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PRV599A

VHF PORTABLE TWO-WAY RADIO

OWNER'S MANUAL

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Shenzhen HYT Science & Technology Co., Ltd.

THANK YOU

Thank you for your purchase of HYT two-way portable radio. This easy-to-use radio adopts the latest advanced technology, providing reliable communications in high efficiency.

Before operate this radio, please read this manual carefully to be acquainted with its features.

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USER SAFETY INFORMATION

READ THIS IMPORTANT INFORMATION ON SAFE AND EFFICIENT OPERATION BEFORE USING YOUR HYT PORTABLE TWO-WAY RADIO.

- ◇ Only qualified technicians are allowed to repair this product.
- ◇ Turn off your radio prior to entering any area with a potentially explosive atmosphere. Do not remove, install, or charge batteries in such areas.
- ◇ Do not use any portable radio that has a damaged antenna. If a damaged antenna comes into contact with your skin, a minor burn can result.
- ◇ Do not expose the radio in direct sunlight for a long time or place it close to a heating source.

User Safety, Training, and General Information

READ THIS IMPORTANT INFORMATION ON SAFE AND EFFICIENT OPERATION BEFORE USING YOUR RELM HANDHELD PORTABLE TWO-WAY RADIO.

Compliance with RF Energy Exposure Standards

Your **RELM** two-way radio is designed and tested to comply with a number of national and international standards and guidelines (listed below) regarding human exposure to radio frequency electromagnetic energy. This radio complies with the IEEE (FCC) and ICNIRP exposure limits for occupational/controlled RF exposure environment at duty cycles of up to 50% talk-50% listen and should be used for occupational use only. In terms of measuring RF energy for compliance with the FCC exposure guidelines, your radio radiates measurable RF energy only while it is transmitting (during talking), not when it is receiving (listening) or in standby mode.

Note: The approved batteries supplied with this radio are rated for a 5-5-90 duty cycle (5% talk-5% listen-90% standby), even though this radio complies with the FCC occupational RF exposure limits at duty cycles of up to 50% talk.

Your RELM two-way radio complies with the following of RF energy exposure standards and guidelines:

- United States Federal Communications Commission, Code of Federal Regulations; 47CFR part 2 sub-part J
- American National Standards Institute (ANS)/Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992

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- Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1999 Edition
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- Ministry of Health (Canada) Safety Code 6. Limits of Human Exposure to Radio frequency Electromagnetic Fields in the Frequency Range from 3kHz to 300GHz, 1999
- Australian Communications Authority Radio communications (Electromagnetic Radiation-Human Exposure) Standard 1999 (applicable to wireless phones only)

Operational Instructions and Training Guidelines

To ensure optimal performance and compliance with the occupational/controlled environment RF energy exposure limits in the above standards and guidelines, users should transmit no more than 50% of the time and always adhere to the following procedures:

Transmit and Receive

To transmit (talk), push the Push-To-Talk (PTT) button; to receive, release the PTT button.

Hand-held radio operation

Hold the radio in a vertical position with the microphone one to two inches (2.5 to 5 cm) away from the lips.

Body-worn operation

- Always place the radio in a RELM approved clip, holder, holster, case, or body harness for this product. Use of non-RELM-approved accessories may exceed FCC RF exposure guidelines.
- If you do not use a RELM approved body-worn accessory and are not using the radio in the intended use position in front of the face, then ensure the antenna and the radio are kept 2.5 cm (one inch) from the body when transmitting.

Antennas & Batteries

- Use only RELM approved, supplied antenna or RELM approved replacement antenna. Unauthorized antennas; modifications, or attachments could damage the radio and may violate FCC regulations.
- Use only RELM approved, supplied batteries or RELM approved replacement batteries. Use of non-RELM-approved batteries may exceed FCC RF exposure guidelines.

Approved Accessories

For a list of RELM approved accessories see the accessories page of this user manual or visit the following website which lists approved accessories: <http://www.RELM.com>

FCC Compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is

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connected.

- Consult the dealer or an experienced radio/TV technician for help.

Industry Canada Compliance

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 Canada.

