

VKS-737 & HF-Tel

Divisions of the Australian National 4WD Radio Network Inc.



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Communications Systems Comparison

27MHz CB (Citizens Band) Radio

27MHz AM (amplitude modulation) & SSB (single side band) CB is generally limited to a maximum range of approximately 10 to 50km.

The main application of 27MHz CB is mobile to mobile, base to mobile and base to base. 27MHz is prone to "Skip" where signals may travel many thousands of kilometres but cannot be heard "just down the road".

27MHz is very susceptible to ignition and other man made noises which generally limits its use in mobile installations over large distances.

UHF CB (Citizens Band) Radio

UHF CB signals are generally line of site giving a range of typically 10 to 40km maximum. By using repeater stations it is possible to greatly extend the range.

Since UHF CB uses FM (frequency modulation) on 477MHz, as compared with AM & SSB on 27MHz, the quality of the signals is improved and noise & interference is reduced. The use of high gain antennas also improves the performance of UHF CB.

The main application of UHF CB is inter-mobile, base to mobile and base to base over limited distances. The use of Selcall allows users to contact other suitably equipped users without the need to listen to other traffic on the channel.

There are no individual User licences associated with operating either 27MHz or UHF CB radios.

Mobile Telephone

Mobile Telephones operate through providers such as Telstra & Optus, the maximum range within a cell is limited to 32km for GSM phones and approximately double for Next-G units (vehicle mounted units - the range is considerably reduced for hand held units).

While mobile telephones now cover around 95% of the Australian population they are primarily concentrated around metropolitan areas, major highways and regional centres. Only about 5% of the outback is covered with cells in and around some country towns such as Broome, Ceduna, Kalgoorlie, Karratha, Mt Isa and Port Hedland etc.

Mobile telephones incur a monthly rental charge as well as timed call charges.

Satellite Telephone

Satellite telephones can provide telephone, fax and data communications to almost anywhere in the world.

Whilst satellites can provide coverage to most parts of Australia, the costs (monthly rentals and call charges) are generally outside the scope of the average four wheel drive user who makes the occasional trip into the outback.

Satellite telephones do not provide the "community" based support to travellers that is provided to HF radio subscribers via the VKS-737 Radio Network.

High Frequency SSB Radio

Using frequencies in the range of 2 to 25MHz, HF can offer reliable communications over thousands of kilometres.

HF offers no cost communications between mobiles travelling anywhere in Australia as well as to base stations operated by the VKS-737 Radio Network. These base stations provide free information such as Weather Reports, Road Closures, Safety Logging, Message Handling and Telephone Calls.

Modern features such as Selcall allow subscribers to reliably make contact with other subscribers and bases around Australia, while some transceivers allow Direct Dial Radio-Telephone calls through suitably equipped bases.

Another use of HF radio is for making contact with the Royal Flying Doctor Service (RFDS) who can provide medical advice, treatment and emergency medical evacuation for travellers in the outback.

VKS-737 subscribers have the option of making direct Selcall contact (via radio-telephone interconnect) with the RFDS via the VKS-737 bases at Adelaide, Alice Springs, Cairns, Charters Towers, Darwin, Derby, Newcastle, Perth, St Marys & Swan Hill.

HF radio can also provide entertainment in the form of broadcasting stations such as Radio Australia, BBC World Service, Radio Netherlands, Radio Zealand, Voice of America etc. as well as Weather Services, Time Signals etc.

There are presently four brands of type-approved HF radio equipment sold in Australia, the typical cost of new equipment is around \$3400 for a radio with an automatic tuning antenna.

Some manufacturers include a voucher for 12 months subscription to the VKS-737 Network in the price of a new radio package.

Second-hand prices are dependant upon the age of the radio, the availability of spare parts, the number of channels fitted, the type of antenna (i.e. tapped whip or automatic tuning type) and whether the radio is fitted with Selcall etc.

Subscription to the VKS-737 Radio Network includes the Licence Authority to use the VKS-737 frequencies.

Important Note:

- VKS-737 subscribers **DO NOT** require an Outpost Mobile Licence (RFDS licence) to operate on the VKS-737 Network frequencies.
- An Outpost Mobile Licence (RFDS licence) **DOES NOT** permit operation on the VKS-737 Network frequencies.

VKS-737 HF Radio-Telephone Network versus Satellite Telephone in the Outback

Service	VKS-737	Satellite
Vehicle to Vehicle Communications	Free	Charged
Vehicle to Base Station Communications	Free	Charged
Position Reporting & Safety Logging	Free	Charged
Message Handling to Family & Friends	Free	Charged
Daily Weather Reports	Free	Charged
Daily Road Conditions & Closure Reports	Free	Charged
Medical Calls	Free	Charged
Emergency Calls to Family & Friends	Free	Charged
Emergency Calls & Breakdown Calls	Free	Charged
Medical Emergency Calls	Free	Charged
General Telephone Calls	Charged	Charged

Message and Radio-Telephone Services

The VKS-737 Radio Network has facilities to provide either free of charge, or charged, message and radio-telephone interconnect services for subscribers. Radio-Telephone services are provided by HF-Tel.

No Charge:

- Messages to subscribers from family and friends.
- Calls to Emergency Services, either by Operator Connection or Selcall Pre-Dial.
- Urgent telephone calls to family, friends etc.

Charged:

- Selcall calls to a single pre-set telephone number are available for \$13 per month per telephone number; this includes 10 minutes worth of calls. Excess calls are charged at \$1.30 per minute. A \$13.00 set up fee per number applies for the use of this service.
This limited "short-term" service is subject to spare pre-dial numbers being available on radio-telephone interconnects.
- Direct Dial Radio-Telephone calls to any fixed or mobile telephone number within Australia is available for \$13 per month and includes 10 minutes worth of calls.
Excess calls are charged at \$1.30 per minute. A \$13.00 set up fee per number for the use of this service.

These provide easy to use radio-telephone facilities for VKS-737 subscribers.

* The Direct Dial service is only available on Telcall equipped radios such as:

Barrett 250, 550, 950 & 2050, Codan 8528, 9323 & NGT, Icom F7000, Q-Mac HF90 or radios fitted with Jenal SC-2 microphones.

HF e-mail Services

Data transmission on HF radio is slow by comparison with the 56k dial-up and ADSL (broadband) services most people are familiar with. Data rates ranging from 0.6 to 2.4k are typical via HF radio and are dependant on radio conditions and the quality of the modem used. At best, these data rates are suitable for text based emailing (no attachments or web surfing).

HF SMS and GPS Services.

As a cost-effective alternative, **Bcon** has developed an Internet based messaging and vehicle location system.

Bcon Messaging is a SMS style text messaging service using HF radio. It is not an e-mail service. It has the advantage of using existing HF radio features without requiring additional expensive ancillary equipment.

Features of the system include:

- Short messaging (SMS) of up to 62 characters to and from HF radios.
- Logging of GPS locations by the vehicle.
- Vehicle location from the Internet.

Which radios are supported?

- Bcon Messaging and Bcon Positioning (Auto) currently supports Barrett 2050, Codan 9323, 9360 9390 & NGT radios.
- Bcon Positioning (Manual) supports manual position reports from Telcall compatible radios such as: Codan 8528, Barrett 550, 950 & Q-Mac HF90.

For further information check out the Bcon website at: www.bcon.com.au