Amateur Radio

UV-20R SERIES

USER‘S MANUAL

PREFACE

Thank you for purchasing this product. which is a dual band/dual display/dual watch. This easy-to-use radio will deliver you secure, instant and reliable communications at peak efficiency. Please read this manual carefully before use. The information presented herein will help you to derive maximum performance from your radio.

FCC Licensing Information This device complies with Part 15 of the federal Communications Commission (FCC) Rules. Operation is subject to the condition that that this device does not cause harmful interference. The radio operates on radio frequencies that are regulated by the Federal Communications Commission (FCC). To transmit on these frequencies, you are required to have a license issued by the FCC. To obtain forms, call the FCC forms hotline at: 1-800-418-3676 or go to http://www.fcc.gov For questions concerning commercial licensing, contact the FCC at 1-888- CALL-FCC (1-888-225-5322). Before filling out you application, you must decide which frequency you can operate on.

WARNING ! MODIFICATION OF THIS DEVICE TO RECEIVE CELLULAR RADIOTELEPHONE SERVICE SIGNALS IS PROHIBIITED UNDER FCC RULES AND FEDERRAL LAW.

ATTENTION! When programming the radio, start by reading the factory software data, and then rewrite this data with your frequency etc., to a new saved code plug, otherwise errors may occur. You can use the programming cable with a PC to program the authorized frequency, bandwidth, power, etc. your programming must comply with your FCC (or EU other country) license certification.

ATTENTION! Before using this product, read the RF Energy Exposure and Product Safety Guide that ship with the radio which contains instructions for safe usage and RF energy awareness and control for compliance with applicable standards and regulation.

PMR446, FRS, GMRS, MURS

You may be tempted to use PMR446 (in Europe) or FRS, GMRS, MURS (in the USA) frequencies. Do note however that there are restrictions on these bands that make this transceiver illegal for use.

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1. GETTING STARTED

1.1 Regulations and Safety Warnings

■EU Regulatory Conformance

As certified by the qualified laboratory, the product is in compliance with the essential requirements and other relevant provisions of the Directive 1999/5/EC (2014/53/EU). All applicable EU regulations are regarded (2006/66/EC, 2011/65/EU, 2012/19/EU). Please note that the above information is applicable to EU countries only.

■FCC Part15/IC Compliance

FCC Part 15 Compliance

This device complies with Part 15 of the FCC rules. Operation is subjected to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
Changes or modifications not expressly approved by the party responsible for compliance could void your authority to operate the equipment.
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates and can radiate radio frequency energy. If not installed and used in accordance with the instructions, it may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. Verification of harmful interference by this equipment to radio or television reception can be determined by turning it off and then 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 connected.
- Consult the dealer or an experienced radio/TV technician for help.

IC Compliance

This device complies with Innovation, Science and Economic Development Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'ISED applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:
(1) l'appareil ne doit pas produire de brouillage, et
(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

■FCC RF Exposure

WARNING! It is up to the user to properly operate this radio transmitter to insure safe operation. Please adhere to the following:
Do not use the radio with a damaged antenna. If a damaged antenna comes into contact with the skin, a minor burn may result.
Please contact your local dealer for a replacement antenna.

SAR tests are conducted using standard operating positions accepted by FCC/ISEDC with the device transmitting at its highest certified power level in all tested frequency bands, although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value. Before a new model is a available for sale to the public, it must be tested and certified to the FCC/ISEDC that is does not exceed the exposure limit established by the FCC/ISEDC. Tests for each product are performed in positions and locations as required by the FCC/ISEDC.

For body worn operation, this device has been tested and meets the FCC/ISEDC RF exposure guidelines when used with and accessory designated for this product or when used with and accessory that contains no metal. To maintain compliance with FCC/ISEDC RF exposure guidelines hold the transmitter and antenna at least 1 inch (2.5 centimeters) from your face and speak in a normal voice, with the antenna pointed up and away from the face.

The equipment complies with FCC/ISEDC radiation exposure limits set forth for and uncontrolled environment. In order to comply with the FCC/ISEDC RF exposure requirement, the antenna installation must comply with following:

Users must be fully aware of the hazards of the exposure and able to exercise control over their RF exposure to qualify for the higher exposure limits.

Your wireless hand-held portable transceiver contains a low power transmitter. This product sends out radio frequency (RF) signals when the Push-to-Talk(PTT) button is pressed.

The device is authorized to operate at a duty factor not to exceed 50%

Les tests SAR sont effectués à l'aide d'une position de fonctionnement standard acceptée par la FCC / ISEDC, où l'équipement transmet à son niveau de puissance certifié le plus élevé dans toutes les bandes de fréquences testées, et bien que le SAR soit déterminé au niveau de puissance certifié le plus élevé, le niveau de SAR réel de L'équipement en fonctionnement peut être bien inférieur au maximum. Les nouveaux modèles doivent être testés et certifiés par la FCC / ISEDC avant d'être vendus au public, qui ne doit pas dépasser les limites d'exposition spécifiées par la FCC / ISEDC. Les tests de chaque produit sont effectués aux endroits et aux endroits requis par la FCC / ISEDC.Pour une utilisation sur le corps, l'appareil a été testé et est conforme aux directives FCC / ISEDC sur l'exposition aux RF lorsqu'il est utilisé avec les accessoires spécifiés pour ce produit ou avec des accessoires sans métal.

Pour rester conforme aux directives FCC / ISEDC sur l’exposition aux RF, maintenez l’émetteur et l’antenne à au moins 2,5 cm (1 po) de votre visage et parlez d’une voix normale.Pour rester en conformité avec les directives FCC / ISEDC sur l’exposition aux RF, maintenez l’émetteur et l’antenne à au moins 1 pouce (2,5 cm) de votre visage et parlez d’une voix normale, l’antenne étant dirigée vers le haut et éloignée du visage.

L'appareil est conforme aux limites d'exposition aux rayonnements spécifiées par la FCC / ISEDC pour les environnements non contrôlés. Pour être conforme aux exigences d'exposition aux RF FCC / ISEDC, l'installation de

l'antenne doit répondre aux exigences suivantes:
Les utilisateurs doivent être pleinement conscients des dangers de l'exposition et être en mesure de contrôler leur exposition aux RF afin de se conformer aux limites d'exposition plus élevées.
Votre émetteur - récepteur portatif sans fil contient un émetteur de faible puissance. Ce produit émet un signal de radiofréquence (RF) Lorsque vous appuyez sur le bouton Push to talk (PTT). L'installation est autorisée à fonctionner avec un facteur d'occupation ne dépassant pas 50%.

■Precautions for Portable Terminals

Operating Prohibitions

To protect you against any property loss, bodily injury or even death, be sure to observe the following safety instructions:

1. Do not operate the product in a location containing fuels, chemicals, explosive atmospheres and other flammable or explosive materials. In such location, only an approved Ex-protection model is allowed for use, but any attempt to assemble or disassemble it is strictly prohibited.
2. Do not operate the product near or in any blasting area.
3. Do not operate the product near any medical or electronic equipment that is vulnerable to RF signals.
4. Do not hold the product while driving.
5. Do not operate the product in any area where use of wireless communication equipment is completely prohibited.

