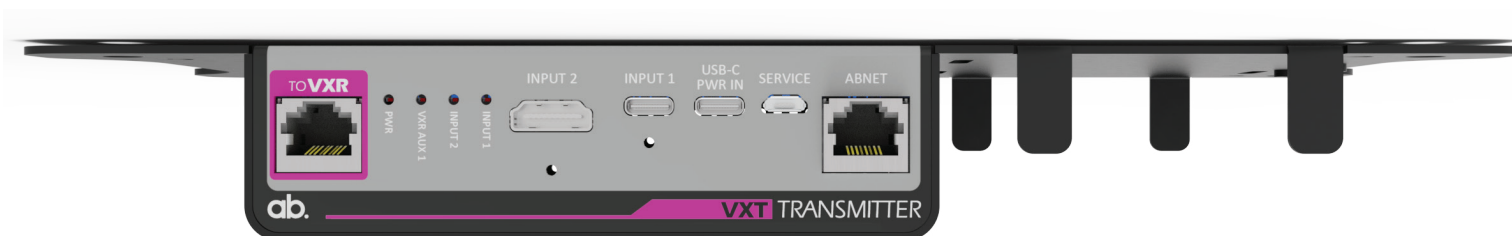
A socket is provided on the VXR for the bidirectional RS-232 pass-through providing connectivity to the VXT.

The VXR has an independent analogue audio output switched with the video signal to allow the connection of an amplifier and speakers if required.

Power for the system is connected to the VXR receiver. Region specific plug-tops are supplied



3.C VXT Transmitter Connectivity.



Connection	Type	Function
To VXR	RJ45	Connection to VXR
ABNET	RJ45	AB peripherals like Tablebox Touch Panel
SERVICE	Micro USB	Engineering port
USB-C PWR IN	USB-C	Optional charging power for USB-C laptop
USB-C	USB-C Locking	USB-C Laptop Connection
RS232	3-Pin Phoenix	RS232 control signal pass-through to VXR
HDMI	HDMI Locking	HDMI Laptop Connection

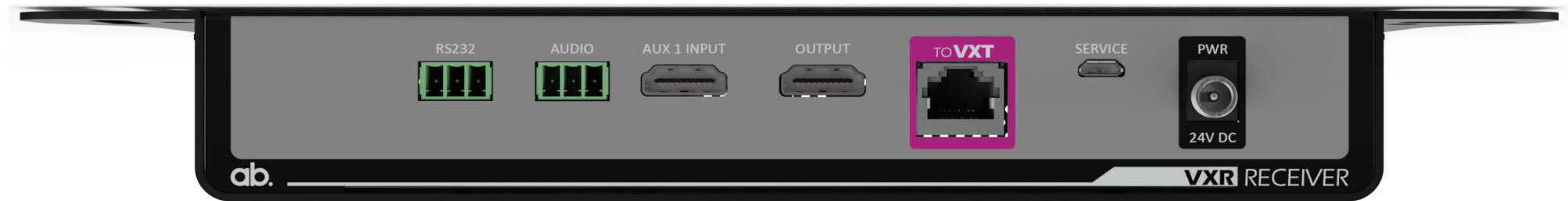
Understanding the LED's

The VXT Transmitter includes status LED indicators to show active connections and to further help diagnose potential problems:

- USB-C : Green LED –Lit when input is selected
- HDMI: Green LED –Lit when input is selected
- PWR: Green/Red LED –Green when operational, red while in standby. NOTE: The VXT goes into standby after a period of having no signals connected (~10 minutes). Reconnecting a USB-C or HDMI input will bring the VXT out of standby.
- The USB-C or HDMI LEDs indicate the input is selected, not that a signal is present.

NOTE: When an input signal is connected the associated input LED will light, and the video displayed via the VXR's Video Out Port. If no signals are present on the VXT, the VXR VIDEO IN (if a signal is connected) will be displayed via the VXR's Video Out Port.

3.D VXR Receiver Connectivity.



Connection	Type	Function
PWR	DC Jack	24V power for both VXR and VXT
SERVICE	Micro USB	Engineering port
TO VXT	RJ45	Connection to the VXT
VIDEO OUT	HDMI	Video out
VIDEO IN	HDMI	Aux HDMI Input
AUDIO	3-Pin Phoenix	Analogue stereo audio out
RS232	3-Pin Phoenix	RS232 control signal passthrough to VXT

