

## About High Frequency (HF) Communications.

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

Modern radio features allow users to reliably make contact with each other and VKS-737 and Royal Flying Doctor Service Base Stations located all around Australia, some radios also permit Direct Dial Radio-Telephone calls through VKS-737 Base Stations.

A very important use of HF radio is for contacting emergency organisations such as the Royal Flying Doctor Service, Police, Ambulance and Vehicle Breakdown Associations.

### The **VKS-737** Radio Network provides:

- 7 Frequencies**

<b>Channel 1: 5455kHz</b>	<b>Adelaide – 1</b>
<b>Channel 2: 8022kHz</b>	<b>Adelaide – 2</b>
<b>Channel 3: 11612kHz</b>	<b>Alice Springs – 1</b>
<b>Channel 4: 14977kHz</b>	<b>Alice Springs – 2</b>
<b>Channel 5: 3995kHz</b>	<b>Cairns – 1 (VJN)</b>
<b>Channel 6: 6796kHz</b>	<b>Cairns – 2</b>
<b>Channel 7: 10180kHz</b>	

- 19 Base Stations**

<b>Carnarvon (VJT)</b>	<b>Mount Isa (VJI)</b>
<b>Charleville (VJJ)</b>	<b>Newcastle</b>
<b>Charters Towers - 1</b>	<b>Perth</b>
<b>Charters Towers – 2</b>	<b>Port Hedland (VKL)</b>
<b>Darwin</b>	<b>St Marys</b>
<b>Derby (VJB)</b>	<b>Swan Hill</b>
<b>Meekatharra (VKJ)</b>	

**Notes:**

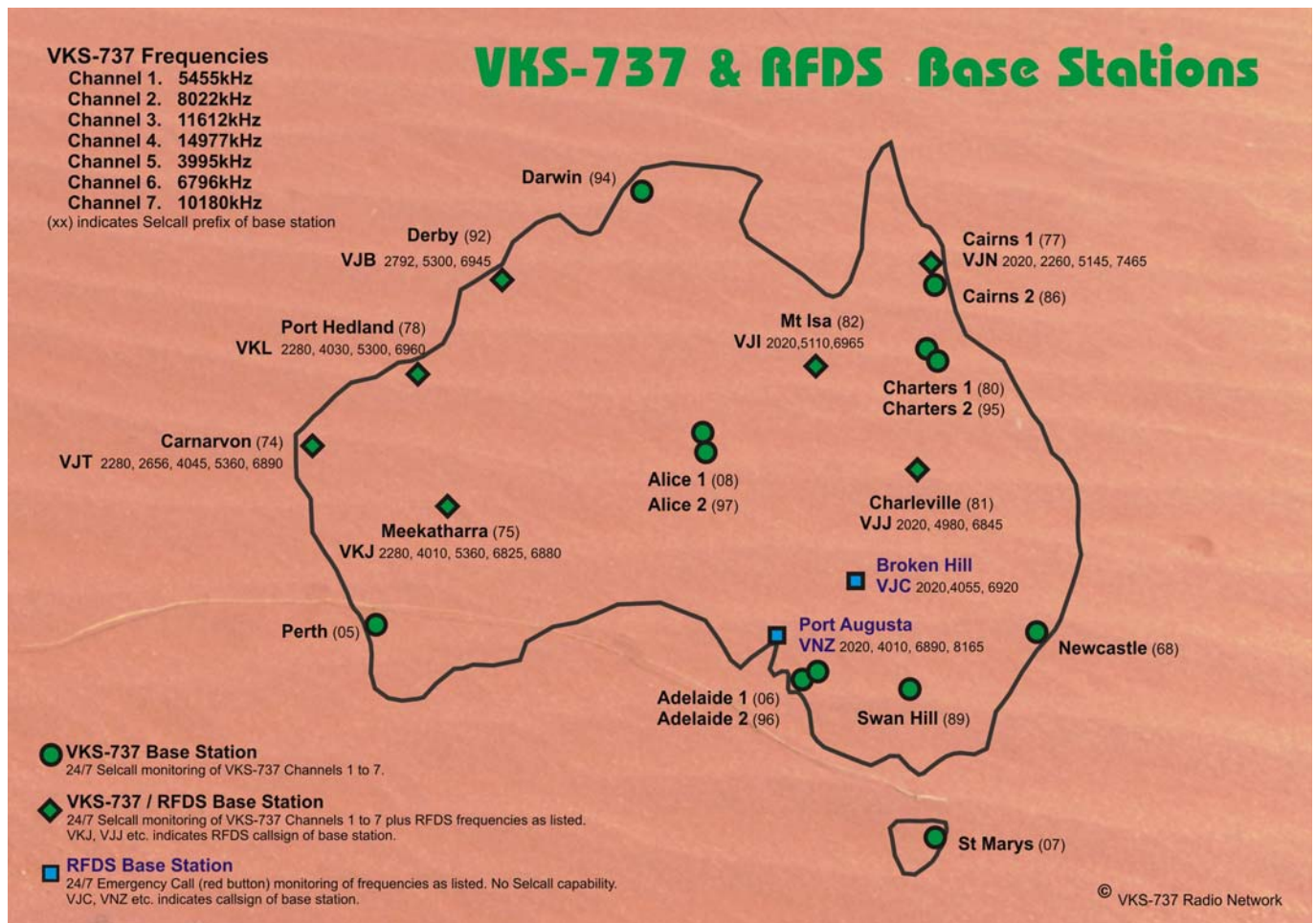
- Base Stations identified with RFDS callsigns (VJB), (VJN) etc. are located at Royal Flying Doctor Service bases and operated on behalf of the RFDS via partnerships between VKS-737 and RFDS Queensland Section / Western Operations.
- All base stations scan VKS-737 Channels 1 to 7; base stations located at RFDS bases also scan the RFDS frequencies licensed to the relevant RFDS base. Please note users need to hold a current ACMA Output
  - Direct medical emergency access to the Royal Flying Doctor Service.
  - Direct emergency access to Police & Emergency Services vehicles fitted with VKS-737 frequencies.
  - Free-to-air mobile communications between VKS-737 subscribers anywhere in Australia.
  - Regular daily voice safety logging schedules are provided through some VKS-737 Base Stations and can provide road and weather reports upon request, position reporting and message handling.
  - Access to 4WD repairs, recovery and spare parts providers
  - Radio-telephone facilities (additional charges apply) Contact VKS-737 Head Office for further details.