Important Tips

To help you make better use of the product, be sure to observe the following instructions:

1. Do not use any unauthorized or damaged accessory.
2. Keep the product at least 2.5 centimeters away from your body during transmission.
3. Do not keep the product receiving at high volume for a long time.
4. For vehicles with an air bag, do not place the product in the area over the air bag or in the air bag deployment area.
5. Keep the product and its accessories out of reach of children and pets.
6. Please operate the product within the specified temperature range.

7. Continuous transmission for a long time may lead to heat accumulation within the product. In this case, please keep it at a proper location for cooling.
8. Handle the product with care.
9. Do not disassemble, modify or repair the product and its accessories without authorization.

■Precautions for Batteries

Charging Prohibitions

To protect you against any property loss, bodily injury or even death, be sure to observe the following safety instructions:

1. Do not charge or replace your battery in a location containing fuels, chemicals, explosive atmospheres and other flammable or explosive materials.
2. Do not charge your battery that is wet. Please dry it with a soft and clean cloth prior to charge.
3. Do not charge your battery suffering deformation, leakage and overheat.
4. Do not charge your battery with an unauthorized charger.
5. Do not charge your battery in a location where strong radiation is present.
6. Overcharge shall always be prohibited for it may shorten the life of your battery.

Maintenance Instructions

To help your battery work normally or prolong its life, be sure to observe the following instructions:

1. Accumulated dust on charging connector may affect normal charging. Please use a clean and dry cloth to wipe it on a regular basis.
2. It is recommended to charge the battery under 5℃~40℃. Violation of the said limit may cause battery life reduction or even battery leakage.
3. To charge a battery attached to the product, turn it off to ensure a full charge.
4. Do not remove the battery or unplug the power cord during charging to ensure a smooth charging process.
5. Do not dispose of the battery in fire.
6. Do not expose the battery to direct sunlight for a long time nor place it close to other heating sources.

7. Do not squeeze and penetrate the battery, nor remove its housing.

Transportation Instructions

1. Damaged batteries must not be transported.
2. To avoid short circuit, separate the battery from metal pars or from each other if two or more batteries are transported in one packaging.
3. The radio must be switched off and secured against switch-on, if the battery is attached.

The content of the shipment must be declared in the shipping documents and by a Battery Shipping Label on the packaging. Contact your hauler for the local regulations and further information.

1.2 Main features

- Dual band (VHF/UHF) displayed
- Output power:37dBm
- 50 CTCSS tones and 208 DCS codes
- SOS Emergency function
- Built-in FM Radio (65-108MHz)
- 2pin Kenwood accessory jack
- TOT (Time out timer)
- Reverse function
- Busy Channel Lockout function (BCL)
- Frequency step: 2.5/5/6.25/10/12.5/25KHz
- Repeater shift
- Power Save
- Channel and frequency mode (MR/VFO) are selectable
- Scanner function, precise setting of scanning frequency range, useful frequencies can be saved as channels
- Operating modes: UHF/VHF, UHF/UHF, VHF/VHF
- CTCSS and DCS codes research
- 1750Hz tone for repeaters
- Full dot matrix LCD display screen
- VOX, Scan, Dual Watch functions
- Channel or frequency mode selection
- DTMF function
- Setting and storing of channel names
- VOICE: vocal indication of the function selected
- Frequency offset (adjustable): 0-69.990MHz
- Squelch adjustable in 9 levels
- Li-Ion 1800mAh battery pack
- Dual band, dual display & dual band single display (SYNC) set
- Large screen, full keyboard, open menu operation, get rid of the shackles of programming software

1.3 Maintenance

Your Two Way Radio is an electronic product of exact design and should be treated with care.
The suggestions below will help you to fulfill any warranty obligations and to enjoy this product for many years.

- Do not attempt to open the radio for any reason! The radio's precision mechanics and electronics require experience and specialized equipment; for the same reason, the radio should under no circumstances be realigned as it has already been calibrated for maximum performance. Unauthorized opening of the transceiver will void the warranty.
- Do not store the Radio under the sunshine or in hot areas.
- High temperatures can shorten the life of electronic devices, and warp or melt certain plastics.
- Do not store the radio in dusty and dirty areas.
- Keep the Radio dry. Rainwater or damp will corrode electronic circuits.
- If it appears that the Radio diffuses peculiar smell or smoke, please shut off its power immediately and take off the charger or battery from the radio.
- Do not transmit without antenna.

1.5 Content of the packaging

- 1 Radio
- 1 Earphone
- 1 Antenna
- 1 Li-Ion battery pack
- 1 Belt clip

If any item is missing, please verify with your dealer.

2. BATTERY INFORMATION

2.1 Charging the Battery Pack

The Li-ion battery pack is not charged at the factory; please charge it before use. Charging the battery pack for the first time after purchase or extended storage (more than 2 months) may not bring the battery pack to its normal maximum operating

capacity. Best operation will require fully charging/ discharging the battery two or three times before the operating capacity will reach its best performance. The battery pack life may be depleted when it's operating time decreases even though it has been fully and correctly charged. If this is the case, replace the battery pack.

2.2 Charger Supplied

Please use the specified charger provided by our company. Other models may cause explosion and personal injury. After installing the battery pack, and if the radio displays low battery with a voice prompt, please charge the battery.

2.3 Use Caution with the Li-ion Battery

a. Do not short the battery terminals or throw the battery into a fire. Never attempt to remove the casing from the battery pack, as our company cannot be held responsible for any accident caused by modifying the battery.
b. The ambient temperature should be between 5℃-40℃ (40˚F - 105˚F) while charging the battery. Charging outside this range may not fully charge the battery.
c. Please turn off the radio before inserting it into the charger. It may otherwise interfere with correct charging.
d. To avoid interfering with the charging cycle, please do not cut off the power or remove the battery during charging until the green light is on.
e. Do not recharge the battery pack if it is fully charged. This may shorten the life of the battery pack or damage the battery pack.
f. Do not charge the battery or the radio if it is damp. Dry it before charging to avoid damage.

WARNING !

When keys, ornamental chain or other electric metals contact the battery terminal, the battery may become damage or injure a human. If the battery terminals are short circuited it will generate a lot of heat. Take care when carrying and using the battery. Remember to put the battery or radio into an insulated container. Do not put it into a metal container.

2.4 How to Charge

a. Plug the AC adaptor into the AC outlet, and then plug the cable of the AC adaptor into the DC jack located on the back of

the charger. The indicator light blinks orange and is then ready to charge a battery.

b. Plug the battery or the radio into the charger. Make sure the battery terminals are good in contact with charging terminals. The indicator light turns to red--- charging begins.

c. It takes approximately 2-5 hours to fully charge the battery. When the lamp lights green, the charging is completed. Remove the battery or the radio unit with its battery from socket.

When charging a radio (with battery) the indicating lamp will not turn into green to show the fully charged status if the radio is powered on. Only when the radio is switched off will the lamp indicate normal operation. The radio consumes energy when it is power-on, and the charger cannot detect the correct battery voltage when the battery has been fully charged. So the charger will charge the battery in constant voltage mode and fail to indicate correctly when the battery has been fully charged.

2.5 LED Indicator

STATUS	LED
No Battery	Green and red alternately flashing
Charge Normally	Red
Fully Charged	Green
Trouble	Red blinks fast for a long time

NOTE：Trouble means battery too warm, battery short-circuited or charger short-circuited.

2.6 How to Store the Battery

a. If the battery needs to be stored, keep it in status of 80% discharged.

b. It should be kept in low temperature and dry environment.

c. Keep it away from hot places and direct sunlight.

