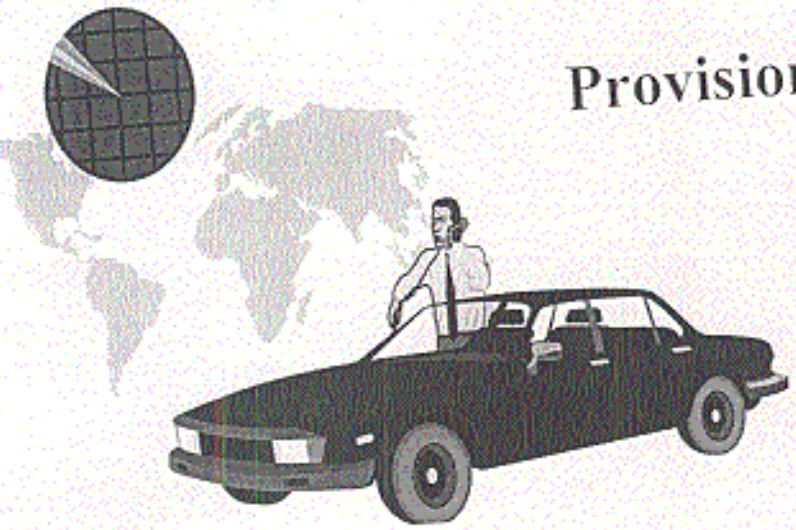
Provisional User Manual



AP99

ADI COMMUNICATIONS CORP.
FCC ID: MKDAP99
EXHIBIT #: 8A

ADI Communications

OPERATING INSTRUCTIONS FOR THE AP99 PORTABLE

1. INTRODUCTION :

The AP99 has been designed specifically for use by Paramilitary and Public Safety entities who require a radio with a high degree of environmental protection and performance. The AP99 has a 100-channel capability with the ability to assign user-defined names to each channel for ease of use. The radios employ microprocessor technology and all user parameters can be easily programmed from a PC. A wide range of operating facilities are provided, many of which can be enabled or disabled from the PC.

Of rugged construction with the chassis and covers made from aluminum , the unit has a high quality abrasion resistant paint finish. The battery is a slide-on type and is of a stepped design with dual guide rails to provide extra strength. The unit is designed to have a very high degree of waterproofing with special seals fitted throughout.

2. PREPARING THE RADIO FOR USE:

The portable consists of three basic parts, the main body, the antenna and the battery.

2-1. Charging the Battery(Ref. Fig 1)

Before assembling the portable, the battery should be fully charged first, using the battery charger supplied as described below.

Plug the AC Mains power pack supplied, into the mains supply and plug the DC output cord into the receptacle on the charger unit.

Insert the battery into the charger unit for charging. Check that the battery is inserted the correct way round and that the rear battery contacts align and mate correctly with the contacts on the charger. The charge indicator will glow RED to indicate commencement of charging.

When the battery is fully charged, the RED indicator will extinguish and the GREEN indicator will light up. The battery is now ready to be used.

The battery can also be charged with the portable radio still attached. In this case, first switch off the radio before inserting it into the charger.

It should be remembered that new batteries do not reach maximum capacity until after they have been charged and discharged several times.

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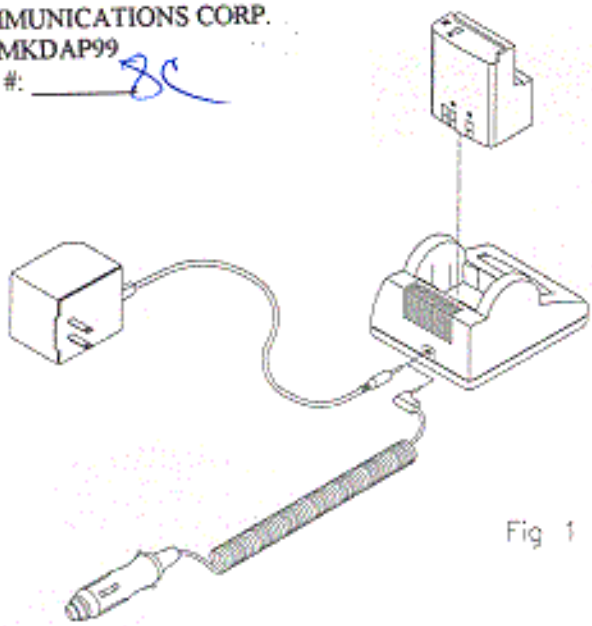


