

A 5/8 wavelength mobile whip

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A 5 foot CB helical whip can be used as the basis for a 2m 5/8 wavelength aerial that can be used on a vehicle or for the home stations using one of the mounts described above. Remove all the old wire from the whip and re-use it to make a loading coil at the base of the whip. The coil should be 8 turns with 5mm spacing between turns. Use a length of coax braid slipped over the fiberglass whip as the new radiating element. Using braid keeps the whip flexible and helps to increase the useable bandwidth too. You will need around 1400mm of RG-58 coax and some heat shrink tubing to complete the project. Some aerials are too thick to take the RG58 braid, if so get separate braid or strip larger coax. Dual wall 12mm heat shrink is recommended as it contains glue which helps stabilize the aerial and also keeps out moisture. You can buy dual wall heat shrink (WH5643) from Jaycar for around \$4.50 per 1200mm length. You should also be able to source it from electrical wholesalers.

The final length for the whip depends on a number of factors including the loading coil and type of braid you use. The whip should end up around 1350mm long from base to the end of the braid. It's best to start with more braid than required (1400mm is a good starting point) and then trim small sections off until it's resonant at the frequency of interest.

The whip is quite long so remember to remove it before entering underground car parks etc.

Notes on adjustment.

- The aerial is affected by nearby objects and large metal structures. Do not attempt to adjust the aerial before you mount it in it's final operating position.
- The heat shrink lowers the resonant frequency of the aerial. Do not attempt to adjust the aerial before you cover it in heat shrink.
- You may not achieve a 1.1:1 VSWR with your aerial. As long as you can get it around 1.5:1 everything will be OK.
- The best place for a mobile aerial is in the middle of the roof of the car. All other locations on the car will cause some variation to the radiation pattern.
- Variations in the radiation whilst measurable will not cause your aerial to stop working altogether.