» Do not short circuit the battery terminals.

» Never attempt to remove the casing from the battery pack.

» Never store the battery in unsafe surroundings, as a short may cause an explosion.

» Do not put the battery in a hot environment or throw it into a fire, as it may cause an explosion.

2.7 Using the Type-C USB Charger

The micro-USB charger is a handy port that allows you to conveniently charge your Li-ion battery pack.

1. Make sure your radio is turned OFF.
2. Plug the Type-C USB cable into the Type-C USB charging port on your battery. Connect the other end of the micro-USB charger to wall power outlet.
3. An empty battery will be fully charged in 4 hours.
4. The battery meter on LCD will move to indicate the battery is charging.

Note:

• It is recommended to power OFF your radio while charging. However, if power is turned on while charging, you may not be able to transmit a message if the battery is completely empty. Allow time for the battery to charge to 1 bar before attempting to transmit a message.

• For optimal battery life, remove the radio from the charger within 6 hours. Do not store the radio while connected to the charger.

3. INSTALLATION OF ACCESSORIES

Before the radio is ready for use we need to attach the battery pack, as well as charge the battery.

3.1 Installing/ Removing the Antenna

a. Installing the Antenna: Screw the antenna into the connector on the top of the transceiver by holding the antenna at its base and turning it clockwise until secure.

b. Removing the Antenna: Turn the antenna counter-clockwise to remove it.

3.2 Installing the belt clip

a. At the back of the radio there are two parallel screws mounted above the battery, remove these and thread them through the holes on the belt clip as you screw them back into the radio body.

b. Removing the Belt Clip: Unscrew counter-clockwise to remove the belt clip.

3.3 Installing the battery pack

Before attaching or removing the battery make sure your radio is turned off by turning the power/volume knob all the way counter-clockwise.

a. Make sure the battery is aligned in parallel with the radio body with the lower edge of the battery about 1-2cm below the edge of the radio.
b. Once aligned with the guide-rails, slide the battery upward until you hear a click as the battery locks in place.

Remove the battery pack

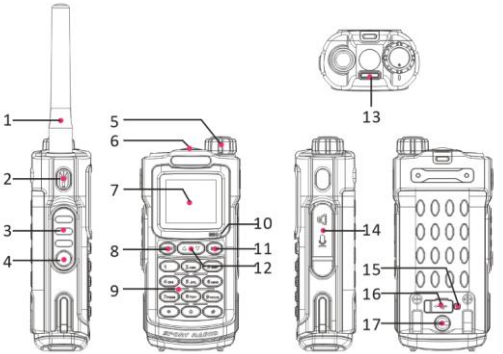
To remove the battery, press the battery release above the battery pack, as you slide the battery downward.

3.4 Installing the Additional Speaker/Microphone (Optional)

Pry open the rubber MIC-Headset jack cover and then insert the Speaker / Microphone plug into the double jack.

4. RADIO OVERVIEW

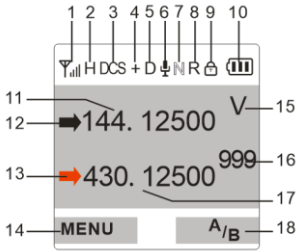
4.1 Buttons and controls of the radio



1. Antenna
2.SK1- Flashlight/ Emergency Alert key
3. PTT key
4. SK2- FM broadcast/Monitor key
5. Power/Volume knob
6. LED flashlight
7. Color LCD
8. Key (MENU)
9. Numeric keypad
10. MIC Input
11. Key (EXIT)
12. ▲ or ▼ navigation keys
13. TX/RX Status LED
14. Accessory jack
15. Type-C charging indicator
16. Type-C charging port
17. Battery tightening screw

4.2 Main controls and parts of the radio

LCD Display



1. Received signal strength.
2. High/Low power selection.
3. These symbols show that you set a **DCS** or **CTCSS** code in tx or rx. In tx mode it appears while you are transmitting, while in rx mode it is shown also in stand-by condition.
4. Appears when a **positive shift** is activated or Appears when a **negative shift** is enabled.
5. This letter is displayed when the **Dual Watch** function is active.
6. VOX function enabled.
7. **Narrow bandwidth:** N = narrow. When the wide (W) bandwidth is activated, no icon is displayed.
8. **Reverse** frequency
9. This icon indicates the **keypad lock**. To unlock it press **[*]**.
10. Battery level indicator. When the battery is almost used up, the icon starts blinking and the transmission is blocked. Charge the radio.
11/17. Depending on the setting, it will show the frequency in use, the channel name, the menu setting, etc

12/13. Indicates the **VFO** in use and the current menu or function setting. This icon is displayed close to the band in use or to the menu settings.
15. Indicates the **Frequency** (VFO) mode.
16. Indicates the **channel number** that you stored

Battery Level Indicator

When the battery level indicator reads the battery is depleted. At this point the radio will start beeping periodically as well as flash the backlight of the display and when voice prompts are enabled, a "Low Voltage" announcement will be heard, indicating that you need to change your battery or put your radio in the charger.

4.3 Status Indications

The status LED has a very simple and traditional design.

LED Indicator	Radio Status
Constant Red	Transmitting.
Constant Green	Receiving.

4.4 Main keypad controls

•**[MENU]** key: It is used for activating the MENU, choose each MENU selection and confirm the parameter.
In standby mode, press and hold the key to switch between frequency (VFO) mode and channel (MR) mode.
To save frequencies to channel memory you must be in Frequency (VFO) mode. Memory mode is sometimes also referred to as Channel mode.
• ▲ key: Press it for more than 2 seconds, the channel and frequency will move upwards rapidly; in SCAN mode, press this control to move the scanning upwards.
• ▼ key: Keep it pressed it for more than 2 seconds, the channel and frequency will move downwards rapidly; in SCAN mode, press this control to move the scanning downwards.
• **[EXIT]** key: press to exit the Menu and functions. A/B (appears on the display): push to select the desired frequency (VHF

or UHF) in the main or secondary display. When listening to broadcast FM, the **[EXIT]** key switches between 65-75 MHz and 76-108 MHz band.
The radios features a battery voltage meter that the current voltage of the battery on the display.
To see the voltage displayed, press and hold [EXIT] key for about two seconds.

• Numeric keypad

With these keys you can input the information or your selections on the radio. In tx mode, push the number keys to send a corresponding DTMF code.

• *🔑 Key

A short momentary press of the key enables the reverse function.
If you press this button for more than 2 seconds you will lock/unlock the keypad.

• #SCAN key

If you press shortly **[#SCAN]** you will switch to High / Low output power.
When listening to broadcast FM a momentary press will start the scanning. Scanning in broadcast FM will stop as soon as an active station is found, regardless of scanner resume method.
To enable the scanner, press and hold the **[#SCAN]** key for about two seconds.

5. BASIC OPERATIONS

5.1 Power on the radio

• Turning the unit on

To turn the unit on, simply rotate the **volume/power** knob clockwise until you hear a "click". If your radio powers on correctly there should be an audible double beep after about one second and the display will show a message or flash the LCD depending on settings for about one second. Then it will display a frequency or channel. If the Voice prompt is enabled, the voice will announce "frequency mode" or "channel mode".

• Turning the unit off

Turn the **volume/power** knob counter-clock wise all the way until you hear a "click". The unit is now off.

