Aerpro
First Choice

1W UHF CB HANDHELD RADIO 3 PACK

80 CHANNEL
UHF CB RADIO

APH01

USER GUIDE

aerpro.com

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INTRODUCTION

WELCOME

Thank you for purchasing the Aerpro APH01 1 Watt UHF CB Radio Kit.
Please ensure that you have read the product manual and instructions in full, prior to installation and use. Failure to do so may result in product failure/damage or incorrect operation and therefore impact the product performance.

FEATURES

- VOX voice activated transmission
- 1 Watt transmission power
- 80 Narrow-band channels
- Squelch control (automatic)
- CTCSS (38ch)/ DCS (61ch) codes
- Duplex range extender
- Channel scan function
- LED torch light
- 10 call ring tones
- Roger beep
- Button beep
- Backlight display

BOX CONTENTS

- UHF CB Radio (x3)
- Belt Clip (x3)

TECHNICAL SPECIFICATIONS

Frequency	476.425 - 477.4125 Mhz
Channel number	80 channels
Sub-code	CTCSS 38 and DCS 61 sub-codes
Transmission Power	1 Watt
Battery Type	3 x AAA Batteries Each (Not Included)

SAFETY INFORMATION AND WARNINGS

INFORMATION ON SAFE OPERATION

Please read this information before installing or using your UHF radio.
The operation of your UHF radio in Australia is subject to conditions in the following Licence: In Australia the ACMA Radio communications (Citizen Band Radio Stations) and in New Zealand by MED the General User Radio Licence for Citizen Band Radio.

SAFETY AND GENERAL USE WHILST IN A VEHICLE

Check the State and Federal laws and regulations regarding the use of two way radios in the area where you drive, and always obey them.

FOR VEHICLES FITTED WITH AIRBAGS

When using the radio in a vehicle, do not place your radio in the area over an airbag, or in the airbag deployment area. Airbags inflate with great force, if a radio is placed in the airbag deployment area and the air bag inflates, it may be propelled with great force and cause serious injury to the occupants of the vehicle.

POTENTIALLY EXPLOSIVE ATMOSPHERES

Turn your radio OFF when in any area with a potentially explosive atmosphere. Sparks in such areas could cause an explosion or fire resulting in injury or even death. **NOTE:** Areas with potentially explosive atmospheres are often, but not always clearly marked. They include fueling areas such as below deck on boats; fuel or chemical transfer or storage facilities; areas where the air contains chemicals or particles, such as grain, dust, or metal powders; and any other area where you would normally be advised to turn of your vehicle engine.

BLASTING CAPS AND AREAS

To avoid possible interference with blasting operations; turn your radio OFF near electrical blasting caps, or in a “blasting area”, or in areas posted: “Turn off the two way radio.” Obey all signs and instructions.

EXPOSURE TO RADIO FREQUENCY ENERGY

Your two-way radio complies with Australian Communications Authority Radio Communications (Electromagnetic Radiation-Human Exposure) Standard, 2003. To assure optimal radio performance and make sure human exposure to radio frequency electromagnetic energy is within the guidelines set out in the above standards always adhere to the following radio operating procedures.

RADIO OPERATION AND EME EXPOSURE

Unauthorised antennas, modifications, or attachments could damage the radio and violate compliance. **DO NOT** hold the antenna when the radio is “**IN USE**.” Holding the antenna reduces the effective range. **DO NOT** use the radio if the antenna is damaged. If a damaged antenna makes contact with a persons skin, a minor burn may result.

ELECTROMAGNETIC INTERFERENCE/COMPATIBILITY

Nearly every electronic device is susceptible to electromagnetic interference (EMI). To avoid the possibility of electromagnetic interference and/or compatibility conflicts, turn off the radio in any location where posted notices instruct you to do so such as health care facilities.

AIRCRAFT

When instructed to do so, turn off your radio when on-board an aircraft. Any use of a radio must be in accordance with applicable regulations per airline crew instructions.

MEDICAL DEVICES – PACEMAKERS

The Advanced Medical Technology Association recommends a minimum separation of 15cm be maintained between a radio and pacemaker. These recommendations are consistent with the independent research by, and recommendations of, the U.S. Food and Drug Administration. People with pacemakers should:

•ALWAYS keep the radio more than 15cm away from the pacemaker when the radio is powered on.