Fig 1

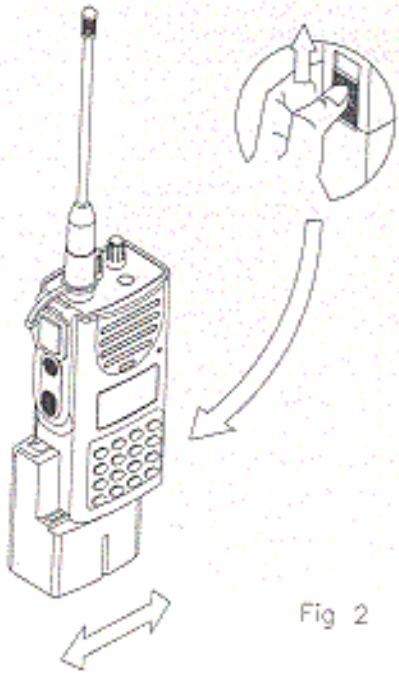


Fig 2

3. BATTERY INSTALLATION AND REMOVAL:(Ref. Fig 2)

To connect the battery to the portable, position it into the groove on the bottom of the radio's case and slide it in until it clicks into place.

To remove it, switch off the radio and then release the side-retaining latch by sliding it upwards and slide the battery off.

4. ANTENNA INSTALLATION AND REMOVAL:

The antenna is terminated in a TNC-type plug and is simply screwed clockwise into place on the top of the set. Ensure that the antenna is firmly attached by hand-tightening, but do not overtighten by using pliers or other such tools.

To remove the antenna, screw the antenna connector counter-clockwise until it becomes free.

DO NOT TRANSMIT WHEN NO ANTENNA IS CONNECTED.

5. INSTALLATION OF THE OPTIONAL SPEAKER/MICROPHONE:

Ensure that the radio is switched off.

Remove the plug-in cover from the accessory socket on the left side of the portable.(Ref. Fig 3)

Plug-in the connector of the speaker/microphone into the accessory socket, ensuring that the pins of the connector are correctly aligned.

Insert the two screws provided into the holes on the corner of the connector and tighten the screws so that the connector is firmly attached to the portable.

Store the plastic cover in a safe place for later use if it is removed from the portable.

The radio is now ready for use.

(Note : The radio should be programmed first with the licensed frequencies and facilities for use before attempting transmission).