### HF Radio (**VKS-737**) versus Satellite Telephone in rural and remote areas.

Service / Feature	VKS-737	Satellite
Australia Wide coverage	<b>Yes</b> (conditions may vary at times)	Many reported “dead spots” or “no / poor signal areas”
Emergency Calls – Breakdown	<b>Free</b>	<b>Charged</b>
Emergency Calls – Family & Friends	<b>Free</b>	<b>Charged</b>
Emergency Calls – Medical	<b>Free</b>	<b>Charged</b>
General Information Calls	<b>Free</b>	<b>Charged</b>
General Telephone Calls	<b>Charged (using HF-Tel)</b>	<b>Charged</b>
Message Handling from Family & Friends	<b>Free</b>	<b>Charged</b>
Road Condition & Closure Reports	<b>Free</b>	<b>Charged</b>
Safety Logging / Position Reporting	<b>Free</b>	<b>Charged</b>
Vehicle to Base Station Communications	<b>Free</b>	<b>Charged</b>
Vehicle to Vehicle Communications	<b>Free</b>	<b>Charged</b>
Weather and Cyclone Reports	<b>Free</b>	<b>Charged</b>

**Notes:**

- The VKS-737 Radio Network issues subscribers with a Licence Authority under Section 114 of the Radiocommunications Act No. 174 of 1992 to use the Network’s frequencies for **MOBILE Use Only**.
- VKS-737 subscribers **DO NOT** require an ACMA Mobile Outpost Licence (commonly referred to as an RFDS licence) to access the VKS-737 Radio Network frequencies.
- An Outpost Mobile Licence (RFDS licence) **DOES NOT** permit operation on the VKS-737 Network frequencies.
- The use of base station equipment, amateur radio equipment or fixed antennas are NOT permitted on the VKS-737 Radio Network. Refer to VKS-737 Conditions of Use (available on the VKS-737 website) for further details.**



## HF-Tel 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.

### 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 members.

### Charged:

- Basic selcall radio-telephone service to a single pre-allocated telephone number anywhere within Australia. This service works with any selcall equipped HF radio (except radios with WA1 or WA2 format selcall).
- Direct-Dial radio-telephone service to any telephone number within Australia. This service only works with Telcall equipped radios such as:
  - Barrett 250, 550, 950 & 2050,
  - Codan 8528, 9323, NGT & Envoy,
  - Icom F7000, F8100
  - Q-Mac HF90
  - Radios fitted with a Jenal SC-2, SC-51 or SC-350 Selcall Microphone.