•NOT carry the radio in the breast pocket (handheld models).

•Use the ear opposite the pacemaker to minimise the potential for interference.

•Turn the radio OFF immediately there is any reason to suspect that interference is taking place.

MEDICAL DEVICES – HEARING AIDS

Some radios may interfere with some hearing aids. In the event of such interference, you may want to consult your hearing aid manufacturer to discuss alternatives.

MEDICAL DEVICES – OTHER

If you use any other personal medical device, consult the manufacturer of your device to determine if it is adequately shielded from RF energy. You physician may be able to assist you in obtaining this information.

GENERAL WARNINGS

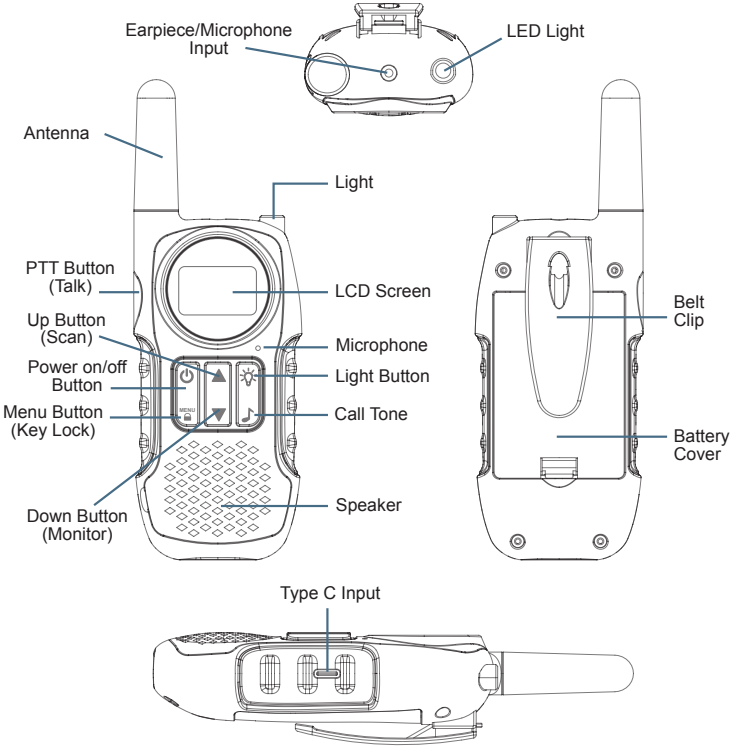
Some radios may interfere with some hearing aids. In the event of such interference, you may want to consult your hearing aid manufacturer to discuss alternatives.

BATTERIES

All batteries can cause property damage and/or bodily injury such as burns if conductive material such as jewelery, keys, or beaded chains touch exposed terminals. Do not replace or charge batteries in a potentially explosive atmosphere.

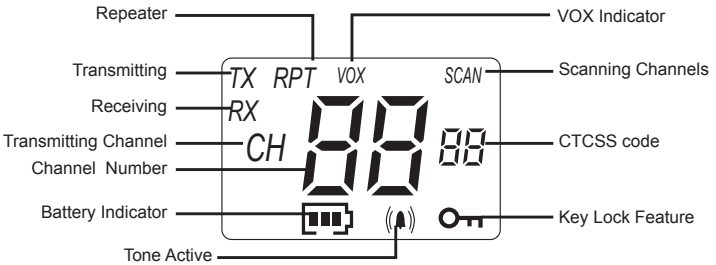
RADIO CONTROLS

RADIO LAYOUT



LCD DISPLAY

LCD DISPLAY



INSTALLING THE BATTERIES & BELT CLIP

Battery pack:
Each handheld CB radio requires 3 AAA batteries (not included). On the back of the handheld CB radio, lift up the release tab on the battery cover and remove. Place the 3 AAA batteries in the correct position as marked on the inside of the handheld CB radio. Replace the battery cover and you are ready to go.

Belt clip:
Place the belt clip to the corresponding grooves on the back of the transceiver, and then pull downwards. Press and hold release tab, then pull upwards to release.

RADIO OPERATIONS

POWER ON/OFF

To turn the APH01 on or off, press and hold the Power on/off button for 2 seconds until you hear a beep sound.

