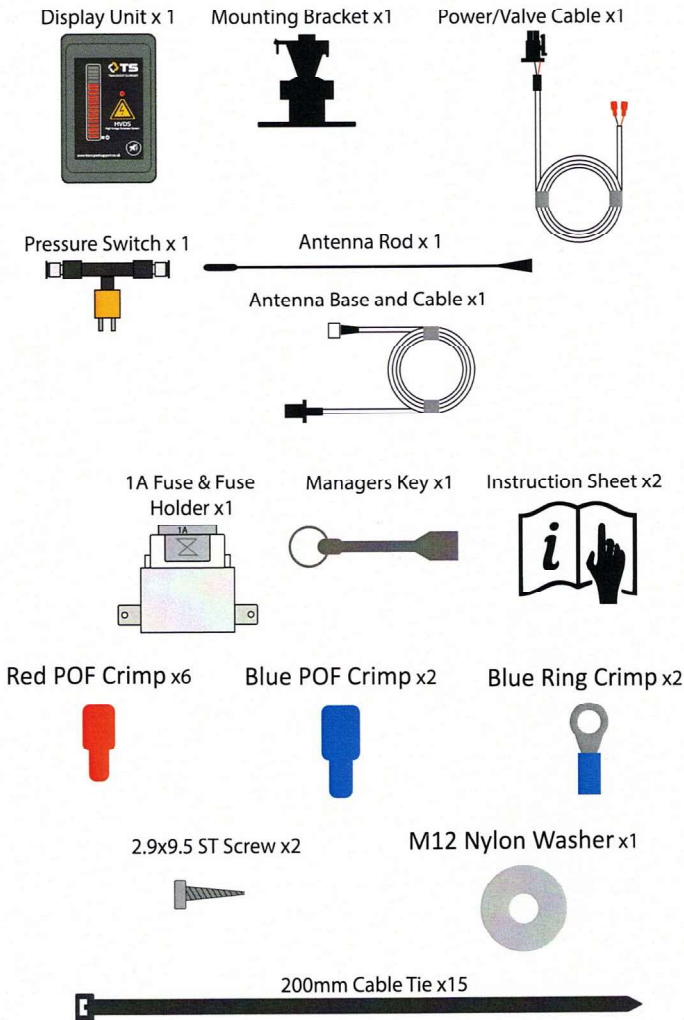


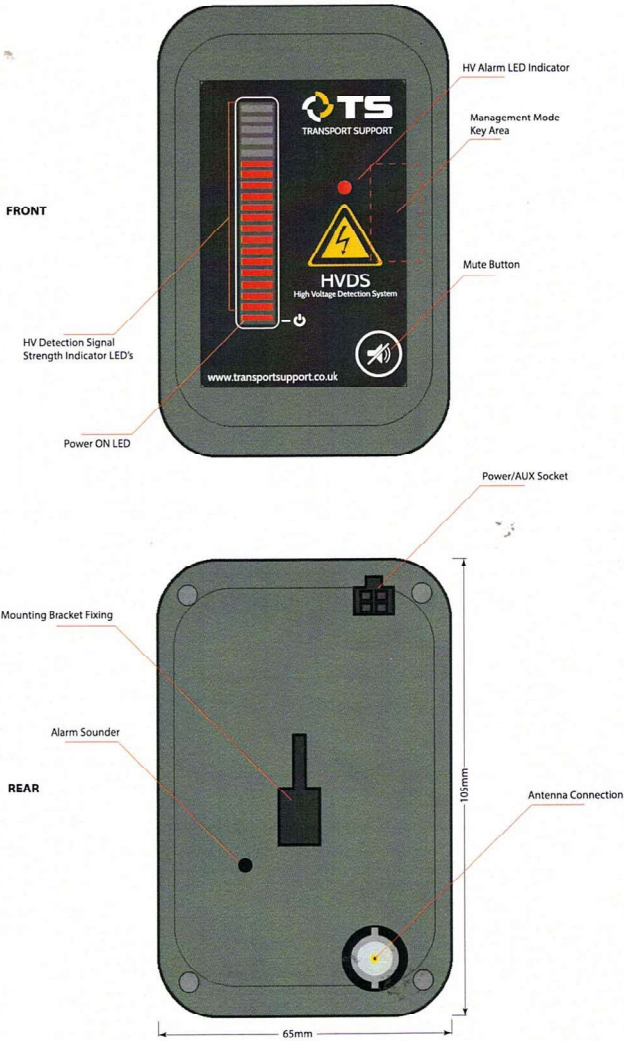
Electrical:	
Operating Voltage.....	DC 11-32v
Operating Current	<150mA at 24v*
Fuse Rating.....	1A
Casing Material.....	ABS
LED Viewing Angle.....	30 degrees
HV Detection Range.....	up to 100 meters**
Warning Tone.....	High pitched pulsed buzzer. Approx. 85db
Visual Warning.....	Red LED signal strength meter and high intensity red flashing LED
Power Indicator.....	High intensity red LED
Environmental:	
Waterproof rating.....	Display: IP65
Relative Humidity	Display: 100%
Operating Temperature.....	-10 to +55°C
Size.....	Display: H106xW67xD22mm
Weight.....	Display: 91g
Cable Length.....	Power Lead: 2m
	Antenna Lead: 5m