5.2 Adjusting the volume

To turn up the volume, turn the volume/power knob clock-wise. To turn the volume down, turn the **volume/power** knob counter-clock-wise. Be careful not to turn it too far, as you may inadvertently turn your radio off.

5.3 Making a call

NOTE: Press the [EXIT] key to switch the main channel to the other channel if there are 2 channels shown on the display. In standby mode, press and hold the [MENU] key to switch between frequency (VFO) mode and channel (MR) mode.

- Channel mode call: After selecting a channel, hold down the **[PTT]** key to initiate a call to the current channel. Speak into the microphone with normal tone. Initiate a call, the red LED is on.
- Frequency mode call: The off state, hold press **[MENU]** key to open the radio, switching to the frequency mode, the frequency range allowed entering, press the **[PTT]** key, a call to the current channel. Speak into the microphone with normal tone. Initiate a call, the red LED is on.
- Receive a call: When you release the **[PTT]** key, you can answer it without any action.

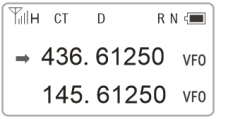
When receiving a call, the green LED is on.

NOTE: To ensure the best reception volume, keep the distance between the microphone and the mouth at the time of transmission from 2.5 cm to 5 cm.

5.4 Channel selection

There are two modes of operation: Frequency (VFO) mode, and Channel or Memory (MR) mode.
For everyday use, Channel (MR) mode is going to be a whole lot more practical than Frequency (VFO) mode. However, Frequency (VFO) mode is very handy for experimentation out in the field. Frequency (VFO) mode is also used for programming channels into memory.
In Channel (MR) mode you can navigate up and down the channel by using the ▲/▼ keys or the encoder.
Ultimately which mode you end up using will depend entirely on your use case.

5.5 Frequency (VFO) mode



In Frequency (VFO) mode you can navigate up and down the band by using the ▲/▼ keys.
Each press will increment or decrement your frequency according to the frequency step you've set your transceiver to.
You can also input frequencies directly on your numeric keypad with kilohertz accuracy.
The following example assumes the use of a 12.5 kHz frequency step.

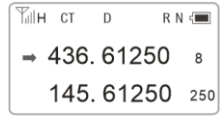
Example. Entering the frequency 436.61250 MHz on display *A*

a. In standby mode, press and hold the **[MENU]** key to switch to the frequency (VFO) mode.
b. Press **[EXIT]** until the ⇨ icon appears next to the upper display. .
c. Enter **[4][3][6][6][1][2][5] [0]** on the numeric keypad.

WARNING!

Just because you can program in a channel does not mean you're automatically authorized to use that frequency. Transmitting on frequencies you're not authorized to operate on is illegal, and in most jurisdictions a serious offence. However, it is legal in most jurisdictions to listen. Contact your local regulatory body for further information on what laws, rules and regulations apply to your area.

5.6 Channel (MR) mode



The use of Channel (MR) mode is dependent on actually having programmed in some channels to use.
Once you have channels programmed and ready, you can use the ▲/▼ keys or the encoder to navigate between channels.

6. ADVANCED FEATURES

6.1 Frequency scanning

This function can scan the frequency.

a. In frequency mode, press **[#SCAN]** key for more than 2 seconds. The radio will start scanning the frequency according to the set frequency step.

b. You can change the scanning direction with the ▲/▼ keys.

c. Press **[#SCAN]** key to stop the scanning.

Note: for Scan mode, see Menu No.20.

6.2 Channel scanning

This function can scan the channels.

a. In channels mode, press **[#SCAN]** key for more than 2 seconds. The radio will start scanning according to the channel you set.

b. You can change the scanning direction with the ▲/▼ keys.

c. Press **[#SCAN]** key to stop scanning.

Note: for Scan mode, see Menu No.20.

6.3 CTCSS scanning

The function allows scanning the frequencies with CTCSS tone enabled.

a. In standby mode, press **[MENU] [3][1]**, “SEEK” will appear on the display.
b. Press **[MENU]** and the scan of CTCSS tones will start.
NOTES: The function cannot be activated when the radio is set in Channel mode. The Scan will start only when the receiving band will detect a signal.

6.4 DCS scanning

This function allows scanning the frequencies with DCS code enabled.
a. In standby mode, press **[MENU] [3][2]**; the display will show “SEEK”.
b. Press **[MENU]** and the scan of DCS codes will start.
NOTES: The function cannot be activated when the radio is set in Channel mode. The Scan will start only when the receiving band will detect a signal.

6.5 Cursor➡Conversion (A/B)

Directly press **[EXIT]** key to move the cursor up and down. Then, you can modify or confirm the parameters indicated by the cursor.
Important1: The radio has a dual-frequency display function. In frequency mode, you will see on the display two different receiving and transmitting frequencies; while in channel mode the two different channels will be displayed.
Important2: In frequency or channel mode, press the **[EXIT]** key to shift between the main channel A and the sub-channel B ➡ on the display indicates on which channel (main channel A or sub channel B) you are operating.

6.6 High/low power fast selection

In channel mode, press **[#SCAN]** key to shift between High/ Low power.

6.7 Keypad lock

This function locks the keypad to prevent accidental pressure of the controls.
To unlock the keypad, press **[*]** for more than 2 seconds.

6.8 FM Radio (FM)

The frequency range to listen to the radio is 65-108MHz. When listening to broadcast FM, press **[EXIT]** key switches between 65-75 MHz and 76-108 MHz band.

a. In frequency or channel mode, Press **[SK2]** to turn on the radio.

b. Select the desired radio frequency with the ▲/▼ keys or input the frequency. Or

- Press [**#SCAN**] to automatically search a radio station.

c. Press [**SK2**] to exit FM radio.

Note: while you are listening to the radio, the frequency or channel of A / B receiving signal will automatically switch to the frequency or channel mode for normal transmitting and receiving.

When the signal disappears the radio will automatically switch again to FM radio mode.

6.9 TX 1000Hz, 1450Hz, 1750Hz, 2100Hz repeaters tone

Press **[PTT] + [SK2]** to send 1750Hz repeaters tone. This function is useful for communications through repeaters.

If you have the keypad lock enabled on your radio, you can still send a 1750Hz tone the regular way without having to unlock your radio.

6.10 Manual Programming (Channels Memory)

Memory channels are an easy way to store commonly used frequencies so that they can easily be retrieved at a later date. The radios features 999 memory channels that each can hold: Receive and transmit frequencies, transmit power, group signaling information, bandwidth, ANI/ PTT-ID settings and a six character alphanumeric identifier or channel name [1] .

Frequency Mode vs. Channel Mode

In standby mode, press and hold the [MENU] key to switch between frequency (VFO) mode and channel (MR) mode.

These two modes have different functions and are often confused.

Frequency Mode (VFO): Used for a temporary frequency assignment, such as a test frequency or quick field programming if permitted.

Channel Mode (MR): Used for selecting preprogrammed channels.

