



RECYCLABLE PACKAGING

Shenzhen Esma Electronics Co., Ltd

Address: #2710, F27, Block B Zhongshen Garden, Caitian Road
Futian District, Shenzhen, China 518000

EC REP MARWAY Consulting UG (haftungsbeschraenkt)
Am Maibusch 108 -110, 45883, Gelsenkirchen, Germany
MARWAY.UG@outlook.com

FC **CE** **UK** **CA** 
MADE IN CHINA

HIROYASU IC-980Pro Mobile Transceiver



User's Manual

Table of Contents

Safety Information	1
Unpack and inspect contents	1
Front Panel	2
Top	6
Rear Panel	7
Microphone	9
Basic Operation	11
Scanning	14
VFO mode	14
Memory mode	15
Settings	16
RF FUNCTION	17
CTCSS/DCS	21
SET	24
Saving a Memory Channel	33
Programming Channel data	35
Specifications	36
FCC Statement	37

Safety Information

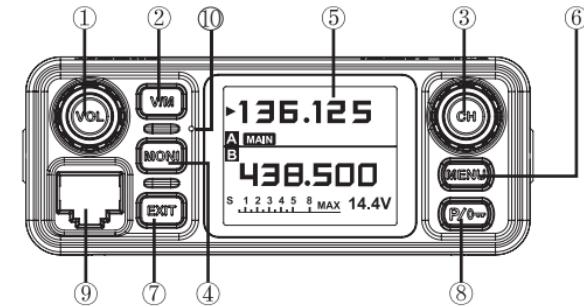
- Do not attempt to configure your transceiver while driving.
- This transceiver is designed for use with a 13.8V DC power supply or a standard vehicle battery. Do not use with a 24V battery.
- Keep away from interferential devices, such as TVs, generators, etc.
- Do not expose the transceiver to long periods of direct sunlight or place it close to heating appliances.
- If an abnormal odor or smoke is detected coming from the transceiver, turn the power off immediately and contact your dealer.
- Do not transmit on high power for extended periods, or the transceiver may overheat.

Unpack and inspect contents

- Check packaging for any apparent damage.
- Verify that these items are found inside the box:
 - Radio
 - MH-18 Microphone, clip and screws
 - Mounting bracket, washers, and screws
 - Power cable with cigarette lighter plug and spare fuse
- If any items are missing or damaged, please contact your dealer immediately.

Front Panel

The Front Panel has on it two knobs, five buttons, the microphone connector, and the colored display screen, as pictured here. Each item is described in detail.



1) Volume knob and Power On/Off button	6) MENU button
2) V/M button	7) EXIT button
3) Channel/Menu selection knob and Enter button	8) PTT button
4) Monitor button	9) Microphone connector
5) Colored Display screen	10) Mic in the front panel of Radio

Volume knob and Power On/Off button

This knob has an integrated button. Push the button and hold for 2 seconds to turn the radio On or Off. Adjust the Volume by turning the Volume knob clockwise to increase the audio level or counterclockwise to decrease it.

V/M button

This button switches the VFO (A or B) that is currently selected as MAIN, from the VFO mode to the Memory mode. Two Memory mode display formats are shown, as described in [Memory mode](#).

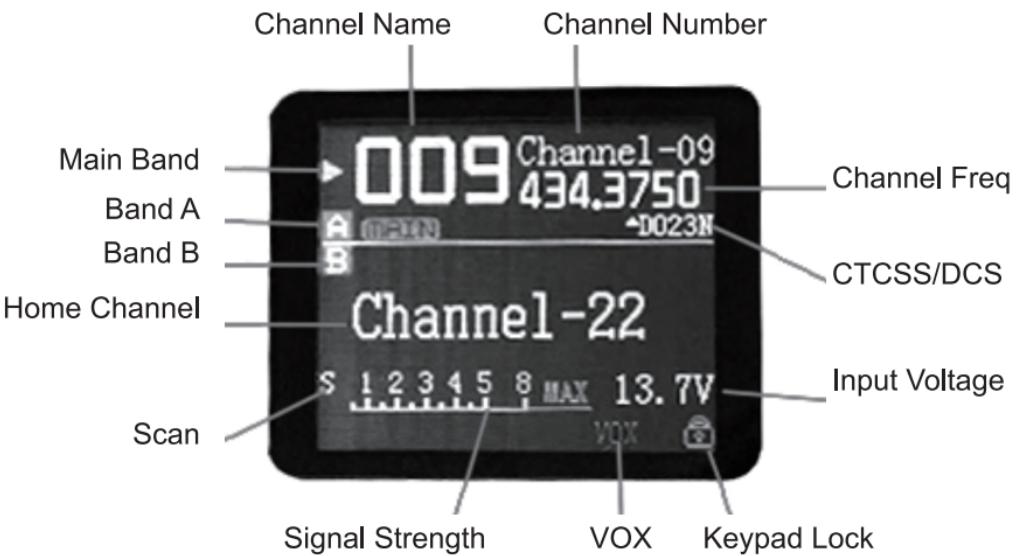
Channel/Menu selection knob and Enter button

This knob also has an integrated button. Pushing the button is the same as pushing the MENU button: it causes Settings editing to begin or acts as a confirmation for the changes during editing. Turning the knob changes the selected Channel, Frequency, or choice during editing Settings. When not editing Settings, pushing this button is the same as pushing the MENU button

Monitor button

Pushing this button opens the receiver squelch, allowing the user to hear weak transmissions. The letters MONI stand for Monitor, so the user can hear all transmissions.

