

Model

GRHFC

Ground Independent Vehicle Mount
Mobile Antenna, 1.17 metre

Frequency Range

148 — 174 MHz

Bandwidth

4 MHz Field Tune

2.1 dBi Gain

- Mounts into any bracket with minimum 10 mm diameter hole.
- Fixed 4.5 metre RG58 low loss stranded cable.

INSTALLATION and TUNING GUIDE

www.zcg.com.au

ANTENNA DESCRIPTION

The **GRHFC** 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 stainless steel whip with delrin base stands 1.17 metres tall and delivers 2.1 dBi gain.

4.5 metres of RG58 low loss stranded cable exits through the antenna base. The cable is fixed into the delrin base and therefore the antenna top cannot be removed.

No connector is supplied. Various types are available separately as you require.

MOUNTING

Typical mounting positions are to a vehicle bull bar, guard, boot or truck mirror using the appropriate bracket with a 10 mm diameter hole minimum.

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

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

CABLE and CONNECTOR

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. A damaged feeder cable is a cause of high VSWR and reduced performance.

The cable may be cut shorter as desired. Then carefully fit your chosen connector using proper tools



TUNING

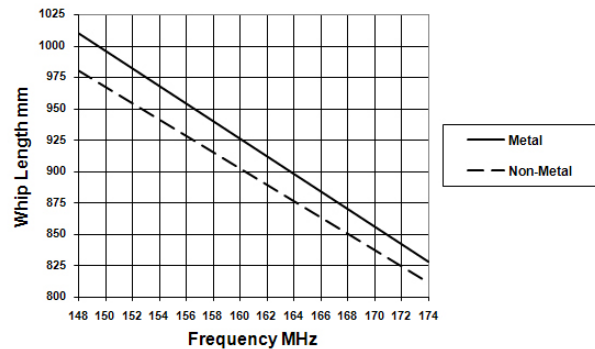
The stainless steel whip is trimmed in the field to the desired 4 MHz bandwidth within the frequency range 148–174 MHz using an SWR meter.

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 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.