3. Optional Accessories

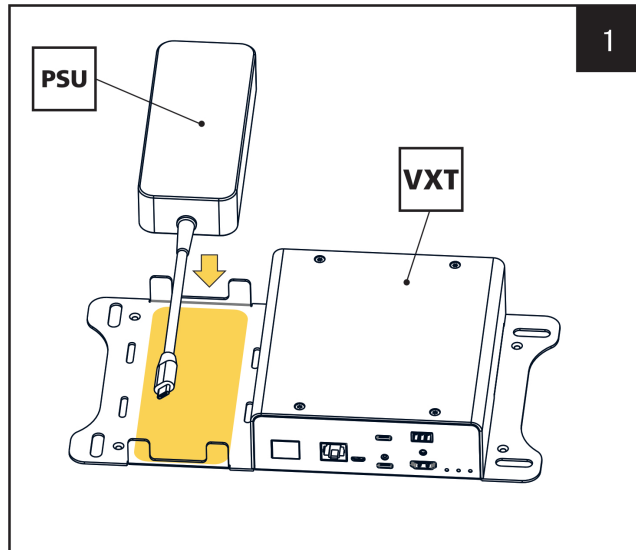
3.A: VX USB-C Charging PSU (100W).

Part No. 900-00586 BX/VX USB-C Charging PSU (100W)

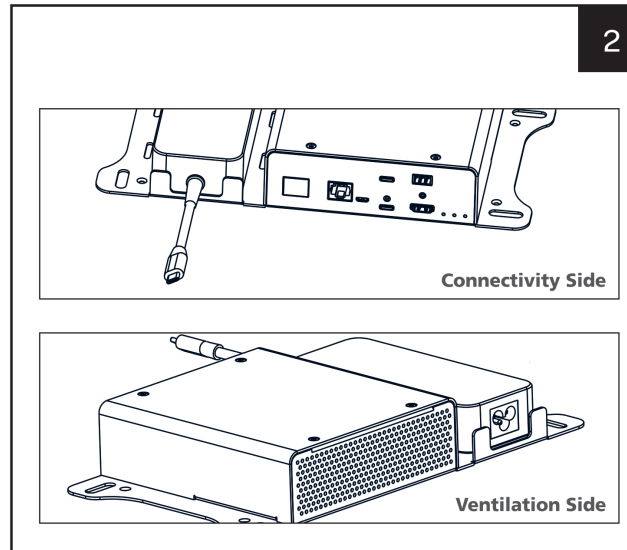
With the optional USB-C Charging PSU, the VXT can provide up to 100w charging to any connected device. This depends on the quality and length of USB-C cable used. We recommend the Ashton Bentley 2.5m Locking USB-C Input Cable. This has a locking USB-C connector to prevent inadvertent disconnection from the BX.



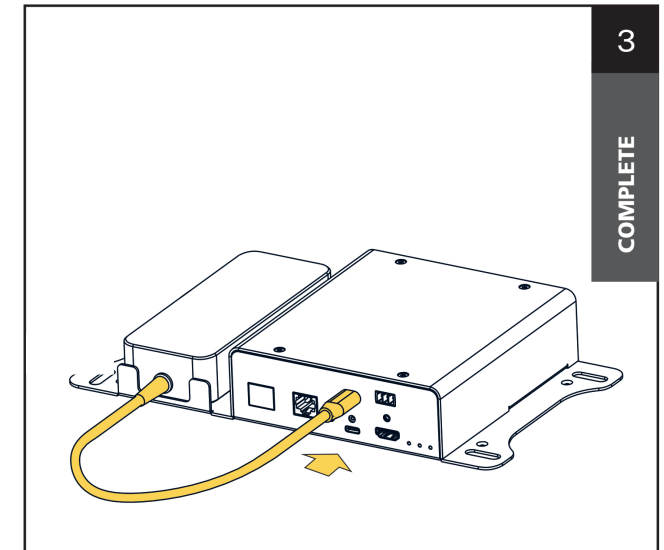
Optional VX USB-C Charging PSU (100W) Installation.



The PSU attaches to the VXT mounting plate



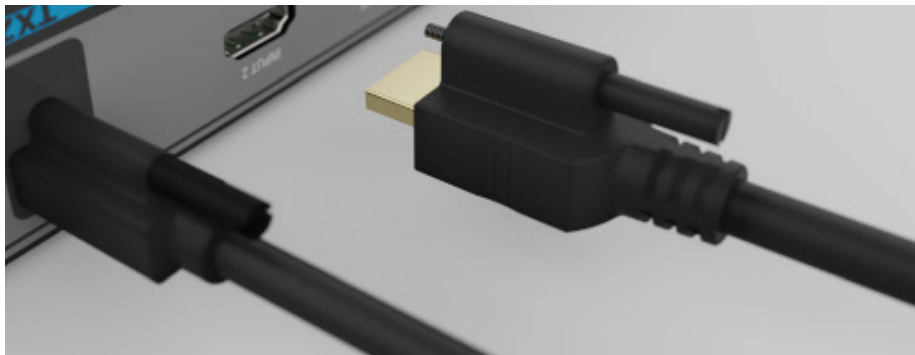
Check the orientation of the PSU. Power-In socket towards ventilation side of VXT.