* in normal use without AUX connected. Up to 650mA with AUX port used at maximum rating.
** detection range dependant on local conditions.

Kit Contents:



HIGH VOLTAGE DETECTION SYSTEM HVDS



WARNING!

Before using this product please read and fully understand the instructions provided. The Transport Support HVDS is only to be used for guidance purposes ONLY and must not be relied upon to prevent contact with overhead power cables. Transport Support (A division of GN Systems Ltd.) or its representatives accept no responsibility for direct or indirect damage or injury whilst using this product.

**SAFETY DURING USE IS SOLELY THE
RESPONSIBILITY OF THE OPERATOR**

Operating Manual

1. Power On/Power Off

1.1 The HVDS is powered by the ignition switched power from the vehicle. A pressure activated switch (supplied) can be used in the PTO air line so that the HVDS is only powered up when the PTO is activated. DO NOT CONNECT THE HVDS DIRECTLY TO THE VEHICLES PTO CONTROL SWITCH. See vehicle manufacturer guidelines for correct connection to electrical system.

2. Operation

2.1 When the vehicles PTO is engaged the TS HVDS should power up (IF THE PTO PRESSURE SWITCH HAS BEEN INSTALLED)

2.2 On power up the HVDS will briefly light all LED indicators and sound the alarm buzzer to prove that all indicators are functioning correctly. The current alarm set point will then be briefly displayed.

2.3 The bottom LED on the signal strength meter is a POWER ON indicator and will remain lit when the HVDS is powered.

2.4 If an overhead high voltage cable is detected at a signal strength at or above the alarm set point, the unit will give an audible 'beep' tone and the alarm indicator LED will flash continuously. In alarm, the signal strength being detected will still be displayed.

2.5 When the HVDS is in alarm mode, i.e. when overhead high voltage cables are detected, the audible alarm can be muted. However, the HVDS will emit a 'beep' tone every 5 seconds to remind the operator of potential danger. When the alarm is muted the red alarm indicator will continue to flash and the received signal strength will still be displayed.

2.6 Mute is automatically cancelled every time the unit is switch off or when the detected signal drops below the alarm threshold.


2.7 Mute is activated by pressing the mute button once whilst the HVDS is alarming. Mute can be manually cancelled by pressing the mute button again.

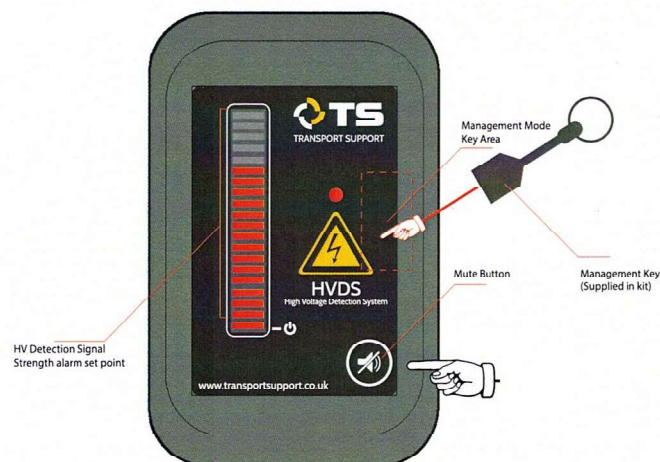
3. Detection Sensitivity Adjustment

The HVDS alarm limit can be adjusted using a management key.


