

TRANSCEIVER TEST GUIDE

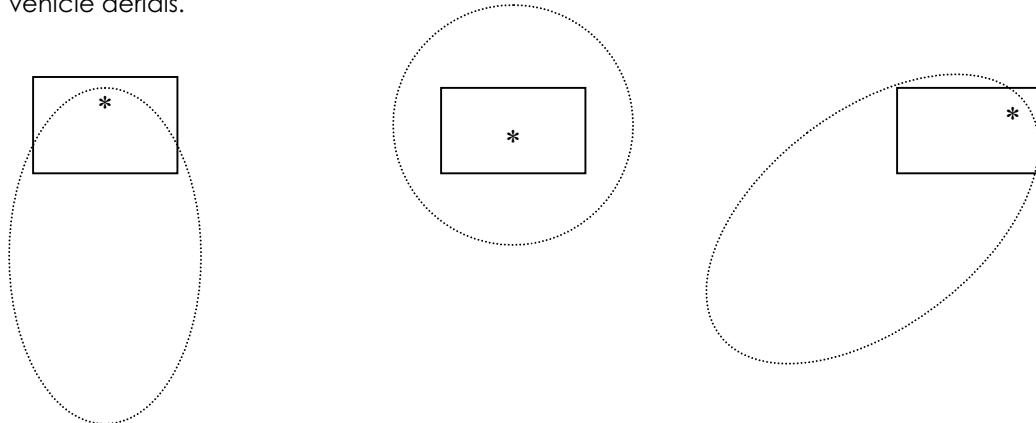
Useful things to check on an aerial.

These checks apply to magnetically mounted aerials and permanently installed aerials.

- 1) If you have a multi meter; do a continuity check, both on the centre conductor to the aerial, and also the outer of the plug connector to the ground plane- earth.
(If you do not have a meter, a bit of wire, a 12v bulb and a 12v feed will suffice)
- 2) Using the resistance range; check there is no short circuit between the centre conductor and the outer casing of the plug connector.
(With the bulb method check there is **no** continuity between centre conductor and the outer casing of the plug connector).
- 3) Ensure that the aerial is grounded to the ground plane- In most cases your vehicle bodywork. (Magnetic mounts will achieve this even through the protective thin rubber shoe).

Other useful things to check.

- 1) The radio should ideally have its power and earthing fed directly from the host vehicle battery.
- 2) Both the supply line *and the earth line* should be protected with a fuse appropriate to the radio. This is to protect the set in the event of the main earth to the engine becoming high resistance. The vehicle starter motor, like an electric winch, draws a high current. If it cannot return to the battery through the main earth, then it will find any other route of low resistance. i.e. via the aerial lead, handbrake cable, exhaust etc. There is adequate power available to melt the co-ax and fry the radio.
- 3) The most efficient way to use a vehicle mounted aerial, whether the magnetic type or a permanently installed item, is to ensure that it has the best possible ground plane to operate from. This is achieved by placing the aerial in the centre of the vehicle, this is usually the middle of the vehicle roof.
The diagrams below illustrate the propagation patterns relating to the placement of vehicle aerials.



The positioning of your aerial dictates the direction that your strongest transmitted signal will take. Obviously if control is in the opposite direction to this path then you will encounter problems.

As it is not always possible to determine your geographical relationship to a control or relay then the optimum position for a vehicle mounted aerial is the middle choice above.