The PSU Power-Out (with USB-C connector) can now be connected to the VXT.

3.B: Locking USB-C & HDMI Cables.

Ashton Bentley developed two cables for use with the VXT (and other Ashton Bentley products).



USB-C **Part No. 115-00065 2.5m Locking USB-C Input Cable**

Features:

- A unique screw-in locking connector to prevent inadvertent disconnection
- 2.5m length which is longer than most USB-C Cables
- When used with optional USB-C Charging PSU, provides up to 100W of charging power to the laptop

HDMI **Part No. 115-00066 2.8m Locking HDMI Input Cable**

This cable has a unique screw-in locking connector to prevent inadvertent disconnection.

4. Setup & Initial Power Up

4.A: Setup.

The VX USB-C/HDMI Video Extender kit is fully configured and ready to use out of the box. There are no additional drivers and/or configuration required prior to use.

Once the VXT & VXR, and peripherals, are connected and are powered up, the system is fully operational.

If problems are encountered, ensure all cables are routed and connected correctly, and PSU powered.

4.B: Initial Power Up Sequence.

Before powering up the system please ensure that the system is completely assembled and that the wiring is correct.

Please follow these steps:

- Connect the VXT to the VXR with the supplied Cat7 cable
- Connect an HDMI display to the VXR
- Connect the supplied PSU to the 24V PWR connection on the VXR
- Connect a USB-C or HDMI input device to the VXT

4.C: Basic Operation.

The VX Kit has 3 inputs:

1. USB-C (VXT)
2. HDMI (VXT)
3. Aux HDMI (VXR)

The last device (with signal) that is connected to any of the 3 inputs will be displayed via the HDMI out on the VXR.

If all three inputs have devices with signal, then to override what is being displayed disconnect and reconnect the new one to be displayed.

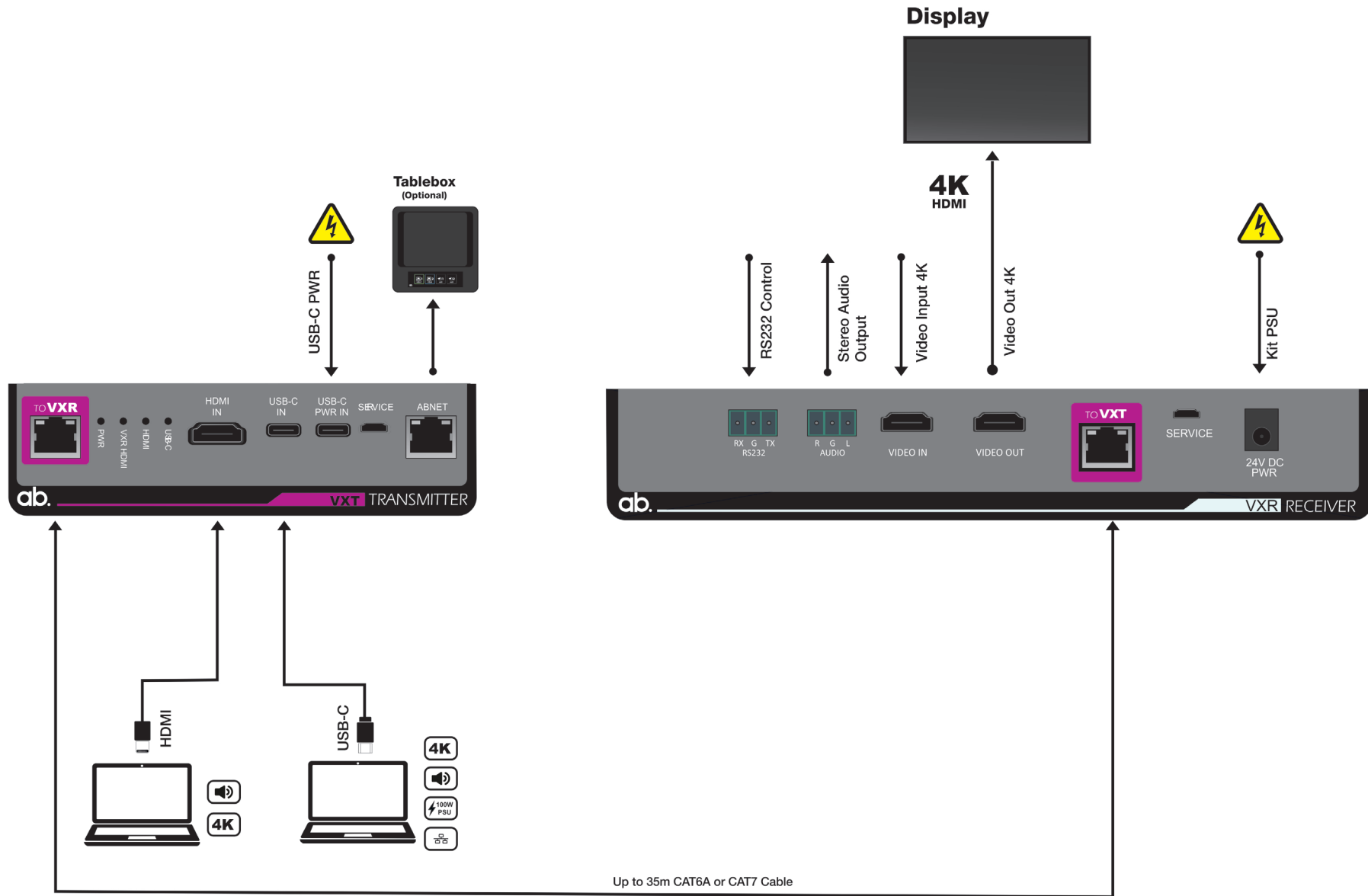
Removing all sources from the VXT will result in the VXR switching to the AUX HDMI Input. When an input signal is connected the associated input LED on the VXT will light, and the video displayed via the VXR's Video Out Port.