These services are provided by **HF-Tel** (a division of the Australian National 4WD Radio Network Inc.) and provide exclusive, easy to use, radio-telephone facilities for VKS-737 subscribers.

### Call Costs (September 2012):

- The service is available for a \$13.00 per month which includes 10 minutes worth of calls per month.
- Calls in excess of 10 minutes per month are charged at \$1.30 per minute \*.

### Set-up Fee:

- There is a set-up fee of \$13.00 for each booking.

### Security Bond:

- A security bond of \$80.00 applies for all bookings. This bond, less the cost of any excess telephone calls \*, will be refunded at the end of the booking period.

### Credit Card Surcharge:

- There is a surcharge of 2.78% for all MasterCard / Visa Card transactions or 3% for American Express transactions.

### Further Information / Application Forms:

- Further information about the HF-Tel Network and Application Forms can be obtained from the VKS-737 website at [www.vks737.on.net](http://www.vks737.on.net) or from the VKS-737 / HF-Tel Head Office.

# Communications Systems Comparison

## **27MHz CB (Citizens Band) Radio**

27MHz AM & SSB CB is generally limited to a maximum range of approximately 10 to 50km depending upon terrain.

The main application of 27MHz CB is inter-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 susceptible to ignition and other interference 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 on 477MHz, as compared with AM & SSB on 27MHz, the quality of the signals is improved and noise and 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.

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

## **Mobile Telephone**

Mobile Telephones operate through various providers, 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 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 major country towns such as Broome, Ceduna, Kalgoorlie, Karratha, Mt Isa and Port Hedland etc.

Mobile telephones incur rental charge and call charges.

## **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 Safety Logging, Weather Reports, Road Closures, Message Handling and Telephone Calls.

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

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 VKS-737 base stations.

VKS-737 subscribers have the option of making direct Selcall contact (via radio-telephone interconnect) with emergency services via 19 bases at Adelaide (2), Alice Springs (2), Cairns (2), Carnarvon, Charleville, Charters Towers (2), Darwin, Derby, Meekatharra, Mount Isa, Newcastle, Perth, Port Hedland, St Marys & Swan Hill.

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

There are presently three brands of new 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.

## **Satellite Telephone**

Satellite telephones can provide telephone, fax and data communications to many parts of 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.

## **VKS-737 Services for Satellite Telephone Users**

The VKS-737 Radio Network can provide satellite telephone users with services similar to those provided to subscribers with HF radios – this is provided via a dedicated subscriber's contact telephone number which connects their calls to the Network's duty operators.

Subscribers to this service should be aware that all calls made to the VKS-737 Radio Network are charged by their service provider at normal call rates.

For further information on this service contact VKS-737 Head Office on (08) 7325 2600 during South Australian business hours.



Further details of VKS-737 & HF-Tel services can be obtained from our website:

[www.vks737.on.net](http://www.vks737.on.net)



(Scan this QR code on your smart phone to visit our website)

The VKS-737 Radio Network is a division of the Australian National 4WD Radio Network Inc. a national **Public Benevolent Institution** established "for the relief of sickness, suffering, helplessness, destitution and misfortune to a disadvantaged section of the community, being all "outback" travellers who are in distress by providing them with emergency assistance and support in co-operation with other organisations".

Our **Mission Statement** is to provide emergency and general radio communications assistance service to travellers in rural and remote areas of Australia, and to be the pre-eminent provider of high frequency radio communications services throughout rural and remote area of Australia.

The VKS-737 Radio Network provides emergency services in conjunction with the Royal Flying Doctor Service of Australia and state emergency service organisations 24 hours a day, 7 days a week via 19 Base Stations strategically located around Australia.



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