VOLUME CONTROL

To increase the volume, press the Up ▲ button. And press the Down ▼ button to decrease the volume.

BATTERY VOLTAGE DISPLAY

The APH01 can detect a low battery level when the battery voltage goes low. When the battery voltage is low, the battery icon will flash on screen and a beep sound will be heard to indicate that the batteries will need to be replaced.

RECEIVING / TRANSMITTING

The devices are in “Standby” mode when it is turned ON and not transmitting. When a signal is received on the current channel, the LCD will display a receiving icon in “reception” mode.
When you press the PTT (push to talk) button, the devices switches to “Transmission” mode. Hold the device in a vertical position with the Mic (microphone) 3-5cm away from your mouth. While holding the PTT button, speak into the microphone in a normal tone of voice. Release the PTT button when you have finished transmitting.
For others to receive your transmission, they must be on the same channel with you.

NOTE: The talking range will depend on your surroundings and environment. It will be affected by obstructions such as hills or buildings. Don’t try to use two devices which are less than 1.5m (5 feet) apart. Otherwise, you may experience interference.

CHANNEL OPERATIONS

CHANGING CHANNELS

Press the MENU button one time, the channel number will flash on the display.
Press the Up▲/Down▼ button to change the channel.
Press the PTT button to confirm and return to stand-by mode.
NOTE: If no button is pressed within 5 seconds during setting, the device will return to stand-by mode.

CTCSS / DCS (Continuous Tone Coded Squelch System / Digitally Coded Squelch)

Press the MENU button 2 times, the current CTCSS code will flash on the display.
Press the Up▲/Down▼ button to change the 38 available codes.
Press the PTT button to confirm and return to stand-by mode.
When operating on the 476.4250MHz to 477.4125 MHz License free radio frequency band, the APH01 has 80 available radio channels. If there are many device users near you, there is a chance that some of the users are operating on the same radio channel.
When using CTCSS, a low frequency tone (between 67-250Hz) will be transmitted along with the voice signal. CTCSS codes are 01 -> 38 , DCS codes are 39 -> 99. Due to filtering, these sub-channels will generally not be audible so they will not disturb the communication.

VOX (Hands free function)

Press the MENU button 3 times, the current VOX setting will flash on the display and the VOX icon will display.
Press Up▲ button to set the VOX sensitivity level between 1 and 3 level (level 3 is the high sensitive level).
Press Down▼ button until “OF” appears on the display to turn VOX OFF.
Press the PTT button to confirm and return to stand-by mode.
In VOX mode, the radio will transmit a signal when it is activated by your voice or other sound around you.
VOX Operation is not recommended if you plan to use your device in a noisy or windy environment.
NOTE: VOX mode will be overridden when you press the PTT button.

CHANNEL OPERATIONS (continued)

SETTING THE CALL TONES

The device has 10 call tones.
Press the MENU button 4 times, “CA” is displayed and on the current call tone.
Press the Up▲/Down▼ button to change another call tones.
Press the PTT button to confirm and return to stand-by mode.

KEY TONE ON/OFF

To turn the key tone on/off. Press the MENU button 5 times, “TO” will be displayed.
Press the Up▲/Down▼ button disable the key tone ON/OFF.
Press The PTT button to confirm your selection and return to the stand-by mode.

ROGER BEEP ON/OFF

After the PTT button us released, the device will send out a roger beep to confirm you have stopped talking.
1,Press the MENU button 6 times, “RO” will be displayed.
2,Press the Up▲/Down▼ button disable the roger beep ON/OFF.
3,Press The PTT button to confirm your selection and return to the stand-by mode.

REPEATER ON/OFF

Press the MENU button 7 times, “RP” will be displayed.
Press the UP▲/Down▼button disable the Repeater ON/OFF.
Press the PTT button to confirm your selection and return to the stand-by mode.
This turns ON all 16 Repeater channels 01 -> 08 & 41 -> 48

SCANNING FOR AN ACTIVE RADIO CHANNEL

Press and hold the Up▲ button for 2 seconds: The “SCAN” function indicator will appear on the display and the channel will scan continuously from 1 to 80. Once an active channel is found, the scanning will stop and you can listen to the transmission. When the transmission is on the found channel stop, the scanning will resume automatically.
NOTE: If you press PTT button while listening to a found channel, the device will go back to stand-by mode on the found channel.