The VXT goes into standby after approx. 10 minutes with having no signals connected. Reconnecting a USB-C or HDMI input will bring the VXT out of standby.

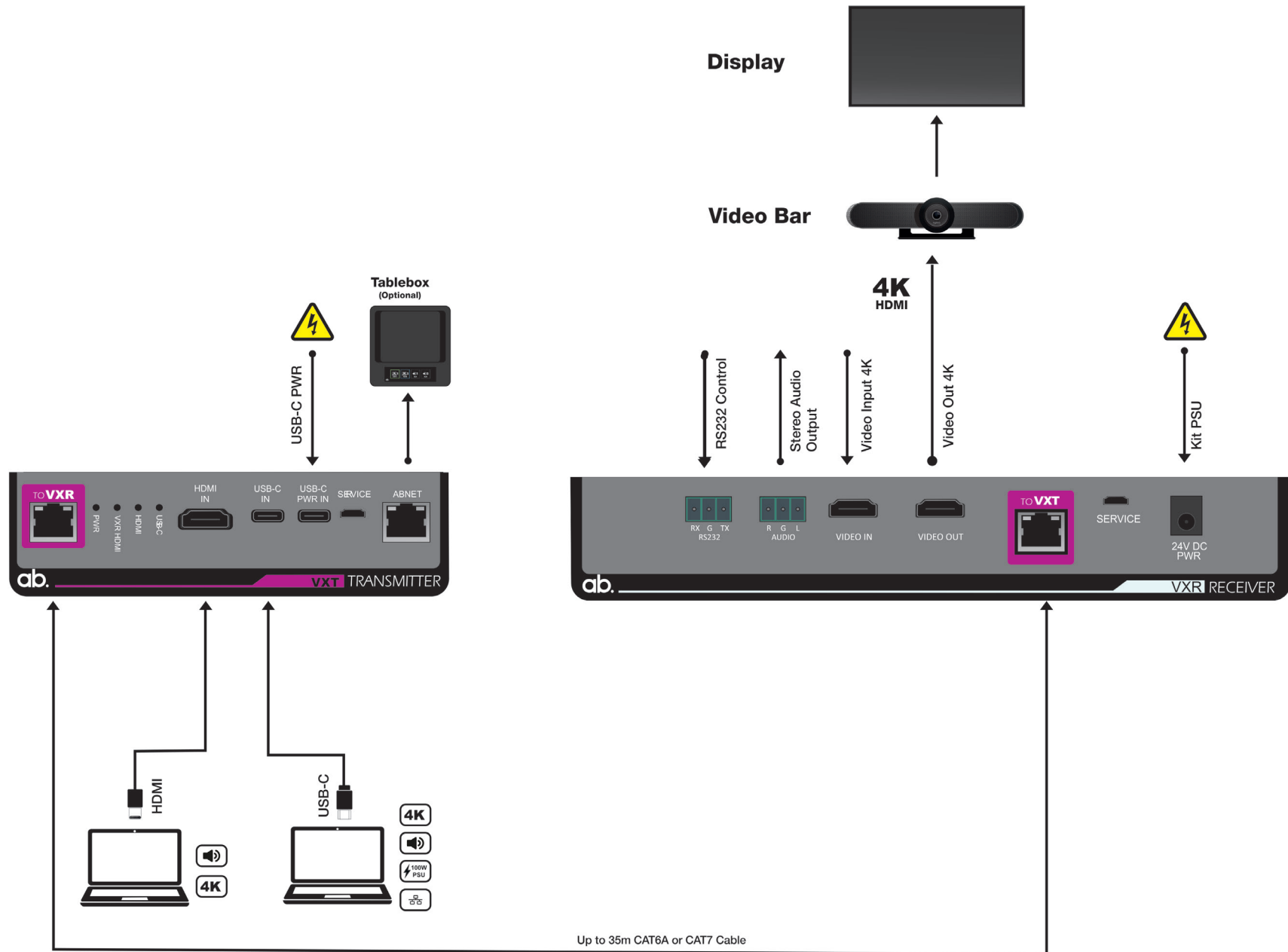
If using an Ashton Bentley Tablebox with Touch Panel only the two inputs at the VXT can be selected. The Aux HDMI cannot be used in this scenario.