Colored Display screen



MENU button

Pushing the MENU button enters the Settings editing mode. Pushing the MENU button during a Setting selection confirms acceptance of the new value. See the Settings section for details.

Press Menu button on the front panel momentarily, then press V/M button to realize the radio in single band and dual bands display switch.

EXIT button

Pushing the EXIT button closes the current Settings editing screen and moves to the previous screen. If a Setting is in the process of being changed, pushing the EXIT button cancels the change. The MENU button must be pushed to confirm the change to the new value.

PTT button

This button has the same function as the PTT button on the Microphone. Pushing it causes a transmission.

(Note: There is also a picture of a key on this button. Is this the LOCK function? ---- No, it is not lock function. For keypad lock function, You can use the "#" on the microphone, see the operation details below please.)

Microphone connector

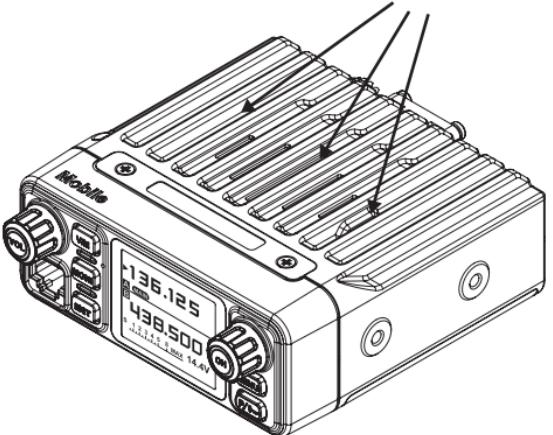
The supplied microphone must be the only microphone plugged into the microphone connector. The microphone features and functions are described in Section 2.

Mic in the Front Panel

There are two built-in Mics for the transceiver. One is in the hand microphone, another one is in the front panel. You shall let your lips 1-2 inches close to the mic in the front panel, and speak in your normal voice if you select mic on device host to talk.

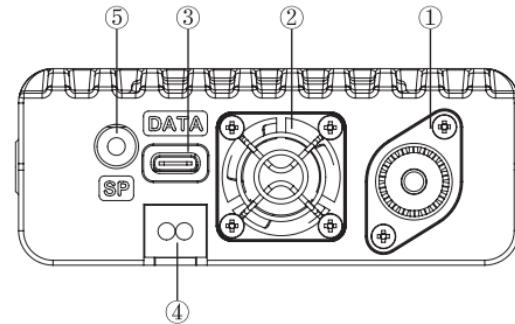
Top

On top of the radio is the speaker, behind the slots.



Rear Panel

The Rear Panel has five items on it, as shown here: power cable, antenna connector, fan, speaker connector, Data connector. Each item is described.



- 1) Antenna connector
- 2) Fan
- 3) Data connector (DATA)
- 4) Power cable
- 5) Speaker connector (SP)

Antenna connector

This UHF SO-239 connector is where the user will plug in his external dual-band antenna.

Fan

The integrated fan will turn on when the internal circuitry becomes hot during an extended transmission. This will happen when a transmission lasts longer than about 5 minutes, when using High power output. It will turn off when the internal circuitry has cooled off.

Data connector (DATA)

This Type C USB connector can be used to program the radio memory channels, instead of having to hand enter each channel on the Front Panel or with the Microphone (see Section 3).

Power cable

This two-wire cable comes out of the rear panel. The user end of the cable has a "T" shaped power connector. The user plugs his battery or power supply into this power connector. The supplied power cable can be used to connect the radio to the vehicle cigarette lighter.

Speaker connector (SP)

This 1/8" (3.5mm) monoaural connector accepts a cable to an external speaker. When an external speaker cable is plugged in, the internal speaker is disabled.

Microphone

The microphone has two buttons on the top, the PTT button on the side, the Keypad buttons on the front, with two status lights, as shown here:



- 1) A/B buttons
- 2) RX/TX lights
- 3) Microphone
- 4) PTT button
- 5) Keypad

A/B buttons

These two buttons are used to switch which VFO, A or B, is to be the MAIN. Only the MAIN VFO can be changed to select a new Frequency or Channel, or to change its Settings. The MAIN VFO is the one used to Receive and Transmit. The other VFO shown is the Sub.