Note: THE HVDS IS FACTORY SET FOR OPTIMAL SENSITIVITY i.e. good detection range with minimal false alarms. If however greater or lesser 'sensitivity' is required, please carry out the following procedure.

3.1 On powering up the HVDS, hold the management key over the sensor area as shown below.

 Note: This can only be done within the first 10 seconds from power up.



3.2 The HVDS will enter set-up mode and display the current alarm limit on the signal strength meter. By pressing the mute button the alarm limit can be incremented one LED bar at a time. Once the limit reaches the top of the display it will automatically drop back down to the bottom.

 Note: If the alarm limit is set at the bottom of the scale the HVDS will alarm further away from the detected power line as it will alarm when only a very small signal is detected. If the alarm limit is set at the top of the scale the HVDS will only alarm when it is very close to the power lines as it will need a large signal to trigger the alarm.

IMPORTANT!:

The above procedure does not actually adjust the sensitivity of the HVDS detection circuitry. It is only adjusting the point at which the alarm will be triggered.

3.3 Once the desired alarm setting is reached, touch the management key against the sensor area until a 'beep' tone is heard.

3.4 The setting will be stored and the HVDS will go back into normal detection mode.

4. Installation of the HVDS

4.1 The system can be powered from 12v to 24v DC (11-32v DC Input range)

4.2 The power for the HVDS should be picked up from the vehicles (see vehicle manufacturers guidelines) ignition switched power source. A pressure switch can be used in the PTO air line so that the HVDS only powers up when the PTO is activated.



DO NOT CONNECT THE HVDS DIRECTLY TO THE VEHICLES PTO SWITCH.

4.3 The detection antenna should be mounted to the roof of the vehicle or as high up as possible. IMPORTANT! IF MOUNTED TO A METAL ROOF OR OTHER METAL SURFACE THAT IS CONNECTED TO THE VEHICLES GROUND, USE THE INSULATING M12 NYLON WASHER TO INSULATE THE TEETH ON THE ANTENNA BASE CONNECTOR FROM THE THE MOUNTING SURFACE. THE TEETH ON THE ANTENNA BASE **SHOULD NOT** BE CONNECTED TO GROUND.



A) Note proximity to other aerals or beacons. A minimum distance of 1m is preferred.



Before cutting a hole in the panel, check that there is sufficient clearance beneath the surface to mount the base.

Access from both sides:

Drill a 12mm hole. Insert the antenna base body through the hole from the inside of the vehicle. Fit the washer (ensure that the flat surface faces towards the panel) and the cap onto the body and tighten firmly by hand. Then follow steps 4 & 5 below.

External access only:

1. Drill a 19mm hole. Insert the assembly tool through the cap ensuring that the washer has its flat surface towards the cap.
2. Screw the assembly tool approximately 4 turns into the antenna base body and push the cable through the hole.
3. Use the assembly tool to hold the base and locate the washer in the hole to position the earthing spikes. Screw the cap on firmly by hand and remove the assembly tool.
4. Tighten the cap on firmly with an 18mm A/F open ended spanner. The recommended torque is 4Nm.
5. Secure the assembly with the countersunk screw supplied with the antenna base.

4.4 Use the two self tapping screws in conjunction with the self adhesive mounting base to mount the HVDS display in a suitable location inside the cab.