FCC Requirements

Your radio must be properly licensed Commission prior to use. Your RELM Wireless dealer can assist you in meeting these requirements. Your dealer will program each radio with your authorized frequencies, signaling codes, etc., and will be there to meet your communications needs as your system expands.

Only qualified technicians are allowed to maintain this product.

Do not use the transceiver or charge a battery in explosive areas such as coal gas, dust, steam, etc.

Switch OFF the transceiver while refueling or parking at gas station.

Do not modify or adjust this transceiver without permission.

Do not expose the transceiver to direct sunlight over a long time, nor place it close to heating source.

Do not place the transceiver in excessively dusty, humid areas, nor on unstable surfaces.

Safety: It is important that the operator is aware of and understands hazards common to the operation of any transceiver.

Please carefully take the transceiver out of the box. We recommend that you confirm the items listed in the following table before discarding the box. If any items are missing or have been damaged during shipment, file a claim with the carrier immediately.

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SUPPLIED ACCESSORIES

Item	Qty. (pcs)
Antenna	1
Belt clip	1
Screw set	1
External speaker-microphone jack cover	1
Locking bracket for speaker-microphone	1
Battery *	1
Charger	1
Warranty card	1
Introduction manual	1

Note: *---Not available in simple packing.

ANTENNA, BATTERY AND OTHER ACCESSORIES

The battery is not charged by the factory, please charge it before use. Repeat charging and discharging cycle for two or three times can make battery in its normal capacity. In any condition, when the battery is low, it needs to recharge or replacement

NOTE:

★If the battery is fully charged, do not charge it any more. Overcharging will reduce battery life and cause damage.

★After charging finished, remove the battery from the charger, otherwise, when re-connect the charger with power supply, the battery will be charged again, which may cause overcharging.

Do not complete the battery terminals (short-circuit) or dispose the battery by fire, and not disassemble the battery.

1, BATTERY

Align the four slots on the battery cover with the tabs on the aluminum cover and then push up the battery until the latch on the cover bottom locks in place. To remove the battery, release the latch and slide the battery away from the radio.

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2, ANTENNA

Position the antenna base on the radio connector and screw the antenna in clockwise until clicks in place.