CHANNEL OPERATIONS (continued)

SENDING A CALL TONE

Press the call button quickly, the call tone will be transmitted on the setting channel.

MONITOR

Press and hold the Down▼ button for about 2 seconds to active monitor.
Release the Down▼ button to return to stand by mode.
This temporarily turns OFF the automatic squelch

BACKLIT DISPLAY

Press any button except for the MENU button to activate the back light of the LCD display. The back light will light on about 5 seconds.

BATTERY SAVING FUNCTION

When the device has not been used for 6 seconds, the economy mode is automatically activated. This does not affect the reception of transmission and the stand by mode is automatically re-activated as soon as a signal is detected.

BUILT-IN FLASH LIGHT

Your device has a built-in flash light that can be used in sending light signals or for our lighting needs.

LOCK & UNLOCK THE DEVICE

Press and hold MENU button for 3 seconds to lock & unlock the device.

RESETTING THE DEVICE

Turn radio OFF first and then press & hold on the Power button and PTT button together for 2 seconds, the device will be power on and reset back to Channel NO.1.

FUNCTION

CTCSS & DCS

WHAT IS CTCSS AND DCS?

CTCSS (Continuous Tone-Coded Squelch System) and DCS (Digitally Coded Squelch) modifies the transmission signal to allow privacy while sharing the same channel, without disturbing each other. This is an important feature on a radio when there are many radio users in the same area.

CTCSS continuously superimposes any one of about 50 low-pitch audio tones on the transmitted signal, ranging from 67 to 254 Hz.
DCS was designed as the digital replacement for CTCSS. DCS adds a 134.4 bps (sub-audible) bit stream to the transmitted audio.
CTCSS or DCS is enabled by on the radio through selectable sub channels.
When CTCSS or DCS is enabled, incoming signals must be on the same CTCSS or DCS sub channel as the receiving radio or they will be filtered out.
NOTE: The CTCSS and DCS Tone Charts can be found on page 19 of this instruction manual.

BUTTON BEEP

WHAT IS BUTTON BEEP?

When buttons are pressed on the radio (exc. PTT Button), the radio emits a beep tone to indicate the button has been pressed. The radio has button beep default on.

FUNCTION- Using The UHF Radio

TRANSMIT AND RECEIVE PROCEDURE

Your UHF radio contains a transmitter and receiver. To control your exposure and ensure
compliance with the general population/uncontrolled environment exposure limits, always adhere
to the following procedure:

- Transmit no more than 50% of the time.
- To receive calls, release the **"(PTT) BUTTON"** on the microphone handpiece.
- To transmit (talk), press the **"(PTT) BUTTON"** on the microphone handpiece.

When powered on and not transmitting, the radio is always in receive mode. When a signal is received the LCD will display the RX indicator, and then you can hear if the other party is calling. **NOTE:** You may not receive the call if you set a high "squelch off" level of the transceiver.
If current channel has been programmed with signaling, you can only hear the call from the same signaling, other calls can not be heard. For others to receive your transmission, they must be on the same channel as you and if CTCSS or DCS is enabled, the same sub channel must also be selected.
NOTE: *Transmitting 50% of the time, or less, is important because the radio generates*
measurable RF energy exposure only when transmitting (in terms of measuring standards compliance).
NOTE: *Do not transmit between two radios that are less than 1.5m apart, otherwise you may experience interference.*
NOTE: *The UHF radio is simplex "one way at a time". While you are speaking, you can not receive a transmission.*
NOTE: T*he UHF radio is an open licence band. Always identify yourself when transmitting.*

TRANSMITTING RANGE

The transmitting range will depend on the antenna, terrain, surroundings and environment, it will be affected by obstructions such as hills, buildings and foliage. The use of duplex mode will extend the transmission range in areas where a repeater station is present.

FUNCTION- Duplex Mode Via Repeaters

DUPLEX REPEATER MODE

This feature allows the use of local repeater stations that are designed to automatically re-transmit your broadcast over large areas, thus increasing the range of the UHF radio. Repeater stations are privately operated radio systems and are installed throughout Australia each repeater station operates on preset channels. Check the area you plan on traveling to for any repeaters and their channel.