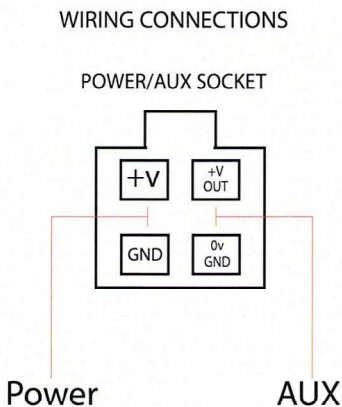
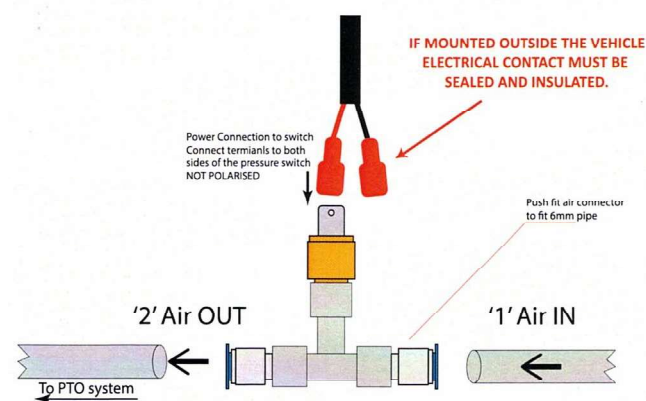
It is not recommend that ONLY the self adhesive base is used unless mounting vertically to a clean flat surface. The self tapping screw will provide a secure fix and prevent the unit coming loose.

4.5 The detection antenna is connected to the HVDS display unit by a twist locking BNC connector plug.

4.6 The HVDS features an auxiliary switching output that gives an output at supply voltage when the system is alarming. Connections for the auxiliary output are not supplied with the HVDS kit. Cable and connector terminals are available from Transport Support. The AUX output can switch up to 500mA @ 12v DC.

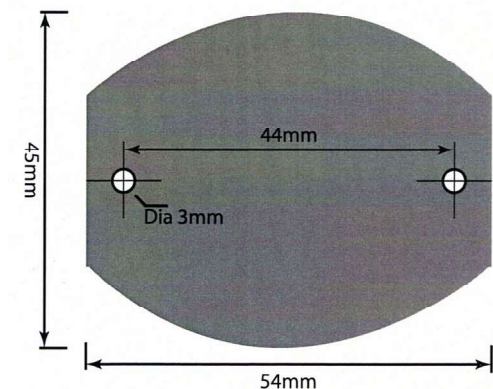
7 If using the pressure switch, it should be connected into the PTO airline. One side the switch should be connected to +V ignition switch supply and the other side of the switch connected to the +V (red) lead to the HVDS power input.

⚠ IF THE PRESSURE SWITCH IS MOUNTED TO THE OUTSIDE OF THE VEHICLE IT MUST BE PROTECTED AND SEALED FORM WATER INGRESS. THE ELECTRICAL CONNECTIONS TO THE PRESSURE SWITCH ARE NOT WATERPROOF AND WILL CORRODE IN WET CONDITIONS. SUCH DAMAGE WILL NOT BE COVERED BY WARRANTY.



Mounting Template - Photocopy before use - DO NOT SCALE

Mounting Bracket



GUIDANCE FOR WORKING SAFELY NEAR OVERHEAD POWER LINES

The TS HVDS detects the presence of overhead AC power lines by sensing the electrical field which they generate. Therefore the HVDS will only detect overhead power lines when they are energised. An extremely dangerous situation can occasionally occur when overhead power lines are temporarily switched off as the HVDS would not detect the presence of the overhead lines which could become re-energised at any time.

When using a vehicle fitted with a TS HVDS the following working procedure should always be carried out.