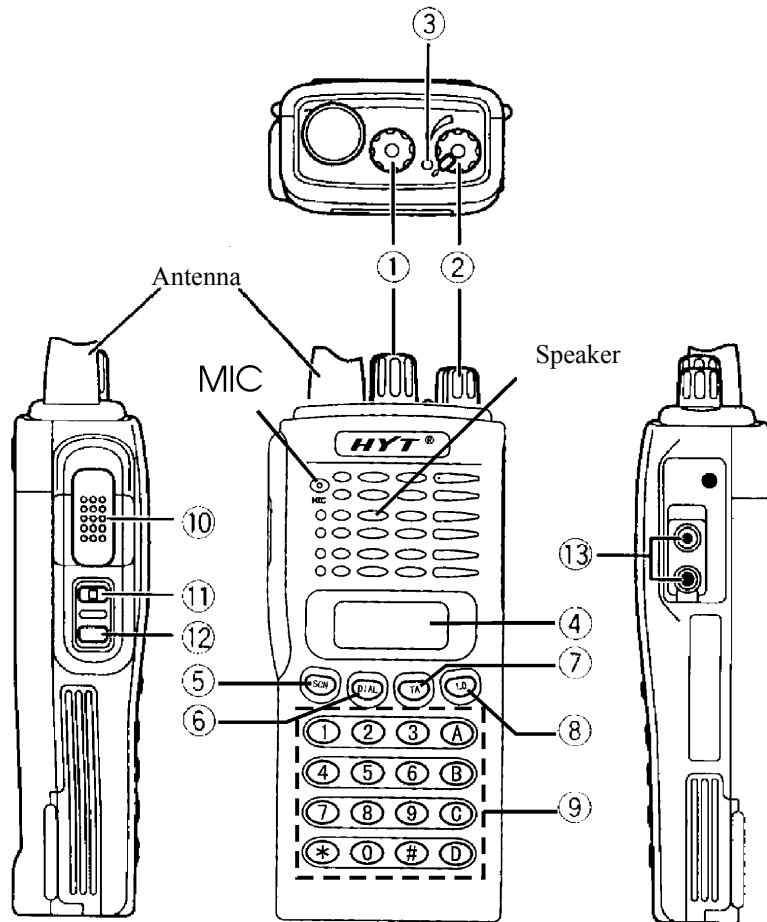
3, EXTERNAL SPK-MIC JACK

Plug speaker-microphone pins into the SP/MIC jacks. Fix the external speaker-microphone with the retainer by using supplied screws($3\text{mm} \times 6\text{mm}$). If the external speaker-microphone is not used, cover the SP/MIC jacks with jack caps by using supplied screws($3\text{mm} \times 6\text{mm}$).

4, BELT CLIP

If it is necessary, it can be mounted to the belt with 2 pcs screws of $3\text{mm} \times 8\text{mm}$.

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GETTING ACQUAINTED

■ CONTROL KNOBS, FUNCTION KEYS AND JACKS

(1) CHANNEL SELECTOR KNOB

Used to select channel and squelch level. In addition, it can be programmed by the dealer to delete undesired channels from scan list or to select CTCSS frequency.

(2) POWER/VOLUME KNOB

Used to turn on or turn off the power, and also used to adjust the volume.

(3) LED INDICATOR

Red LED glows in transmitting. When the battery voltage lowers to the critical level, red LED flashes. Green LED glows when receiving signals. If DTMF/Two-tone is used, when the radio receives correct signals, orange LED flashes.

(4) LCD

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used to display operation status.

(5) **SCN KEY**

Used to control scanning.

(6) **DIAL KEY**

When store and send feature is enabled, it is used to send codes; and when auto-dial feature is enabled, it is used to store, confirm, send or delete codes.

(7) **TA KEY**

Used to enable or disable FREQUENCY REVERSE/ TALK AROUND feature.

(8) **LO (low power) KEY**

Used to select transmit power.

(9) **KEYPAD**

Used to enter, store or send DTMF codes.

(10) **PTT BUTTON**

Used to switch between transmit and receive mode.

(11) **LAMP KEY**

Used to turn on or turn off LCD backlight . Press [LAMP], the backlight will illuminate for about 5 seconds and then automatically turn off. During illuminating, press any key except [LAMP], the timer will retime. To turned off the backlight, press [LAMP] again. .

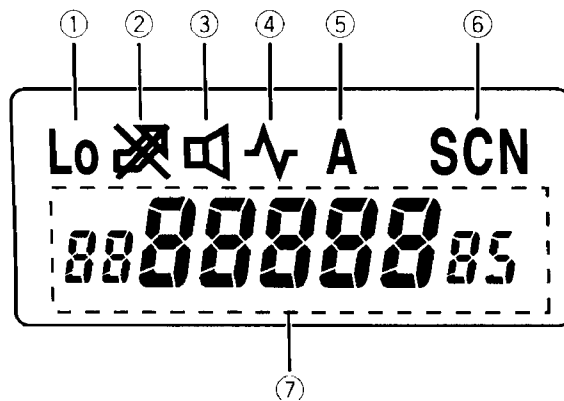
(12) **MONI BUTTON**

Pressing this button can monitor the selected channels.

(13) **EXTERNAL SPEAKER-MICROPHONE JACK**

Used to connect with external speaker-microphone.

■ LCD



①Appears when low power is selected.

②Appears when selected channel is busy.

③Appears when MONI button is pressed to disable CTCSS/CDCSS.

④Appears when MONI button is pressed to switch the speaker on.

⑤Appears when the selected channel is in scan list. Radio only scans channels in the scan list.

⑥Appears in scanning.

⑦Displays selected channel number, squelch level or DTMF code. When selective call is enabled, messages received is also displayed here. .

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FEATURES AND OPERATION

1,POWER

To turn on the power, turn **POWER/VOL** knob clockwise until a “click” is heard (the tone also can be programmed as “beeps”), and characters will be displayed on LCD. To shut off the power, turn **POWER/VOL** knob counter clockwise until a “click” is heard, and characters disappears from LCD. 。

2,VOLUME

Press [**MONI**] button to monitor background noise, and at the same time turn **POWER/VOL** knob to adjust the volume to a comfortable level.