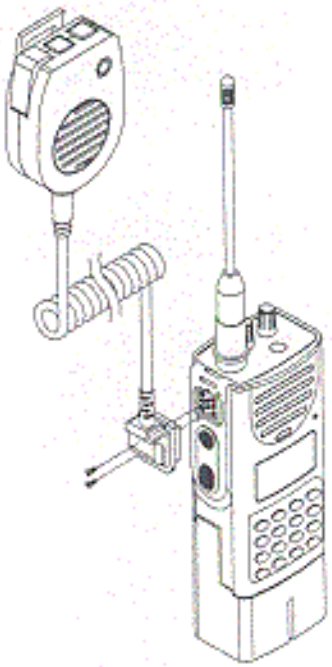


Fig 3

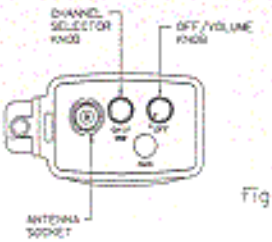


Fig 4

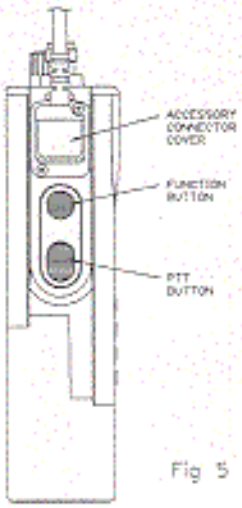


Fig 5

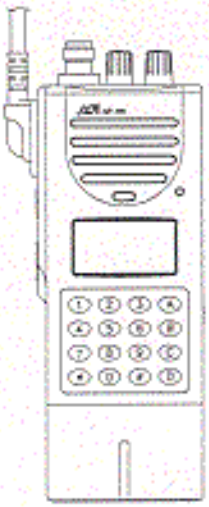


Fig 6

6. THE CONTROLS :

The radio has the following controls :

An on/off switch and concentric volume control at the top right of the set. Turning the knob clockwise switches the power onto the set (click noise).

A rotary channel selector on the top left of the portable. Rotating this knob changes the channel. The channel number plus its associated channel name appear in the display on the front of the portable. This rotary control can also be used for adjustment of the Squelch setting which is described later.(Ref. Fig 4)

A Press To Talk (PTT) switch on the bottom left side of the portable. Pressing this button keys the transmitter.(Ref. Fig 5)

A Function (FUN) button which is located on the side of the portable just above the PTT switch. (Ref. Fig 5)

A 16 key keypad located on the front face of the portable. These keys are used in conjunction with the FUN key to enable and disable functions on the portable. (Ref. Fig 6)

7. GETTING READY TO OPERATE:

Turn the Volume knob clockwise until a click is heard.

The display will illuminate and all indicators(Ref. Fig 7) will appear briefly before the display is extinguished to be replaced by a radio channel number and channel name. This is the self-diagnostic test that the radio carries out each

time that it is switched on. The channel displayed will be the last radio channel used before the radio set was turned off. (Ref. Fig 8)

To set the volume, turn the Volume Control midway or at a volume level which is comfortable for listening.

To set the channel, rotate the Channel knob until the desired channel number and name is displayed.

To set the Squelch, press the FUN button together with "4" on the keypad. Rotate the channel selection knob. SQ-0 to SQ-15 will appear whilst the knob is turned. (Ref. Fig 9) When set to SQ-0 a hissing sound will be heard and the BUSY indicator will appear. (Ref. Fig 10) Set the control at a level at which the hissing sound just disappears and the BUSY indicator is extinguished. Setting the level higher will cause the set to be less sensitive on reception. It is important to make sure that the channel is not being used when this operation is carried out. 5 seconds after rotating the knob, the set will reset to operational status.

The set is now ready for operation.



Fig 7

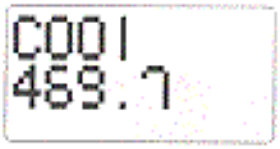


Fig 8

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Fig 9

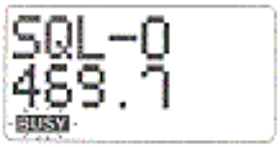


Fig 10

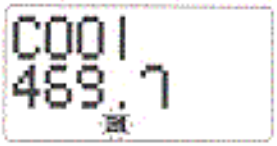


Fig 11

8. MONITORING THE CHANNEL:

If the radio set is equipped with Selective Calling or decoding CTCSS/DCS , the radio will remain quiet and the monitor symbol(Ref. Fig 11) will be on until a code is received which matches the internal code of the portable.

Before transmitting, the radio channel must be monitored first so as not to interfere with another user who may be transmitting.

To monitor the channel, press FUN + 0. The loudspeaker will be opened and any traffic will be heard. The loudspeaker symbol will disappear in the display. If any transmission is received, the Busy indicator will be lit

9. TRANSMITTING:

Hold the radio vertically a few inches from the face.

Press the PTT button and speak clearly into the front grille.

The Transmit indicator will appear in the display. (Ref. Fig 12)

To receive and hear the reply, release the PTT button. The Transmit indicator will be extinguished and any incoming transmission will be heard in the speaker.

