

Received Calls

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to select **CallLog**, and press [Select] key to enter.
2. Rotate [ENC] knob to **ReceiveCalls**, and press [Select] key to make the following options:
 - ①. **ReceiveCalls List** → press [Select] key to enter → rotate [ENC] knob to choose the number → press [Select] key to make the following options and processes:
 - ◇ **View** → Press [Select] key to check the received call number → Press [Back] key to return to the previous level;
 - ◇ **TimeOfCall** → press [Select] key to display the call time and duration information → press [back] key to return to previous level;
 - ◇ **SendMsg** → Press [Select] key to edit the message → press [OK] key → rotate [ENC] knob to choose operation of **SendMsg**, **InsertComMsg**, **ExitEditer** → Press [Select] key to confirm the operation → Return to the previous level;
 - ◇ **Delete** → "Are you sure?" characters pops up on the screen → press [OK] key to confirm deletion or press [Back] key to cancel deletion → return back to previous level;
 - ②. **Delete All** → "Are you sure?" characters pops up on the screen → press [OK] key to confirm deletion or press [Back] key to cancel deletion → return back to previous level;

Missed Calls

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob

to select CallLog, and press [Select] key to enter.

2. Rotate [ENC] knob to MissedCalls, and press [Select] key to make the following options:

- ①. **MissedCalls List** → press [Select] key to enter → rotate [ENC] knob to choose the number → press [Select] key to make the following options and processes:
 - ◇ **View** → Press [Select] key to check the missed call number → Press [Back] key to return to the previous level;
 - ◇ **TimeOfCall** → press [Select] key to display the call time and duration information → press [back] key to return to previous level;
 - ◇ **SendMsg** → Press [Select] key to edit the message → Press [OK] key → rotate [ENC] knob to choose operation of **SendMsg**, **InsertComMsg**, **ExitEditer** → Press [Select] key to confirm the operation → Return to the previous level;
 - ◇ **Delete** → "Are you sure?" characters pops up on the screen → press [OK] key to confirm deletion or press [Back] key to cancel deletion → return back to previous level;
- ②. **Delete All** → "Are you sure?" characters pops up on the screen → press [OK] key to confirm deletion or press [Back] key to cancel deletion → return back to previous level;

Scan

Scan, Scan list, Scan Mode and Roaming of the radio can be enabled or disabled by following ways.

Scan (On/Off)

Processes:

1. Press the preset [Scan On/Off] key to turn on/off the scan

OR

1. Access the menu, press [Menu] key and rotate [ENC] knob to select Scan, and press [Select] key to enter.
2. Rotate [ENC] knob to Scan and press [Select] key to enter.
- ①. **Select List** → press [Select] key to enter → rotate [ENC] knob to choose the list → press [Select] key to confirm the selection and return to the previous level.
- ②. **Scan On/Off** → press [Select] key to turn it on or off.
- ③. **RoamScan On/Off** → press [Select] key to turn it on or off.

Scan List

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to select **Scan** and press [Select] key to enter.
2. Rotate [ENC] knob to **Scan list** and press [Select] key to enter.
3. Rotate [ENC] knob to the desired scan list and press [Select] key to enter the list.
4. Rotate [ENC] knob to below options:
 - ①. Choose one of the channel, press [Select] to make following options:
 - ◇ **Set Prior** → press [Select] key to set the channel to be priority → "Prior is set" pops up on the screen → Return to the channel list, where the current channel displays "P" letter;
 - ◇ **Cancel Prior** → press [Select] key to cancel the priority channel → "Cancelled" pops up on the screen → Return to

the channel list, where the "P" letter disappears on current channel;

- ◇ **Channel Del** → press [Select] key to delete the channel from the scan list → Return to the channel list;
- ②. **Channel Add** → press [Select] key to make below options:
 - Zone list → rotate [ENC] knob to choose the Zone → press [Select] key → rotate [ENC] knob to choose the desired channel → press [Select] key to add the selected channel and return to the scan list.

Scan Mode

Processes:

1. Press the preset [Scan Mode] key to choose the scan mode.

OR

1. Access the menu, press [Menu] key and rotate [ENC] knob to select **Scan** and press [Select] key to enter.
2. Rotate [ENC] knob to **Scan Mode** and press [Select] key to enter.
 - ①. **Carrier** — when the radio receives an air carrier signal in scanning, it will stay at the current channel for a short time until the carrier signal disappears and continue to scanning.
 - ②. **Time** — when the radio receives an air carrier signal in scanning, it will stay at the current channel for a preset short period (time range is 5S-20S) and continue to scanning once the preset period is up.
 - ③. **Search** — when the radio receives an air carrier signal

in scanning, it will stay at the current channel and exit the scanning. Unless you restart it.