RX/TX lights

When a signal is being received, the Green light will turn on. During a transmission, the Red light will turn on.

Microphone

The Microphone element sits right behind this little hole. Normal operation is to hold the Microphone 1 – 2 inches from your lips and speak in your normal voice.

PTT button

Push the PTT (Push To Talk) button to begin transmitting. Release the PTT button to stop transmitting. It is best to wait 1 or 2 seconds after starting to push the button before beginning to speak. Some repeater networks require this time to allow all repeaters to get linked up.

Keypad

Buttons, or keys, on the Keypad are used to enter Frequency values.

1. "FUN" + "7" to activate the FM, repeater this procedure to switch the FM radio OFF.
2. "FUN" + "9" to activate Scan feature.
3. In VFO mode, Input the desired frequency by the numeric keys on the microphone, then Press "FUN" + "0" to select the desired memory channel number for saving your frequency.
4. Press and hold in "#" key for 2 second to lock the keypad. Excepts the volume knob, other keys are invalid. Repeater this procedure to unlock the keypad.
5. press "FUN" + "*" to recall home channel.

Basic Operation

Since this radio can both receive and transmit, it is called a transceiver. These steps are needed to make the transceiver operate:

- Mount the unit in a vehicle or other suitable enclosure, if desired.
- Connect a suitable dual-band antenna to the antenna connector on the rear panel. Attempting to transmit without an antenna may cause damage to the internal circuitry.
- All efforts at providing an efficient antenna system will be wasted if poor quality, lossy coaxial cable is used. Losses in coaxial lines increase as the frequency increases, so an 8-meter-long (25") coaxial line with 1/2dB of loss at 06MHz may have a loss of 3dB or more at 430MHz, choose your coaxial cable carefully based on the installation location (mobile Vs. Base) and the overall length of the cable required (for very short runs of cable in a mobile installation, the smaller, more flexible cable types may be acceptable).
- Connect appropriate power, battery or power supply, to the power cable coming out of the rear panel. The supplied power cable can be used to connect the radio to the vehicle cigarette lighter. (Red cable=positive, Black cable=Negative)

Warning: Never remove the fuse holders from the DC cable

- Press the On/Off button on the Volume knob for 2 seconds to power on the radio. When finished using, press the On/Off button again for 2 seconds to turn the radio off.
- Adjust the Volume by turning the Volume knob clockwise to increase the audio level or counterclockwise to decrease it.

This transceiver operates in two RF modes: VFO mode and Memory mode. The front panel display shows two frequencies or channels, one of them is the Main and the other is the Sub. The top one is called the A, and the bottom one is the B, with the letters A and B shown on the left side. The one that is currently the Main is shown with the word Main next to its letter. There is also a green arrow on the left, pointing to the frequency or channel number of the Main selection. Also, the frequency or channel number of the Main selection will be a White color, while the Sub is a light gray color.

To change which one is Main, use the A/B buttons on top of the Microphone to choose. The Main frequency or channel is the one that you will receive and transmit on and can change the frequency or channel on. The other frequency or channel that is shown, but not selected as Main is just there for you to view. You must select it as Main to use it or change it.

- Receiving –

When the radio receives a transmission, the audio being received will be heard from the speaker or the external speaker, if it is attached. Also, the Green RX light on the Microphone will turn on and the strength of the received signal will be shown at the bottom of the Display, where the S, the numbers 1 through 8 and the word MAX are located. If the signal is weak, it will be shown by dark blue lines, up to 5, then a stronger signal will show light blue lines up to 8. A signal stronger than that will be shown with red lines under the word MAX. A Green 'R' will also be displayed under the S.

- **Transmitting –**

To transmit, merely push the PTT button on the left side of the Microphone. Before transmitting, make sure you are on the correct frequency or channel, and that four other things are also set correctly: Power (page 17), CTCSS (page 21), SFT-D (page 19) and SFT Frequency (page 19). Hold the Microphone 1 – 2 inches from your lips and speak in your normal voice. While pushing the PTT button, the Red TX light on the Microphone turns on and the frequency or channel number turns from White to Red. Also, At the bottom of the Display, under the S on the left, will be a Red 'T' and the signal strength display will be used to indicate the Power level. In Low Power, only the dark blue lines will be shown up to the number 5. In High Power, the dark blue, light blue and red lines will be shown, up to under the word MAX. Release the PTT button to receive.

Note:

This transceiver must be used within the regulations of the region where it is used. For example, this radio may be used in the United States on the 2 meter and 70 cm bands, only with a valid Amateur Radio license issued by the FCC. Also, in the U.S., this radio cannot be used on the FRS channels because it has not been certified for this service and its power output is beyond the maximum allowed. And this radio cannot be used on most GMRS channels because of the power output limits.