5. Application Examples

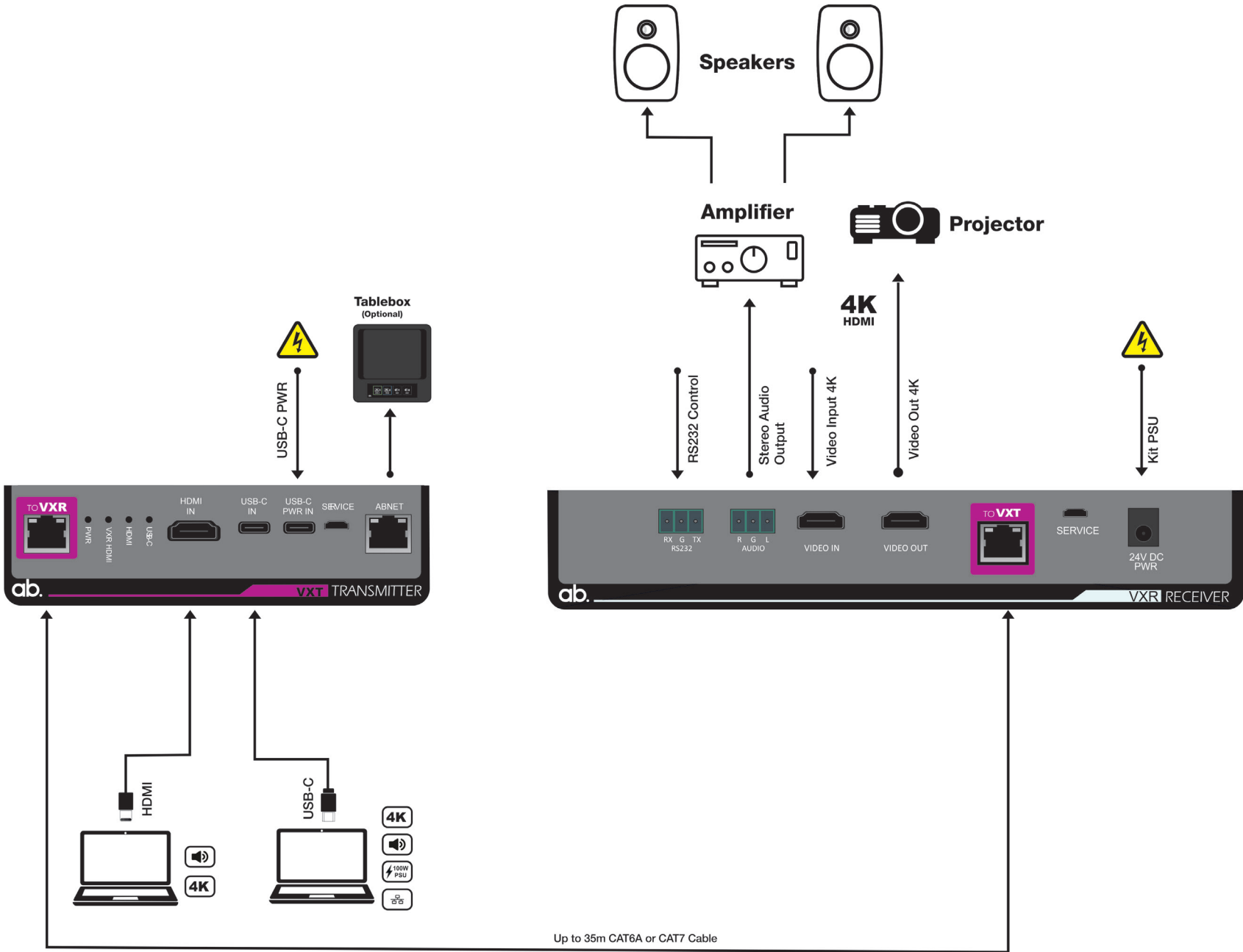
5.A Presentation.