Notes:

- ◊ Before any scan mode is selected, please make sure the "Scan List" preset in advance, otherwise the scan feature is unable to activate.
- ◊ When the scan is ON, the radio will start to scan all the receivable channels in the list.

Roaming

Roaming and Roam Mode can be enabled or disabled by following two ways:

Processes:

1. Press the preset [Roam On/Off] key to turn on/off the roaming.

OR

1. Access the menu, press [Menu] key and rotate [ENC] knob to select **Scan**, and press [Select] key to enter.
2. Rotate [ENC] knob to Scan and press [Select] key to enter.
①. **Select List** → press [Select] key → rotate [ENC] knob to choose the list → press [Select] key to confirm the selection and return to the previous level.
②. **RoamScan On/Off** → press [Select] key to turn it on or off.

Roam Setting

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to select Scan and press [Select] key to enter.

2. Rotate [ENC] knob to **RoamSetting** and press [Select] key to make following options:

- ①. **Roam Mode** → press [Select] key → rotate [ENC] knob to choose the modes of Auto, Manual and RSSI → press [Select] key to confirm the selection and return to the previous level.

Annexed table 1: Roam Mode description

Roaming Mode	Description
Auto	Once searching an available repeater from the scan list, the radio will lock to the current available repeater and pause auto roaming. Then, it will connect with the available repeater according to the preset Connect Check Timer. If the connection fails after the preset Connect Time is used up, it will restart the strong signal Auto roaming search.
Manual	Users can manually roam to the next available repeater. Once it is on, all repeater channels in the scan list will be waken up to search the nearest available repeaters until finds an available one. Every time the nearest available repeater is found, a Connect Re-check Timer (Repeater Check Timer) will be enabled. Users can also lock the repeater by short pressing the [OK>Select] key. The next available repeater is not necessarily the one with the largest RSSI value in the channels of the scan list.

Roaming Mode	Description
RSSI (Strong Signal Roaming)	Once a repeater in the channels of the scan list with RSSI more than preset RSSI threshold value is searched by RSSI mode, the radio will lock to the current channel and pause the strong signal auto roaming. Then it will connect with the current repeater according to the preset Connect Check Timer. If the connection fails after the preset Connect Time is used up, it will restart the strong signal Auto roaming search.

②. **RSSI Set** → press [Select] key to display the current RSSI threshold value → rotate [ENC] knob to adjust the desired value → press [OK] key to confirm the modification → "Set Ok!" pops up on the screen and return to the previous level.

Annexed table 2: RSSI threshold value set

Range (Unit: dBm)	
Maximum	-90dBm
Minimum	-125dBm
Increment	-1dBm

 **Notes:**

◇ The received signal strength (RSSI threshold value) is settable. If the RSSI mode is enabled and the searched repeater RSSI value is more than the preset threshold, the repeater's

transmitting signal coverage will be automatically recognized as good, and then the radio will suspend RSSI roaming.

◇ The stopped repeater is not necessarily the one with the largest RSSI value in the channels of the scan list.

③. **Connect Check Timer** → press [Select] key to display the current time value(second) → rotate [ENC] knob to adjust the desired connect check time → press [OK] key to confirm the modification → "Set Ok!" pops up on the screen and return to the previous level.

Annexed table 3: Connect Check Time set

Range (Unit: second)	
Maximum	255
Minimum	0
Increment	1

 **Notes:**

◇ When the nearest available repeater is searched by Manual Roaming, the radio will immediately start timing according to the preset dwell time value. If the available repeater is not confirmed by pressing the [OK] key within the preset time, once the timer reaches the preset time, the radio will stop roaming; or restart roaming to find the next available repeater.

④. **Connect ReCheck Timer** → press [Select] key to display the current time value(second) → rotate [ENC] knob to adjust the desired recheck time → press [OK] key to confirm the modification → "Set Ok!" pops up on the screen and return to the previous level.

Annexed table 4: Connect ReCheck Timer set

Range (Unit: second)	
Maximum	255
Minimum	0
Increment	1

 **Notes:**

◇ When the available repeaters are searched by Auto roaming or RSSI roaming, the radio is confirmed to lock at the currently available repeater and the roaming is paused. Then, the radio will transmit signals at regular intervals based on the preset Connect ReCheck Timer to connect with the current repeater. If fails to connect with the currently available repeater in preset Connect Timer of transmission (set on the Connect Timer table), the radio will restart Auto Roaming or RSSI Roaming to search any nearest available repeater.