3,MONITOR

If monitor function has been set valid by your dealer, in receive mode, press [**MONI**] button, you can monitor activities on your selected channels.

There are three ways to operate [**MONI**] button, one of which can be chosen by your dealer.

①Hold down the button , the speaker is switched on; Release the button, the speaker is switched off

②Hold down the button, if received signal has correct CTCSS/CDCSS, speaker is switched on; release the button , speaker is switched off.

③Press the button, if received signal has correct CTCSS/CDCSS, speaker is switched on; release the button , speaker is switched off.

If monitor function has been set invalid by the dealer, pressing [**MONI**] cannot monitor the channel.

4, SELECT CHANNEL

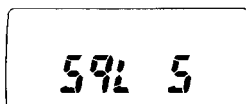
Turn Channel selector knob to change channel number which is displayed on LCD. Turn the knob clockwise, channel number will increase, and turn counter clockwise, channel number will decrease. Transmit and receive frequencies of each channel have been set by the dealer.

5,SELECT SQUEL LEVEL

Hole down [**MONI**] button, and then press [**LO**], current squelch level code is displayed on LCD as below figure. Turn **CHANNEL SELECTOR** knob to select the squelch level, and then press any key except [**LAMP**] to store the setting. LCD returns to origin display.

Note: If the squelch level is set too high, you may not efficiently receive weak signals; if the

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level is set too low, you may be interfered by noise or other unwanted signals.

6 RECEIVE

CTCSS /CDCSS/ DTMF/Two-Tone function can be set by your dealer. When the signaling is set, only signals with same signaling can be received, otherwise, all conversations on your selected channel can be heard.

7, TRANSMIT

Hold down **PTT** button, red LED glows, speak into the microphone (mouth is 10cm away from the microphone) or enter DTMF code by the keypad, your message is transmitted. Release **PTT**, radio returns to receive mode.

NOTE:

- ★ If Busy Channel Lockout feature has been enabled by your dealer and the selected channel is busy, pressing **[PTT]** button, radio will sound alert tone, and transmission is automatically prohibited.
- ★ Holding down **[PTT]** button, radio will check its battery voltage. When the battery lowers to the preset value, red LED flashes, and when the battery lowers further, radio stops transmitting and sounds alert. In this condition, please recharge or replace the battery.
- ★ When continuous transmission time exceeds preset time (the time is set by the dealer), radio stops transmission and sounds alert, and then returns to receive mode. The dealer also can set an alert tone before the transmission time exceeds the preset time, which is different from the time out alert tone.

■ SELECT TRANSMIT POWER

If high transmit power is set on current channel by your dealer, pressing **[LO]** can toggle transmit power between high and low (when in low power, “Lo” appears on LCD). Since using low transmit power can save battery and decrease the interference to others, low transmit power is selected with priority when the communications quality can be guaranteed.

NOTE:

- ★ If high transmit power is prohibited on current channel and “Lo” is displayed on LCD, press **[LO]**, an alert tone of wrong operation will be heard, and low transmit power will not change.
- ★ The operation of switching a channel in high transmit power to low transmit power will switch all channels in high transmit power to low power.

■ CONNECT ID/DISCONNECT ID

When radio is connected or unconnected to a repeater, a special connect ID or disconnect ID can be sent, which can be set by your dealer. One of the following methods will be set by your dealer.

To transmit a connect ID:

Method 1: Press **[PTT]**, connect ID is transmitted.

Method 2: While holding down **[PTT]** button, press **[DIAL]**, and then press **[*]**, connect ID is

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transmitted.

To transmit a disconnect ID:

Method 1: Release [PTT], disconnect ID is transmitted.

Method 2: While holding down [PTT] button, press [DIAL], and then press [*], disconnect ID is transmitted.

8, CHANNEL SCAN

Press [SCN], radio begins scanning from current channel in ascending order, and “SCAN” appears on LCD. To stop scanning, press [SCN] again.

■ SCAN OPERATION

When radio locks in on a busy channel, scan can be restarted according to the restart mode, which can be programmed by the dealer as **time-operated scan** or **carrier-operated scan**.