10. OPERATIONAL FEATURES:

10-1. Display Illumination

To switch on the back-light of the display in dark conditions, press the FUN button momentarily. The light will extinguish automatically after a period of no keypad activity. (Ref. Fig 13)

11. PASSWORD PROTECTION:

The radio can be programmed with a Personal Identity Number (I.D.) to prevent unauthorized use of the set. If so programmed :

When switched on, the radio will prompt the user to enter his I.D. (Ref. Fig 14) Press * to clear the display and enter the I.D. number using the numeric keypad. The display will show * for each digit entered.

The radio will beep if the correct code is entered and the channel number and name will appear in the display.

The radio is ready for use.

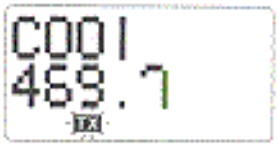


Fig 12

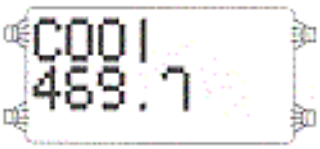


Fig 13



Fig 14

12. TRANSMIT TIME LIMITER:

The time limiter will operate if the transmitter is keyed for too long. The time limit is programmable. When the time limiter is activated:

The transmitter is switched off automatically, and the radio returns to the receive condition even if the PTT remains keyed.

To reset the condition, the PTT key must be released.

However, if the PTT is pressed again within 5 seconds a warning tone is activated.

13. TRANSMIT ALERT TONE:

The transmit alert tone informs the user that the transmitter has been keyed without having to look at the display. This is useful at night and provides added security in operational circumstances where a light might give away the position of the user to hostile elements.

14. AUTOMATIC POWER OFF:

As a means of preserving the battery the radio will power off automatically after a programmed period without any activity. The facility can be disabled by programming if not required.

15. POWER SAVE FEATURE:

If programmed, this feature will power down the radio for short periods to conserve the battery, then periodically check for channel activity. This period can be set from 0 to a few seconds.

16. KEYPAD LOCK:

The keypad can be locked to prevent inadvertent operation of the keypad. Locking is enabled by pressing FUN + 8 and disabled by pressing FUN + 8 again. (Ref. Fig 15)

17. TRANSMITTER POWER LEVEL:

The transmit power level on each channel can be switched between high and low level and vice versa by pressing FUN + 2. When a channel is operating in high power mode a letter H will appear in the display. If the set is switched off, on reswitch on, the TX power levels will revert to the default levels selected per channel at the time of programming. (Ref. Fig 16)



Fig 15

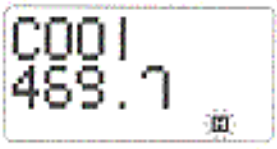


Fig 16

18. KEYPAD SUPERVISORY TONES:

The keypad "beep" tones can be switched on and off by pressing "1" when the set is switched on. After doing this, the set should be switched off and then on again normally. (Ref. Fig 17)



Fig 17

19. CHANNEL SCANNING FEATURES:

The AP99 portable has two scanning types-All Channel Scan and Programmed Channel Scan. Each type has two modes:None-priorty and Priority Channel.

In both scan modes, the radio will stop on the channel on which a call is received. The radio will remain on that channel for a few seconds to enable one to transmit, otherwise the radio will resume scanning. If the radio is scanning one must exit the scan mode to transmit on a desired channel if a call is not received on that channel.

20. BUSY ALL SCAN:

This feature causes the radio to scan all channels programmed in the radio. The radio will stop on the first received busy channel.

To activate All CH Scan :

Press the FUN button together with "#" button.

ALL CH SCAN will appear in the display (Ref. Fig 18)

When scanning stops, the number and name of the channel will be displayed and the Busy indicator will be lit.

A few seconds after the last transmission, the radio resumes scanning and ALL CH SCAN will reappear in the display.

To deactivate All CH Scan : Press "#".

ALL CH SCAN will disappear from the display.

Reset to required channel for normal operation.