⑤. **Connect Times** → press [Select] key to display the current connect time → rotate [ENC] knob to adjust the desired connect times → press [OK] key to confirm the modification → "Set Ok!" pops up on the screen and return to the previous level.

Annexed table 5: Connect Times Set

Range (Unit: time)	
Maximum	10
Minimum	1
Increment	1

 **Notes:**

◇ No matter which roaming mode is selected, in searching, each repeater channel in the scan list will try to connect with nearby available repeaters based on the preset Connect Times. If the pause channel fails to find the available repeaters within the preset Connect Times, it will continue to scan the next repeater channel from the list till find an available one.

Precautions for roaming

1. Before any scan mode is selected, please make sure the "Scan List" preset in advance, otherwise the scan feature is unable to activate.
2. When the roaming is activated, the radio will scan all repeater channels (TX/RX inter-frequency) only; will not scan channels with same TX/RX frequency.
3. When the roaming is activated, if there is no TX/RX inter-frequency channel (repeater channels) in the scan list, after scanning the current selected scan list, it will exit the roaming function.
4. In roaming searching, if band A is with "→" icon, when

PTT button is pressed, the radio will stop roaming and return back to preset Scan reply/transmit Mode to initiate a call. It will continue to roam after PTT is released.

5. When roaming is on, the radio is default to scan in the main band (Band A). When the main band (Band A) is in roaming, channel selection is prohibited. However, menu accessing and setting of main band (Band A) still can be made by selecting the "➡" icon.

6. When the main band (Band A) is in roaming, channel and VFO operation and menu accessing & setting of Band B still can be made by selecting the "➡" icon display.

Zones & Channel

The following two ways can be used to select and switch in Zones and channels.

Processes:

1. Press the preset [Zone & Channel] key to switch in zones and channels.

OR

1. Access the menu, press [Menu] key and rotate [ENC] knob to select **Zone & Channel** and then press [Select] key to enter.
2. Rotate [ENC] knob to desired zone and press [Select] key to enter.

3. Rotate [ENC] knob to desired channel and press [Select] key to make following options:

①. **Select** → press [Select] key → change the zone and channel → return to the standby interface;

②. **Modify Name** → press [Select] key → modify the channel name → press the [OK] key to confirm and return to the previous level.

Local Set

If the basic operation and functions of the menu are allowed by software to set and check, below functions are operational thru accessing **Local Set** menu.

Language

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Local Set**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose the Language and press [Select] key to enter.

3. Rotate [ENC] knob to choose the desired Language and press [Select] key to change.

4. "Lang is set" pops up on the screen and return back to the previous level.

KeypadLock

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose Local Set, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **KeypadLock** and press [Select] key to enter.

3. Rotate [ENC] knob to choose operation of **AutoLock SW**

and **ManualLock SW** and press [Select] key to switch it on / off.
4. Press [Back] key to return to the previous level.

BackLight

Processes:

1. Press the preset [BackLight on / off] key.

OR

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Local Set**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **BackLight** and press [Select] key to make the following options and procedures:
 - ①. **BL switch** → press [Select] key → rotate [ENC] knob to choose operation of **BL on**, **BL off**, **Auto** → press [Select] key to confirm → return to the previous level;
 - ②. **Brightness** → press [Select] key → rotate [ENC] knob to select desired brightness → press [OK] key to confirm → return to the previous level;
 - ③. **DelayTime** → press [Select] key → rotate [ENC] knob to select → press [OK] key to confirm → return to the previous level;

LED indicator

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Local Set**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **LEDs** and press [Select] key to enter.
3. Press [Select] key to switch it on / off.
4. Press [Back] key to return to the previous level.

Notes:

- ◇ If the LED indicator is OFF, it will not light in receiving and transmitting;
- ◇ If the LED indicator is ON, it will light in receiving and transmitting.

Display Mode

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Local Set**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **DisplayMode** and press [Select] key to enter.
3. Rotate [ENC] knob to choose operation of **CHN+Name**, **CHN+FREQ**, **CHN**, and press [Select] key to confirm.
4. "DispMode is Set" pops up on the screen and return to the previous level.

VOX

Processes:

1. Press the preset [VOX] key to turn it on / off.

OR

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Local Set**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **VOX** and press [Select] key to make the following options and processes:
 - ①. **Vox Switch** → press [Select] key to turn it On or Off;
 - ②. **Vox Level** → press [Select] key → rotate [ENC] knob to

choose desired level → press [Select] key to confirm → return to the previous level;

③. **Vox delay** → press [Select] key → rotate [ENC] knob to choose operation of **OFF**, **Tran_Rx**, **Tran_Tx**, **Tran_RxTx** → press [Select] key to confirm → return to the previous level;

Notes:

- ◊ If VOX is on, when the audio amplitude is detected to reach the preset level, the radio will automatically initiate a call without pressing the [PTT] key
- ◊ The higher sensitivity level, the smaller audio amplitude is required. The smaller sensitivity level, the greater audio amplitude is required.