5.B Video Conferencing.



5.C Projection.



6. Technical Resource

6.A VXT Specification.

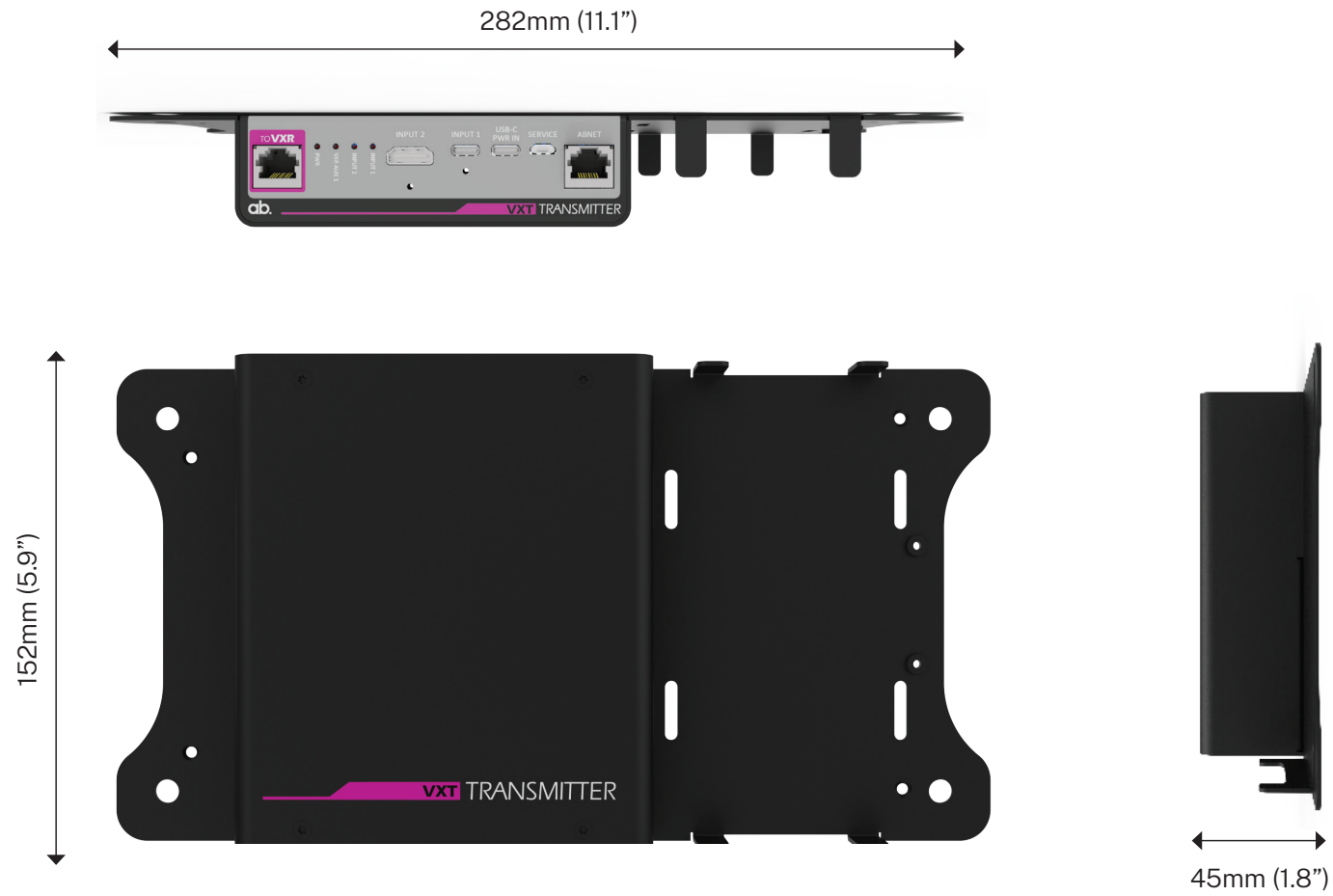
HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
DP Compliance	Display Port 1.2a
Video Bandwidth	USB-C: 5.4 Gbps HDMI: 18 Gbps
Video Resolution	480i-1080p50/60Hz, 4Kx2K@24/30Hz, 4k2k@60Hz
Color Space	RGB, YCbCr 4:4:4 / 4:2:2, YUV 4:2:0
Color Depth	8/10/12-bit (1080P@60Hz) 8-bit (4K@60Hz)
HDR	Support
HDMI Audio Formats	LPCM, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-H Master Audio, DSD
Transmission Distance	Max distance 1080P & 4K 35m (100ft)
ESD Protection	Max distance 1080P & 4K 35m (100ft) Human body model — ±8kV (Air-gap discharge) & ±4kV (Contact discharge)
Inputs	1x HDMI IN [Type A, 19-pin female] 1 x RJ45, 8-pin female (to VXT)
Outputs	1x HDMI OUT [Type A, 19-pin female] 1x AUDIO OUT [Phoenix jack]
Controls	1x RS-232 [3-pin (Phoenix terminal)] 1x SERVICE [Micro USB, Update port]
Housing	Black Metal Enclosure
Shipping Weight	1.5Kg,
Power Supply	Powered from VXR via Cat7 link cable
Power Consumption	24W Maximum
Operating Temperature	32-104°F / 0-40°C
Storage Temperature	-4-140°F / -20-60°C
Relative Humidity	20-90% RH (no condensation)

