

# HF ANTENNA INSTALLATION GUIDE

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For popular multitap antennas including the Bushcomm Outbacker range of antennas as well as autotuners like the Barrett 910 / 2019 and Codan's 9350 and 3040.

*These guidelines refer equally to a multitap or autotune installation.*

Having a good grounding is essential for both transmission (Tx) and reception (Rx). In a mobile installation, the vehicle body is an integral part of the antenna system. Following is a description on how best to achieve a good ground plane, sometimes referred to as "earth" or "grounding".

**Note:** *Check with your state traffic authority for what is the legal placement of your antenna system. There is no conformity between states. Qld, NT and WA appear to be more lenient while SA, NSW and, especially Vic, are stricter.*

Use braided tinned copper strap 20-25mm wide for best results. If you have trouble finding braid locally, try [www.hfradiosales.com](http://www.hfradiosales.com). Clean with sandpaper to bare metal where the braid connects to the body and chassis and apply electrical contact grease to the sanded area. Contact grease can be purchased from Jaycar.

## METHOD

For front mounted antennas, use braid from the antenna base to the body (see Pic 1 and 2).



Pic 1

Pic 2

For rear mounted installations go to a suitable earth point such as a door/tailgate hinge bracket on the body side of the vehicle then run a suitable length of braid from the under body of the vehicle to the chassis (see Pic 3). It pays to have a body/chassis connection for ALL installations.



Pic 3

Also running braid from the vehicle body to the top bonnet hinge bolt will also help increase the groundplane area (see Pic 4).



Pic 4

Earth the transceiver to a suitable body point (see Pic 5).



Pic 5

## TIPS

- Preferably connect the transceiver to your second battery, if you have one. Starting the vehicle with the radio connected to the main battery will cause the radio to re-boot and possibly blow an internal fuse. Remember to turn off the radio first, if connected to the main battery before starting.
- Running coaxial cable in loom tube will avoid the coaxial cable touching any live electrical cabling and help reduce interference. (see Pic 5 above). Use 7mm loom tube available from Jaycar, Supercheap etc.
- Disconnect any battery Megapulse and/or Rust Prevention devices you may have when using the transceiver. Both these units create a LOT of noise.
- Some fridges can cause interference - you may have to turn it off when transmitting.
- Route coaxial cable and autotune control cable as far away as possible from the vehicles electrical injectors and ECU. RF generated when *transmitting while driving* can sometimes do funny things to your vehicle's ECU and the noise generated by the injectors can be troublesome. Best to stop and turn the motor off when transmitting in modern vehicles.
- Keep other antennas, CB and mobile phone for example, at least 1 metre away from your hf antenna. They interfere with one another.
- Coaxial cable shielding can be removed and used as a light braid.
- make sure the antenna, with the whip removed, is no taller than 2.1 metres above ground - low undercover car parks?
- The tuning coil within the autotuner should be 40 cm clear of any body work or obstructions, particularly for the Codan 9350.
- Avoid using the radio under or near high tension power lines if possible.

**By following the above method and tips you will minimize interference to your radio and improve reception and transmission.**