The duplex mode on the radio helps increase the range of the radio using repeater stations. In duplex mode, the fixed position station forwards the signal it receives from repeater input stations (31-38)/(71-78) to the corresponding output stations (1-8)/(41-48). Any transmissions sent on non-duplex channels are sent in simplex mode, or directly between radios without the use of a repeater.

SELECTING REPEATER

To access the repeat feature, press the “(MENU) button” 7 times, “RP” will display on the screen. Press the “UP button” or “DOWN button” to select an option “on or off”.
Once the desired option has been selected, press the “(PTT) button”and this will save the selected option and the radio will return to the default screen.

DUPLEX / REPEATER INFORMATION

DUPLEX RECEIVE/TRANSMIT CHANNEL GUIDE

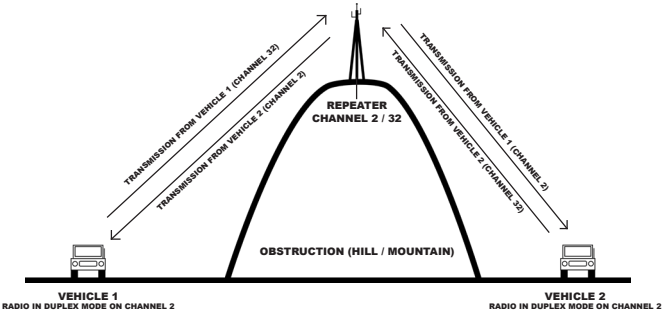
The following table displays the receive and transmit channels when using repeater stations:

Receive Channel	1	2	3	4	5*	6	7	8
Transmit Channel	31	32	33	34	35*	36	37	38

Receive Channel	41	42	43	44	45	46	47	48
Transmit Channel	71	72	73	74	75	76	77	78

***Channel 5/35 is emergency channel only**

VISUAL REPRESENTATION OF DUPLEX



UHF CB CHANNEL GUIDELINES

RADIO COMMUNICATIONS (CITIZEN BAND RADIO STATIONS) CLASS Licence 2002

NOTE: The operation of your UHF radio in Australia and New Zealand is subject to conditions in the following Licences: In Australia, the ACMA Radio Communications (Citizen Band Radio Stations) and in New Zealand by MED the General User Radio Licence for Citizen Band Radio.
No Licence is required to own or operate this radio in Australia or New Zealand. The Radio Communications (Citizen Band Radio Stations) Class Licence 2002 contains the technical parameters, operating requirements, conditions of Licence and relevant standards for Citizen Band (CB) radios. CB radios must comply with the class Licence for their use to be authorised under the class Licence.
Licences for Repeater Channels 44 & 45 will not be Licenced for an additional 6 to 12 months to allow extra time for owners of Channel 5 Emergency repeaters to upgrade equipment to meet new standards.
Channels 1 to 8 and 41 to 48 – Repeater Channels. Enable duplex mode on your radio to use any available repeaters.
Channels 5 & 35 – Emergency use only. Monitored by volunteers, no general conversations are to take place on these channels.
Channels 22 & 23 – Data transmissions only (excluding packet).
Channels 31 to 38 and 71 to 78 – Repeater inputs. Do not use these channels for simplex transmissions as you will interfere with conversations on channels 1 to 8 and 41 to 48.
The Australian Government legislated that channels 5 & 35 on the UHF CB Band are reserved for emergency use only.
If you do find you are interfering with another persons conversation, just select another channel.

IMPORTANT CHANNEL INFORMATION

A list of currently authorised channels can be obtained from the ACMA website in Australia and the MED website in New Zealand.
Please note the following channel guidelines:
• Channels 01-08 (and 31-38), and Channels 41-48 (and 71-78) are repeater channels.
• Channels 05 and 35 are emergency channels, do not use these unless it is an emergency.
• Channel 11 is a calling channel.
• Channels 22 and 23 are for telemetry and telecommand applications (Data Only).
• Channel 40 - road channel (Australia).
• Channels 61, 62 and 63 are reserved for future use and TX is inhibited on these channels.