6.B VXR Specification.

HDMI Compliance	HDMI 2.0b
HDCP Compliance	HDCP 2.2
DP Compliance	Display Port 1.2a
Video Bandwidth	USB-C: 5.4 Gbps HDMI: 18 Gbps
Video Resolution	480i-1080p50/60Hz, 4Kx2K@24/30Hz, 4k2k@60Hz
Color Space	RGB, YCbCr 4:4:4 / 4:2:2, YUV 4:2:0
Color Depth	8/10/12-bit (1080P@60Hz) 8-bit (4K@60Hz)
HDR	Support
HDMI Audio Formats	LPCM, Dolby Digital/Plus/EX, Dolby True HD, DTS, DTS-EX, DTS-96/24, DTS High Res, DTS-H Master Audio, DSD
Transmission Distance	Max distance 1080P & 4K 35m (100ft)
ESD Protection	Human body model — ±8kV (Air-gap discharge) & ±4kV (Contact discharge)
Inputs	1x HDMI IN [Type A, 19-pin female] 1 x RJ45, 8-pin female (to VXT)
Outputs	1x HDMI OUT [Type A, 19-pin female] 1x AUDIO OUT [Phoenix jack]
Controls	1x RS-232 [3-pin phoenix connector] 1x SERVICE [Micro USB, Update port]
Housing	Black Metal Enclosure
Shipping Weight	1Kg
Power Supply	24W Maximum
Operating Temperature	32-104°F / 0-40°C
Storage Temperature	-4-140°F / -20-60°C
Relative Humidity	20-90% RH (no condensation))

6.C Dimensions.

VXT Transmitter Dimensions:



The VXT has a back plate for simple mounting in Ashton Bentley tables or under/in 3rd party furniture/cabinets.

VXR Receiver Dimensions:



The VXR has a back plate for simple mounting in Ashton Bentley tables or under/in 3rd party furniture/cabinets.

7. Important Safety Information

PLEASE READ AND SAVE THIS INFORMATION

When using your Ashton Bentley equipment, the following information and precautions should always be followed to reduce the risk of damage, fire, electric shock or injury to people. If in any doubt about installation, operation or maintenance please contact your vendor or Ashton Bentley.

Follow all warnings and instructions marked on the equipment.

Allow plenty of space in the construction area and remove cartons and any packaging materials before assembly.

The system must be placed in an indoor, dry location. Never operate the system outdoors or very humid conditions. Never allow ingress of fluid of any sort.

To avoid a trip hazard do not lay loose cables across a floor. Always use suitable cable management or install under a raised floor.

Do not block or cover any ventilation vents in the products

VTX & VRX Specific Safety Information

The VXT and VXR are a closed system, they are not designed to work with any other extender product and should only be used together.

The VXT and VXR are designed for internal use only.

The VX USB-C and HDMI Video/Audio Extender Kit comes with a 10m CAT7 shielded cable to connect the VXR to the VXT. This cable will carry the 18Gbit/s data rate that the system uses. Other cables are not recommended, however, if it is necessary to use a 3rd party cable is of high quality, terminated correctly.

Electrical

Where the incoming mains electrical feed is unstable or prone to transient input voltage spikes more than 1KV, Ashton Bentley highly recommends the use of a surge protection device connected to the power input cable.

As with any electronic device, pay close attention to the product when it is turned on. If any of the following are noticed, then do not use the product until everything is back to a fully safe state:

- Power cables, plugs, power supplies/adapters, extension cords, surge protectors that are cracked, broken, or damaged.
- Signs of overheating, smoke, sparks, or fire.
- Signs that liquid has been spilled, or an object has fallen, onto the electronic elements of the product, the power cable, or power supply/adapter.

Note: If you notice these conditions with a product that is not supplied by Ashton Bentley, disconnect from the Ashton Bentley product, and stop using the system until you can contact the product manufacturer for further instructions, or until you get a suitable replacement.