Ex 1. Programming a Channel Repeater Offset with CTCSS Tone

EXAMPLE New memory in Channel 10:
RX = **432.55000** MHz
TX = **437.55000** MHz (This is a (+ 5) Offset)
TX CTCSS tone 123.0

a. Press the **[EXIT]** button to switch between menus.
b. Press and hold the **[MENU]** key to set the radio to VFO mode, and the VFO icon is displayed on the right.
c. [MENU][2][9][MENU] [1] [0] [MENU] [EXIT] **Deletes Prior Data in channel (Ex. 10)**
d. [MENU] [1][3] [MENU] 123.0 **[MENU] [EXIT]** **Selects desired TX encode tone**
e. Enter RX frequency (Ex. **43255000**)
f. [MENU] [2][8] [MENU] [1][0] [MENU] **Enter the desired channel (Ex 10)**
-->>[EXIT] **RX has been added**
g. Enter TX frequency (Ex. **43755000**)
h. [MENU] [2][8] [MENU] [1][0] [MENU] **Enter the same channel (Ex 10)**
-->> [EXIT] **TX has been added**
i. Press and hold the **[MENU]** key to return to the MR mode and the channel number will reappear.

Ex 2. Programming a Simplex Channel with CTCSS tone

EXAMPLE New memory in Channel 10:
RX = **432.6625** MHz
TX CTCSS tone 123.0

a. Press the **[EXIT]** button to switch between menus.
b. Press and hold the **[MENU]** key to set the radio to VFO mode, and the VFO icon is displayed on the right.
c. [MENU] [2][9][MENU] [1] [0] [MENU] [EXIT] **Deletes Prior Data in channel (Ex. 10)**
d. [MENU] [1][3] [MENU] 123.0 [MENU] [EXIT] **Select desired TX encode tone (Ex 123 CTCSS)**
-->>Use **[EXIT]** to select Upper display
e. Enter RX frequency (Ex. 43266250)

f. [MENU] [2][8] [MENU] [1][0] [MENU] **Enter the desired channel (Ex 10)**
-->> [EXIT] **Channel has been added**

g. Press and hold the **[MENU]** key to return to the MR mode and the channel number will reappear.

6.11 Repeaters Programming

The following instructions assume that you know what transmit and receive frequencies your repeater employs, and that you're authorized to use it.

a. Press and hold the **[MENU]** key to set the radio to VFO mode, and the VFO icon is displayed on the right.
b. Use the numeric keypad to enter the repeater's output (your receiving) frequency.
c. Press the **[MENU]** key to enter the menu.
d. Enter **[2][7]** on the numeric keypad to get to frequency offset.
e. Press **[MENU]** key to select.
f. Use the numerical keypad to enter the specified frequency offset. See the section called “27 OFFSET - Frequency shift amount” for details.
g. Press **[MENU]** to confirm and save.
h. Enter **[2][6]** on the numeric keypad to get to offset direction.
i. Use the ▲/▼ keys to select **Plus** (positive) or **Minus** (negative) offset.
j. Press **[MENU]** to confirm and save.
k. Optional:
a). Save to memory, see the section called “Manual programming” for details.
b). Set up CTCSS; see the section called “CTCSS” for details.
l. Press **[EXIT]** to exit the menu. If everything went well, you should be able to make a test call through the repeater.

NOTE:

If you're experiencing problems making a connection to the repeater, check your settings and/or go through the procedure again.
Certain Amateur Radio repeaters (especially in Europe) use a 1750Hz tone burst to open up the repeater. To see how this is done with the radios, see the section called “1750Hz Tone-burst”.

If you're still unable to make a connection, contact the person in charge of the radio system with your employer or your local amateur radio club, as the case may be.
*If you for some reason want to listen to the repeater's input frequency instead, press [*π] key momentarily and you'll reverse your transmit and receive frequencies.*
This is indicated in the LCD on the radio with an R in the top row, next to the plus and minus for the offset direction.

7. WORKING THE MENU SYSTEM

For a complete reference on available menu items and parameters, see **Appendix C, Shortcut Menu operations.**
Note: in channel mode, the setting of these features is not possible: CTCSS/ DCS tones, wide/narrow bandwidth, PTT-ID, Busy channel lock out, channel name edit.

7.1 Basic use

Using the menu with arrow keys
a. Press the **[MENU]** key to enter the menu.
b. Use the ▲/▼ keys to navigate between menu items.
c. Once you find the desired menu item, press **[MENU]** again to select that menu item.
d. Use the ▲/▼ keys to select the desired parameter.
e. When you've selected the parameter you want to set for a given menu item;
  a). To confirm your selection, press **[MENU]** and it will save your setting and bring you back to the main menu.
  b). To cancel your changes, press **[EXIT]** and it will reset that menu item and bring you out of the menu entirely.
f. To exit out of the menu at any time, press the **[EXIT]** key.

7.2 Using short-cuts

As you may have noticed if you looked at **Appendix C, Shortcut Menu operations**, every menu item has a numerical value associated with it. These numbers can be used for direct access of any given menu item.
The parameters also have a number associated with them, see **Appendix C, Shortcut Menu operations** for details.
Using the menu with short-cuts

a. Press the **[MENU]** key to enter the menu.
b. Use the numerical keypad to enter the number of the menu item.
c. To enter the menu item, press the **[MENU]** key.
d. For entering the desired parameter you have two options:
  a). Use the arrow keys as we did in the previous section; or
  b). Use the numerical keypad to enter the numerical short-cut code.
e. And just as in the previous section;
  a). To confirm your selection, press **[MENU]** and it will save your setting and bring you back to the main menu.
  b). To cancel your changes, press **[EXIT]** and it will reset that menu item and bring you out of the menu entirely.
f. To exit out of the menu at any time, press the **[EXIT]** key.
g. All further examples and procedures in this manual will use the numerical menu short- cuts.

7.3 Functions and operations

(1) Squelch level (Squelch) - MENU No.0

Thanks to this function you can adjust the squelch in 10 different levels:
• **Level 0**: opened squelch. With this setting, the radios will detect all signals, also the weakest ones, but will also receive the background noise or undesired signals.
• **Levels 1- 9**: level 1 (lowest squelch level), level 9 (highest squelch level).
If the squelch is set to the highest level, the radio will receive the strongest signals only.

(2) Step frequency (Step) - MENU No.1

This function lets you select the desired frequency step.
The selectable steps are the following: 2.5/5.0/6.25/10.0/12.5/20.0/25.0/50.0 KHz
Note: in channel mode, this function cannot be modified.

(3) Transmit power (Tx Power) - MENU No.2

In this MENU you can select the high/ low output power.

High power =5W(VHF max)/4W(UHF max);Middle power=2W; Low power =1W

Note: select the output power can improve the quality of the call, while the low output power can reduce the radiation and the battery capacity loss. Press the fast key "#Scan" to switch between the high or low output powers.

(4) Power save (Power Save) - MENU No.3

The power save feature enables a reduction in the consumption of the battery when the radio is in standby.

You have 5 selections available: Off/ Mode 1/ Mode 2/ Mode 3/ Mode 4. For example: Mode 1= 1s' working and 1s' battery saving. Mode 2= 1s' working and 2s' battery is saving.

NOTE: The higher the number the longer the battery lasts. The higher number increases the RX sleep cycle, but you may miss the first few syllables before the RX opens

(5) VOX Function (Vox Level) - MENU No.4

This function allows hands-free conversations: just speak in the direction of the microphone and the communication will be automatically activated.

You can choose amongst 11 levels: Off, 1-9. 1 is the highest level, 9 is the lowest one. If this option is set to Off, the VOX function is turned off

Note: the higher is the level, the higher is the microphone sensitivity. The VOX function cannot be modified in SCAN and FM radio mode.