Channel Switch (Channel Sw)

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Local Set**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **Channel Sw** and press [Select] key to enter.
3. Press [Select] key to turn it on / off.
4. Press [Back] key to return to the previous level.

Notes:

- ◊ If the channel switch is OFF, the radio can't rotate the channel selector to choose the frequency or channel.

Factory Reset

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Local Set**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **Factory Reset** and the display shows "Are you sure restore factory settings" by pressing [Select] key.
3. Press [OK] key to confirm factory reset, or press [Back] key to cancel.

Notes:

- ◊ If confirm to restore the factory set, the radio will be restored to the factory initial state. All data like frequencies, channels and etc set by CPS will be completely cleared and can't be recovered.

Parameters

If it is allowed by software, set and check TOT, High / Low Power, Time Slot / Repeat setting, Power Saving mode, Encryption Level and etc. can be made thru **Parameters** menu.

TOT

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Parameters**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **TOT** and press [Select] key to enter.

3. Rotate [ENC] knob to choose the **Call Time(S)** and press the [OK] key to confirm.

4."Calltime is set" pops up on the screen and the radio returns to the previous level.

Notes:

- ◊ Range of Call Time: Off, 20S, 30S, 40S, 50S ~ 500S;
- ◊ The Call Time is for limiting the time of each call, which can be used to avoid affecting the normal communication of other users due to the long-term transmission of the radio.

Power

Processes:

1. Press the preset [Power] key to switch the power between high and low.

OR

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Parameters**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **Power** and press [Select] key to choose High or Low Power and press [Select] to confirm.
3. "Power is set" pops up on the screen and the radio returns to the previous level.

Slot / Repeat Setting

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose Parameters, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose Slot/Repeat Setting, and then press [Select] key make following options and processes:

Settings for Repeater Channel:

①. **RX DirectSlot** → press [Select] key → rotate [ENC] knob to choose operation of **OFF, Slot 1, Slot 2** → press [Select] key to confirm → "Set OK!" pops up on the screen → return to the previous level;

②. **TX DirectSlot** → press [Select] key → rotate [ENC] knob to choose operation of **OFF, Slot 1, Slot 2** → press [Select] key to confirm → "Set OK!" pops up on the screen → return to the previous level;

Settings for channel with same RX/TX frequency:

①. **Direct Mode Operation** → press [Select] key → rotate [ENC] knob to choose operation of **OFF, Slot 1, Slot 2** → press [Select] key to confirm → "Set OK!" pops up on the screen → return to the previous level;

Notes:

- ◊ Slot / Repeat setting is set according to the channel type that currently accesses the menu (Repeat with different TX/RX frequency or RX/TX with same frequency).

Encryption (ENC Level)

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Parameters**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **EncLevel** and press [Select] key to enter.
3. Rotate [ENC] knob to choose the desired encryption level

or turn it off and press [Select] key to confirm.

4. "Set Ok!" pops up on the screen and returns to the previous level;

Notes:

- ◊ If it is allowed by CPS software, enable this function will help to prevent other users from eavesdropping without authorization.
- ◊ Although encryption is not a necessary requirement for receiving and transmitting. But the receiver radio must have same encryption method, level, alias and value as the transmitter radio to decrypt the encrypted voices from each other.

Squelch Level (SQ level)

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Parameters**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **SQ Level** and press [Select] key to enter.
3. Rotate [ENC] knob to select the desired level or normally open (Level 0), and press [Select] key to confirm.
4. "Sq level is set" pops up on the screen and the radio returns to the previous level.

Band

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Parameters Setting**, and then press [Select] key

to enter.

2. Rotate [ENC] knob to choose **Band** and press [Select] key to enter.
3. "Set Ok" pops up on the screen and the radio returns to the previous level.

Busy Channel Lockout (BCLO)

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose Parameters Setting, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **BCLO** and press [Select] key to turn Busy On or OFF
3. Press [Back] key to return to the previous level.