Scanning

Press "FUN" + "9" to activate the scanning, In VFO Mode, it will scan the frequency starting from your input frequency, In Memory channel mode, it will scan channels starting from your selected channels press "▲" key on the microphone for upward scanning based on current frequency/ Channel , press "▼" on the microphone for downward scanning based on current frequency/ Chanel. The scanner will stop and stay on the frequency or channel when a signal is detected and it is strong enough to active the squelch.

VFO mode

In the VFO mode, whether in the A or B VFO, to change the frequency, simply enter the frequency using the buttons on the Microphone keypad. Six digits must be entered. The frequency can also be changed using the Channel knob on the Front panel or the Up and Down arrows on the Microphone keypad. If the frequency displayed is not what was entered or expected, it may be that the Step (page u) needs to be changed to a smaller value.

To complete the configuration for this frequency you must verify or change four other things: Power (page 19), CTCSS (page 22), SFT-D (page 21) and SFT Frequency (page 21). The current settings for these three items can be seen on the Display, as part of the A or B VFO. The A settings are shown under the frequency; the B settings are shown above the frequency. The settings are shown as a Plus or Minus near the middle of the Display and the CTCSS tone is shown on the right side

of the Display. If no tone is shown, then CTCSS is not turned on. If no Plus or Minus is shown, then this is a Simplex frequency. When the selected VFO is in the Low Power setting, a "LO" will be shown between the Plus or Minus and the CTCSS tone.

Memory mode

In the Memory mode, the radio will be using stored channel settings data to set up the Frequency, Power (page 17), CTCSS (page 21), SFT-D (page 19) and SFT Frequency (page 19). The desired channel can be selected by turning the channel knob or by entering the channel number (001 to 200) using the buttons on the Microphone keypad.

In the Memory mode, the information displayed for the selected channel can be in one of two different formats. Pushing the V/M button on the Front panel selects the VFO mode or one of the two Memory mode formats. The first format shows just the Channel number, such as: CH-001. The four other configuration settings are also displayed, as described for the VFO mode.

The second format shows the channel name in large numbers (3 digits) on the left, with an alpha name (channel number) displayed on the right, above the frequency. The four other configuration settings are also displayed, as described for the VFO mode.

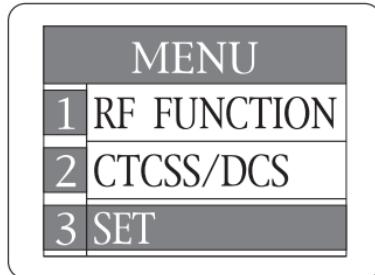
Settings

The settings of the radio's basic functions can be changed in the Settings mode. This includes how the radio transmits, how it scans, what happens when it turns on, automatic turn off, etc.

Enter the Settings mode by doing one of three things: push the Front Panel MENU button, push the button on the Front Panel Channel/Menu selection knob, or push the FUN button on the front of the Microphone. These three buttons are equivalent and can be called the MENU button options.

Likewise, two buttons can be used to exit a settings change, either before or after the change is made. Exiting before the change causes the setting to revert back to the original value. The Front Panel EXIT button and the Microphone EXIT button can be called the EXIT button options. When one of these buttons is pushed, a high tone beep is also heard.

The Display now shows the three sub-sections of the Settings menu, as shown here:



If no further action is taken, this menu list will go away after 10 seconds. Use the Front Panel Channel/Menu selection knob or the Microphone Up and Down arrows to select which sub-section is to be accessed. Then push one of the MENU button options to enter that sub-section.

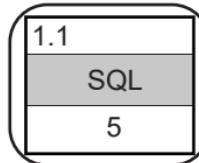
Note: While in the Settings mode, pushing the PTT button on the Microphone or pushing the PTT button on the Front Panel causes the Settings mode to be terminated. Any changes that were pending are cancelled.

RF FUNCTION

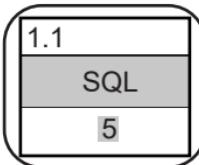
When the selected VFO is in the Memory mode, there are 8 items that can be changed. They are identified as 1.1 to 1.8. When the VFO is in the VFO mode, there are 12 items, identified as 1.1 to 1.12.

1.1 SQL - Squelch – this is the process of silencing the receiver audio output when no signal is being received. The default value is 5. The choices are: 0 – 9. If the value is set too low, the audio output will just be noise. If the value is set too high, some weak stations may not be heard. The user must find a value that works well for the band, frequency, and surroundings where he is operating.

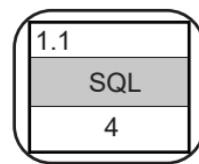
The first view of this setting will be like this. The current value is shown on the bottom, in dark letters on a light Blue background.



If this value needs to be changed, push one of the MENU button options. Then use the Front Panel Channel/Menu selection knob or the Microphone Up and Down arrows to select the desired value. When making changes, the new available choices are shown as White letters on a dark Blue background.