Fig 18



Fig 19

21. PRIORITY ALL SCAN:

These feature functions in the same manner as described above except that the radio also monitors constantly up to two preprogrammed priority channels. If activity occurs on a priority channel the radio will switch to that channel even if the radio has stopped on a non-priority channel.

To activate Priority All Scan :

Press the FUN button together with the "#" button.

Release the FUN button and press the "*" button.

PRI-ALL SCAN appears in the display. (Ref. Fig 19)

To deactivate Priority All Scan :

Press "#".

PRI-ALL SCAN will disappear from the display.

Reset the required channel for normal operation.

22. BUSY PROGRAM SCAN:

This feature causes the radio to scan a preprogrammed list of channels. The radio will stop on the first received busy channel in the list.

To activate Busy Program Scan :

Press the FUN button together with the "9" button.

PROGM CH SCAN will appear in the display. (Ref. Fig 20)

When scanning stops, the number and name of the channel will be displayed and the Busy indicator will be lit.

A few seconds after the last transmission, the radio resumes scanning and PROGM CH SCAN will reappear in the display.

To deactivate Busy Program Scan :

Press "#".

PROGM CH SCAN will disappear from the display.

Reset the required channel for normal operation.



Fig 20



Fig 21

23. PRIORITY PROGRAM SCAN:

This feature functions in the same manner as described above except that the radio also monitors constantly up to two preprogrammed priority channels. If activity occurs on a priority channel, the radio will switch to that channel even if the radio has stopped on a non-priority channel.

To activate Priority Program Scan :

Press the FUN button together with the "9" button. Release the FUN button and press the "*" button.

PRI-PRG SCAN appears in the display. (Ref. Fig 21)

To deactivate Priority Program Scan :

Press "#".

PRI-PRG SCAN will disappear from the display.

Reset the required channel for normal operation.

24. SCAN TABLE EDIT:

To enter the Scan Table Edit mode, press "2" whilst switching on the portable. The display will show a channel number and to the right of the display either character O or X denoting whether or not the displayed channel number is included in the scan list. O = yes, X = no. (Ref. Fig 22) To include or delete the channel from the list, press # Rotate the channel selection knob to the next channel, and repeat the selection. When the selection is completed, switch off the radio. Switching the radio back on will return the unit to normal operation , with the new scan list .



Fig 22

25. 5-TONE DIALLING FEATURES:

Selective Call Encoding/Decoding:

If this facility is programmed in the portable, pressing FUN + C will enter the 5-tone dialing mode. The code is selected by pressing the required digits on the keypad. Pressing the "D" button will then transmit the 5-tone code selected. The set will reset to normal operation after 5 seconds if no digits are selected.

26. DTMF DIALLING:

DTMF Encoding

If this facility is programmed in the portable , press PTT first, followed by any key press on the front keypad, will cause the associated DTMF code to be transmitted.

Last Number Redial

FUN + D will cause the last DTMF number keyed to be redialled.
(Ref. Fig 23)

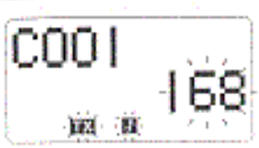


Fig 23

27. AUTOMATIC NUMBER I.D (ANI): (DTMF & 5 TONE)

If programmed, this facility will transmit an I.D. code every time the PTT is pressed or released according to programming.

28. EMERGENCY CALL BUTTON: (DTMF & 5 TONE)

If the emergency call facililty is software enabled, pressing the red button on top of the unit will cause the radio to go to a previously programmed channel and transmit a sequence of up to 8 tones. The radio will then automatically switch between RX and TX in a choice of 1 of 3 modes, sending its 5-tone sequence each time it transmits. The choice of mode is as follows:

(a). 10 seconds of TX followed by 10 seconds of RX. Activity period is software selectable in 30-minute periods up to a maximum of 7.5 hours. During activation, no audio alarm tone is generated, and the microphone is live during the TX period.

(b). This is the same as (a) but the TX signal contains an audio alarm signal.

(c). Same as (b) but with a TX duty cycle of 20 seconds, and RX duty cycle of 10 seconds.