

Radio Frequencies

27MHz These AM radios have been around for a long time, and don't require licensing and are commonly referred to as **CB Radios** (Citizen Band). These radios are limited to a low power output of 4W, resulting in short communication ranges (1 to 5km). There are still many operators using these channels, and radio chatter can be quite noisy in urban areas.

29MHz (or **ski boat radios**) (29.700MHz - 29.999MHz) basically fall in the same AM band as the 27MHz band, but the radio equipment is more modern, but have roughly the same range and power as the 27MHz radios. The frequencies need to be licensed with ICASA, or via ORRA, our club link to ICASA. There are fewer operators with 29MHz, but range is still limited to typically 1 to 3km ave for convoy work. Radio outputs are limited to 5W.

The licence costs through **ORRA** are R10 registration (once off), R20 subscription per year, and R35 per year per radio.

Here is some more info regarding these frequencies:

1. There are 23 fixed frequency channels numbered 1 to 23 (ICASA numbering).
2. The Off-Road Radio Association (ORRA) is licensed to use three frequencies. These frequencies are not exclusive to ORRA, and are shared with other users. These frequencies are:
 - o Ch. 14 = 29.8725 MHz
 - o Ch. 15 = 29.8850 MHz
 - o Ch. 16 = 29.8975 MHz
3. Other users of the 29 MHz radio band include:
 - o The National Sea Rescue Institute and the ski boat fraternity (Ch 19, 6, 22)
 - o Civil Protection organisations and Farming communities (Ch 4,10,12,18,20)

VHF radios - the latest trend is moving in this direction (149MHz - 152MHz band, some also in the low 140MHz areas). This falls in the FM band, and because the mobile radios typically can transmit legally at 25W, even though radios with outputs of 75W are available, communication ranges are far superior to that of 29MHz radios, and range is typically 20km to 40km, even though transmission in excess of 100km have been recorded. The signals are also very clear, and line-of-sight is not needed for close convoy work (5-10km). In the high band range, line of sight is needed for effective communication.

Licensing can now be obtained from **ORRA** as well for a single frequency. Costs involved are the similar in structure to those above for 29MHz, with the difference that the licence costs per vhf radio is R100pa

For more information about radio licenses, go to <http://www.fwdcsa.co.za/orraask.htm>

Following is a link for downloading license application forms:

http://www.fwdcsa.co.za/forms/form_orra_application_29mhz_2a.doc

HF radios offer longer range, and more powerful 100W to 400W radios. Amateurs use this equipment to communicate around the world, and these could be use on overlanding trips to remote places to stay in contact with the world. You need to pass a HAM exam to be allowed to operate these sets on the allocated frequency bands, as issued by ICASA. They are also much more expensive than the radios mentioned above, typically up to R20,000.

Satellite Phones These phones are probably your best bet for staying in contact in remote areas. With these you can phone any other phone in the world, from anywhere in the world. The phones are expensive (from R12,000), and airtime is also expensive, as you have to purchase prepaid (pay-as-you-go) cards, the smallest denomination \$100 at the moment. Talk time costs are

typically \$1.75/minute. They can be rented from R40/day. The later models allow to connect to the internet, which allows you to stay in touch with email etc

The **antenna** are one of the most important component in your radio setup. It is pointless to buy a top-of-the-range radio, and connect it to a cheap antenna, or even a good antenna, which is not properly set up.

There are various types for vehicles, and these include window, magnetic and fixed (through the body). The first is the least effective. Magnetic mounts are great when you don't want permanent installations, but tend to scratch the bodywork when dust settles between the mount and the body. On Land Rovers, modifications are necessary, as the bodies are made from non-magnetic aluminium, and mild steel plates are often attached to the body, especially if the roof racks are also from aluminium or stainless steel, defeating the object of a magnetic mount.

Then you also also get different whip antennas with different gains (the higher the gain, the better). Popular antennas are quarter, half and 5/8 wave length antennas, the last one usually offering 2 dB gain over dipole antennas. Consult the professionals, such as Antronic in Durban, for the best setup on your vehicle.