Signaling

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Parameters**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **Signaling** and press [Select] key to enter.
3. Rotate [ENC] knob to select the desired item and press [Select] key to make the following options and procedures:
 - ①. **RX Subaudio** → press [Select] key to make the following options and processes:

- ◊ **Signaling off** → press [Select] key to turn off the CTCSS/DCS code → "Set Ok" pops up on the screen and returns to the previous level;
- ◊ **CTCSS** → press [Select] key → rotate [ENC] knob to choose the CTCSS code → press [Select] key to confirm → "Set Ok" pops up on the screen and returns to the previous level;
- ◊ **DCS** → press [Select] key → rotate [ENC] knob to choose the DCS code → press [Select] key to confirm → "Set Ok" pops up on the screen and returns to the previous level;
- ◊ **DCS Reverse** → press [Select] key → rotate [ENC] knob to choose the DCS Reverse code → press [Select] key to confirm → "Set Ok" pops up on the screen and returns to the previous level;
- ②. **TXSubaudio** → Press [Select] key to make the following options and procedures:
 - ◊ **Signaling off** → press [Select] key to turn off the CTCSS/DCS code → "Set is ok" pops up on the screen and returns to the previous level;
 - ◊ **CTCSS** → press [Select] key → rotate [ENC] knob to choose the CTCSS code → press [Select] key to confirm → "Set Ok" pops up on the screen and returns to the previous level;
 - ◊ **DCS** → press [Select] key → rotate [ENC] knob to choose the DCS code → press [Select] key to confirm → "Set Ok" pops up on the screen and returns to the previous level;
 - ◊ **DCS Reverse** → press [Select] key → rotate [ENC] knob to choose the DCS Reverse code → press [Select] key to confirm → "Set Ok" pops up on the screen and returns to the previous level;

CTCSS Phase Reverse (CTCSSTail)

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Parameters**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **CTCSSTail** and press [Select] key to enter.
3. Choose operation of **55HZ, 120, 180, 240** and press [Select] key to confirm.
4. "Set Ok" pops up on the screen and returns to the previous level;

Tone Set

If it is allowed by CPS software, set and check the prompt tones by accessing the **Tone Set** menu.

Profiles

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **Profiles** and press [Select] key to enter.
3. Rotate [ENC] knob to choose **General** or **Silent**, and press [Select] key to confirm the selection.
4. "Profile is set" pops up on the screen and returns to the previous level.

Key Tone

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **KeyTone** and press [Select] key to make following options and procedures:
 - ①. **KeyRingSW** → press [Select] key to turn it on / off;
 - ②. **KeyRingStat** → press [Select] key → rotate [ENC] knob to choose the keytone level → press [Ok] key to confirm → "Keytone is set" pops up on the screen and returns to the previous level.

Message Tone (Msg Tone)

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **Msg tone** and press [Select] key to enter.
3. Rotate [ENC] knob to choose the desired ringtone type or turn it off and press [Select] key to confirm.
4. "RingTone is set" pops up on the screen and returns to the previous level.

Private Call Tone (PCallTone)

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **PCallTone** and press [Select] key to make following options and procedures:
 - ①. **PCallSW** → press [Select] key → rotate [ENC] knob to

choose operation of **Rx Begin Tone, Rx End Tone, Tx Begin Tone, Tx End Tone** → press [Select] key to tick or cancel it → press [Back] key to return to the previous level;

- ②. **PCallTone** → press [Select] key → rotate [ENC] knob to choose the desired ringtone type or turn it Off → press [Select] key to confirm → "Tone is set" pops up on the screen and returns to the previous level.

Group Call Tone(GCallTone)

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **GCallTone** and press [Select] key to make following options and procedures:
 - ①. **GCallSW** → press [Select] key * rotate [ENC] knob to choose operation of **Rx Begin Tone, Rx End Tone, Tx Begin Tone, Tx End Tone** → press [Select] key to tick or cancel it → press [Back] key to return to the previous level;
 - ②. **GCallTone** → press [Select] key → rotate [ENC] knob to choose the desired ringtone type or turn it Off → press [Select] key to confirm → "Tone is set" pops up on the screen and returns to the previous level.

Alert Tone

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **Call Alert** tone and press [Select] key to enter.
3. Rotate [ENC] knob to select the desired ringtone type or turn it off and press [Select] key to confirm.
4. "Tone is set" pops up on the screen and returns to the previous level.

Power On Tone

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Tone Set**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **Poweron tone SW** and press [Select] key turn it on or off.
3. Press [Back] key to return to the previous level.

Appendix

If it is allowed by CPS software, set and check GPS, FM radio, time, DTMF, HeadSet+Speaker etc. by accessing the **Appendix** menu.