(6) Wide/Narrow bandwidth (Bandwidth) - MENU No.5

This function is used to set the working bandwidth of the radio.

You can choose between wide or narrow bandwidth.

Wide: 25KHz， Narrow: 12.5KHz

Note: In channel mode, this function cannot be modified.

(7) Backlight (Backlight) - MENU No. 6

With this function you can adjust the auto off time of the display backlight (Bright, 1-10Sec).
When the option is Bright, the backlight is always on, which will affect the battery standby time.
Note: we suggest you setting 4-5s levels.

(8) Dual Watch Operation (D.Wait) - MENU No. 7

When this function is activated, you can receive the frequency of channel A and channel B at the same time.
If a signal is detected, the▼/▲ pointer will blink on the corresponding channel or frequency.
Note: In Dual Watch operation mode, you can change the parameter of AB channel or frequency freely.

(9) Keypad beep (Beep) - MENU No. 8

When this function is enabled, every time a button is pressed, you will hear a beep tone.

(10) Time-Out-Timer (TOT) - MENU No.9

The TOT function is used to prevent a too long transmission and limits the tx time: TOT temporarily stops the transmission if the radio has been used beyond the max pre-set time (for example 15s, 30s, 45s, etc).
Note: If this option is set to OFF, press and hold the PTT key to keep transmission.

(11) Receiving DCS (Rx DCS) - MENU No.10

DCS codes are similar to access codes and can be added to channels, so as to create a sort of personal channel. They enable the radio to communicate with the users that are tuned on the same channel and have set the same DCS code.
You can choose amongst:

- **Off:** Off
- D023N-D754N (Normal DCS), D023I-D754I (Inverse DCS)

Note: In radio there are 208 groups of normal and inverse DCS codes. This function cannot be amended in channel mode.

(12) Receiving CTCSS (Rx CTCSS) - MENU No.11

As DCS codes, the CTCSS codes can be added to the channels for creating new private channels.
Note: there are 50 groups of CTCSS tones. In channel mode the CTCSS tones cannot be changed.

(13) Transmitting DCS (Tx DCS) - MENU No.12

In this Menu you activate DCS codes in tx mode. You can choose between normal R-DCS (D023N-D754N) and inverted R-DCS (D023I-D754I)
Note: the groups of DCS codes are 208. DCS codes cannot be changed in channel mode.

(14) Transmitting CTCSS (Tx CTCSS) - MENU No.13

In this Menu you can set a CTCSS tone in tx mode.
You can choose: Off or CTCSS (67.0 to 254.1 Hz)
Note: there are 50 groups of CTCSS tones. In channel mode the CTCSS tones cannot be changed.

(15) Voice prompts function (Voice) - MENU No. 14

With this function, you activate a voice that informs you about any operation/ selection you are doing.

(16) ANI-ID (ANI-ID) - MENU No.15

With this function you can set your ID-code. It can be programmed by the proper programming software. You can edit up to 5 digits.

(17) DTMFST (DTMFST) - MENU No.16

Determines when DTMF Side Tones can be heard from the transceiver speaker. You can choose amongst four options:

- **Off:** No DTMF Side Tones are heard
- **DT-ST :** Side Tones are heard only from manually keyed DTMF codes
- **ANI-ST:** Side Tones are heard only from automatically keyed DTMF codes
- **DT+ANI:** All DTMF Side Tones are heard

(18) Signal code (S-CODE) - MENU No.17

Selects 1 of 15 DTMF codes. The DTMF codes are programmed with software and are up to 5 digits each.

(19) Scan Add (Scan Add) - MENU No.18

In channel mode, to scan the current channel, the channel must be added to the scan group.

•**On:** Turn on the scan function of the current channel.

•**Off:** Do not scan the current channel.

(20) Scan ranger (Scan Ran) - MENU No.19

In frequency mode, the frequency sweep range can be precisely set. Input the start value and end value of the sweep frequency through the keyboard.

EX: Enter 144146, in frequency mode, scan in the range of 144.000-146.000MHZ. Enter 430450, in frequency mode, scan in the range of 430.000-450.000MHZ.

Note: channel mode, the set frequency range is invalid and cannot be saved.

(21) SCAN Resume Mode (Scan Mode) - MENU No.20

Thanks to this function, the radio can SCAN in frequency or channel mode. You can choose amongst three options:

• **Time-operated SCAN**

Whenever a signal is detected, the radio will suspend the SCAN for 5 seconds, and then will continue to SCAN even if the signal is still present.

• **Carrier-operated SCAN**

Whenever a signal is detected, the radio will stop scanning. It will resume to SCAN once the signal will disappear.

• **Search -Search SCAN**

The radio will stop scanning once a signal is detected.

(22) PTT-ID (PTT-ID) - MENU No.21

With this function you can decide when sending the ANI-ID code in tx mode.
You can choose amongst 4 possibilities.

- **Off:** press PTT to turn it off
- **BOT:** the code is sent when you press the PTT
- **EOT:** the code is sent when the PTT is released
- **BOTH:** the code is sent when you press and release the PTT

Note: select 'OFF' when using in case of affecting the radio.

(23) Channel A Display Mode (MDF-A) - MENU No.22

This function is used to set the display mode of channel A.
Display modes:

- **Frequency:** Frequency + channel No.
- **Name:** Channel name

Note: Channel name mode must be set by the programming software. Up to three numbers or characters can be edited.

(24) Channel B Display Mode (MDF-B) - MENU No.23

This function is used to set the display mode of channel B.
Display modes:

- **Frequency:** Frequency + channel No.
- **Name:** Channel name

Note: Channel name mode must be set by the programming software. Up to three numbers or characters can be edited.

(25) Busy Channel Lock (Busy Lock) - MENU No. 24

When this function is on, it may prevent other radios' interference. If the selected channel is being used by other radios, when you press key PTT, your radio cannot transmit.
Release the PTT and transmit as soon as the frequency is no longer busy.

(26) Auto Keypad Lock (AUTO LK) - MENU No.25

When this feature is activated, the keypad will be automatically locked after 15s; this prevents accidental pressure of any keys.
The keypad lock can be manually activated/deactivated through the keypad: keep pressed [*] .

(27) Frequency offset direction (Direction) - MENU No.26

Using this function, you can set the direction of the frequency offset in rx and tx.
You have the following options:

- **Plus: Positive offset;**
- **Minus: Negative offset;**
- **None: No offset.**

Note: you should set different frequency deviation according to the repeaters selected. This function is not enabled in channel mode.

(28) Frequency offset (Offset) - MENU No. 27

In this MENU you can set the deviation between tx and rx. The frequency offset of this radio is 00.000-99.998MHz.

(29) Channel store - (Memory) - MENU No. 28

When the radio is in frequency working mode or standby mode, input the desired frequency or parameters directly.
NOTES: If you want to set CTCSS tones, DCS codes or the frequency offset, you have to do it before storing the channel. The channels already stored are displayed as CH-XXX ("CH" and -channel number), and other channels only display channel numbers.

(30) Channel Delete (Delete) - MENU No.29

In this menu you can delete a channel of the radio.

(31) Alarm Mode (Alarm Mode) - MENU No.30

This function can set the tone alarm/code alarm/site alarm of the radio.
Keep pressed the [SK1] key for 3 seconds to start the alarm tone.
The following three options can be selected:
- **Site:** the speaker emits an alarm tone but the radio doesn't transmit;
- **Tone:** the speaker emits an alarm tone and the radio transmits it;
- **Code:** the speaker emits an alarm tone and the radio transmits it followed by ANI-ID code.