UHF CB CHANNELS AND FREQUENCIES

UHF CHANNEL FREQUENCY TABLE

CH#	FREQ.	CH #	FREQ.	CH#	FREQ.	CH #	FREQ.
1	476.425	21	476.925	41	476.4375	61	
2	476.450	22	Data Only	42	476.4625	62	Reserved
3	476.475	23	Data Only	43	476.4875	63	Reserved
4	476.500	24	477.000	44	476.5125	64	Reserved 477.0125
5	476.525	25	477.025	45	476.5375	65	477.0375
6	476.550	26	477.050	46	476.5625	66	477.0625
7	476.575	27	477.075	47	476.5875	67	477.0875
8	476.600	28	477.100	48	476.6125	68	477.1125
9	476.625	29	477.125	49	476.6375	69	477.1375
10	476.650	30	477.150	50	476.6625	70	477.1625
11	476.675	31	477.175	51	476.6875	71	477.1875
12	476.700	32	477.200	52	476.7125	72	477.2125
13	476.725	33	477.225	53	476.7375	73	477.2375
14	476.750	34	477.250	54	476.7625	74	477.2625
15	476.775	35	477.275	55	476.7875	75	477.2875
16	476.800	36	477.300	56	476.8125	76	477.3125
17	476.825	37	477.325	57	476.8375	77	477.3375
18	476.850	38	477.350	58	476.8625	78	477.3625
19	476.875	39	477.375	59	476.8875	79	477.3875
20	476.900	40	477.400	60	476.9125	80	477.4125

CTCSS TONE TABLE (Codes 01 -> 38)

CODE	FREQ. (Hz)	CODE	FREQ. (Hz)
OF	OFF	20	131.8
1	67.0	21	136.5
2	71.9	22	141.3
3	74.4	23	146.2
4	77.0	24	151.4
5	79.7	25	156.7
6	82.5	26	162.2
7	85.4	27	167.9
8	88.5	28	173.8
9	91.5	29	179.9
10	94.8	30	186.2
11	97.4	31	192.8
12	100.0	32	203.5
13	103.5	33	210.7
14	107.2	34	218.1
15	110.9	35	225.7
16	114.8	36	233.6
17	118.8	37	241.8
18	123.0	38	250.3
19	127.3		

DCS CODE TABLE

CODE	DCS CODE (OCTAL)	CODE	DCS CODE (OCTAL)
39	022	65	152
40	025	66	155
41	026	67	156
42	031	68	162
43	032	69	165
44	036	70	172
45	043	71	174
46	047	72	205
47	051	73	212
48	053	74	223
49	054	75	225
50	065	76	226
51	071	77	243
52	072	78	244
53	073	79	245
54	074	80	246
55	114	81	251
56	115	82	252
57	116	83	255
58	122	84	261
59	125	85	263
60	131	86	265
61	132	87	266
62	134	88	271
63	143	89	274
64	145	90	306

DCS CODE TABLE (continued)

CODE	DCS CODE (OCTAL)
91	311
92	315
93	325
94	331
95	332
96	343
97	346
98	351
99	356

CODE	DCS CODE (OCTAL)

TROUBLE SHOOTING GUIDE

Problem	Corrective Action
No power	A.The batteries may be exhausted. Replace with new batteries B.The batteries may not be installed with correct polarity. Remove and install the batteries correctly C.The power switch is broken. (Contact your local dealer for repairs) D. Battery contacts are broken. (Contact your local dealer for repairs)
Cannot talk to or hear other members in your group	A. Different frequency or channel used, try another. B. Different CTCSS / DCS settings. Please reset settings. C. Out of communication range.
Cannot power on or frequent power-off	Check the batteries are NOT flat
Intermittent receiving with loud noise.	A.Out of communication range or obstructed by tall buildings or in basement and so on.
Receive voice from the other party but can not transmit	Check [PTT] key. (Contact your local dealer for repairs)

TECHNICAL ASSISTANCE

If you need assistance setting up or using your AERPRO product now or in the future, call Aerpro Support. Australia

TEL: 03 – 8587 8898

FAX: 03 – 8587 8866

Mon-Fri 9am – 5pm AEST

Please retain this user guide for future reference.

If you would like to download a digital copy of this manual, or other Aerpro manuals/ software, please visit the Aerpro.com website and click on ‘Firmware & Manuals” or search for the product model number for more information, accessories and products.

This manual is considered correct at time of printing but is subject to change.
For latest manuals and updates refer to the website.

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