① Time-operated scan

After radio locks in on one busy channel for a period (the time is set by the dealer.), the radio will begin scanning other channels even if the channel is still busy.

② Carrier-operated scan

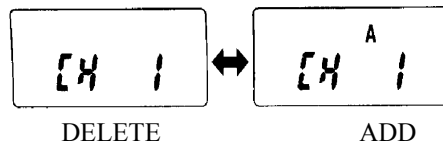
Radio will lock in on one busy channel until there is no activity, and then after a delay (delay time is set by the dealer), radio begins scanning other channels.

■ PRIORITY SCAN

If your dealer has set a priority channel, when radio scans non-priority channels, it will periodically detect the priority channel, and when it detects any activity on the priority channel, radio switches to scan the priority channel immediately. When a priority channel is selected, “P” appears on LCD.

■ CHANNEL DELETE

This feature allows radio to delete undesired channels from the scan list. Select the channels to be deleted by using CHANNEL SELECTOR knob in non-scan mode. Holding down [MONI] button and pressing [SCN] key can toggle the selected channel between ADD and DELETE. When the current channel is in scan list, “A” is displayed on LCD.



■ SCAN REVERT CHANNEL

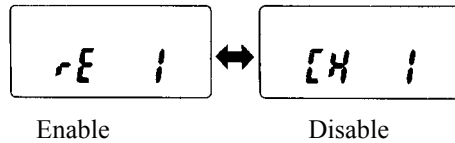
The **scan revert channel** feature sends you to the right transmit channel while responding to or initiating a call during channel scan. Press [PTT] button, radio stops scan and transmits on the revert channel. This feature is set by the dealer.

9, FREQUENCY REVERSE / TALK AROUND

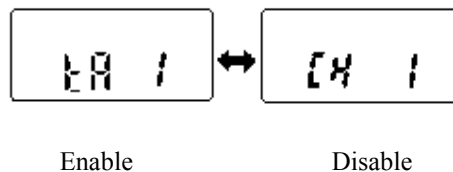
If communications between radios are disrupted because of a long distance from repeaters or other reasons, frequency reverse feature can be used in such cases. When frequency reverse feature is enabled, transmit frequency and receive frequency will be reversed, and at the same

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time, corresponding CTCSS/CDCSS encode and decode also be reversed. To enable or disable the feature, press [TA] key.



There is some difference between TALK AROUND and FREQUENCY REVERSE. When TALK AROUND is enabled, TX frequency is changed to be same as RX frequency and at the same time CTCSS/CDCSS encode and decode change correspondingly. To enable or disable TALK AROUND, press [TA] key.



10, DTMF SELECTIVE CALL

■MANUAL DIAL

Holding down [PTT] button, press DTMF keys, corresponding DTMF digits are transmitted, and DTMF tones can be heard. The radio can be programmed by the dealer to continue transmitting for 2 seconds after [PTT] is released, therefore, in the 2 seconds, a DTMF code can be transmitted without pressing [PTT] button. [A], [B], [C] and [D] can be programmed invalid by your dealer.

■STORE AND DIAL

When this function is enabled, after entering DTMF code with up to 16 digits in receive mode, press [DIAL] key, you can transmit the entered code.

★Even if [A],[B],[C]and [D] have been set invalid in manual dial, these keys still can be used in this feature.

★"[D]" can be set as vacant number by the dealer, i.e., "D" is not transmitted, it only represents a pause time that is set by the dealer.

■AUTO-DIAL

This function is enabled or disabled by the dealer.

①Store DTMF code

One DTMF code with maximum 16 digits can be stored in one digit key ([0]-[9]). Press [DIAL], and then press [#], LCD displays as the below. Enter the code to be stored (16 digits maximum) with the keypad, and press[DIAL] , and then press one digit key of [0]~[9], the entered code is stored in the corresponding digit key.

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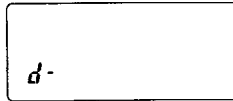
★Even if [A],[B],[C] and [D] have been set invalid in manual dialing, these keys can be used when this feature is enabled.

★If enter unwanted digits, press [MONI] button, and then re-enter the whole number.