(32) Scan of frequencies with CTCSS (SEEK CTC) - Menu No. 31

The function allows scanning the frequencies with CTCSS tone enabled.
NOTES: The function cannot be activated when the radio is set in Channel mode. The Scan will start only when the receiving band will detect a signal.

(33) Scan of frequencies with DCS (SEEK DCS) - Menu No. 32

This function allows scanning the frequencies with DCS code enabled.
NOTES: The function cannot be activated when the radio is set in Channel mode. The Scan will start only when the receiving band will detect a signal.

(34) Squelch tail elimination (TAIL) - Menu No. 33

This function is used eliminate squelch tail noise between handhelds that are communicating directly (no repeater). Reception of a 55 Hz or 134.4 Hz tone burst mutes the audio long enough to prevent hearing any squelch tail noise.

(35) Squelch tail elimination of repeater (RP-STE) - Menu No. 34

This function is used when the radio operates through a repeater; when the PTT is released, the repeater will emit the end transmission tone to confirm it is working.
Available settings:
Off, 1,2,3,4,5,….10 to set the delay time.

Note: Please disable this function in normal using, lest affect your normal conversation.

(36) Delay the squelch tail of repeater (RPT-RL) - Menu No.35

With this function you have the confirmation that the repeater has transferred the signal. You can choose amongst: Off 1,2,3,4,5,….10 to set the delay time.

(37) Roger beep (ROGER) - Menu No. 36

When the PTT is released, the radio will beep to confirm to other users that you have finished your transmission and that they can start talking.

(38) 1750Hz Repeater Tone (R-TONE) - Menu No.37

With this function you can select **1000Hz, 1450Hz, 1750Hz, 2100Hz** repeater tone. To send out a repeater tone; You hold down the [**PTT]** + **[SK2]** key.
If you have the keypad lock enabled on your radio, you can still send a 1750Hz tone the regular way without having to unlock your radio.

(39) Power on image (Power on Msg) - Menu No.38

With this function you can set the display mode when the radio is turned on. Available options:
• **Logo**: Display the preset startup picture.
• **Msg:** Welcome message.
• **Voltage:** The power voltage is momentarily displayed.

(40) Language selection (Language) - Menu No. 39

With this function, you can select the language of the LCD display and operation prompt.

(41) Frequency hopping system (Hopping Freq) - MENU No. 40

With this function, you can activate the frequency hopping system, improve the anti-interference ability of the radio, and reduce the risk of being monitored.

(42) Reset (Reset) - Menu No.41

With this function you can reset the transceiver to the factory-programmed settings and parameters. After that, you can set the desired functions.
There are two types of reset:
• **VFO:** Menu Reset
• **ALL:** Menu and channel Reset

(43) Dual Band single display (SYNC) - Menu No.42

The radio is dual-band, dual-display, and the screen can display A/B frequency band at the same time. It can also be set to dual-band single-screen display. When single frequency point is displayed, the channel nickname, frequency and channel number will be displayed at the same time.
•**On**: Turn on the SYNC function and display the alias, frequency and channel number of the current channel.
•**Off**: Turn off the SYNC function, which is a dual-segment dual display mode. The main frequency and sub frequency will be displayed.

Appendix A. – Trouble shooting guide

Phenomena	Analysis	Solution
You cannot turn on the radio.	The battery may be installed improperly.	Remove and reattach the battery.
	The battery power may run out.	Recharge or replace the battery.
	The battery may suffer from poor contact caused by dirty or damaged battery contacts.	Clean the battery contacts or replace the battery.
During receiving, the voice is weak or intermittent.	The battery voltage maybe low.	Recharge or replace the battery.
	The volume level may be low.	Increase the volume.
	The antenna maybe loose or maybe installed incorrectly.	Turnoff the radio, and then remove and reattach the antenna.
	The speaker maybe blocked.	Clean the surface of the speaker.
You cannot communicate with other group members.	The frequency or signaling type maybe inconsistent with that of other members.	Verify that your TX/RX frequency and signaling type are correct.
	You may be too far away from other members.	Move towards other members.
You hear unknown voices or noise.	You may be interrupted by radios using the same frequency.	Change the frequency, or adjust the squelch level.
	The radio in analog mode maybe set with no signaling.	Request your dealer to set signaling for the current channel to avoid interference
You are unable to hear anyone because of too much noise and hiss.	You may be too far away from other members.	Move towards other members.
	You may be in an unfavorable position. For example, your communication may be blocked by high buildings or blocked in an underground area.	Move to an open and flat area, restart the radio, and try again.
	It may be the result of external disturbance (such as electromagnetic interference).	Stay away from equipment that may cause interference.
The radio keeps transmitting.	VOX may be turned on or the headset is not installed in place	Turn off the VOX function. Check that the headphones are in place.

NOTE: If the above solutions cannot fix your problems, or you may have some other queries, please contact your dealer for more technical support.

Appendix B. - Technical Specifications

General

Power	1.6W(H),1.3W(L)
Channel Spacing	25.0KHz(Wide)/12.5KHz(Narr)
Memory Channel	999 Groups
Operation Voltage	DC 7.4 V ±10%
Transmission current	≤1800mA
Receive Sensitivity	0.25µV (12dB SINAD)
Rated Audio Power Output	1W @16 ohms
Receive current	≤380mA
Connection for accessories	2 pin Kenwood jack
Antenna impedance	50 Ohm

NOTE: All specifications may be modified without prior notice or liability. Thank you.

Appendix C. - Shortcut Menu operations

MENU No.	Name (Full Name)	Enter item	LCD display	Selectable
0	Squelch - Squelch Level	MENU+0	H 00 Squelch 3	0-9 Levels 0:Lowest 9:Highest
1	Step –Step Frequency	MENU+1	H 01 Step 2.5KHz	2.5K/5.0K/6.25K/10.0K 12.5K/20.0K/25.0K/50.0K
2	Tx Power – Transmit Power	MENU+2	H 02 Tx Power High	HIGH:5W(VHF) 4W(UHF)/Low:1W *Selects between HIGH, LOW transmitter power when in VFO/Frequency mode. Use the minimum transmitter power necessary to carry out the desired communications.
3	Power Save – Battery Saving	MENU+3	H 03 Power Save 2	Off/ Mode 1/ Mode 2/ Mode 3/Mode 4 *Selects the ratio of sleep cycles to awake cycles (Mode 1/ Mode 2/ Mode 3/ Mode 4). The higher the number the longer the battery lasts. The higher number increases the RX sleep cycle, but you may miss the first few syllables before the RX opens.
4	Vox Level - VOX	MENU+4	H 04 Vox Level Off	Off, 1-9 Off: off 1:Highest Sensitivity 9:Lowest Sensitivity
5	Bandwidth /Narrow Bandwidth	MENU+5	H 05 Bandwidth Narrow	Wide:25.0K Narrow:12.5K

