

Model  
**GRH**

**“Quick Fit” Ground Independent  
 Mobile Antenna Kit, 1.17 metre**

**144 to 174 MHz  
 Field Tune to 4 MHz Bandwidth  
 2.1 dBi Gain**

**Recommended for vehicle bull bar,  
 guard, boot of a sedan or truck mirror**

- “Quick Fit” to the UHF female mounting base included with 6 metre RG58 low loss stranded cable
- Mounts into any bracket with min 17 mm diameter hole.
- BNC male crimp connector supplied, not fitted.

**INSTALLATION and  
 TUNING GUIDE**

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**ANTENNA DESCRIPTION**

The **GRH** mobile antenna is a ground independent, half wave, end fed design ideally suited for use where no metal ground plane exists. In practice the antenna is also used where some metal is present, but where it is not of sufficient area to allow a normal quarter wave whip to be mounted

The antenna stands 1.17 metres tall and delivers 2.1 dBi gain.

The installation kit consists of :

- the **GRH/T** stainless steel whip with a UHF male connector inside the delrin base.
- The **RA6.0** right-angle UHF female base and 6 metre RG58 low loss stranded cable set.
- **BNC male crimp** connector supplied, not fitted.

This combination allows you to easily remove the stainless steel whip from the base in any situation where you are concerned about damage, vandalism or theft of the antenna.

**MOUNTING POSITION**

Typical mounting positions are to a vehicle bull bar, guard, boot of a sedan or truck mirror using the right-angle UHF female base supplied and appropriate bracket with a 17 mm hole.

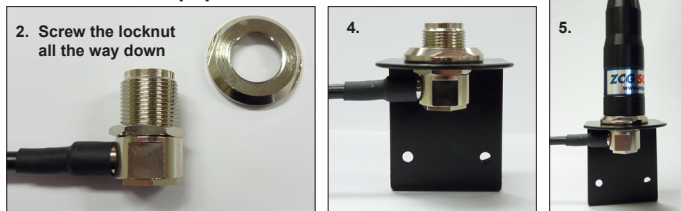
It is important to mount the antenna as far away from other antennas and metallic objects as possible to avoid interference and distortion of the omnidirectional pattern. At least 350 mm side clearance is desirable, preferably more.

The antenna must be vertical for best performance, not mounted at an angle.

**INSTALLATION GUIDE**

1. Remove the ring from the UHF female mounting base.
2. Screw the locknut all the way down the thread until it turns freely at the very bottom of the base.
3. Insert the UHF female connector through the hole of your mounting bracket.
4. Replace the ring onto the UHF female mounting base and screw it down tight to secure the base firmly on the bracket.
5. Screw the GRH “Quick Fit” antenna top onto the UHF female base.

**IMPORTANT : Do not over-tighten** the antenna top on the mounting base. This is not necessary and will make removal of the antenna top quite difficult.



Route the RG58 cable carefully. Avoid high heat areas in the engine bay. Ensure that the cable is not stretched excessively and there are no sharp kinks. Use cable ties, but do not pull so tight as to crush the cable.

The cable may be cut shorter as desired. Then carefully fit the **BNC male crimp** connector supplied using proper tools.

**TUNING GUIDE**

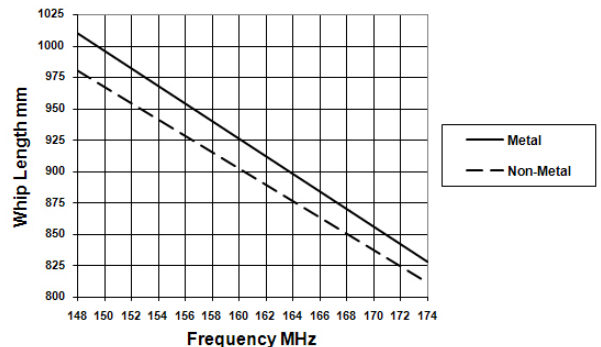
The stainless steel whip is to be trimmed in the field to the desired 4 MHz bandwidth within the frequency range 148–174 MHz using an SWR meter.

The **Cutting Chart** below indicates the different lengths to be expected when mounted on different ground plane types.

Note that these antennas pull lower in tune when mounted on a metal mass than when mounted on some other non-metal surface.

**All measurements refer to the stainless steel whip length, not including the delrin base.**

**CUTTING CHART**



MHz	On Metal	On Non-Metal	MHz	On Metal	On Non-Metal
148	1010 mm	980 mm	162	912 mm	889 mm
150	996 mm	967 mm	164	898 mm	876 mm
152	982 mm	954 mm	166	884 mm	863 mm
154	968 mm	941 mm	168	870 mm	850 mm
156	954 mm	928 mm	170	856 mm	837 mm
158	940 mm	915 mm	172	842 mm	824 mm
160	926 mm	902 mm	174	828 mm	811 mm

Use an Allen Key to loosen the grub screw and remove the stainless steel whip. Trim the whip from the bottom.

**Cut the antenna at least 30 mm LONGER than the expected length. Then trim back slowly and check tune using an SWR meter until minimum SWR is obtained.**

**SWR better than 1.5:1 should be achieved** in all cases where there is no metal close beside the base mount. If SWR begins to rise after dipping, do not trim any further.

When the desired frequency is reached with minimum SWR, **apply LOCTITE 262 Adhesive on the grub screw.** Then tighten the stainless steel whip firmly in position using an Allen Key.