Push one of the MENU button options to confirm the change or push one of the EXIT button options to stop changing this setting. After pushing to confirm or to exit the value is shown



Use the Front Panel Channel/Menu selection knob or the Microphone Up and Down arrows to select a different setting that might need to be changed or push one of the EXIT button options to return to the main Settings menu.

1.2 Power – this is the transmitter power output. The default value is High. The choices are: High, Low.

High Power=power output 25Watts appro. , Low Power=10Watts appro.

Follow the same method as used to change SQL. This should be done for all settings.

1.3 Compandor-it is an advance audio technology in communication system design to suppress noise, then enhance the voice quality. The default value is Off. The choices are: On, Off.

1.4 Scramble – Scrambler is an encryption technique that disperses speech signals over a broadband through specific programming methods, requiring the receiver to perform the same decryption programming to understand the speech content. The purpose of frequency scrambling is to enhance communication security and prevent unauthorized listening. Only walkie talkies with the same scrambling settings enabled can communicate normally. If the scrambling settings are different, although the walkie talkies can receive signals, they cannot clearly understand what is being said. Scrambling and frequency hopping are two different technologies. Frequency hopping avoids interference and eavesdropping by constantly changing frequencies, while scrambling prevents eavesdropping or interference by dispersing

and mixing signals. The default value is Off. The choices are: scramble 1, scramble 2, scramble 3, scramble 4, scramble 5, scramble 6, scramble 7, scramble 8.

1.5 Bandwidth – this is the bandwidth of the transmitted signal. It needs to be set to match the bandwidth of the receiver that will be listening. The default value is Wide. The choices are: Wide, Narrow.

1.6 BCLO – Busy Channel Lock – this feature prevents the radio's transmitter from being activated if a signal is being received. On a frequency where stations using different CTCSS or DCS codes may be active, BCLO prevents a transmission from disrupting their communications accidentally (because the radio may be muted by its own receiver tone decoder).

The default value is Off. The choices are: Off, QDT, CAT. QDT=CTCSS/DCS, CAT=Carrier

1.7 TOT – Time Out Timer – this feature limits the transmission time to a pre-set value. Some repeater systems have time out timers to discourage long-winded users. This Timer should be set to be less than the system timer. This will also promote battery conservation, and, in the event of a stuck PTT switch, it can prevent interference to other users.

The default value is 30s. The choices are: 30s, 60s, 90s, 120s, 150s, 180s, 210s, 240s, 270s.

1.8 TOA - Time OF Arrival, there is a prompt tone before the PTT transmission time is end. The default value is Off. The choices are: Off, 1s, 2s, 3s, 4s, 5s, 6s, 7s, 8s, 9s, 10s. For example, one prompt tone will remind you that the PTT transmission time will be end 5 seconds later if you select the value as 5s.

Note: This is the end of the settings in this sub-section if the VFO that is selected is in the Memory mode. If the VFO is in the VFO mode, then these additional settings can be viewed and changed:

1.9 SFT-D – Shift Direction – when communicating through a repeater, the receive and transmit frequencies are different. This setting sets whether the transmit frequency will be higher or lower than the receive frequency. The default value is Off, which will put it in simplex mode and not able to talk through a repeater. The choices are: Off, +, -. + : sets the TX frequency to be higher than the RX frequency.

- : sets the TX frequency to be lower than the RX frequency.

1.10 SFT Frequency – Shift Frequency – this setting is the difference between the TX and RX frequencies. The default value is 0.00000. This value is in MHz. The common value used in the U.S. for Amateur Radio is 0.60000 MHz for VHF and 5.00000 MHz for UHF. The new value can be entered by pushing the keys on the Microphone, turning the Front Panel Channel/Menu selection knob or pushing the Microphone Up and Down arrows.

1.11 Tx Frequency – this setting shows the resultant TX frequency when the Shift Direction and Shift Frequency are applied to the RX frequency. This value cannot be changed.

1.12 Step – this setting sets the value of the last digit in the Frequency when it is being entered. The default value is 10K. The choices are: 2.5K, 5K, 6.25K, 10K, 12.5K, 20K, 25K, 30K, 50K.

CTCSS/DCS

CTCSS is the acronym for Continuous Tone-Coded Squelch System. CTCSS is used to reduce the annoyance of listening to other users on a shared two-way radio communication channel. It is sometimes referred to as tone squelch or PL tone, for Private Line, a trademark of Motorola. It does this by adding a low frequency audio tone to the voice. Where more than one group of users is on the same radio frequency, CTCSS circuitry mutes those users who are using a different CTCSS tone or no CTCSS.

CTCSS codes are different low frequency audio tones, ranging from 67Hz to 254.1Hz. Repeater systems use these tones for two purposes: prevent receiver intermodulation interference and to allow only those radios with the proper tone to access the repeater. Open repeaters will have their PL tone published in a repeater directory. Closed repeaters will provide the PL tone only to their users.