- BE PARTICULARLY CAUTIOUS WHEN PASSING THROUGH AREAS WHERE THE HVDS HAS PREVIOUSLY DETECTED POWER LINES.
- ALWAYS VISUALLY INSPECT YOUR WORK AREA AND FAMILIARISE YOURSELF WITH THE POSITION OF OVERHEAD CABLES.
- FIND OUT THE ROUTES OF ALL OVERHEAD LINES ON YOUR LAND AND NEAR TO YOUR BOUNDARIES. MARK THEM ON A MAP. THE ELECTRICITY COMPANY SHOULD BE ABLE TO GIVE YOU THIS INFORMATION.
- MAKE SURE YOU HAVE INFORMATION ABOUT ALL THE LINES ON YOUR LAND. IF NOT, CONTACT THE OWNER OF THOSE LINES.
- MAKE SURE YOU HAVE DETAILS OF THE MAXIMUM WORKING HEIGHTS PERMITTED UNDER EACH SPAN OF OVERHEAD LINES ON YOUR LAND AND ADJACENT TO EACH STRUCTURE. MARK THESE ON A MAP FOR REFERENCE.

In operation, the HVDS detects the signals emitted from overhead AC power lines. As a general rule, the higher the voltage, the greater distance the emitted field will extend from the overhead lines. Therefore the higher the voltage the further away the HVDS will detect.

⚠ THE HVDS WILL NOT DETECT TELEPHONE LINES OR OVERHEAD OBSTACLES (THAT DO NOT EMIT HV FIELDS) .

WHAT TO DO IN AN EMERGENCY

NEVER TOUCH AN OVERHEAD LINE EVEN IF IT HAS BEEN BROUGHT DOWN BY MACHINERY OR HAS FALLEN. NEVER ASSUME LINES ARE 'DEAD'.

WHEN A MACHINE OR VEHICLE IS IN CONTACT WITH AN OVERHEAD POWER LINE, ELECTROCUTION IS POSSIBLE IF ANYONE TOUCHES BOTH THE MACHINE/VEHICLE AND THE GROUND. STAY INSIDE THE MACHINE/VEHICLE AND LOWER ANY RAISED PARTS THAT ARE IN CONTACT WITH THE LINES OR DRIVE AWAY FROM THE LINES IF IT IS POSSIBLE TO DO SO.

HIGH VOLTAGE ELECTRICITY CAN ARC A CONSIDERABLE DISTANCE - KNOW THE MINIMUM SAFE CLEARANCE BETWEEN YOU AND HIGH VOLTAGE LINES.

IF YOU NEED TO SUMMON HELP OR BECAUSE OF FIRE, JUMP OUT OF THE VEHICLE AS FAR AS YOU CAN WITHOUT TOUCHING ANY CABLES OR THE VEHICLE. KEEP UPRIGHT AND GET AWAY FROM THE AREA.

CONTACT THE EMERGENCY SERVICES AND THE ELECTRICITY COMPANY TO DISCONNECT THE SUPPLY. EVEN IF THE LINES APPEAR DEAD, DO NOT TOUCH THEM - AUTOMATIC SWITCHING MAY RECONNECT THE POWER.

IF CONTACT WITH OVERHEAD POWER LINES OCCURS

**CONTACT THE EMERGENCY SERVICES AND
REPORT THE INCIDENT**

Detection ranges of the TS High Voltage Detection System (HVDS)

