

Once you've got your licence, the first purchase you're likely to make may well be a handheld radio. All the rage at the moment are the PoFung / Baofeng radios as these can be bought cheaply, but they have limitations!

First off, so you're not disappointed, it's important to understand the limitations:

- **Build quality** – At £25, don't expect a high-quality radio. They are made to be sold at budget prices, and are not the best quality.
- **Audio** – Notable is the lowish quality of the microphone, which can sound muffled. Solutions include drilling out a bigger hole on the front of the radio to allow more sound to hit the mic, or plugging in an external microphone. Make sure you speak loudly and clearly at a suitable distance from the mic hole. Some experimentation may be needed.
- **Antenna** – VHF and UHF normally work "just beyond line of sight" and there's a limited range. The free antenna supplied with a Baofeng-type radio is acceptable, but don't expect much in the way of distance. At a high point out in the open with nothing in the way, hitting a repeater 10 or 20 miles away may well be possible, but built-up area or in a dip, you may get nothing.



Not hearing much?

First, check that the Squelch isn't set too high. If it's set too high, you'll be blocking some signals. Next, check the obvious – Is the volume turned up? Is the antenna connected correctly? Are you on the right frequency? Is your radio set to some odd unexpected mode? As a last resort, try a factory reset.

The 2m band can often be quiet. Listening when a busy net is on in your area is worth a try. If a net is on a repeater, listen to the Input frequency, as you may be able to hear local signals even if you can't hear the repeater itself.

If trying to work a repeater, you will need exactly the right settings to be programmed into your radio – The CTCSS tone on transmit, and the offset. Without both of these 100%, you won't open the repeater.

Improving your Range

The cheap antenna supplied with budget radios can be unscrewed normally revealing an SMA plug or socket – Connecting a better antenna will make a big difference. Here are some options:

Height is more important than power for VHF/UHF. At home, a rooftop antenna is best – as high as you can get it.

Many find that a good option is a 2m/70cm colinear white stick antenna (£30+) on the roof or in the loft. If not, a home-made Slim Jim antenna (loft, or out the window). Last resort, a bigger / better rubber duck type antenna.

Position matters too - If you're working using just the rubber duck antenna – Try going elsewhere – High up, closer to a repeater, less built-up area – again, perhaps when you know a busy net is on.

If you can't get a good signal at home, get in the car. Get yourself a cheapish 2m/70cm mobile 5/8 wave antenna. These have a magnetic base for the roof of your car, and the co-ax goes through the door seal. Cheap mag mounts use very thin co-ax cable, which is not great at UHF, so don't skimp too much. The metal roof of your car will act as a groundplane, and you have freedom to drive to a high point or find a nearby sweet-spot.

If using an external antenna with co-ax cable, using RG213 (the thicker co-ax) may be better than the thinner RG58. It's less lossy at VHF/UHF frequencies, and if you're struggling for signal, it can make the difference.

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