Although CTCSS is mostly used when talking on a repeater, it can also be used on a simplex frequency. Both stations must have the RX and TX CTCSS turned on and set to the same tone.

However, anyone on the same frequency, that has RX CTCSS turned off, can hear all the conversations.

DCS is the acronym for Digital-Coded Squelch, which generically is known as CDCSS (Continuous Digital-Coded Squelch System) and was designed as the digital replacement for CTCSS. DCS is also referred to as Digital Private Line (or DPL), another trademark of Motorola.

DCS adds a sub-audible data bitstream to the transmitted audio. DCS uses 83 different codes, whereas CTCSS uses a maximum of 50 tones.

This sub-section has 4 items that can be changed. They are identified as 2.1 to 2.4. Use the Front Panel Channel/Menu selection knob or the Microphone Up and Down arrows to select which sub-section is to be accessed.

2.2 R – CTC/DCS – this setting selects whether CTCSS or DCS is to be used for the receiver and selects which code. When this setting is selected, it shows which Squelch mode is currently being used. The default value is OFF. The choices are: OFF, CTCSS, DCS, IDCS.

If this value needs to be changed, push one of the MENU button options (as described at the top of Settings). Then use the Front Panel Channel/Menu selection knob or the Microphone Up and Down arrows to select the desired value. Push one of the MENU button options to confirm the change or push one of the EXIT button options to stop changing this setting.

This sub-section has one more level deep that the user must go to to select the CTCSS tone or DCS code. After selecting it above, the new choice will be White letters on a dark Blue

background. Push one of the MENU button options to see what the current tone or code is and to change it if needed. Push one of the MENU button options to confirm the change or push one of the EXIT button options to stop changing this setting.

- 2.3 T – CTC/DCS – this setting selects whether CTCSS or DCS is to be used for the transmitter and selects which code. This setting can be changed using the same steps as R-CTC/DCS above.
- 2.4 Special DCS - another Special encryption Codes to rich the encryption methods of your transceiver. The default value is Off. The choices are: Off, Special DCS 1, Special DCS 2, Special DCS 3. only with same talking frequency and special DCS, the communication is valid.

SET

When the selected VFO is in one of the Memory modes, there are 22 items that can be changed. They are identified as 3.1 to 3.23. When the VFO is in the VFO mode, there are only 19 items, identified as 3.1 to 3.20. Use the Front Panel Channel/Menu selection knob or the Microphone Up and Down arrows to select which sub-section is to be accessed.

- 3.1 Work Mode – this function shows the current mode of the selected VFO. This mode can also be changed. The mode displayed will be the current mode of the selected VFO. The choices are: Frequency, Channel, Memory. On a new radio, that does not have any Frequencies saved to Memory yet, only the Frequency choice will be available.

The user will use the same methods to change these settings as described for SQL.

When the Work Mode is changed from Frequency to Memory, it will be changed to the last Memory data retrieved and displayed. When changing from a Memory mode to Frequency, it will be changed to the last Frequency used on that VFO.

3.2 ROG Beep – this feature will enable a sequence of tones to be transmitted at the end of the transmission, after the user releases the PTT button. The default value is Off. The choices are: Off, 1, 2, 3.

As each choice is selected, the sequence of tones is played for the user to hear, to be able to make a selection. Push one of the MENU button options to confirm the change or push one of the EXIT button options to stop changing this setting.

3.3 Home Channel – this feature selects which of the saved Channels is to be designated as the Home Channel.

Use the Front Panel Channel/Menu selection knob or the Microphone Up and Down arrows to select which channel is to be selected. Push one of the MENU button options to confirm the change or push one of the EXIT button options to stop changing this setting.

You can set the numbers of home channel to the maximum memory channel numbers. For example, supposed that you save 50 memory channels in the memory bank, then the limit to maximum numbers of home channel is 50.

3.4 A/B Switch – this feature can enable the radio to automatically switch to the VFO that has a

received signal. The default value is Off. The choices are: Off, Auto, On.

Definition of choices:

Off – all transmissions will occur on the VFO that is selected as MAIN.

Auto – when a signal is received on the VFO that is not MAIN, the radio will switch to that VFO, so transmitting can occur there. If no activity occurs on this VFO for 5 seconds, then it will revert back to the MAIN VFO.

On – when a signal is received on the VFO that is not MAIN, the radio will switch to that VFO, so transmitting can occur there. This becomes the new MAIN. The user must toggle A/B to return to the original VFO, if desired.

3.5 Double Watch – this feature allows the radio to receive signals from band A and Band B at the time. Clicking sounds appears in double watch enable mode. Disable the double watch feature to disappear the clicking sounds.

The default value is Off. The choices are: Off, On.

3.6 VOX Gain – this feature lets the user initiate a transmission without pushing the PTT button. When the microphone senses audio input, the radio will automatically switch from receive to transmit. It is not necessary to use a VOX headset to utilize VOX operation.

