AUSTRALIAN UHF CB/PERSONAL RADIO SERVICE

This article draws information from an AULRO (Australian Land Rovers Owners) article and the Lakecomm web site.

UHF is widely used for vehicle to vehicle communication. UHF is *line-of-sight*, so that the range is limited to the height of the two antennas. Range can be increased by the use of a repeater.

Citizens Band

In Australia 477MHz has been allocated for public use. You may operate a radio on these frequencies without a licence. A licence is required for other frequencies. ACMA (Australian Communications & Media Authority) is the licensing authority.

477MHz Channel Allocation

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
1[d]	*476.425*	11	476.675	21	476.925	*31[d]*	*477.175*
2[d]	*476.450*	12	476.700	22	476.950	*32[d]*	*477.200*
3[d]	*476.475*	13	476.725	23	476.975	*33[d]*	*477.225*
4[d]	*476.500*	14	476.750	24	477.000	*34[d]*	*477.250*
5[d]	*476.525*	15	476.775	25	477.025	*35[d]*	*477.275*
6[d]	*476.550*	16	476.800	26	477.050	*36[d]*	*477.300*
7[d]	*476.575*	17	476.825	27	477.075	*37[d]*	*477.325*
8[d]	*476.600*	18	476.850	28	477.100	*38[d]*	*477.350*
9	476.625	19	476.875	29	477.125	39	477.375
10	477.650	20	476.900	30	477.150	40	477.400

Duplex

Duplex is used with repeaters. When you select *Duplex* your transceiver transmits 30 channels higher than it is receiving. So if you select Channel 1 duplex, your radio transmits on Channel 31 and receives on Channel 1. Duplex pairs are 1-31, 2-32, 3-33, 4-34, 5-35, 6-36, 7-37 and 8-38.

Selcall

Selcall allows radio to radio calling of UHF CBs by dialling their selcall number. Radios can be programmed to be completely silent until they are called. On radios which have this feature, received selcalls are usually indicated with a beep.

CTSS (Continuous Tone Coded Squelch System)

Not all radios are fitted with CTSS. CTSS allows you to filter out callers who are using a different CTSS tone or no CTSS.

Antennas

Your antenna should be located on the highest point possible and with separation of at least one quarter of a wave length from any other antennas. (For UHF radio waves the wavelength is between 10cm and 1m. For HF radio waves the wavelength is 10m to 100m). The best location is in the middle of your roof. However this is generally not practical and most of us mount the antenna on the bull bar. Generally speaking, the longer the antenna the higher the gain

In choosing an antenna the type of terrain you drive is important. An antenna with highest possible gain is not necessarily the best. Very high gain antennas have a flatter radiation pattern making them good for flat terrain but practically useless in mountainous terrain.

Gain	Suits
0-3db	hilly/ mountainous terrain
4 - 6db	general type terrain
9db	STRICTLY super flat terrain

Most times it's not practical to change antennas continually so a 4.5-6db antenna is a good compromise.

UHF antennas come pre-tuned, with no user adjustment required. Base mounted springs not supplied as an integral part of the antenna should never be used on UHF as they will put detune the antenna.

Pictures copied from [Lakecomm]



2dB



4.5dB



6.5dB



Antenna Pack – 6.5, 2 & 4.5dB

Repeaters

A repeater receives a transmission and re-broadcasts it, allowing greatly increased range. Antennas are usually set up by private organisations and are set up in a location which is in *line-of-sight* of the two parties communicating, usually on top of a hill or tall building. Because the repeater receives and re-transmits a signal the repeater operates on two channels. To communicate via a repeater set your transceiver to *Duplex*. Duplex channels are 1-31, 2-32, 3-33, 4-34,5-35, 6-36, 7-37 and 8-38. Both parties set their units to the lower channel of the Duplex pair, for example, Channel 2 and engage Duplex.

Example:

Two people, A & B, wishing to communicate via a repeater agree to communicate on, say, 2-32. Both set their transceivers to Channel 2 and ensure Duplex is activated. The repeater is listening on Channel 32 and transmits on Channel 2. When A presses the transmit button A's signal is transmitted via Channel 32 (the Duplex of 2). The repeater picks up the transmission on 32 and repeats it on Channel 2 where it is heard by B whose unit is set to channel 2.

For a current list of repeaters go to Tropinet or ACBRO

Restrictions

You should not transmit on

- Channels 22 & 23. These are data channels for controlling gates, pumps etc
- Channels 31-38 as these are the input channels of repeaters.
- Channels 5-35 are reserved for emergency communications.

Emergency

In an emergency you can use channel 5/35 (476.525/477.275 MHz).These channels are designated as emergency channels and non-urgent traffic must be confined to other channels.

There are organisations that voluntarily monitor the emergency channels. These organisations may assist you in contacting the appropriate service in an emergency.

Licences

In Australia, although there is no individual licence needed to use this equipment, it is still governed by the Citizens Band Radio Stations Class Licence and the Radio Communications Act. Under this Federal legislation certain channels have been reserved for specific use. Some other channels have also been designated for certain uses by general agreement. These are National allocations – there may be channels used locally for other purposes, however these uses are not part of the legislated channel allocations.

Channel(s)	Use	Notes
1 to 8 (31 to 38)	Repeaters [range extenders] (Established by law)	Transmitting on these channels within range of a repeater will increase the communications range. A repeater needs two channels to work, i.e. 1 and 31 up to 8 and 38, thus, channels 31 to 38 should also be avoided from use.
5 & 35	Emergency Calling Established by law	Can be used by anyone in an emergency situation ONLY. Ch 35 is used by 5/35 Repeaters. You should NOT use channel 35 for normal contacts
10	4WDrivers (Generally Accepted Use)	Used by 4WD enthusiasts, clubs, convoys and in national parks
11	Calling Channel (Established by law)	To call or locate another station. Parties must then switch to a conversation channel
9, 10, 12 to 21, 24 to 30, 39	Conversations (Established by law)	Used for conversations between stations
22, 23	Data Transmissions (Established by law)	No voice transmissions allowed on these two channels. Reserved for telemetry & telecommand (Data channels)
29	Highway Communications (Generally Accepted Use)	Mainly used by Truck Drivers and other Highway users on Pacific Highway
18	Caravaners, Campers (Generally Accepted Use)	Holiday Maker's communication channel, e.g., when in convoy
40	Highway Communications (Legally Recommended Use)	Mainly used by Truck Drivers and other Highway users

PLEASE NOTE!
Although the Class Licence does permit the use of channels 1 – 8 and 31 – 38 for normal conversations (except channels 5/35) when there is no repeater within range, as atmospheric conditions can cause signals to travel excessive distances, the use of these channels even outside the known coverage area of a repeater could cause interference to distant repeater stations.

FOR MORE INFORMATION ON CB USAGE & ALLOCATIONS, CONTACT:
AUSTRALIAN COMMUNICATIONS & MEDIA AUTHORITY