6	Backlight –Auto Backlight	MENU+6	H 06 Backlight 5Sec	Bright/1,2,3…8，9,10Sec ***Time-out for the LCD backlight. (seconds)**
7	D.Wait – Dual Watch Operation	MENU+7	H 07 D.Wait Off	Off On ***Monitor [A] and [B] at the same time. The display with the most recent activity ([A] or [B]) becomes the selected display.**
8	Beep- Keypad Beep	MENU+8	H 08 Beep On	Off On ***Allows audible confirmation of a key press.**
9	TOT - Time-Out-Timer	MENU+9	H 09 TOT 60S	15,30…600S ***This feature provides a safety switch that limits transmission time to a programmed value. This will promote battery conservation by not allowing you to make excessively long transmissions, and in the event of a stuck PTT switch it can prevent interference to other users as well as battery depletion**
10	Rx DCS - Receiver DCS	MENU+10	H 10 Rx DCS Off	Off, D023N…D754N. D023I …D754I ***Mutes the speaker of the transceiver in the absence of a specific low-level digital signal. If the station you are listening to does not transmit this specific signal, you will not hear anything.**
11	Rx CTCSS - Receiver CTCSS	MENU+11	H 11 Rx CTCSS Off	Off, 67.0HZ…254.1HZ ***Mutes the speaker of the transceiver in the absence of a specific and continuous sub-audible signal. If the station you are** **Listening to does not transmit this specific and continuous signal, you will not hear anything.**

12	Tx DCS -Transmitter DCS	MENU+12	H 12 Tx DCS Off	Off, D023N…D754N; D023I …D754I ***Transmits a specific low-level digital signal to unlock the squelch of a distant receiver (usually a repeater).**
13	Tx CTCSS - Transmitter CTCSS	MENU+13	H 13 Tx CTCSS Off	Off, 67.0HZ…254.1HZ ***Transmits a specific and continuous sub audible signal to unlock the squelch of a distant receiver (usually a repeater).**
14	Voice - Voice Reminding	MENU+14	H 14 Voice Off	Off On ***Allows audible voice confirmation of a key press.**
15	ANI-ID	MENU-15	H 15 ANI-ID 12345	**Displays the ANI code that has been set by software. This menu cannot be used to change it.**
16	DTMFST - DTMFST	MENU+16	H 16 DTMFST OFF	Off: No DTMF Side Tones are heard DT-ST : Side Tones are heard only from manually keyed DTMF codes ANI-ST: Side Tones are heard only from automatically keyed DTMF codes DT+ANI : All DTMF Side Tones are heard
17	S-CODE - Signal Code	MENU+17	H 17 S-CODE 15	1,…,15 * Signal code (only could be set by PC software)
18	Scan Add-Scan channel add	MENU+18	H 18 Scan Add On	ON: the current channel is added to the scan, the scan current channel OFF: Do not scan the current channel.

19	Scan Ran- Scan Frequency Range	MENU+19	H Scan Ran 19 ------	136-174 & 400-520MHz *Ex. 144 148 input and scan range is 144.0000-148.0000 * Scanning frequency range, valid in VFO mode. The channel mode, invalid input, cannot be saved
20	Scan Mode - Scanner Resume Method	MENU+20	H Scan Mode 20 Time	Time - scanning will resume after a fixed time has passed Carrier -scanning will resume after the signal disappears Search -scanning will not resume
21	PTT-ID - PTT-ID	MENU+21	H PTT-ID 21 OFF	Off: No ID is sent BOT: The selected S-CODE is sent at the beginning EOT: The selected S-CODE is sent at the ending BOTH : The selected S-CODE is sent at the beginning and ending
22	MDF-A - Channel A Display Mode	MENU+22	H MDF-A 22 Name	Frequency: Displays programmed Frequency Name: Displays the channel name ***Note: Names must be entered using software.**
23	MDF-B - Channel B Display Mode	MENU+23	H MDF-B 23 Name	Frequency: Displays programmed Frequency Name: Displays the channel name ***Note: Names must be entered using software.**
24	Busy Lock – Busy Channel Lock-out	MENU+24	H Busy Lock 24 Off	Off On ***Disables the [PTT] button on a channel that is already in use. The transceiver will sound a beep tone and will not transmit if the [PTT] button is pressed when a channel is already in use.**
25	AUTO LK –Automatic Keypad Lock	MENU+25	H AUTO LK 25 Off	Off On ***When ON, the keypad will be locked if not used in 8 seconds. Pressing the [*] key for 2 seconds will unlock the keypad.**

26	Direction – Frequency Offset Direction	MENU+26	H Direction 26 None	None: TX = RX (simplex) Plus: TX will be shifted higher in frequency than RX Minus : TX will be shifted lower in frequency than RX
27	Offset -Frequency shift amount	MENU+27	H Offset 27 00.000	00.000…69.990 ***Specifies the difference between the TX and RX frequencies**
28	Memory - Store a Memory Channel	MENU+28	H Memory 28 CH–999	000…250 ***This menu is used to either create new or modify existing channels (0 through 250) so that they can be accessed from MR/Channel Mode**
29	Delete - Delete a memory channel	MENU+29	H Delete 29 CH–999	000…250 ***This menu is used to delete the programmed information from the specified channel (0 through 250) so that it can either be programmed again or be left empty.**
30	Alarm Mode - Alarm Mode	MENU+30	H Alarm Mode 30 Tone	Site: Sounds alarm through your radio speaker only Tone: Sending alarm tone Code: Sending alarm code
31	SEEK CTC -Scan of frequencies with CTCSS	MENU+31	H Seek 31 67.0Hz	67.0HZ,…,254.1HZ ***Automatic stop after receiving the CTCSS signal**
32	SEEK DCS -Scan of frequencies with DCS	MENU+32	H Seek 32 D023N	D023N,…,D754I ***Automatic stop after receiving the DCS signal**

33	TAIL - Squelch Tail Elimination	MENU+33	H TAIL 33 On	On Off ***This function is used eliminate squelch tail noise between handhelds that are communicating directly (no repeater). Reception of a 55 Hz or 134.4 Hz tone burst mutes the audio long enough to prevent hearing any squelch tail noise.**
34	ROGER - Roger Beep	MENU+34	H ROGER 34 Off	Off On ***Sends an end-of-transmission tone to indicate to other stations that the transmission has ended.**
35	R-TONE–Repeater Tone	MENU+35	H R-TONE 35 1750Hz	1000Hz/1450Hz/1750Hz/2100Hz ***To send out a repeater tone; You hold down the [PTT] + [LAMP/MONI] key.**
36	OPNSET -Power On Message	MENU+36	H OPNSET 36 Msg	Logo: Performs an LCD screen test at power-on Msg : Displays a 2-line power on message Voltage: ***Controls the behavior of the display when the transceiver is turned on.**
37	Language-Language selection	MENU+37	H Language 37 English	Chinese English
38	Hopping Freq-Frequency hopping system	MENU+38	H Hopping Freq 38 On	Off On
39	RESET – Restore defaults	MENU+39	H Reset 39 On	VFO: Menu initialization ALL: Menu and channel initialization ***Resets the radio to factory defaults, with some exceptions.**

40	SYNC- Dual Band single display	MENU+40	H SYNC 40 On	ON: Enable single band 2 line display, a display alias frequency; OFF: Normal display status.

ATTENTION: conditions of use!

The band of frequencies on which this device operates is administrated by limitations and/or permissions for their usage. Consequently, in the EU Countries mentioned in the sheet, operators must consult the entrusted authorities. In particular, they must possess a license or a frequency assigned to them by their respective competent authority.

Disclaimer

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