The default value is Off. The choices are: Off, 1 - 9, where 9 is the most sensitive setting. A value in the middle will be a better choice for most users.

3.7 VOX Delay – this delay is at the end of the transmission.

The default choice is 1.0s. The choices are: 0.3s, 0.5s, 1.0s, 1.5s, 2.0s, 3.0s.

3.8 Key Tone – this feature enables a tone for each time a microphone key or button is pushed.

The default value is On. The choices are: Off, On. If you change this setting from On to Off, you will no longer hear a tone when you hit a key.

3.9 1750Hz tone- Repeaters across the U.K and much of Europe need an access tone (1750Hz tone) to switch the transmitter from standby ready for use.

The default value is "Off" the choices are: Off 1/2/3/4/5s

1/2/3/4/5s period selection stands for the radio emits 1750 tone automatically for repeater access in every period time.

3.10 Mic – there are built-in two mics for the transceiver.

you can select the mic in the hand microphone or another mic in front panel of the device host to talk. (please read front panel introduction section above for location of mic)

The default value is 'in hand'. The choices are: in hand, device host.

"In hand" means that you talk through the mic in the hand microphone "device host" means that you talk through the mic in the device host. You shall keep your mouth close to the mic in the front panel for transmit, otherwise the mic in the front panel can not pick up

your voice for transmitting.

3.11 Denoise – Background noise Canceling. The background noise will be shielded to make your voice more clear when you talk around a noise environment

The default value is On. The choices are: Off, On.

3.12 Key Lock – manual or Automatic keypad lock

The default value is Manu. The choices are: Manu, Auto.

Manu – press and hold "#" on the microphone for 2 seconds to lock keypad, repeat the procedure above to unlock keypad.

Auto – the keypad will be locked automatically if without any operation for more than 55 seconds.

3.13 Lamp Control – this setting controls how long the Front Panel display and the lighted keys in the Microphone will stay lit after a received transmission terminates or the user finishes making changes. When the display is not lit up, the user cannot see what frequencies or channels are being monitored on the VFOs.

The default value is 10S. The choices are: 5S, 10S, 15S, 20S, On.

3.14 Language – this setting chooses the language used in all the Settings screens.

The default value is English. The choices are: English, Chinese.

3.15 APO – Automatic Power off. This feature turn the radio off after se set period of time with no any operation. The default value is Off, the choices is Off, 10m, 30m, 1h, 2h, 3h, 4h, 5h, 6h, 7h, 8h, 9h, 10h, 11h, 12h.

3.16 Power on mode – this setting allows the user to select what the radio will do when power is applied.

The default value is ON. The choices are: OFF, ON, AUTO.

OFF –the radio must be switched on manually no matter that it was turn on by manual or cut the power off compulsively.

ON – the radio turns on automatically once the power cable is connected and the power supply works properly no matter that the last operation to radio is switched off manual or cut the power off compulsively.

AUTO – the radio memory your last switch-off method automatically, the radio will resume your last switch-off method once the power supply work properly and the power cable is connected.

For example: supposed your last time switch-off method is to disconnect the power cable or cut the power off compulsively, then the radio will turn on automatically once the power cable is connected or power is switched on again. Another example: supposed your last time switch-off method is to press the "Volume" dial for 2 seconds to switch off the radio, then you shall repeat the procedure to turn on the radio manually once the power supply

works and power cable is connected.

3.17 Reset – this setting will allow the user to perform a reset to the radio.

The default value is VFO. The choices are: VFO, ALL.

VFO – clear all frequencies of VFO Mode to factory defaults.

ALL – Clear all memories and other settings to factory defaults.

3.18 Scan Resume – The IC-980Pro allows you to scan just the memory channels, the entire operating band, or a portion of that band. It will halt on signals encountered, so you can talk to the station (s) on that frequency, if you like.

Scanning operation is basically the same in each of the above modes. Before you begin, take a moment to select the way in which you would like the scanner to resume scanning after it halts on a signal.

The default value is Carrier. The choices are: Carrier, Time, Seek.

Carrier - In this mode, the scanner will halt on a signal encounters. Two seconds after the carrier has dropped because the other station (s) ceased transmission, the scanner will resume.

Time - In this mode, the scanner will halt on a signal it encounters, and will hold there for five seconds. If you do not take action to disable the scanner within five seconds, the

scanner will resume even if the stations are still active.

Seek - In this mode, the scanner will immediately halt on a signal encounters, it will not restart automatically

3.19 PriScan - Memory Channel Priority Scan Feature

The choices are OFF, and the memory channels

3.20 Scan Add - add or Delete a channel for scan

The default value is Add, and the choices are Add/Del.