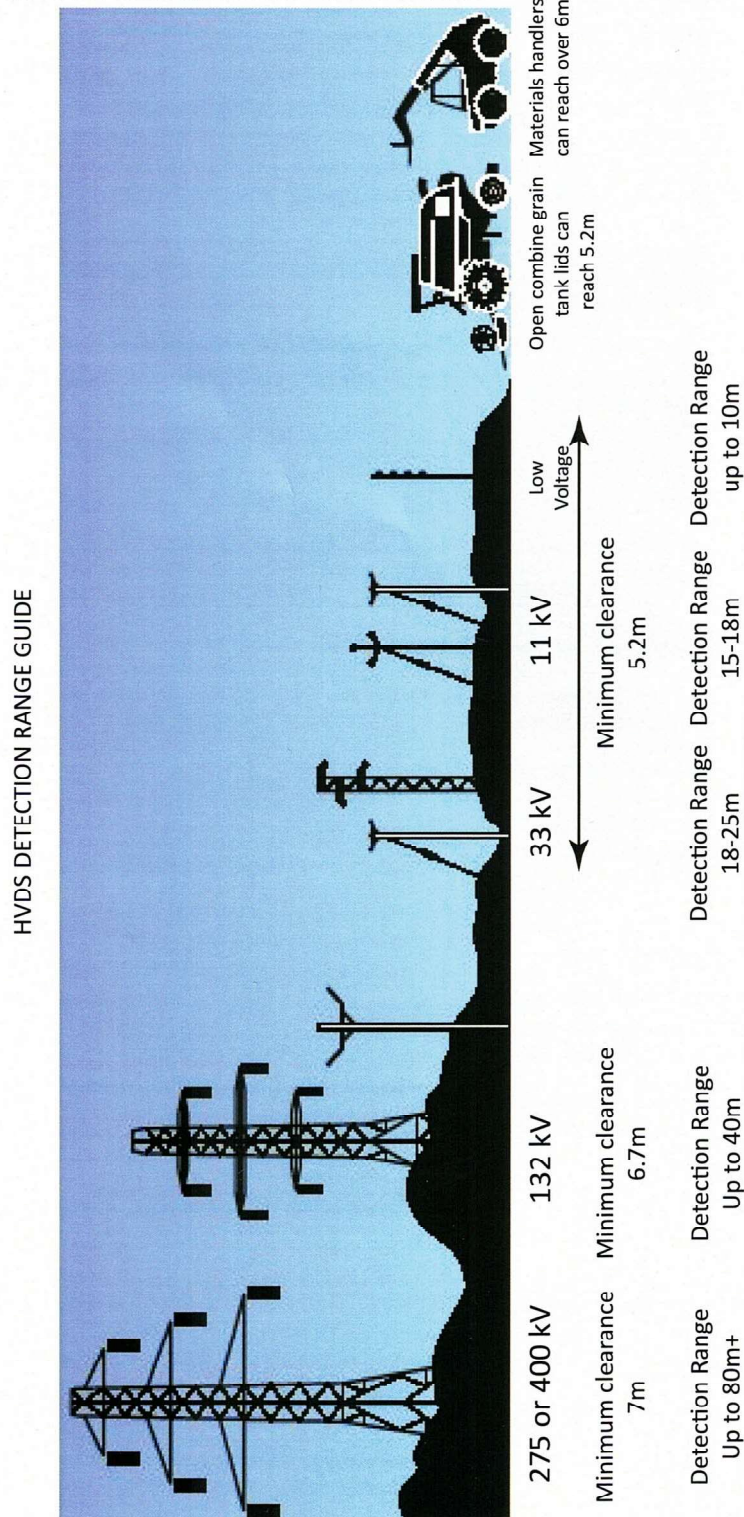
The TS HVDS is a safety device intended to help prevent vehicles and machinery from coming into contact with overhead high voltage power cables. The system works by detecting the field that is generated around overhead AC high voltage lines. Generally the higher the voltage on the transmission line the greater the field will extend out from those lines. The HVDS detects the presence of these fields (AC 50/60Hz) above background noise and gives an audio and visual alarm to the operator.

In tests we have found that our HVDS system will detect the presence of overhead power lines at the distances shown below.

All HVDS units are thoroughly tested during manufacture and complete a final test against actual overhead power cables in the field. In most situations these detection ranges can be expected. However certain conditions can affect the detection range of the HVDS such as 3-phase transmission, adverse weather conditions, horizontal or vertical stacking of overhead lines and or their proximity to large structures such as buildings and bridges.

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SAFETY IS THE SOLE RESPONSIBILITY OF THE OPERATOR.