GPS

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Appendix**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **GPS** and press [Select] key to make following options and procedures:

- ①. **GPS switch** → press [Select] key to turn GPS On or Off;

②. **Upload SW** → press [Select] key → rotate [ENC] knob to choose operation of **GPGGA, GPGSA, GPGSV, GPRMC** → press [Select] key to tick or cancel → press [Back] key to return to the previous level;

③. **Group Info** → press [Select] key to enter the following options and procedures:

◇ **GPS map** → press [Select] key to display the rough distance between the radio and other members → rotate [ENC] knob to choose the calculation unit → press [Back] key to return to the previous level;

◇ **GPS RXMsgs** → press [Select] key to display the received message list from others → rotate [ENC] knob to check the location information of others → press [Back] key to exit → press [Back] key to return to the previous level;

◇ **GPS location** → press [Select] key to display the location information of the radio → rotate [ENC] knob to check GPS / GL received satellites information and signal strength (white: empty signal, red: weak signal, light blue: available signal) → Press [Select] key to return to the previous level;

◇ **Clear RXMsg** → press [Select] key to delete the received messages and return to the previous level;

④. **GPS Report Chn** → press [Select] key to check Zone, Chn, Send interval on / off information → press [Back] key to return to the previous level;

⑤. **Calibrator** → press [Select] key to make following options and processes:

◇ **Auto** → press [Select] key to confirm;

- ◊ **Manual** → Press [Select] key → Display Time zone and difference list → rotate [ENC] knob to choose the desired time zone → Press [Select] key to confirm → return to the previous level;

Note:

- ◊ GPS is allowed by software;
- ◊ Some GPS functions must be pre-set by software before use;
- ◊ Some GPS functions must be positioned successfully before use normally;
- ◊ Some GPS functions require other users to have GPS function and successfully positioned also before use normally;
- ◊ The GPS Distance Calculation or the use of some functions is for reference only, which may cause errors due to some unexpected or environmental reasons;
- ◊ GPS function is optional.

FM Radio

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Appendix**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **FM radio** and press [Select] key to display the FM radio frequency information.
3. Rotate [ENC] knob to manually select the FM radio frequency or seek the FM radio frequency automatically.
4. Press the [Back] key to exit the FM radio mode and return to the previous level. Or press [OK] key to make the following

options and procedures:

- ①. **Save** → press [Select] key to save the current FM radio channel;
- ②. **FM List** → press [Select] key to display the list of saved FM radio frequencies → rotate [ENC] knob to choose the desired frequency → press [Select] key to make below operations:
 - ◊ **Delete** → press [Select] key to delete the current FM radio frequency or press [Back] key to cancel.
 - ◊ **Play** → press [Select] key to play the current FM radio frequency or press [Back] key to cancel.

Time

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Appendix**, and then press [Select] key to enter.
2. Rotate [ENC] knob to choose **Time** and press [Select] key to make following options and procedures:
 - ①. **Date** → Press [Select] key to display the date and year → rotate [ENC] knob or input the desired date and year via numeric keypad of speaker microphone → press [Ok] key to confirm → "Date is set" pops up on the screen and returns to the previous level;
 - ②. **Time** → Press [Select] key to display the time → rotate [ENC] knob to choose or input the desired time via numeric keypad of speaker microphone → press [Ok] key to confirm → "Time is set" pops up on the screen and returns to the

previous level;

③. **DateForm** → press [Select] key → rotate [ENC] knob to choose the desired date form → press [Select] key to confirm → "Date is set" pops up on the screen and returns to the previous level;

④. **Use GPS Datetime** → press [Select] key to turn it on or off;

 **Note:**

◊ **Use GPS Datetime** is effective only when GPS function is on and successfully positioned.

 **DTMF** 

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Appendix**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **DTMF** and press [Select] key to make following options and procedures:

①. **DTMF Switch** → press [Select] key to turn it on or off;

②. **DTMF LocVolume** → press [Select] key to display current local volume → rotate [ENC] knob to adjust the volume → press [OK] key to confirm → "Save Ok" pops up screen and returns to the previous level;

 **Note:**

◊ DTMF code Tone is only used as a alert tone to the local radio and remind the recipient user to receive the call;

◊ DTMF code must be preset by CPS software.

 **HeadMIC+Spk**

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Appendix**, and then press [Select] key to enter.

2. Rotate [ENC] knob to choose **HandMic+Spk** and press [Select] key to enter.

3. Rotate [ENC] knob to choose operation of **Spk+HandMic**, **LoudSpeaker**, **Handmic** and press [Select] key to confirm.

4. "Set Ok" pops up on the screen and returns to the previous level

 **Note:**

1. HandMic+Spk is the choice of audio output mode of this radio.

◊ If it is Off, neither the external speaker nor the handMic (speaker microphone) has audio output. It requires inserting earpiece to hear the output audio.

◊ If "HandMic" mode is selected, there is audio output from the speaker microphone, but no audio output from the external speaker.

◊ If "LoudSpeaker" mode is selected, there is audio output from the external speaker, but no audio output from the speaker microphone.