★To disable this feature, press [PTT], [SCN], [TA] or [LO], and the stored codes are deleted.

②CONFIRM STORED DTMF CODE

Press [DIAL] key, and then press [*], LCD displays as the below. And then press the digit key ([0]-[9]) in which the DTMF code is stored, the stored code is displayed on LCD and corresponding DTMF tone is heard. To return to original display, press any key.

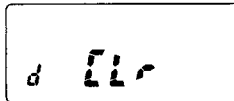


③DIAL

To transmit stored DTMF code, press [DIAL], and then press corresponding digit key ([0]-[9]). The code is displayed on LCD during transmitting.

④DELETE STORED DTMF CODE

To delete a code, press [DIAL], and press [D] (at this time LCD displays as the below), and then press the digit key in which the code is stored ([0]-[9]). To cancel this operation, press any



key other than [0]~[9].

■RE-DIAL

Double pressing [DIAL] key, radio re-dials the last transmit code, which will be displayed on LCD during transmitting.

NOTE: Re-dial memory is deleted when the radio is shut off.

11, CODE SQUELCH

Code squelch can be set by the dealer. If the feature is enabled and the received code is same as the radio ID code (3-10 digits) which is set by the dealer, squelch is opened. If Auto- Responder and Call Alert Tone are enabled by the dealer, they can be used together with Code Squelch. But when Group Call is enabled, Auto- Responder is invalid.

To send a call, hold down [PTT] and enter ID code or Group Code by the keypad, if you like, you also can operate in store and send or auto-dial mode. When transmission ends, the radio returns to normal operation.

Note: Code squelch cannot be used together with selective call on the same channel.

12, SELECTIVE CALL

Selective call can be set by the dealer. This feature is similar with code squelch, but it can be

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used to transmit or receive combination message (maximum with 5 digits). The format is:

ID code(3 digits) +1 intermediate code +message code (maximum with 5 digits)

When the radio receives DTMF code as preset, the speaker is switched on, and message code appears on LCD. When radio receives its ID code, “C” appears on LCD; and when receives a group code, “A” appears on LCD. When there is no message code, “NO DATA” appears on LCD.

To send a call, hold down **[PTT]** and enter preset DTMF code, and if you like, you also can operate in store and send or auto-dial mode. After transmission, radio returns to normal operation.

Note: If code squelch has been enabled on the selected channel, selective call cannot be enabled on the channel.

13, TWO-TONE SELECTIVE CALL

When Two-Tone selective call is set valid by the dealer, hold down **[PTT]** and **[LAMP]** simultaneously to transmit corresponding two tones, and when the end tones are sounded, release the keys. In Two-Tone valid time, the corresponding radios can receive the call.

14, SELECTABLE CTCSS

This feature (set by the dealer) is used to temporarily change CTCSS frequencies on some channels. To enter selectable CTCSS mode, use CHANNEL SELECTOR knob to select wanted channels, and then hold down **[MONI]** button, and then press **[DIAL]** key (at this time LCD displays as the below), and then use CHANNEL SELECTOR knob to select a CTCSS number from 39 CTCSS numbers. New selected frequency is valid only in selectable CTCSS mode. To exit from this mode, hold down **[MONI]** button, press **[DIAL]** key, and LCD will return to original display.

A rectangular box representing an LCD display, containing the word "OFF" in a stylized, bold, black font.

15, AUTO-RESPONDER

Auto-Responder can be set to work with code squelch or selective call. After this feature is enabled, when receiving a call with correct code, radio will automatically respond. One of the following responds can be set by the dealer.

★alert tone

★radio ID code

★code stored in **[0]** key

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16, CALL ALERT TONE

In receive mode, when the radio receives correct DTMF code, it will sound alert tone. To stop the alert tone, press any key.

CARE AND CLEANING

- ◇ Avoid physical abuse of your radio such as carrying it by the antenna or remote microphone.
- ◇ Wipe the battery contacts with a lint-free cloth to remove dirt, grease, or other material that may prevent good electrical connection.
- ◇ When not in use, keep the accessory jacks covered with the protective cap.
Clean the shell, controls and keys of your radio with neutral detergent and warm water after long period of usage. Avoid using strong chemicals.