TEST/CALIBRATION CHECK LIST

Unit Serial Number: HVDS 14704

Firmware Version: 1.1

Manufactured: 1 2 3 4 5 6 7 8 9 10 11 12 / 2024 / 2025

Test/Calibration Date: 8 / 8 / 25

Tested By: lll

Visual Inspection: ☒

Power Up: ☒

LEDs: ☒

Mode: ☒

Calibration 1/2/3: ☒

AUX Output: ☒

Mute Button: ☒

Mute Reset: ☒

Audio Alarm: ☒

Packing Check List

1 x HVDS Unit:	<input checked="" type="checkbox"/>	1x 2.5 mm Hex Key:	<input checked="" type="checkbox"/>
1 x Mounting Bracket:	<input checked="" type="checkbox"/>	1 x Antenna Installation Tool:	<input checked="" type="checkbox"/>
1 x Power Cable:	<input checked="" type="checkbox"/>	1 x M12 Nylon Washer:	<input checked="" type="checkbox"/>
1 x Antenna Rod:	<input checked="" type="checkbox"/>	1 x Instruction Sheet:	<input checked="" type="checkbox"/>
1 x Antenna Base:	<input checked="" type="checkbox"/>		
1 x Antenna Cable:	<input checked="" type="checkbox"/>		
1 x Pressure Switch:	<input checked="" type="checkbox"/>		
1 x Management Key:	<input checked="" type="checkbox"/>		
15 x Cable Ties:	<input checked="" type="checkbox"/>		
2 x ST Screws:	<input checked="" type="checkbox"/>		
1 x 1A Fuse/Holder:	<input checked="" type="checkbox"/>		
6 x RED POF Crimp:	<input checked="" type="checkbox"/>		
2 x Blue Ring Crimp:	<input checked="" type="checkbox"/>		
2 x Blue POF Crimp:	<input checked="" type="checkbox"/>		

Packed By: JS

Warranty

This limited warranty extends only to the original purchaser. Please note that any warranty service questions must be accompanied by the order number from the transaction through which warranted product was purchased. The order number serves as your warranty number and must be retained. Transport Support will offer no warranty service without this number. Transport Support warrants this product and its parts against defects in materials or workmanship for 1 year un otherwise stated from the original ship date. During this period, Transport Support will repair or replace defective parts with new or reconditioned parts at Transport Support's option, without charge to you. All shipping fees to Transport Support must be paid by the customer. All returns must be affected via the Procedures for Obtaining Warranty Service described below. All original parts (p installed by Transport Support at the original system build) replaced by Transport Support or authorized service centre, become the property of Transport Support. Any after-market addition modifications will not be warranted. The owner is responsible for the payment, at current rates, any service or repair outside the scope of this limited warranty. Transport Support makes no o warranty, either express or implied, including but not limited to implied warranties of merchantability for a particular purpose, or conformity to any representation or description, with respect to product other than as set forth below. Transport Support makes no warranty or representation, ei express or implied, with respect to any other manufacturer's product or documentation, its qu performance, merchantability, fitness for a particular purpose, or conformity to any representatio description. Except as provided below, Transport Support is not liable for any loss, cost, expe inconvenience or damage that may result from use or inability to use the product. Under circumstances shall Transport Support be liable for any loss, cost, expense, inconvenience or dam exceeding the purchase price of the product. The warranty and remedies set forth below are exclu in lieu of all others, oral or written, expressed or implied. No reseller, agent or employe authorized to make any modification, extension or addition to this warranty. THIS WARRANTY D NOT EXTEND TO THE ELIMINATION OF EXTERNAL GENERATED STATIC OR NOISE, TO THE CORRECT OF ANTENNA PROBLEMS, TO COSTS INCURRED FOR THE REMOVAL OR REINSTALLATION OF PRODUCT, OR TO DAMAGE TO ANY TAPES, SPEAKERS, ACCESSORIES, OR ELECTRICAL SYSTEMS. warranty extends only to products distributed and/or sold by Transport Support. This warranty co only normal use of the product. Transport Support shall not be liable under this warranty if damage or defect results from (i) misuse, abuse, neglect, improper shipping or installation; disasters such as fire, flood, lightning or improper electric current; or (iii) service or alteration anyone other than an authorized Transport Support representative; (iv) damages incurred thro irresponsible use, including those resulting from viruses or spyware, overclocking, or other non-omended practices.

You must retain your sales invoice or other proof of purchase to receive warranty service. No warr extension will be granted for any replacement part(s) furnished to the purchaser in fulfilment of warranty. Transport Support and its Authorized Service Centre accepts no responsibility for software programs, data or information stored on any media or any parts of any products returnec repair to Transport Support. PLEASE VISIT <http://www.transportsupport.co.uk/warranty> for warranty terms.