◊ If "Spk+HeadMic" mode is selected, both the external speaker and the speaker microphone have audio output.

2. The headset audio output at the side accessory socket is not controlled by menu setting; it always has audio output once inserting the headset.

Record

If it is allowed by CPS software, set and check record set, recording list, clear record, space info about recording by accessing Record menu.

Processes:

1. Press the preset [Record On/Off] key to turn it on / off.

OR

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Record**, and then press [Select] key to enter.

2. Rotate [ENC] knob to make following options and processes:

①. **Record Set** → press [Select] key → rotate [ENC] knob to choose operation of RX record SW, TX record SW → press [Select] key to turn it on or off → press [Back] key to return to the previous level;

②. **Record List** → press [Select] key to display the recording list → rotate [ENC] knob to choose the desired record and press [Select] key to make following options and processes:

◇ **Play** → press [Select] to play the selected recording → return to the previous level after finishing playing;

◇ **Delete** → press [Select] key → "Are you sure?" pops up on the screen → press [Ok] key to confirm deletion or press [Back] key to cancel deletion and return to the previous level;

◇ **Information** → press [Select] key to display the detailed information of the recording.

③. **Clear record** → press [Select] key → "Are you sure?" pops up on the screen → press [Ok] key to confirm deletion or press [Back] key to cancel deletion and return to the previous level;

④. **Space Info** → press [Select] key to display the recorded time and total recordable time information → press [Back] key to return to the previous level

Notes

◇ The total recording time supported is more than 50 hours. It is supported to purchase additional recording time according to the actual requirement.

Device Info

If it is allowed by CPS software, set and check Radio ID, Rx Group List, CH Contact (channel contact), Version and other information by accessing **Device Info** menu.

Processes:

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose Record, and then press [Select] key to enter.

2. Rotate [ENC] knob to make following options and processes:

①. **Radio ID** → press [Select] key to display the Radio ID → rotate [ENC] key to choose or input desired ID with numeric keypad of speaker microphone → press [OK] key to save → "Set ok" pops up on the screen and returns to the previous level.

②. **RXGroupList** → press [Select] key to display the receiving group list → rotate [ENC] knob to check details → press [back] key to return to the previous level;

③. **CH contact** → press [Select] key to display the default channel contact information → press [Back] key to return to

the previous level;

④. **Version** → press [Select] key to display the local version information → press [Back] key to return to the previous level;

User_defined Mode

If it is allowed by CPS software, it is supported to check and modify the parameters of Channel or VFO mode by accessing User_defined Mode menu.

Processes:

1. In standby mode, press and hold the [B/E] key for 3 seconds to enter the User-defined mode.

OR

1. Access the menu, press [Menu] key and rotate [ENC] knob to choose **Record**, and then press [Select] key to enter.

2. Rotate [ENC] knob to select the following options (refer to **User_defined table**).

3. Press [Select] key to light up the cursor and enter to the editing mode.

4. Rotate [ENC] knob to choose the desired value and press [Select] to confirm and save.

5. Press [Back] key to return to the previous level.

User-defined table

In order	Operation	Options	Confirm	Remarks
Channel Attribution (Working Mode)	Press [Select] key	Digital/Analog/RX:D/A-TX:A/TX:D/A-RX:D	Press [Select] key	For both Analog and Digital mode
RX Frequency		In the available range of the radio		
TX Frequency		In the available range of the radio		For Digital Mode
Power		High/Low		
RX BS (Slot)		Off / Slot 1/Slot 2		Not available for digital VFO mode
TX BS (Slot)		Off / Slot 1/Slot 2		
RX Color Code		0~15		For Digital Mode
TX Color Code		0~15		
Alarm		On/Off		Not available for digital VFO mode
Call Alert		On/Off		
Private Call Type		PATCS /OACSU		For Digital Mode
Meg Type		PATCS /OACSU		
Permission (TX Policy)		Impolite/ Polite to CC/ Polite to All		Not available for digital VFO mode
RX Group List		Off / Self-defined		
Encryption		Off / Defined by software		For Analog Mode only
Default Contacts		Off / Contact List		
Emergency		Off / self-defined		Not available for analog VFO mode
Scan List		Off / self-defined		
TX Subtone Type		Signaling Off/CTCSS/DCS/ DCS Reverse		For Analog Mode only
TX Subtone(TX Sub Item)		The signal codes of DCS/CTCSS		
RX Subtone Type		Signaling Off/CTCSS/DCS/ DCS Reverse		Not available for analog VFO mode
RX Subtone(TX Sub Item)		The signal codes of DCS/CTCSS		
Scan List		All available channels		For Analog Mode only
Save2SelChn (Save to current channel)		All available channels		
Save2SelChn (Save to selected channel)		All available channels		

 **Notes**

◇ When accessing any sub menu, press the [Back] key to return to the previous level.