Never wrap a power cable around a power supply/adapter or other object. Always route power cables so that they will not be walked on, tripped over, or pinched by objects.

Do not use any power supply/adapter that shows corrosion at the ac input pins or shows signs of overheating (such as deformed plastic)

Note: The power cable and supply/adapter provided with this product are intended to be used with this product only. Do not use them with any other products.

Only use the supply/adapter provided with the product. The use of 3rd party power supplies/adaptors will invalidate the warranty.

For your safety, Ashton Bentley provides a power cable with a grounded attachment plug. Do not use your system during a lightning storm.

Do not connect or disconnect any cables or perform installation, maintenance, or reconfiguration of this product during an electrical storm.

Connect all power cables securely to a properly wired and grounded electrical outlet. Connect properly wired outlets to any equipment that will be attached to this product.

8. Environmental Policy

Environmental Policy.

Through careful design and selection of materials, Ashton Bentley is committed to designing and manufacturing products that minimise the effect on the environment.

Materials and Manufacture

All Ashton Bentley products are manufactured primarily from natural base metals with a minimum number of treatments and finishes applied. This product design, with a view to managing the future recycling process, allows most product components to easily be disassembled, recycled and re-used without the use of specialist equipment.

Ashton Bentley products are on average made from >98% recyclable materials. Ashton Bentley continue to develop design and manufacturing processes that minimise raw materials used whilst endeavoring to increase the percentage of materials that can be easily recycled and re-used.

Packaging

Ashton Bentley packaging has been designed to use the minimum amount of material required to provide protection of the product during transport and shipping.

Where possible we have used recycled materials and all parts of our product packaging can be easily recycled or retained for future use.

Recycling Ashton Bentley

All Ashton Bentley products have been designed to provide many years of trouble-free service, however, when the time comes to dispose of your system, Ashton Bentley offer a fully inclusive program under the European WEEE directive 2012/19/EU and its subsequent amendments.



9. Warranty

Warranty Overview.

All Ashton Bentley products are designed and manufactured to the highest possible standards providing customers with many years of trouble-free service.

Our aim is to provide high-quality, low-cost solutions that can be used and managed day-to-day with the minimum effort.

Because things do occasionally go wrong Ashton Bentley warrants that its products shall conform to the applicable published and/or agreed upon operational specifications and shall be free from defects in material, workmanship, and functionality for a period of 3 years after the date of purchase.

This warranty cover provides:

- 3 Years - Return to Base. Repair or Replace

The warranty services will be managed and provided by an Ashton Bentley approved service partner who is fully supported by Ashton Bentley.

Return to Base. Return And Repair

Our warranty provides "Return to Base cover for a period of three years from the date of purchase. Any system, or part of a system, identified as faulty will be repaired or replaced at our UK facility or by our local service partner from whom the system was purchased.

No charge will be made for this repair or replacement providing that the faulty system/component be correctly packaged and returned..

Our warranty is intended to provide customers with a transparent repair or replacement service if things go wrong, however, please note that our warranty does not include the following:

- Cosmetic damage where it does not affect the operation or safety of the product
- Charges for repairs undertaken by any other party
- The cost of repairing or replacing a product which fails because anyone neglects, abuses or misuses the product
- In operability of a product caused by the failure of services provided by a third party
- Theft or any loss suffered if you cannot use the product or any loss other than repair or replacement

Where items have been returned to us and are found to have been subject to any of the above, we reserve the right to charge for the repair or replacement and all costs incurred to return the item.

Note: Any repaired or replaced product shall not extend the originally established warranty period. This express warranty relates to the original end-user purchasing the product and is not assignable or transferable to any other party or subsequent purchasers, unless otherwise agreed in writing by Ashton Bentley. The terms of Ashton Bentley "Total Cover Warranty" do not affect your statutory rights, the right to charge for the carriage, appropriate repair and testing or a replacement unit.

Process:

1. When a unit is purchased the customer, or the service partner on behalf of the customer, will complete the Ashton Bentley warranty registration documentation and forward this by e-mail to Ashton Bentley in the UK.
2. Should a fault occur you simply report the fault to Ashton Bentley or your local service partner from whom the unit was purchased giving them your product registration details. The service partner will then contact you to gain as much information about the nature of the fault as they can and facilitate a resolution remotely if possible.
3. Should that not be possible the faulty system or component will be identified, and you are requested to suitably pack and return the faulty system or component back to Ashton Bentley facility in the UK or your local service partner at your cost.
4. On receipt, the unit will be inspected, and we will either carry out a repair or supply a replacement and return to the service partner or to the site.
5. Return carriage costs will be covered by Ashton Bentley however any local import duties/taxes will be your responsibility.



Want to know more?

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