Note: This is the end of the settings in this sub-section if the VFO that is selected is in the VFO mode. If the VFO is in the Memory mode, then these additional settings can be viewed and changed:

3.21 Delete Ch – this feature allows the user to delete an existing channel from the Memory.

To select the channel to delete, push one of the MENU options. The current channel selected will be displayed. Use the Front Panel Channel/Menu selection knob or the Microphone Up and Down arrows to select which channel is to be deleted. Push one of the MENU button options to confirm the change or push one of the EXIT button options to exit this setting.

3.22 Name Edit – this feature allows the user to add an alphanumeric name to each channel. This feature will also allow the assigned name to be changed (or completely removed).

To use this feature, the user must first select the channel that is to have the name added or changed, then select this feature. The existing name will not be shown at first. The user must push one of the MENU options. When editing is complete, push one of the MENU options to confirm the changes. Or push one of the EXIT button options to exit this feature without making any changes.

When a new name is started, all '*' are shown, with the character position at the far right. There are 10 character positions in the name. The '*' character cannot be used in the name. To begin entering the name, push the Microphone '#' key to move to the far left.

Then use the Front Panel Channel/Menu selection knob or the Microphone Up and Down arrows to select which letter, number or special character is to be used in each character position of the name. For numbers, the keys on the Microphone can be used. When the desired character has been found, push The Microphone '*' key to move to the next character position to the right. A double beep is heard each time the '*' key is pushed. All character positions must be filled with a character or the Space character. Those positions not filled will show a '*' in the name.

When all character positions have a character or the Space character, push one of the MENU options to confirm the changes.

3.23 Name Display – this setting determines whether the channel name should be displayed. The default value is On. The choices are: Off, On.

Saving a Memory Channel

This radio has memory storage for 200 channels. Information that is stored includes a name, the Frequency, Shift Offset, and CTCSS or DCS tone.

To begin the process of saving a new Memory Channel, put one of the VFOs (A or B) into the VFO mode. Select which VFO is to be used by pushing the A or B button on top of the Microphone. The word **MAIN** will appear in Red letters in the selected VFO.

Then enter the receive Frequency by pushing the buttons on the front of the Microphone or using the Up and Down arrows on the Microphone, or turning the Channel Select knob in the upper right corner of the Front Panel. The desired Frequency may not be reachable if the Step is not correct (check the Step Settings if needed).

With the desired Frequency set, the other Settings must now be checked. Follow the directions in the Settings section to set: Power, SFT-D, SFT Frequency and DCS or CTCSS tone. There may be other settings also, but these are most likely the only ones changed since the last Memory Channel was entered.

This Frequency information can be stored in any channel, either any empty channel or an existing channel. This method can be used to update or change an existing channel. To store over an existing channel, be sure to locate the channel first, so you know which one to change.

To store the data, enter the Edit Menu by pushing the Menu button on the Channel Select knob

or pushing the MENU button on the Front Panel or pushing the FUN button on the Microphone, then push the '0' key on the Microphone. On the Display will be shown 'SAVE->' or 'Cover->' followed by a three-digit channel number. The channel number displayed is where it will be stored. 'Cover->' will be shown if the channel already has data stored in it. If this is the channel you want to change, then push FUN or MENU to confirm the change. If this is not the desired channel number, use the Up and Down arrows or the Channel Select knob to change to it. 'SAVE->' is shown if this is an empty channel. If this is the desired channel, then push FUN or MENU to confirm the change. If you want to cancel storing before it is done, push the PTT button on the Microphone.

When the data is stored, the word **OK** will be displayed.

How to Delete a channel from Memory is covered in the SET sub-section of the Settings section.

Programming Channel data

You may program the transceiver with a certified Android USB-C cable by software.
Please consult with dealer for programming software sharing.

Quick-access menu settings

Keys combination Operation on microphone speaker	Function
FUN+“0”	Save a memory channel (in VFO Mode)
FUN+“1”	For SQL setting
FUN+“2”	For Power output selection
FUN+“3”	For Dual Watch setting
FUN+“4”	For C-CTC/DCS settings
FUN+“5”	For R-CTC/DCS settings
FUN+“6”	For T-CTC/DCS settings
FUN+“7”	Enable/disable FM radio
FUN+“8”	Offset frequency
FUN+“9”	Scan

Specifications

	Receive	Transmit	Others	Units
Current consumption	0.6	Low power 1.6 High power 4	Standby: 018 Power -off: 0.08	Amps, DC (max.)
Input Power	10 minimum - 13.8 nominal - 15 maximum		Volts, DC	
Output Power	Low power: 10 High power: 25		Watts	
Number of Memory channels	200			
Frequency	76 – 108 136 – 174 400 – 470	136 – 174 400 – 470		MHz
Weight	450			g (radio body only)

FCC Statement

Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Note:

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

This product complies with IEEE and ICNIRP exposure limits for uncontrolled RF exposure environment at operating duty factors of up to 50% and is authorized by the FCC.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 100 cm between the radiator and your body.