Function Applications

Modes of TX and RX in scanning

Set TX and RX call modes in scan list by CPS software.

Scan TX Mode

In scanning, when there is detected active channel or talk group, the radio will stay at the channel for a period of time, which is called "idle time".

◎ The scan TX modes of the scan list can be set as below:

Talkback

- ① If it is "On", when a carrier signal of any channel in the scan list is received in scanning, press the [PTT] key to transmit to the channel within 3S after the received signal disappears.
- ② If it is "OFF", the reply is based on the "Scan TX Mode" preset by the programming software.

Notes:

Scan TX Mode:

- ◊ **Current Channel** — reply on the channel that starts the scanning.
- ◊ **Last Operated Channel** — reply on the channel where the radio stays at last time.
- ◊ **Appointed Channel** — specify the only channel to reply.

Appointed Channel:

After selecting the channel for replying, if there is carrier signal of any channel in the scan list received in scanning, after the received signal disappears, press the [PTT] key, it will reply on the preset appointed channel.

Maintenance and Clean

To ensure the best performance and prolong working life, please acquaint yourself with the following for maintenance and cleaning.

Maintenance

- ◎ Please do not scratch or puncture the device with hard or sharp object.
- ◎ Please do not place the device in an environment which can corrode electronic circuits or under direct solar radiation.
- ◎ Please do not carry the device by its antenna or headset.
- ◎ Please make sure the SP-MIC plug is covered when not in use.

Clean

- ◎ Please clean your device regularly by using a dry clean cloth or soft brush to wipe the dust on the surface and on the charger contacts;
- ◎ The keypads, control knob and housing of the device may be dirty from use. Please use nonwoven wipes to clean them. Do not use chemicals to clean it such as detergent, alcohol, spray or petroleum products, on the device surface or printed labels. Chemicals can damage the housing, display and remove the printing on the labels. Before power on the radio, please make sure the device is dry completely.

General guide for fault handling

Malfunction	Analysis of causes	Handling method
Radio fails to power on	Battery is installed incorrectly	Re-install battery
	Battery power lower than preset value	Please change or charge battery.
	Bad battery contacts or contacts in dirty.	Check and clear the battery contacts.
Receive signal decreases, is unclear or is interrupted.	Battery power gets lower.	Please change or charge battery.
	Volume control at low value.	Adjust the volume to be higher.
	Antenna gets loose or antenna frequency is incorrect.	Power off radio, and re-install antenna, or change antenna with right frequency.
	Speaker is blocked or damaged.	Try to clear the outer speaker or contact your dealer.
	Using the radio under poor working environment or electromagnetic interference	Change working environment or shift antenna direction.
Unable to communicate with group members	The current working channel frequency or signaling value is different.	Change channel or reset signaling and frequency to be same as the group members
	The setting of Digital or Analog channel is incorrect.	Reprogram the current digital or analog channel.
	Out of range of group members	Move back within range
Noise or unrelated communications on current channel	Co-channel user interference	Change frequency or channel.
	Channel not programmed with correct signaling	Reprogram radio to correct signaling or change signaling to prevent interference.
Weak voice traffic with noise during communications	The communication distance is too great	Reduce range between users.
	Signals are blocked during to environment such as buildings and terrain.	Reduce range between users or move to unimpeded line of sight.

Malfunction	Analysis of causes	Handling method
Weak voice traffic with noise during communications	Strong local environmental interference.	Move away from interference source.
Failure to obtain GPS position (Optional)	Radio lacks optional GPS feature or satellite view blocked by environment.	Add GPS feature; move to open site with clear view of sky.

 **Note:**

If the above methods fail to solve your problem, or you confront different malfunctions, please contact your local dealer or appointed maintenance station.

Standard accessories



Radio Unit



Speaker Microphone



GPS Antenna



DC power cord



Mounting Bracket



Screws

FCC Compliance

Changes or modifications to this equipment may cause harmful interference unless the modifications are expressly approved in the instruction manual. The user could lose the authority to operate this equipment if an unauthorized change or modification is made.

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, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an controlled environment .This equipment should be installed and operated with minimum distance 50cm between the radiator& your body.

Do not transmit for more than 50% of the total transceiver use time; transmitting over 50% of the total use time may exceed the limits in accordance to the FCC RF exposure requirements. Nominal transceiver operation is 5% transmission time, 5% reception time, and 90% stand-by time.

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.

NOTE:Antenna gain including cable loss must not exceed 4.7 dBi for satisfying RF exposure limit

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